SYNTEC TECHNOLOGY CO.,LTD.

Driver Alarm Manual.

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1 Driver Alarm - ALARM-1xx

All in one ID **2nd Single Axis ID**	**AL-024**		
1st Single Axis ID	**--**	**Alarm Name**	**Driver Internal Operation Error**
Alarm Content	An internal program error occurred in the driver.		
Possible Cause	An internal program error occurred in the driver.		
Possible Solution	Please contact distributor or Syntec representative.		
All in one ID **2nd Single Axis ID**	**AL-025**		
1st Single Axis ID	**--**	**Alarm Name**	**Driver Hardware Computation Failure**
Alarm Content	Driver Hardware Computation Overflow Or Underflow		
Possible Cause	Either overflow or underflow occurs by hardware computation		
Possible Solution	Please contact distributor or Syntec representative.		

All in one ID **2nd Single Axis ID**	**AL-100**		
1st Single Axis ID	**AL-10**	**Alarm Name**	**IGBT Overheat**
Alarm Content	Generation I single axis drive power module exceeds 90℃ IGBT temperature stays above 100℃		
Possible Cause	1. Cooling system failure 2. Drive output short-circuit 3. Ambient temperature overheat 4. Heat source nearby 5. Continuous use while exceeding drive's rated load		

Possible Solution	1. Check if fan is functioning normally. 2. Check drive's output wiring, refer to "Wiring and Signal" section of manual. 3. Check if ambient temperature is below 55℃, refer to "Transportation and Installation" section of manual. 4. Check environment, remove external heat source or enhance cooling capacity. 5. Check for motor overload or over current.

All in one ID **2nd Single Axis ID**	**AL-101**		
1st Single Axis ID	**AL-72**	**Alarm Name**	**Drive Overload**
Alarm Content	Drive senses power module overload		
Possible Cause	1. Overload during operation due to mechanical factors 2. Overload 3. Encoder or motor wiring error 4. Encoder failure 5. Current gain mismatch while running encoder test, magnetic encoder correction or induction motor parameter estimation		
Possible Solution	1. Eliminate mechanical factors. 2. Check if I_{dq} current feedback Pn-D30(D1-16) has been greater than the parameter Pn-651(P5-02), if so we suggest lowering motor load. 3. Refer to "Wiring and Signal" section of manual for cable re-connection. 4. Redo "Encoder test" and check for alarms, refer to "Auto tuning" section of manual. 5. Lower Tuning Gain (Pn-F2D/Fn-18) to 20, if problem doesn't improve, gradually tune drive parameter (Pn-F2D/Fn-18) to 5.		

All in one ID **2nd Single Axis ID**	**AL-110**		
1st Single Axis ID	**AL-12**	**Alarm Name**	**Critical Over Voltage**
Alarm Content	DC BUS voltage exceeds drive's protective level		
Possible Cause	1. Excess DC BUS voltage caused by braking resistor when motor slows 2. AC power input exceeds drive's rated input voltage 3. Drive hardware failure		

Possible Solution	1. Check regenerative resistor's specs, refer to "Wiring and Signals" section of manual. 2. Check if AC power supply is compatable with drive. 3. If the above two scenarios are ruled out, contact distributor or Syntec representative to check hardware.

All in one ID **2nd Single Axis ID**	**AL-111**		
1st Single Axis ID	**AL-13**	**Alarm Name**	**Low Voltage**
Alarm Content	Power supply voltage is lower than driver's rated input voltage		
Possible Cause	1. AC power supply is too low 2. Drive hardware failure		
Possible Solution	1. check if AC power supply matches drive specs. 2. If the above scenario is ruled out, contact distributor or Syntec representative to check hardware.		

All in one ID **2nd Single Axis ID**	**AL-112**		
1st Single Axis ID	**AL-2D**	**Alarm Name**	**Power Cable Disconnected**
Alarm Content	1. Power cable disconnection detected at motor non-zero speed 2. Drive's 3 phase voltage saturates for over 0.15 seconds (0.5 seconds in 1st Single Axis)		
Possible Cause	1. 3 phase power cables are loose 2. Abnormal incremental encoder feedback 3. Acceleration time is set too short 4. Drive is under voltage when doing Encoder-rotor Offset Calibration. 5. Drive hardware failure		
Possible Solution	1. Check UVW cables between motor and drive for damage or looseness. 2. Redo "Encoder test" and check for alarms (refer to "Auto tuning" section of manual), if this alarm goes off the cause may differ. 3. Increase Pn-307(P6-11) Maximum Jerk Time. 4. a. Please check select manual. Choose the drive with bigger source voltage(220V->380V). b. Lower the rated current and the rated torque to do Encoder-rotor Offset Calibration. Then, revert the value to original value. Notice: Because drive is under voltage, the torque may be small in high speed. 5. If the above scenarios are ruled out, contact distributor or Syntec representative to check hardware.		

All in one ID **2nd Single Axis ID**	**AL-113**		
1st Single Axis ID	--	**Alarm Name**	**Power Failure**
Alarm Content	Power supply phase failure		
Possible Cause	1. Drive cables are loose 2. Power supply failure 3. Drive hardware failure		
Possible Solution	1. Check RST cables for damage or looseness. 2. Check power source. 3. If the above scenarios are ruled out, contact distributor or Syntec representative to check hardware.		
Remark	From v2.8.6, the alarm is triggered only when Pn-804=1. From v2.10.1, v2.11.0, disable to detect this alarm.		

All in one ID **2nd Single Axis ID**	**AL-114**		
1st Single Axis ID		**Alarm Name**	**Severely Low Voltage**
Alarm Content	Power supply voltage is far lower than the protective level.		
Possible Cause	1. Power supply voltage is lower than the 40% normal level. 2. Drive hardware failure.		
Possible Solution	1. Ensure the DC bus voltage is stable when the driver is working. 2. If the above scenario is ruled out, please send back to Syntec.		

All in one ID **2nd Single Axis ID**	**AL-120**		
1st Single Axis ID	**~~AL-15~~**	**Alarm Name**	**Driver Over Current**
Alarm Content	Current feedback exceeds 150% of the drive's peak current		

Possible Cause	1. Overload 2. Encoder and/or motor cable assembly error 3. Encoder error 4. Current loop gain mismatch while Encoder test, Magnetic Pole Offset Tuning or Motor Parameter Estimation 5. Unbalanced motor 3 phase resistance 6. Power module failure
Possible Solution	1. Check if I_{dq} current feedback is greater than 150% drive's peak current. 2. Check encoder and motor U,V, W cables. Refer to "Wiring and signals" section of manual. 3. Redo "Encoder test" and check for alarms, refer to "Auto tuning" section of manual. 4. Use oscilloscope to check if current feedback fluctuate badly. Lower Tuning Gain (Pn-F2D) to 20. If the problem still persist, gradually decrease Drive parameter Pn-F2D to 5. 5. Check if motor 3 phase's resistances are equal. If not, this may indicate motor coil damage, which activates this alarm. Measure if UV, UW, VW resistances are equal (Not recommended when resistance to ground is infinite). 6. Turn off drive power and measure if P/N(+/-) and U/V/W are shorted. Short circuits indicate a broken transistor. Once certain of damage, contact distributor or Syntec representative to check hardware.
Detailed Instructions	AL-15 Issue Toubleshooting
备注	• Alarm is deleted for Single Axis version V1.6.6 and after. • Alarm is deleted for 4-in-1 version V2.2.0 and after. • Alarm is restored for 4-in-1 version V2.12.3 and after.

All in one ID **2nd Single Axis ID**	**--**		
1st Single Axis ID	**AL-17**	**Alarm Name**	**Auto Tuning Over Current**
Alarm Content	Alarm to prevent against current circuit malfunction		
Possible Cause	1. Turning Gain is too high 2. Drive's PM module error		
Possible Solution	1. Check if output current oscillates, lower Tuning Gain parameter Fn-18 to 20, if problem persists, lower gradually to 5. 2. contact distributor or Syntec representative to check hardware.		

All in one ID **2nd Single Axis ID**	**AL-121**		

1st Single Axis ID	AL-1A	Alarm Name	Power Module Over Current
Alarm Content	Drive detects excessive current on power module.		
Possible Cause	1. Internal motor UVW short or UVW to ground short 2. Wire UVW short or UVW to ground short 3. Drive connector UVW short or UVW to ground short 4. Motor is mechanically stuck which leads to abnormally heavy load to drive 5. Power module failure 6. Unbalanced motor 3 phase resistance 7. Current module becomes aged		
Possible Solution	1. Bad insulation in motor, replace motor 2. Wire short, replace wire 3. Drive failure, replace drive 4. Eliminate mechanical reason, increase acceleration time and jerk time, decrease load 5. Turn off drive power, remove motor and wire, measure if P/N(+/-) and U/V/W are shorted. Short circuits indicate a broken transistor. Once certain of damage, contact distributor or Syntec representative to check hardware. 6. Check if motor 3 phase's resistances are equal. If not, this may indicate motor coil damage, which activates this alarm. Measure if UV, UW, VW resistances are equal (Not recommended when resistance to ground is infinite). Or do the encoder function test to see the IA IB IC current feedback. 7. If rotation is below 100rpm, the drive still sends alarm. It means current module may become aged and is related to hardware life. Make sure the above seven are checked and no special historical alarms, turn off drive, remove the motor and wire then restart. Once certain of damage, contact distributor or Syntec representative to check hardware.		
All in one ID **2nd Single Axis ID**	**AL-122**		
1st Single Axis ID	**AL-1D**	**Alarm Name**	**Hall sensor error 1**
Alarm Content	Hall Current Sensor(IA) failure		
Possible Cause	1. U phase current senses loop failure		
Possible Solution	1. Contact distributor or Syntec representative to check hardware.		
All in one ID **2nd Single Axis ID**	**AL-123**		

1st Single Axis ID	AL-1E	Alarm Name	Hall sensor error 2
Alarm Content	Hall Current Sensor(IB) failure		
Possible Cause	1. V phase current senses loop failure		
Possible Solution	1. Contact distributor or Syntec representative to check hardware.		

All in one ID 2nd Single Axis ID	AL-124		
1st Single Axis ID	**--**	**Alarm Name**	**Power Module Over Current 2**
Alarm Content	Drive detects excessive current on power module.		
Possible Cause	1. Overload 2. Encoder and/or motor wiring error 3. Encoder malfunction 4. Unbalanced motor 3 phase resistance 5. Power module failure		
Possible Solution	1. Check if I_{dq} current feedback exceeds drive's peak current. 2. Check encoder and motor U,V, W cables. Refer to "Wiring and signals" section of manual. 3. Redo "Encoder test" and check for alarms, refer to "Auto tuning" section of manual. 4. Check if motor 3 phase's resistances are equal. If not, this may indicate motor coil damage, which activates this alarm. Measure if UV, UW, VW resistances are equal (Not recommended when resistance to ground is infinite). 5. Turn off drive power and measure if P/N(+/-) and U/V/W are shorted. Short circuits indicate a broken transistor. Once certain of damage, contact distributor or Syntec representative to check hardware.		

All in one ID 2nd Single Axis ID	AL-129		
1st Single Axis ID		**Alarm Name**	**This axis is not supported by this driver type**
Alarm Content	This axis is not supported.		
Possible Cause	This axis is not supported, and the axis card port number in controller setting interface is wrong.		

Possible Solution	Close the communication of this axis. Follow the CNC controller manual and set the axis card port number correctly.

All in one ID **2nd Single Axis ID**	**AL-130**		
1st Single Axis ID	**AL-21**	**Alarm Name**	**Regenerative resistance error**
Alarm Content	Triggered when power stage reports abnormality.		
Possible Cause	1. Switching transistor of regenerator is failure.		
Possible Solution	1. Check if transistor of regenerator is shorted, if so, send back to distributor or Syntec representative for hardware repair.		

All in one ID **2nd Single Axis ID**	**AL-131**		
1st Single Axis ID	**AL-22**	**Alarm Name**	**Cooling Fan error**
Alarm Content	Triggered when power stage reports abnormality.		
Possible Cause	1. Cooling fan is malfunction or failure.		
Possible Solution	1. Check If cooling fan is damage, if so, send back to distributor or Syntec representative for hardware repair.		

All in one ID **2nd Single Axis ID**	**AL-132**		
1st Single Axis ID	**AL-2E**	**Alarm Name**	**Control Board Error**
Alarm Content	Triggered when drive's control board has internal communication error.		
Possible Cause	1. Control board is failure.		
Possible Solution	1. Send back to distributor or Syntec representative for hardware repair.		

All in one ID **2nd Single Axis ID**	**AL-133**		

1st Single Axis ID	AL-53	Alarm Name	Inverter Type Error
Alarm Content	**1st Single Axis:** Triggered when power stage parameters and the parameter, which is detected from power stage, is mismatch. **All in one/2nd Single Axis:** Triggered while accessing power stage information.		
Possible Cause	**1st Single Axis:** 1. Control board is incompatible with Power Stage ID(P5-07) 2. Parameter Power Stage ID(P5-07) setting error **All in one/2nd Single Axis:** 1. Triggered when power stage information stored on power stage cannot be read. 2. Triggered when the number of detected current sensors is abnormal. 3. The inverter informations of current sensor is wrong		
Possible Solution	1. Send back to distributor or Syntec representative for hardware repair. 2. 1st Single Axis: a. Change the value of Power Stage ID(P5-07) to Power Stage ID read(D1-70) if not consistent b. If Power Stage ID read(D1-70) is equal to zero, please send back to Syntec Corp.		

All in one ID 2nd Single Axis ID	AL-134		
1st Single Axis ID	**-----**	**Alarm Name**	**FRAM Operating Fail**
Alarm Content	Error occur when drive operate FRAM.		
Possible Cause	1. Save parameters while power is off. 2. Communication between drive and FRAM is disturbed. 3. FRAM reached it's maximum write limit.		
Possible Solution	1. Please save parameters while power is on. 2. If this is a recurring event, send back to distributor or Syntec representative for hardware repair.		

All in one ID 2nd Single Axis ID	AL-135		
1st Single Axis ID	**AL-18**	**Alarm Name**	**DSP Watchdog Reset**
Alarm Content	Drive DSP detects internal watchdog reset.		
Possible Cause	1. System operation is malfunction.		

Possible Solution	1. Send back to distributor or Syntec representative for hardware repair.		
All in one ID **2nd Single Axis ID**	**AL-136**		
1st Single Axis ID	**-----**	**Alarm Name**	**FRAM CRC Error**
Alarm Content	FRAM data is error.		
Possible Cause	1. The memory of parameters is damaged.		
Possible Solution	1. Check if parameters have been tampered with. Correct parameters and save. 2. If this is a recurring event, send back to distributor or Syntec representative for hardware repair.		

All in one ID **2nd Single Axis ID**	**AL-137**		
1st Single Axis ID	**-**	**Alarm Name**	**Calculation sequencal error**
Alarm Content	Insufficient calculation time.		
Possible Cause	1. Insufficient calculation time		
Possible Solution	1. Disable unnecessary functions. 2. Decrease Pn-643 High Cyclc Calculation Level.		

All in one ID **2nd Single Axis ID**	**AL-138**		
1st Single Axis ID	**-**	**Alarm Name**	**Parameters saving failed in permanent memory**
Alarm Content	There were some errors in permanent memory. It has been recovered by earlier parameter settings.		
Possible Cause	1. Parameters saving failed in permanent memory because of noise. It has been recovered by earlier parameter settings. Please check parameter settings.		
Possible Solution	1. Please set correct parameters or using earlier settings. Do alarm reset to clear alarm.		

All in one ID **2nd Single Axis ID**	**AL-139**		
1st Single Axis ID	**-**	**Alarm Name**	**PowerStage Error**
Alarm Content	PowerStage Detects Error		
Possible Cause	1. Drive detects excessive current or over heat on power module		
Possible Solution	1. Follow the instruction if any alarm shows up		

All in one ID **2nd Single 轴向轴向 ID**	**AL-13A**		
1st Single 轴向轴向 ID	**-**	**Alarm Name**	**Module ID Data Error**
Alarm Content	Reading module ID data error		
Possible Cause	1. Module ID data error causing by memory ageing or communication interfered. 2. Any of module number, extend card number, add-on card number is over range.		
Possible Solution	1. Check wiring, especially if shielding is connected to ground correctly. Then reboot the drive. 2. Check the drive, IO extend card, and add-on card are official version. 3. Send back to Syntec.		

All in one ID **2nd Single Axis ID**	**AL-13B**		
1st Single Axis ID	**-**	**Alarm Name**	**RTD Add-on Card SSI Communication Error**
Alarm Content	RTD add-on card SSI communication error		
Possible Cause	1. RTD add-on card loose or not connected. 2. FPGA version not support RTD function. 3. SPI communication error causing by memory ageing or communication interfered.		

Possible Solution	1. Check RTD add-on card connected correctly. 2. Make sure the FPGA version is v2.14.3 or up. If not, update Drive version to v2.14.105 or up. 3. If don't need to use RTD function, please set Pn-548~Pn-54A and Pn-752 to 0. Then reboot the drive. 4. Check wiring, especially if shielding is connected to ground correctly. Then reboot the drive. 5. Send back to Syntec.

All in one ID **2nd Single Axis ID**	**AL-13C**		
1st Single Axis ID	**-**	**Alarm Name**	**Front Stage Information Error**
Alarm Content	Error occurs while accessing front stage informations		
Possible Cause	The front stage informations can not be read correctly		
Possible Solution	Send back to Syntec		

All in one ID **2nd Single Axis ID**	**AL-150**		
1st Single Axis ID	**-**	**Alarm Name**	**Extreme Regenerative Overload**
Alarm Content	The accumulated heat energy of internal or external regenerative resistor is twice higher than heat dissipation threshold. Regenerative resistor may be damaged.		
Possible Cause	1. When using external resistor, Pn-647、Pn-648 is not set properly. 2. The selection or cooling condition of external regenerative resistor needs to be rechecked. 3. When using internal resistor, Pn-647、Pn-648 is not set to 0. 4. When using internal resistor, the frequency of motor acceleration/ deceleration is too high or too intense. 5. Regenerative resistor protection is not turned-off.		
Possible Solution	1. When using external resistor, please check if Pn-647、Pn-648 is set correctly. 2. When using external resistor and parameters are set correctly, please recheck the selection or cooling condition of resistor. 3. When using internal resistor, please check if Pn-647 and Pn-648 are set to 0. 4. When using internal resistor and parameters are set correctly, please decrease the frequency of motor acceleration/deceleration or increase the value of Pn-306、Pn-307. If the alarm is raised consistently, please consider using an external resistor. 5. If regenerative resistor protection is not required, please set Pn-649 to 0.		

All in one ID 2nd Single Axis ID	AL-151		
1st Single Axis ID	**-**	**Alarm Name**	**Regenerative Instant Overload**
Alarm Content	When using internal resistor, the regenerator is turned-on for too long.		
Possible Cause	1. Check if there is an external negative load applied on motor. 2. The resistance of internal resistor is too large.		
Possible Solution	1. Remove the external negative load. 2. Use an external resistor with smaller resistance.		

2 Motor Alarm - ALARM-2xx

All in one ID **2nd Single Axis ID**	**AL-200**		
1st Single Axis ID	**AL-11**	**Alarm Name**	**Motor Overheat**
Alarm Content	Drive detects motor overheat.		
Possible Cause	1. Motor cooling system malfunction 2. Digital temperature sensor setting error 3. KTY84 thermal sensor setting error 4. Motor rated current setting error 5. Insufficient acceleration time 6. Overload		
Possible Solution	1. Check motor cooling system. 2. Correct parameter Pn-50A(P1-40) to Pn-50F(P1-61) according to digital temperature feedback(A or B). 3. Check if KTY84 is wired properly and if parameters P1-30 and Pn1-31 are set correctly. PS: Only 1st Single Axis have this solution. 4. Check rated current parameter Pn-710(P3-14). 5. Check acceleration parameter Pn-306(P6-10) , add acceleration/ deceleration time. 6. Check if load rate Pn-D2A(D1-10) is over 100%, consider switching to a motor with higher power.		
Detailed Instructions	AL-11 Issue Trouble Shooting		
All in one ID **2nd Single Axis ID**	**AL-201**		
1st Single Axis ID	**AL-14**	**Alarm Name**	**Motor Over Speed**
Alarm Content	Motor speed is above 120% of it's maximum speed.		
Possible Cause	1. Motor power cable U,V,W phase order incorrect 2. Encoder malfunction 3. Motor parameter loading error 4. Sever system severe overshoot 5. Severe speed command change 6. Drive software outdated 7. Encoder misses packets causing acceleration to be too great		

Possible Solution	1. Execute " Encoder test ", check if alarm AL-302(AL-24) appears. Refer to "Auto tuning" section of manual. Execute " Encoder test ", check if any alarms appear. Refer to "Auto tuning" section of manual. a. Correct power cord phase order or change parameter Pn-021(P3-22)(0 to 1 and 1 to 0). b. Once certain polarity is correct, please cosider the following causes of this alarm. 2. Check whether drive parameter Pn-7XX match motor lable parameter.If there is a mismatch between motor parameters and those on the lable, please record the motor modle and contactSuzhou or Taiwan Technical Center(Syntec) for correct motor parameters and load them. 3. If vibration of the machine can be observed, tune gain parameters Pn-100 to Pn-102(P2-01 to P2-03). 4. Check if controller's commands shift too frequently, increase controller's acceleration and deceleration time constant. 5. We have corrected drive alarm specs, please upgrade to versions 2.0.25(1.4.12). 6. Capture JOG speed wave form and observe if speed change is not continuous.Check inside the junction box where the encoder is attached, make sure the shielding wire is connected to the motor's ground wire.Observe whether there is value Pn-D73~Pn-D76 (D1-28,D1-29,D1-46,D1-47).
Detailed Instructions	AL-14 Issue Trouble Shooting

All in one ID **2nd Single Axis ID**	**AL-202**		
1st Single Axis ID	**AL-16**	**Alarm Name**	**Overload**
Alarm Content	Motor exceeds S2(short time duty) time limit.		
Possible Cause	1. Motor is stuck due to mechanical factors, leading to overload during operation 2. Continuous operation while exceeding drive's rated current 3. Encoder or motor wiring error 4. Encoder malfunction		

Possible Solution	1. Check if difference between command and motor speed feedback is too great. 2.1 Check if load rate is over 100%, enhance motor capacity, lower motor load or increase acceleration/ deceleration time constant. 2.2. Refer to motor specification to correctly set Pn-72A(P4-50) values. Increase allowed overload time limit so the alarm doesn't frequently go off when limit standards are too high.Refer to motor specification to correctly set Pn-72A(P4-50) values. Increase allowed overload time limit so the alarm doesn't frequently go off when limit standards are too high. 3.Check wiring between encoder and U,V,W cables, refer to "Wiring and Signal" section of manual. 4.Execute "Encoder test" and check for alarms, refer to "Auto tuning" section of manual.

All in one ID **2nd Single Axis ID**	**AL-203**		
1st Single Axis ID	**AL-31**	**Alarm Name**	**Over Torque 1**
Alarm Content	Motor torque exceeds torque level 1 countinuously for over torque check time 1.		
Possible Cause	1. Motor is stuck due to machanical factors, leading to overload during operation 2. Encoder or motor wiring error 3. Encoder malfunction		
Possible Solution	1. Check if difference between command and motor speed feedback is too great. 2. Check wiring between encoder and U,V,W cables, refer to "Wiring and Signal" section of manual. 3. Execute "Encoder test" and check for alarms, refer to "Auto tuning" section of manual.		

All in one ID **2nd Single Axis ID**	**AL-204**		
1st Single Axis ID	**AL-32**	**Alarm Name**	**Over Torque 2**
Alarm Content	Motor torque exceeds torque level 2 countinuously for over torque check time 2		
Possible Cause	1. Motor is stuck due to machanical factors, leading to overload during operation 2. Encoder or motor wiring error 3. Encoder malfunction		

Possible Solution	1. Check if difference between command and motor speed feedback is too great. 2. Check wiring between encoder and U,V,W cables, refer to "Wiring and Signal" section of manual. 3. Execute "Encoder test" and check for alarms, refer to "Auto tuning" section of manual.

All in one ID **2nd Single Axis ID**	**AL-210**		
1st Single Axis ID	**AL-26**	**Alarm Name**	**Motor Pole Number Error**
Alarm Content	Triggered when motor pole number or encoder pole pair number and parameter settings are mismatched		
Possible Cause	1. Motor pole number setup error 2. Encoder pole pair number setup error		
Possible Solution	1. Check if value of parameter Pn-701(P3-01) equals pole number on lable. 2. Check if value of parameter Pn-90A(P3-30) setup correct.		

All in one ID **2nd Single Axis ID**	**AL-230**		
1st Single Axis ID	**AL-77**	**Alarm Name**	**Rotor Position Error**
Alarm Content	Torque integral direction and acceleration direction are inconsistent		
Possible Cause	1. Encoder polarity error 2. Encoder-rotor pole offset error 3. Pn-502 is set too low 4. Motor vibration while servo on, speed feedback is above Pn-502		
Possible Solution	1. Redo "Encoder test" 2. Redo encoder-rotor offset tuning 3. Pn-502 should be set between 5~25RPM(mm/sec) 4. Tune motor or set lower speed loop gain Pn-100(P2-02) and position loop gain Pn102(P2-01).		
Remark	• Alarm threshold can be adjusted via Pn-502 (Zero speed check window) for 4-in1 version V2.4.6 and after. • When linear motor monitors the initial signal of the encoder, it may cause motor goes out of control. Re-boot the power can solve the problem.		

All in one ID 2nd Single Axis ID	AL-231		
1st Single Axis ID	-	Alarm Name	Command Direction Not Allowed
Alarm Content	Command direction is not corresponding to Pn-504 configuration		
Possible Cause	1. Executed moving direction is not allowable 2. Pn-242 Posing Type configuration is not corresponding to Pn-504 Moving Direction Limit Selection 3. Host command polarity wrong set		
Possible Solution	1. Check if Pn-504 setting conflicts with moving direction. Please look up specification of Pn-504 2. Reset Pn-504 or check moving direction while running 3. Check if Pn-242 setting conflicts with Pn-504 4. Modify Pn-242 according to Pn-504. Please look up specification of Pn-242 5. Check Pn-020 and command polarity in controller. If the set is wrong, please modify it.		

All in one ID 2nd Single Axis ID	AL-235		
1st Single Axis ID	-	Alarm Name	Wrong Estimated Speed
Alarm Content	Wrong estimated speed at Induction motor sensorless control mode		
Possible Cause	1. Amount of estimated speed change larger than 30% rated speed 2. Estimated speed is over 120% maximum speed 3. When the direction of speed command changed, speed error over 30% rated speed in 1 second		
Possible Solution	1. Check if the motor parameters are correct 2. Increase acceleration time 3. Lower speed loop gain		

All in one ID 2nd Single Axis ID	AL-236		
1st Single Axis ID	-	Alarm Name	RTD Over Temperature Detection
Alarm Content	RTD over temperature detection		

Possible Cause	1. The temperature is over the setting of Over Temp Level. 2. RTD sensor loose or not connected.
Possible Solution	1. Check Pn-548~Pn-54A and Pn-752~Pn-753 setting are correct or not. 2. Check RTD sensor connected correctly.

3 Encoder Alarm - ALARM-3xx

All in one ID **2nd Single Axis ID**	**AL-300**		
1st Single Axis ID	**AL-51**	**Alarm Name**	**Encoder Halt Alarm**
Alarm Content	Encoder crashed and can't correctly send back position data.		
Possible Cause	1. Syntec encoder crash and watchdog restart encoder. Non-Syntec encoder internal error. 2. Motor overheating 3. Noise interference 4. Hardware malfunction		
Possible Solution	1. Reboot driver and observe encoder for abnormality 2. Check Pn-90E(P3-34) Encoder Reset Counter. If encoder abnormal, check whether the motor is overheated or not. 3. Make sure the shielding wire attached to encoder inside the junction box is connected to the motor's ground wire. 4. Replace encoder. 5. If this is a recurring issue, send back to authorized dealer or Syntec Corp. for repairs		
Detailed Instructions	AL-15 Issue Trouble Shooting 【Pn-D95】Enc Error Status ALMC		
All in one ID **2nd Single Axis ID**	**AL-301**		
1st Single Axis ID	**AL-23**	**Alarm Name**	**Encoder Index Error**
Alarm Content	1. Encoder didn't detect reference signal during encoder test. 2. Encoder-rotor offset calibration takes too long		
Possible Cause	1. Connector wiring is poor contact, or connection is wrong 2. Incorrect encoder setting 3. Encoder pole number (Pn-90A/P3-30) setting error 4. Communication interference 5. Encoder Hardware malfunction		

Possible Solution	1. Check encoder wiring, refer to "Wiring and Signal" section of manual. 2. Execute "Encoder test" and check for alarms . If any alarm goes off, refer to "Syntec auto tuning" section of manual. 3. Set encoder pole number correctly and reboot driver. 4. Refer to "Syntec motor encoder grounding program" section of manual 5. Slowly shift axis by MPG (manual pulse generator) and confirm whether Index Counter equals encoder resolution or not. If not , send back to distributor or Syntec representative to check hardware.
Detailed Instructions	AL-23 Issue Trouble Shooting

All in one ID **2nd Single Axis ID**	**AL-302**		
1st Single Axis ID	**AL-24**	**Alarm Name**	**Encoder Direction Error**
Alarm Content	Encoder's direction is opposite of UVW phase sequence.		
Possible Cause	1. The parameter "Encoder Polarity " setting error.		
Possible Solution	1. Check whether mechanical angle is correct or not. If mechanical angle is incorrect and motor is PMSM type, change any two of UVW power cable. If motor is NOT PMSM type, set parameter Pn-021(P3-22) (0 to 1、 1 to 0) and reboot driver. ⚠If motor is PMSM type, set parameter Pn-021(P3-22) is not recommended.		

All in one ID **2nd Single Axis ID**	**AL-302**		
1st Single Axis ID	**AL-24**	**Alarm Name**	**Encoder Direction Error**
Alarm Content	Encoder's direction is opposite of UVW phase sequence.		
Possible Cause	1. The parameter "Encoder Polarity " setting error.		
Possible Solution	1. Check whether mechanical angle is correct or not. If mechanical angle is incorrect and motor is PMSM type, change any two of UVW power cable. If motor is NOT PMSM type, set parameter Pn-021(P3-22) (0 to 1、 1 to 0) and reboot driver. ⚠If motor is PMSM type, set parameter Pn-021(P3-22) is not recommended.		

All in one ID **2nd Single Axis ID**	**AL-303**		
1st Single Axis ID	**AL-25**	**Alarm Name**	**Encoder Resolution Error**
Alarm Content	Encoder resolution error.		
Possible Cause	1. Encoder resolution Pn-902(P3-21) setting error 2. Encoder pole number Pn-90A(P3-30) setting error 3. Hardware malfunction		
Possible Solution	1. Check if parameter Pn-902(P3-21) is equal to resolution or not. If not, set encoder resolution to correct value and reboot driver 2. Check parameter Pn-90A(P3-30), set encoder pole pair number correctly and reboot driver 3. Send back to distributor or Syntec representative to check hardware		
All in one ID **2nd Single Axis ID**	**AL-304**		
1st Single Axis ID	**AL-27**	**Alarm Name**	**Encoder No Feedback**
Alarm Content	Drive fails to receive signals from the encoder .		
Possible Cause	1. With Syntec motors after manufacturing date of 2021/05, the older driver may not support its communication. 2. Encoder wire is untied or unconnected 3. Encoder communication interface setting error 4. Encoder port number setting error 5. Wire failure (shor circuit, wire breakage) 6. Encoder malfunction 7. Driver's pre-circuit board malfunction 8. Noise generated in QEP encoder 9. Encoder's baud rate is unsupported 10. Encoder firmware update failed		

Possible Solution	1. With Syntec motors after manufacturing date of 2021/05, it is recommended that upgrade driver version at least 3.0.13. 2. Check if encoder wiring and pin definitions are correct or not. Refer to "Wiring and signal" section of manual. 3. Refer to "Driver Parameter Manual", set parameters correctly and restart drive. 4. Replace encoder cable (encoder's green wire between the drive and motor), and send broken one to Suzhou Syntec. 5. Replace motor 6. Replace driver 7. Set Pn-52E(P6-65) to change the speed in startup. 8. Currently supported encoder baud rates are as follows: TAMAGAWA、SYNTEC、SANKYO、BiSSC：2.5MHz Nikon: 2.5MHz、4MHz HIWIN：2.35MHz 9. If the alarm happend after encoder firmware update, please contact syntec or authorized representative 10. If using BiSSC encoder, and the alarm happens during Encoder Offset Searching 2-4 tuning. With there is another encoder plugged, please reboot the drive. With none of encoder plugged, that means the encoder used probably not support 2-4 tuning. In this case, please using Encoder Offset Searching 3-4 tuning or contact distributor or Syntec representative.
Detailed Instructions	AL-27 Issue Trouble Shooting

All in one ID **2nd Single Axis ID**	**AL-305**		
1st Single Axis ID	**AL-28**	**Alarm Name**	**Encoder Pulse Loss**
Alarm Content	Pulse number detected is different in each revolution		
Possible Cause	1. Encoder cable malfunction 2. Encoder's signal is interfering by rotor's axis with magnetic 3. Encoder malfunction		
Possible Solution	1. Replace cable. 2. Check if joining between encoder cable and motor is double end grounded. Check if encoder and motor are grounded. 3. Send back to Syntec or authorized representative.		
All in one ID **2nd Single Axis ID**	**AL-306**		

1st Single Axis ID	AL-54	Alarm Name	Encoder Z Index Shift
Alarm Content	Relative position between A/B phase and Z index is different in each revolution, so feedback position of encode is error possibly.		
Possible Cause	**Syntec encoder:** 1. Syntec encoder's firmware version is outdated 2. Encoder is under noise interference, which causing feedback signal error. 3. Encoder's signal is interfering by rotor's axis with magnetic 4. Hallow magnetic ring Zindex position is differ from the setting parameter 5. Magnetic ring's non-Zindex zone has magnetic field distribution **Non-Syntec encoder:** 1. The circuit board of non-Syntec encoder is broken. 2. Non-Syntec sensor and encoder are wrong assembly.		
Possible Solution	**Syntec encoder:** 1. Update drive's version to 1.6.14 or above(Multi-Axis Servo Drive is updated to V2.2.5 or above), and update encoder's version to 2.0.7 or above. 2. Check if encoder and motor are grounded. 3. Check if joining between encoder cable and motor is double end grounded. 4. Short term countermeasure: Magnetic axle center causing AL-54 SOP Long term countermeasure: Cross-Strait motor plants import axle center inspections starting 2016/7 5. Short term countermeasure: Raise Z index trigger level of P6-60/Pn-940 encoder to 35, and position axle after executing encoder test(rated current 150%). make sure alarm AL54/ AL306 doesn't go off. Long term countermeasure: Imported ultimate solution into manufacture process since 2018/1/11 6. Send the encoder to Syntec or authorized representative for repair. **Non-Syntec encoder:** 1. Check the encoder is contaminated by dust or oil. 2. Check the gap between sensor and encoder is correctly. 3. Send back to Syntec Corp.		
Detailed Instructions	AL-54 Issue Trouble Shooting		
All in one ID **2nd Single Axis ID**	**AL-307**		
1st Single Axis ID	**AL-48**	**Alarm Name**	**Encoder Status Extreme Error**
Alarm Content	Encoder status has extreme errors to operate normally		

Possible Cause	1. Serial encoder communication interference 2. Serial encoder wire is untied or unconnected 3. Connector between drive and encoder has solder empty or code solder 4. Encoder's cable grounding failure 5. Encoder communication type setting error 6. Automatic search for BiSSC data length is failure 7. if the drive is v2.x servo drive with a Nikon encoder, check drive's status parameter Pn-D95 and other encode's alarms first. 8. if using Syntec encoder and version from 2.0.8 or 2.1.1, which support "over temperature self-diagnosis", then probably occurs "Encoder extreme over temperature". 9. Encoder's firmware malfunction 10. Encoder's hardware malfunction
Possible Solution	1. Check if drive's status parameter Pn-D73~Pn-D76(D1-28,D1-29,D1-46,D1-47) is zero or not. 2. Check if encoder and motor are grounded. 3. Check if joining between encoder cable and motor is double end grounded. 4. Check welding wire at the interface between encoder and drive. 5. Check welding wire at the interface between encoder and motor. 6. Check conduction between metal part of first encoder port and drive case. If it's not conduction , the drive is defected has defects. Please contact Suzhou or Taiwan Technical Center for changing procedure. 7. If it did't work by the above solutions: a. Attach magnetic ring to both sides of the encoder cable b. try to separate the encoder cable from the motor power cable or other powerful cables. 8. Refer to chapter "Drive Parameter" in user manual, set Pn-900(P3-20) to right value, and reboot 9. Check BiSSC Encoder data length. Support 18, 26, 32, 36bit BiSSC Encoder only. 10. If the drive is v2.x servo drive with a Nikon encoder, check drive's status parameter Pn-D95 and other encode's alarms first. 11. if using Syntec encoder and version from 2.0.8 or 2.1.1, which support "over temperature self-diagnosis", then check temperature feedback and settings. 12. Backup motor's parameters and record drive's and encoder's versions. Update encoder firmware's version to V1.8.14 or above. 13. Please contact Suzhou or Taiwan Technical Center.
Detailed Instructions	AL-48 Issue Problem Shooting

All in one ID **2nd Single Axis ID**	**AL-308**		
1st Single Axis ID	**AL-68**	**Alarm Name**	**1st Encoder over speed when power on**

Alarm Content	Position changes too fast leads to unfinished initialization. Note: If alarm occurs right after power on, encoder will not complete parameter readback.
Possible Cause	1. Nikon encoder's speed exceeds 250RPM when power is on 2. If alarm occurs when motor isn't running, there is possibly encoder malfunction. 3. If the first encoder is Panasonic Encoder,the motor's speed must run below 100RPM when power is on. 4. If the first encoder is Mitutoyo Encoder,the motor's speed must run below 100RPM when power is on.
Check	Check if motor is running before drive is plugged in
Possible Solution	1. Once the motor stops, reset alarm. 2. Contact motor company for repair.
Detailed Instructions	【Pn-D95】Enc Error Status ALMC

All in one ID **2nd Single Axis ID**	**AL-309**		
1st Single Axis ID	**AL-4C**	**Alarm Name**	**Serial Encoder Communication Type is Wrong**
Alarm Content	1. Encoder communication interface setting is incorrect while using serial encoder 2. If Pn-900(P3-20) is set to 12 and connected with a Nikon encoder, then it is communication issue. 3. If the Pn-900 is set to 23 and connected to the HCFA encoder, then perhaps the encoder does not support high-cycle communication. 4. This alarm occurs when power-up with HCFA/ Sankyo encoders. Please check Pn-642, Pn-643 settings if correct. 5. Setting of Pn-900 can not be used at the setting of Pn-901 6. FPGA version doesn't support this encoder type		
Possible Cause	1. The parameter of encoder communcation interface (Pn-900(P3-20)) and encoder's serial communcation are mismatched. 2. Check if encoder cables are indeed grounded and the wire has breakage or not. 3. Check if the specifications of HCFA motor support high-cycle communication. 4. With HCFA/ Sankyo encoders, frequency of communication is not legal. 5. Check if Pn-901 is set correctly 6. FPGA version doesn't support the encoder type Pn-900(P3-20) setting.		

Possible Solution	1. Set Pn-900(P3-20) correctly and reboot drive. 2. Reassemble cables, make sure there is no interference and then restart 3. Set Pn-900 to 22, and then reboot the drive 4. Please look up manual of Pn-900(P3-20). Refresh setting with correct ones. 5. Setup correct Pn-901 and restart Drive. Refer to "Syntec Parameter Manual" for setup detail 6. Upgrade drive installation package according to encoder type

All in one ID **2nd Single Axis ID**	**AL-30A**		
1st Single Axis ID	**AL-850**	**Alarm Name**	**Encoder Over Speed**
Alarm Content	1. Nikon encoder speed exceeds 6000RPM 2. FeeDat encoder over speed 3. Motor with Panasonic encoder probably revolved over 6500RPM 4. Motor with Mitutoyo encoder exceeds maximum speed		
Possible Cause	1. Check motor is over speed once or not.		
Possible Solution	1. Avoid having encoder run at maximum speed.		
Detailed Instructions	【Pn-D95】Enc Error Status ALMC		

All in one ID **2nd Single Axis ID**	**AL-30B**		
1st Single Axis ID	**-**	**Alarm Name**	**Encoder position feedback error**
Alarm Content	Encoder module error, causing encoder unable to read absolute position data		
Possible Cause	1. FeeDat encoder circuit board breakage 2. BiSSC encoder sensor and magnetic ring are assembled incorrectly. 3. Nikon's absolute position of absolute module is differ from incremental module. 4. EnDat encoder position information error. 5. The position information of Panasonic encoder is error. 6. The position information of Mitutoyo encoder is error. 7. The position information of Mitsubsihi encoder is error. 8. The position information of Delta encoder is error.		
Possible Solution	1. Make sure encoder sensor and optical ruler are assembled correctly 2. Check encoder for dust or oil contamination 3. If this is a recurring issue, send back to authorized dealer or Syntec Corp. for repairs		

Detailed Instructions	【Pn-D95】Enc Error Status ALMC

All in one ID **2nd Single Axis ID**	**AL-30C**		
1st Single Axis ID	**AL-66**	**Alarm Name**	**Encoder multi-turn data error**
Alarm Content	Encoder module error, causing encoder unable to read multi-turn data		
Possible Cause	1. Nikon encoder's multi-turn data is incompatible to single-turn data 2. Panasonic encoder's multi-turn data is incompatible to single-turn data. 3. Mitsubishi encoder's multi-turn data is incompatible to single-turn data. 4. Tamagawa encoder's multi-turn data is incompatible to single-turn data. 5. HIWIN encoder's multi-turn data is incompatible to single-turn data. 6. Sankyo encoder's multi-turn data is incompatible to single-turn data. 7. HCFA encoder's multi-turn data is incompatible to single-turn data.		
Possible Solution	1. Check encoder for dust or oil contamination 2. If this is a recurring issue, send back to authorized dealer or Syntec Corp. for repairs		
Detailed Instructions	【Pn-D95】Enc Error Status ALMC		

All in one ID **2nd Single Axis ID**	**AL-30E**		
1st Single Axis ID	**-**	**Alarm Name**	**Encoder Battery Over Voltage**
Alarm Content	Encoder battery supply is over voltage, which may lead to encoder damage.		
Possible Cause	1. Encoder battery voltage is over the certain threshold of specification		
Possible Solution	1. Check the wiring of encoder 2. Delta: Check the voltage of the battery if over 3.8V		

All in one ID **2nd Single Axis ID**	**AL-311**		
1st Single Axis ID	**AL-33**	**Alarm Name**	**2nd Encoder Index Error**

Alarm Content	1. Encoder didn't detect reference signal during encoder test. 2. Encoder-rotor offset calibration takes too long.
Possible Cause	1. Connector wiring is poor contact, or connection is wrong. 2. Second encoder setting error. 3. Second encoder pole number(Pn-92A/P6-90) setting error. 4. Communication interference 5. Second encoder hardware malfunction
Possible Solution	1. Check wiring of second encoder, refer to "Wiring and Signal" section of manual. 2. Execute "Encoder test". If any alarms goes off, refer to "Syntec auto tuning" section of manual. 3. Set encoder pole number correctly and reboot driver. 4. Refer to "Syntec motor encoder grounding program" section of manual 5. Slowly shift axis by MPG (manual pulse generator) and confirm whether Index Counter equals encoder resolution or not. If not , send back to distributor or Syntec representative to check hardware.

All in one ID **2nd Single Axis ID**	**AL-312**		
1st Single Axis ID	**AL-34**	**Alarm Name**	**2nd Encoder Direction Error**
Alarm Content	Second encoder's direction is opposite of UVW phase sequence.		
Possible Cause	1. The parameter "Second encoder polarity " setting error		
Possible Solution	1. Check whether mechanical angle is correct or not. If mechanical angle is incorrect and motor is PMSM type, change any two of UVW power cable. If motor is NOT PMSM type, set parameter Pn-022(P6-82) (0 to 1、 1 to 0) and reboot driver. ⚠If motor is PMSM type, set parameter Pn-022(P6-82) is not recommended.		

All in one ID **2nd Single Axis ID**	**AL-313**		
1st Single Axis ID	**AL-35**	**Alarm Name**	**2nd Encoder resolution error**
Alarm Content	Second encoder resolution error.		
Possible Cause	1. 2nd encoder resolution Pn-922(P6-81) setting error 2. 2nd Encoder pole number Pn-92A(P6-90) setting error. 3. Second encoder hardware malfunction		

Possible Solution	1. Check if parameter Pn-922(P6-81) is equal to and resolution or not. If they differ not, set encoder resolution to correct value correct encoder resolution value and restart drive and reboot drive. 2. Check parameter Pn-92A(P6-90), set encoder pole pair number correctly and reboot driver 3. Send back to authorized dealer or Syntec Corp. for repairs.		
All in one ID **2nd Single Axis ID**	**AL-314**		
1st Single Axis ID	**AL-36**	**Alarm Name**	**2nd Encoder no feedback**
Alarm Content	Drive fails to receive signals from the second encoder .		
Possible Cause	1. Second encoder wire is untied or unconnected. 2. Encoder communication interface setting error. 3. Encoder port number setting error. 4. Wire failure (shor circuit, wire breakage) 5. Encoder malfunction 6. Driver's pre-circuit board malfunction 7. In dual feedback control and 2nd encoder type is QEP, mechanical problem and machining condition may cause alarm 8. Encoder's baud rate is unsupported 9. Encoder firmware update failed		
Possible Solution	1. Check if serial encoder wiring and pin definitions for errors are correct or not. Refer to "Wiring and signal" section of manual. 2. Refer to "Drive Parameter Manual", set parameters correctly and reboot driver. 3. Replace encoder cable (encoder's green wire between the drive and motor), and send broken one to Suzhou Syntec. 4. Replace motor 5. Replace driver 6. Refer to "Dual feedback control and outer feedback using linear scale" section of manual, change Pn-52F properly 7. Currently supported encoder baud rates are as follows: TAMAGAWA、SYNTEC、SANKYO、BiSSC：2.5MHz Nikon: 2.5MHz、4MHz HIWIN：2.35MHz 8. If the alarm happend after encoder firmware update, please contact syntec or authorized representative 9. If using BiSSC encoder, and the alarm happens during Encoder Offset Searching 2-4 tuning. With there is another encoder plugged, please reboot the drive. With none of encoder plugged, that means the encoder used probably not support 2-4 tuning. In this case, please using Encoder Offset Searching 3-4 tuning or contact distributor or Syntec representative.		

All in one ID **2nd Single Axis ID**	**AL-315**		
1st Single Axis ID	**AL-39**	**Alarm Name**	**2nd Encoder Pulse Loss**
Alarm Content	Pulse number detected is different in each revolution		
Possible Cause	1. Second encoder's cable problem 2. Second encoder's signal is interfering by rotor's axis with magnetic 3. Second encoder malfunction		
Possible Solution	1. Replace cable. 2. Check if joining between encoder cable and motor is double end grounded. Check if encoder and motor are grounded. 3. Send back to Syntec or authorized representative.		

All in one ID **2nd Single Axis ID**	**AL-316**		
1st Single Axis ID	**AL-55**	**Alarm Name**	**2nd Encoder Z Index Shift**
Alarm Content	Relative position between A/B phase and Z index is different in each revolution, so feedback position of encoder is error possibly .		
Possible Cause	**Syntec encoder:** 1. Second encoder's firmware version is outdated 2. Encoder is under noise interference, which causing feedback signal error. 3. Encoder's signal is interfering by rotor's axis with magnetic 4. Hallow magnetic ring Zindex position is different ~~than~~ from the written parameter. 5. Magnetic ring's non-Zindex zone has magnetic field distribution 6. Hardware malfunction **Non-Syntec encoder:** 1. The circuit board of non-Syntec encoder is broken. 2. Non-Syntec sensor and encoder are wrong assembly.		

Possible Solution	**Syntec encoder:** 1. Update drive's version to 1.6.14 or more recent(Multi-Axis Servo Drive is updated to V2.2.5), and update encoder's version to 2.0.7 or above. 2. Check if second encoder and motor are grounded. 3. Check if joining between second encoder cable and motor ~~are~~ is double end grounded. 4. Short term countermeasure: Magnetic axle center causing AL-54 SOP Long term countermeasure: Cross-Strait motor plants import axle center inspections starting 2016/7 5. Short term countermeasure: Raise Z index trigger level of P6-60/Pn-940 encoder to 35, and position axle after executing encoder test(rated current 150%). make sure alarm AL54/AL306 doesn't go off. Long term countermeasure: Imported ultimate solution into manufacture process since 2018/1/11 6. Send the second encoder to Syntec or authorized representative for repair. **Non-Syntec encoder:** 1. Check the encoder is contaminated by dust or oil. 2. Check the gap between sensor and encoder is correctly. 3. Send back to Syntec Corp.
Detailed Instructions	AL-54 Issue Trouble Shooting

All in one ID **2nd Single Axis ID**	**AL-317**		
1st Single Axis ID	**AL-49**	**Alarm Name**	**2nd Encoder Status Extreme Error**
Alarm Content	2nd Encoder status has extreme errors to operate normally		
Possible Cause	1. Second encoder communication interference. 2. Second Serial encoder wire is untied or unconnected 3. Connector between drive and encoder has solder empty or code solder 4. Second encoder's cable grounding failure 5. Second encoder communication type setting error. 6. Automatic search for BiSSC data length is failure 7. If the drive is v2.x servo drive with a Nikon encoder, check drive's status parameter Pn-D96 and other encode's alarms first. 8. If using Syntec encoder and version from 2.0.8 or 2.1.1, which support "over temperature self-diagnosis", then probably occurs "Encoder extreme over temperature". 9. Second encoder's firmware malfunction 10. Second encoder's hardware malfunction		

Possible Solution	1. Check if drive's status parameter Pn-D77~Pn-D7A(D1-42,D1-43,D1-59,D1-60) is zero or not. 2. Check if encoder and motor are grounded. 3. Check if joining between encoder cable and motor double end grounded. 4. Check welding wire at the interface between encoder and drive. 5. Check welding wire at the interface between encoder and motor. 6. Check conduction between metal part of first encoder port and drive case. If it's not conduction , the drive has defects. Please contact Suzhou or Taiwan Technical Center for changing procedure. 7. If it did't work by the above solutions, a. Attach magnetic ring to both sides of the encoder cable b.try to separate the encoder cable from the motor power cable or other powerful cables. 8. Refer to chapter "Drive Parameter" in user manual, set Pn-920(P6-80) to right value, and reboot 9. Check BiSSC Encoder data length. Support 18, 26, 32, 36bit BiSSC Encoder only. 10. If the drive is v2.x servo drive with a Nikon encoder, check drive's status parameter Pn-D96 and other encode's alarms first. 11. If using Syntec encoder and version from 2.0.8 or 2.1.1, which support "over temperature self-diagnosis", then check temperature feedback and settings. 12. Backup motor's parameters and record drive's and encoder's versions. Update encoder firmware's version to V1.8.14 or above. 13. Please contact Suzhou or Taiwan Technical Center.

All in one ID **2nd Single Axis ID**	**AL-318**		
1st Single Axis ID	**AL-69**	**Alarm Name**	**2nd Encoder over speed when power on**
Alarm Content	Position changes too fast leads to unfinished initialization. Note: If alarm occurs right after power on, encoder will not complete parameter readback.		
Possible Cause	1. Nikon encoder speed exceeds 250RPM right after power on. 2. If alarm occurs when motor isn't running, encoder malfunction is possible 3. If the second encoder is Panasonic Encoder,the motor's speed must run below 100RPM when power is on. 4. If the second encoder is Mitutoyo Encoder,the motor's speed must run below 100RPM when power is on.		
Check	Observe if motor is running before drive power-on.		
Possible Solution	1. Once the motor stops, reset alarm. 2. Contact motor company for repairs.		
Detailed Instructions	【Pn-D96】2nd Enc Error Status ALMC		

All in one ID 2nd Single Axis ID	AL-319		
1st Single Axis ID	AL-4D	Alarm Name	2nd Serial Encoder Communication Type is Wrong
Alarm Content	1. Encoder communication interface setting is incorrect while using second serial encoder. 2. If Pn-920(P6-80) is set to 12 and connected with a Nikon encoder, then the problem is with communication there is a communication problem 3. If the Pn-920 is set to 23 and connected to the HCFA encoder, then perhaps the encoder does not support high-cycle communication. 4. This alarm occurs when power-up with HCFA/ Sankyo encoders. Please check Pn-642, Pn-643 settings if correct. 5. Setting of Pn-920 can not be used at the setting of Pn-921 6. FPGA version doesn't support this encoder type.		
Possible Cause	1. The parameter of encoder communcation interface Pn-920(P6-80) and encoder's serial communcation are mismatched. 2. Check if encoder cables are indeed grounded and the wire has breakage or not. 3. Check if the specifications of HCFA motor support high-cycle communication. 4. With HCFA/ Sankyo encoders, frequency of communication is not legal. 5. Check if Pn-921 is set correctly 6. FPGA version doesn't support the encoder type Pn-920(P6-80) setting encoder type.		
Possible Solution	1. Set Pn-920(P6-80) correctly and reboot driver 2. Reassemble cables, make sure there is no interference and then reboot driver 3. Set Pn-920 to 22, and then reboot the drive 4. Please look up manual of Pn-920(P6-80). Refresh setting with correct ones. 5. Setup correct Pn-921 and restart Drive. Refer to "Syntec Parameter Manual" for setup detail 6. Upgrade drive installation package according to encoder type.		

All in one ID 2nd Single Axis ID	AL-31A		
1st Single Axis ID	AL-8A5	Alarm Name	2nd Encoder Over Speed
Alarm Content	1. Nikon second encoder speed exceeds 6000RPM 2. FeeDat second encoder over speed 3. Motor with Panasonic second encoder probably revolved over 6500RPM 4. Motor with Mitutoyo second encoder exceeds maximum speed		
Possible Cause	1. Check motor is over speed once or not. command		
Possible Solution	1. Avoid having encoder run at maximum speed		
Detailed Instructions	【Pn-D96】2nd Enc Error Status ALMC		

All in one ID **2nd Single Axis ID**	**AL-31B**		
1st Single Axis ID	**-**	**Alarm Name**	**2nd Encoder position feedback error**
Alarm Content	2nd Encoder module error, causing encoder unable to read absolute position data		
Possible Cause	1. FeeDat second encoder circuit board breakage 2. BiSSC second encoder sensor and magnetic ring are assembled incorrectly 3. Nikon encoder's multi-turn data is incompatible to single-turn data 4. EnDat second encoder position information error 5. The position information of Panasonic encoder is error. 6. The position information of Mitutoyo encoder is error. 7. The position information of Mitsubsihi encoder is error. 8. The position information of Delta encoder is error.		
Possible Solution	1. Make sure encoder sensor and optical ruler are assembled correctly 2. Check encoder for dust or oil contamination 3. If this is a recurring issue, send back to authorized dealer or Syntec Corp. for repairs		
Detailed Instructions	【Pn-D96】2nd Enc Error Status ALMC		

All in one ID **2nd Single Axis ID**	**AL-31C**		
1st Single Axis ID	**AL-67**	**Alarm Name**	**2nd Encoder multi-turn data error**
Alarm Content	Encoder module error, causing encoder unable to read multi-turn data.		
Possible Cause	1. Nikon 2nd encoder's multi-turn data is incompatible to single-turn data 2. Panasonic 2nd encoder's multi-turn data is incompatible to single-turn data. 3. Mitsubishi 2nd encoder's multi-turn data is incompatible to single-turn data. 4. Tamagawa 2nd encoder's multi-turn data is incompatible to single-turn data. 5. HIWIN 2nd encoder's multi-turn data is incompatible to single-turn data. 6. Sankyo 2nd encoder's multi-turn data is incompatible to single-turn data. 7. HCFA 2nd encoder's multi-turn data is incompatible to single-turn data.		
Possible Solution	1. Check encoder for dust or oil contamination 2. If this is a recurring issue, send back to authorized dealer or Syntec Corp. for repairs		

Detailed Instructions	【Pn-D96】2nd Enc Error Status ALMC		
All in one ID **2nd Single Axis ID**	**AL-31D**		
1st Single Axis ID	**-**	**Alarm Name**	**2nd Encoder Unable to Finish Operation Configuration**
Alarm Content	Failed to set operation configuration		
Possible Cause	1. While setting operation configuration, unable to write the corresponding memory or meet access failure 2. Fail to access 2nd encoder memory		
Possible Solution	1. Check Pn-D9C and encoder software version, and update to the right version 2. Check if communication ever failed and then check up wiring of this encoder		

All in one ID **2nd Single Axis ID**	**AL-31E**		
1st Single Axis ID	**-**	**Alarm Name**	**2nd Encoder Battery Over Voltage**
Alarm Content	2nd Encoder battery supply is over voltage, which may lead to encoder damage.		
Possible Cause	1. Encoder battery voltage is over the certain threshold of specification		
Possible Solution	1. Check the wiring of encoder 2. Delta: Check the voltage of the battery if over 3.8V		

All in one ID **2nd Single Axis ID**	**AL-321**		
1st Single Axis ID	**AL-41**	**Alarm Name**	**Encoder external(1) Thermal Sensor Over Temperature**
Alarm Content	The temperature that encoder external(1)'s Thermal Sensor detect is over drive's protective limit.		

Possible Cause	1. Motor cooling system failure 2. Version compatability 3. Thermal sensor signal error 4. Motor's Thermal Sensor wire unconnected to Encoder external(1)'s temperature sensing wire(the yellow and green line of the encoder, respectively) 5. With SYNTEC encoder, encoder external(1) thermal sensor type setting error 6. Encoder hardware malfunction		
Possible Solution	1. Check and change motor cooling system. 2. If recently updated from V1.2.27~V1.2.31 to V1.2.32 or above, set parameter Pn-743(P1-33) to correct protective temperature limit. 3. Make sure parameter Pn-743 "Syntec Encoder internal(1) Thermal Sensor overheat threshold" is set correctly. 4. Connect Thermal Sensor wire and Encoder external(1)'s temperature sensing wire. If floating, alarms will be prone to happen as temperature display will be 145 degrees. 5. Check the type of resistance used for encoder external(1) thermal sensing. If using PT1000:Update drive firmware to V3.0.0 or higher, and 2nd Encoder firmware to V2.1.1 or higher. And set Pn-75B into 1. 6. If all above solutions fail to solve the problem, Thermal Sensor may have malfunctioned. Please contact Suzhou or Taiwan Tech Center.		
Detailed Instructions	AL-40, AL-41, AL-42 Issue Trouble Shooting		
All in one ID **2nd Single Axis ID**	**AL-322**		
1st Single Axis ID	**AL-42**	**Alarm Name**	**Encoder External(2) Thermal Sensor Over Temperature**
Alarm Content	The temperature that encoder external(2)'s Thermal Sensor detect is over drive's protective limit.		
Possible Cause	1. Cooling system failure 2. Version compatibility 3. Parameter error 4. With SYNTEC encoder, encoder external(2) thermal sensor type setting error		
Possible Solution	1. Check and change cooling system. 2. If recently updated from V1.2.27~V1.2.31 to V1.2.32 or above, set parameter Pn-744(P1-34) to correct protective temperature limit. 3. Make sure parameter Pn-744 "Syntec Encoder external(2) Thermal Sensor overheat threshold" is not 0. If temperature sensing wires are floating, alarms will be prone to happen as temperature display will be 145 degrees. 4. Check the type of resistance used for encoder external(2) thermal sensing. If using PT1000:Update drive firmware to V3.0.0 or higher, and 2nd Encoder firmware to V2.1.1 or higher. And set Pn-75C into 1.		

Detailed Instructions	AL-40, AL-41, AL-42 Issue Trouble Shooting		
All in one ID **2nd Single Axis ID**	**AL-324**		
1st Single Axis ID	**AL-8A6**	**Alarm Name**	**2nd Encoder Internal Over Temperature**
Alarm Content	1. Syntec encoder: Encoder temperature over protective limit setting by drive 2. Nikon encoder: Encoder internal temperature over protection level Pn-746. 3. FeeDat encoder: Encoder internal is overheating 4. Panasonic encoder: Encoder internal temperature over 100 degrees Celsius or protection level Pn-746. 5. Mitutoyo encoder: Encoder internal temperature over 65 degrees Celsius. 6. Mitsubishi encoder: Encoder internal temperature over 115 degrees Celsius or protection level Pn-746. 7. Delta encoder: Encoder internal temperature is higher than 105 Celsius degree. 8. Tamagawa 23 bit encoder: Encoder internal temperature is higher than 85 Celsius degree or protection level Pn-746. 9. Tamagawa 25 bit encoder: Encoder internal temperature is higher than 105 Celsius degree or protection level Pn-746.		
Possible Cause	1. Cooling system failure 2. Version compatibility 3. Thermal sensor signal error 4. With SYNTEC encoder, 2nd encoder internal thermal sensor type setting error 5. Encoder hardware malfunction		
Possible Solution	1. Check and change cooling system. 2. If using SYNTEC, Nikon, Panasonic, Mitsubishi encoders, please check up Pn-D61. 3. If using FeeDat, Tamagawa or Delta encoders, please resolve problem and restart driver. 4. If recently updated from V1.2.27~V1.2.31 to V1.2.32 or above, set parameter Pn-746(P1-36) to correct protective temperature limit. 5. Make sure parameter Pn-748 "Syntec Encoder internal(1) thermal sensor overheat threshold" is set correctly. 6. Check the type of resistance used for 2nd encoder internal thermal sensing. If using PT1000:Update drive firmware to V3.0.0 or higher, and 2nd Encoder firmware to V2.1.1 or higher. And set Pn-75E into 1. 7. If all above solutions fail to solve the problem, Thermal Sensor may have malfunctioned. Please contact Suzhou or Taiwan Tech Center.		
Detailed Instructions	【Pn-D96】2nd Enc Error Status ALMC		

All in one ID **2nd Single Axis ID**	**AL-325**		
1st Single Axis ID	**AL-45**	**Alarm Name**	**2nd Encoder External(1) Thermal Sensor Over Temperature**
Alarm Content	The temperature that 2nd encoder external(1)'s Thermal Sensor detect is over drive's protective limit.		
Possible Cause	1. Cooling system failure 2. Version compatibility 3. Thermal sensor signal error 4. Motor's Thermal Sensor wire unconnected to Encoder external(1)'s temperature sensing wire(the yellow and green line of the encoder, respectively) 5. With SYNTEC encoder, 2nd encoder external(1) thermal sensor type setting error 6. Encoder hardware malfunction		
Possible Solution	1. Check and change cooling system. 2. If recently updated from V1.2.27~V1.2.31 to V1.2.32 or above, set parameter Pn-746(P1-36) to correct protective temperature limit. 3. Make sure parameter Pn-748 (P1-38)"Syntec Encoder internal(1) Thermal Sensor overheat threshold" is set correctly. 4. Connect Thermal Sensor wire and Encoder external(1)'s temperature sensing wire. If floating, alarms will be prone to happen as temperature display will be 145 degrees. 5. Check the type of resistance used for 2nd encoder external(1) thermal sensing. If using PT1000:Update drive firmware to V3.0.0 or higher, and 2nd Encoder firmware to V2.1.1 or higher. And set Pn-75F into 1. 6. If all above solutions fail to solve the problem, Thermal Sensor may have malfunctioned. Please contact Suzhou or Taiwan Tech Center.		
All in one ID **2nd Single Axis ID**	**AL-326**		
1st Single Axis ID	**AL-46**	**Alarm Name**	**2nd Encoder External(2) Thermal Sensor Over Temperature**
Alarm Content	Encoder External(2) detects Thermal Sensor's temperature over drive's protective limit		

Possible Cause	1. Cooling system failure 2. Version compatibility 3. Thermal sensor signal error 4. Motor's Thermal Sensor wire unconnected to Encoder external(2)'s temperature sensing wire(the yellow and green line of the encoder, respectively) 5. With SYNTEC encoder, 2nd encoder external(2) thermal sensor type setting error 6. Encoder hardware malfunction
Possible Solution	1. Check and change cooling system. 2. If recently updated from V1.2.27~V1.2.31 to V1.2.32 or above, set parameter Pn-748(P1-38) to correct protective temperature limit. 3. Make sure parameter Pn-748 (P1-38)"Syntec Encoder internal(2) Thermal Sensor overheat threshold" is set correctly. 4. Connect Thermal Sensor wire and Encoder external(2)'s temperature sensing wire. If floating, alarms will be prone to happen as temperature display will be 145 degrees. 5. Check the type of resistance used for 2nd encoder external(2) thermal sensing. If using PT1000:Update drive firmware to V3.0.0 or higher, and 2nd Encoder firmware to V2.1.1 or higher. And set Pn-760 into 1. 6. If all above solutions fail to solve the problem, Thermal Sensor may have malfunctioned. Please contact Suzhou or Taiwan Tech Center.

All in one ID **2nd Single Axis ID**	**AL-328**		
1st Single Axis ID	**AL-5A**	**Alarm Name**	**Encoder Internal Thermal Sensor Error**
Alarm Content	Encoder Internal Thermal Sensor Error		
Possible Cause	1. Encoder Internal Thermal Sensor Error 2. With SYNTEC encoder, encoder internal thermal sensor type setting error		
Possible Solution	1. If encoder Internal Thermal Sensor is not needed, set parameter Pn-74A(P1-70) to 1. 2. Check the type of resistance used for encoder internal thermal sensing a. If using PT1000:Update drive firmware to V3.0.0 or higher, and 2nd Encoder firmware to V2.1.1 or higher. And set Pn-75A into 1. b. If using KTY84:Please set Pn-75A into 0. 3. Send back to dealer or Syntec Corp.		

All in one ID **2nd Single Axis ID**	**AL-329**		
1st Single Axis ID	**AL-5B**	**Alarm Name**	**Encoder External(1) Thermal Sensor is Unplugged**

Alarm Content	Encoder External(1) Thermal Sensor is unplugged
Possible Cause	1. Encoder External(1) Thermal Sensor is not plugged correctly 2. Encoder external(1) Thermal Sensor is broken 3. Abnormal power supply voltage of 1st encoder 4. With SYNTEC encoder, encoder external(1) thermal sensor type setting error
Possible Solution	1. (a) Make sure encoder external(1) Thermal Sensor is wired properly. (b) If encoder External(1) Thermal Sensor is not needed, set parameter Pn-74B(P1-71) to 1. 2. Measure the resistance of encoder external(1) Thermal Sensor at ambient temperature, and check if the measured value of resistance is in the operating range from 500Ω to 1500 Ω. If the measured value of resistance appears to be wrong, then please replace encoder external(1) Thermal Sensor with a new one. 3. Check if the value of drive parameter Pn-D70【The 5V Detection of 1st Encoder】is lower than 5V. If so, please check the power supply voltage of 1st encoder port on the drive by probing the output pin. If the supply voltage is normal, then the 1st encoder may be broken; otherwise, check if the drive is working correctly. 4. Check the type of resistance used for encoder external(1) thermal sensing a. If using PT1000:Update drive firmware to V3.0.0 or higher, and 2nd Encoder firmware to V2.1.1 or higher. And set Pn-75B into 1. b. If using KTY84:Please set Pn-75B into 0.

All in one ID **2nd Single Axis ID**	**AL-32A**		
1st Single Axis ID	**AL-5C**	**Alarm Name**	**Encoder External(2) Thermal Sensor is Unplugged**
Alarm Content	Encoder External(2) Thermal Sensor is Unplugged		
Possible Cause	1. Encoder External(2) Thermal Sensor is not plugged correctly 2. Encoder external(2) Thermal Sensor is broken 3. Abnormal power supply voltage of 1st encoder 4. With SYNTEC encoder, encoder external(2) thermal sensor type setting error		

Possible Solution	1. (a) Make sure encoder external(2) Thermal Sensor is wired properly. (b) If encoder External(2) Thermal Sensor is not needed, set parameter Pn-74C(P1-72) to 1. 2. Measure the resistance of encoder external(2) Thermal Sensor at ambient temperature, and check if the measured value of resistance is in the operating range from 500Ω to 1500Ω. If the measured value of resistance appears to be wrong, then please replace encoder external(2) Thermal Sensor with a new one. 3. Check if the value of drive parameter Pn-D70【The 5V Detection of 1st Encoder】is lower than 5V. If so, please check the power supply voltage of 1st encoder port on the drive by probing the output pin. If the supply voltage is normal, then the 1st encoder may be broken; otherwise, check if the drive is working correctly. 4. Check the type of resistance used for encoder external(2) thermal sensing a. If using PT1000:Update drive firmware to V3.0.0 or higher, and 2nd Encoder firmware to V2.1.1 or higher. And set Pn-75C into 1. b. If using KTY84:Please set Pn-75C into 0.

All in one ID **2nd Single Axis ID**	**AL-32C**		
1st Single Axis ID	**AL-5E**	**Alarm Name**	**2nd Encoder internal Thermal Sensor Error**
Alarm Content	2nd Encoder internal Thermal Sensor Error		
Possible Cause	1. 2nd Encoder internal Thermal Sensor Error 2. With SYNTEC encoder, 2nd encoder internal thermal sensor type setting error		
Possible Solution	1. If 2nd encoder internal Thermal Sensor is not needed, set parameter Pn-74E(P1-74) to 1. 2. Check the type of resistance used for 2nd encoder internal thermal sensing a. If using PT1000:Update drive firmware to V3.0.0 or higher, and 2nd Encoder firmware to V2.1.1 or higher. And set Pn-75E into 1. b. If using KTY84:Please set Pn-75E into 0. 3. Send back to dealer or Syntec Corp. for repairs.		

All in one ID **2nd Single Axis ID**	**AL-32D**		
1st Single Axis ID	**AL-5F**	**Alarm Name**	**2nd Encoder External(1) Thermal Sensor is Unplugged**
Alarm Content	2nd Encoder External(1) Thermal Sensor is Unplugged		

Possible Cause	1. 2nd Encoder External(1) Thermal Sensor is not plugged correctly 2. 2nd Encoder external(1) Thermal Sensor is broken 3. Abnormal power supply voltage of 2nd encoder 4. With SYNTEC encoder, 2nd encoder external(1) thermal sensor type setting error		
Possible Solution	1. (a) Make sure 2nd encoder external(1) Thermal Sensor is wired properly. (b) If 2nd encoder external(1) Thermal Sensor is not needed, set parameter Pn-74F(P1-75) to 1. 2. Measure the resistance of 2nd encoder external(1) Thermal Sensor at ambient temperature, and check if the measured value of resistance is in the operating range from 500Ω to 1500Ω. If the measured value of resistance appears to be wrong, then please replace the 2nd encoder external(1) Thermal Sensor with a new one. 3. Check if the value of drive parameter Pn-D7B【The 5V Detection of 2nd Encoder】is lower than 5V. If so, please check the power supply voltage of 2nd encoder port on the drive by probing the output pin. If the supply voltage is normal, then the 2nd encoder may be broken; otherwise, check if the drive is working correctly. 4. Check the type of resistance used for 2nd encoder external(1) thermal sensing a. If using PT1000:Update drive firmware to V3.0.0 or higher, and 2nd Encoder firmware to V2.1.1 or higher. And set Pn-75F into 1. b. If using KTY84:Please set Pn-75F into 0.		
All in one ID **2nd Single Axis ID**	**AL-32E**		
1st Single Axis ID	**AL-60**	**Alarm Name**	**2nd Encoder External(2) Thermal Sensor is Unplugged**
Alarm Content	2nd Encoder External(2) Thermal Sensor is Unplugged		
Possible Cause	1. 2nd Encoder External(2) Thermal Sensor is not plugged correctly 2. 2nd Encoder external(2) Thermal Sensor is broken 3. Abnormal power supply voltage of 2nd encoder 4. With SYNTEC encoder, 2nd encoder external(2) thermal sensor type setting error		

Possible Solution	1. (a) Make sure 2nd encoder external(2) Thermal Sensor is wired properly. (b) If 2nd encoder external(2) Thermal Sensor is not needed, set parameter Pn -750(P1-76) to 1. 2. Measure the resistance of 2nd encoder external(2) Thermal Sensor at ambient temperature, and check if the measured value of resistance is in the operating range from 500Ω to 1500Ω. If the measured value of resistance appears to be wrong, then please replace the 2nd encoder external(1) Thermal Sensor with a new one. 3. Check if the value of drive parameter Pn-D7B【The 5V Detection of 2nd Encoder】is lower than 5V. If so, please check the power supply voltage of 2nd encoder port on the drive by probing the output pin. If the supply voltage is normal, then the 2nd encoder may be broken; otherwise, check if the drive is working correctly. 4. Check the type of resistance used for 2nd encoder external(2) thermal sensing a. If using PT1000:Update drive firmware to V3.0.0 or higher, and 2nd Encoder firmware to V2.1.1 or higher. And set Pn-760 into 1. b. If using KTY84:Please set Pn-760 into 0.

All in one ID **2nd Single Axis ID**	**AL-330**		
1st Single Axis ID	-	**Alarm Name**	**Encoder Port Setting Error**
Alarm Content	Encoder Port (Parameter Pn-901) setting error		
Possible Cause	1. Parameter Pn-900 encoder type is set but parameter Pn-901 is not. 2. Port number setting is the same as another encoder port setting 3. Parameter Pn-901 is greater than actual port number		
Possible Solution	1. Set parameter Pn-901 correctly according to the actual application.		

All in one ID **2nd Single Axis ID**	**AL-331**		
1st Single Axis ID	-	**Alarm Name**	**2nd Encoder port setting error**
Alarm Content	2nd encoder Port (Parameter Pn-921) setting error		
Possible Cause	1. Parameter Pn-920 encoder type is set but parameter Pn-921 is not. 2. Port number setting is the same as another encoder port setting 3. Parameter Pn-921 is greater than actual port number		
Possible Solution	1. Set parameter Pn-921 correctly according to the actual application.		

All in one ID **2nd Single Ax is ID**	**AL-332**		
1st Single Axis ID	**AL-6A**	**Alarm Name**	**Encoder not recognized**
Alarm Content	Drive doesn't support the version of encoder version. Do not run this motor and modify any parameters about this motor.		
Possible Cause	1. The version of encoder is outdated. 2. Parameter specifics cannot be recognized if the motor is not supplied by Syntec. 3. Data read from encoder is unable to be interpreted.		
Possible Solution	1. Upgrade driver version. 2. Problems from the motor not supplied by Syntec shall be resolved in following steps: a. First ensure the encoder communication type is supported by the current software version of Syntec driver. b. Then inquire the retailer or manufacturer for trouble shooting. 3. Inquire the retailer or manufacturer for trouble shooting.		

All in one ID **2nd Single Axis ID**	**AL-333**		
1st Single Axis ID	**AL-6B**	**Alarm Name**	**2nd Encoder not recognized**
Alarm Content	Drive doesn't support the version of second encoder version. Do not run this motor and modify any parameters about this motor		
Possible Cause	1. The version of encoder is outdated. 2. Parameter specifics cannot be recognized if the motor is not supplied by Syntec. 3. Data read from encoder is unable to be interpreted.		
Possible Solution	1. Upgrade driver version. 2. Problems from the motor not supplied by Syntec shall be resolved in following steps: a. First ensure the encoder communication type is supported by the current software version of Syntec driver. b. Then inquire the retailer or manufacturer for trouble shooting. 3. Inquire the retailer or manufacturer for trouble shooting.		

All in one ID **2nd Single Axis ID**	**AL-334**		

1st Single Axis ID	AL-58	Alarm Name	Encoder Download Parameters Fail
Alarm Content	Encoder parameter download process is unsuccessful		
Possible Cause	1. With Syntec motors after manufacturing date of 2021/05, the older driver may not support its communication. 2. 1st encoder still not ready after drive power on for 1 second. 3. The parameters read back from encoder is incorrect. 4. Signal transfer error due to the poor contact of the first encoder's pin 5. With hallow type encoder(mini encoder), check whether motor serial number is not zero		
Possible Solution	1. With Syntec motors after manufacturing date of 2021/05, it is recommended that upgrade driver version at least 3.0.13. 2. Check status parameter "First encoder parameter read back status", single axis' parameter is D2-97, four in one's status parameter is Pn-E5F. 3. Check if encoder is wired correctly and whether there are interferences. 4. Check connectivity of encoder connector pins 5. with hallowed encoder, please set motor serial number as 0 and reboot *With this alarm occurring, we would not recommend saving parameters permanently. If alarm doesn't occur after rebooting, parameters have been read correctly. If this problem reoccurs, please contact dealer or Syntec Corp. for repairs.		

All in one ID 2nd Single Axis ID	AL-335		
1st Single Axis ID	**AL-59**	**Alarm Name**	**2nd Encoder Download Parameters Fail**
Alarm Content	2nd Encoder parameter download process unsuccessful		
Possible Cause	1. 2nd encoder still not ready after drive power on for 1 second. 2. The parameters read back from 2nd encoder is incorrect. 3. Signal transfer error due to the poor contact of the 2nd encoder's pin 4. With hallow type encoder(mini encoder), check whether motor serial number is not zero		

Possible Solution	1. Check status parameter "2nd encoder parameter read back status", single axis' parameter is D2-98, four in one's status parameter is Pn-E60. 2. Check if encoder is wired correctly and whether there are interferences. 3. Check connectivity of encoder connector pins *With this alarm occurring, we would not recommend saving parameters permanently. If alarm doesn't occur after rebooting, parameters have been read correctly. If this problem reoccurs, please contact dealer or Syntec Corp. for repairs. Refer to AL-58问题处置 for alarm trouble shooting.

All in one ID **2nd Single Axis ID**	**AL-336**		
1st Single Axis ID	**AL-4A**	**Alarm Name**	**Syntec Encoder Runs in Bootloader Mode**
Alarm Content	When 1st encoder is Syntec Encoder and is Running in Bootloader Mode, alarm occurs.		
Possible Cause	1. Power failure or disconnection during firmware update process		
Possible Solution	1. Update firmware again and restart.		

All in one ID **2nd Single Axis ID**	**AL-337**		
1st Single Axis ID	**AL-4B**	**Alarm Name**	**2nd Syntec Encoder Runs in Bootloader Mode**
Alarm Content	When 2nd is Syntec Encoder and is Running in Bootloader Mode, alarm occurs.		
Possible Cause	1. Power failure or disconnection during firmware update process		
Possible Solution	1. Update firmware again and restart.		

All in one ID **2nd Single Axis ID**	**AL-338**		
1st Single Axis ID	**AL-75**	**Alarm Name**	**Encoder Register Access Error**
Alarm Content	Encoder Register Access Error		

Possible Cause	1. Error count is too high while accessing encoder register
Possible Solution	1. Preclude encoder wiring interferences, reinforce grounding a. Status surveillance: i. Pn-D73(D1-28) Serial Encoder CRC error count(hardware) ii. Pn-D74(D1-29) Serial Encoder CRC error count(software) iii. Pn-D76(D1-47) Serial Encoder overtime error count b. If this alarm occurs when saving parameters, reset alarm and permanently resave parameters again. c. If issue is recurring, contact dealer or Syntec Corp. for repairs.

All in one ID **2nd Single Axis ID**	**AL-339**		
1st Single Axis ID	**AL-76**	**Alarm Name**	**2nd Encoder Register Access Error**
Alarm Content	2nd Encoder Register Access Error		
Possible Cause	1. Error count is too high while accessing 2nd encoder register		
Possible Solution	Preclude encoder wiring interferences, reinforce grounding a. Status surveillance: i.Pn-D77(D1-42) Serial Encoder CRC error count(hardware) ii.Pn-D78(D1-43) Serial Encoder CRC error count(software) iii.Pn-D7A(D1-60) Serial Encoder overtime error count b.If this alarm occurs when saving parameters, reset alarm and permanently resave parameters again. c.If issue is recurring, contact dealer or Syntec Corp. for repairs		

All in one ID **2nd Single Axis ID**	**AL-33A**		
1st Single Axis ID	**-**	**Alarm Name**	**Encoder not support type auto detection**
Alarm Content	Type auto detection only support syntec motors		
Possible Cause	1. Setting Pn-900 Encoder Communiation Type to 12 with non-Syntec motors or non-Nikon encoders. 2. Pn-706 Motor Serial Number exception error.		
Possible Solution	1. Please check up and correct Pn-900 setting. 2. Please contact Syntec Corp.		

All in one ID **2nd Single Axis ID**	**AL-33B**		
1st Single Axis ID	**-**	**Alarm Name**	**2nd Encoder not support type auto detection**
Alarm Content	Type auto detection not support 2nd encoders		
Possible Cause	1. Setting Pn-920 2nd Encoder Communication Type to 12 with non-Nikon encoders		
Possible Solution	1. Please check up and correct Pn-920 setting.		

All in one ID **2nd Single Axis ID**	**AL-340**		
1st Single Axis ID	**-**	**Alarm Name**	**Encoder Status Error**
Alarm Content	Encoder status has errors to operate normally		
Possible Cause	1. if using Syntec encoder and version from 2.0.8 or 2.1.1, which support "over temperature self-diagnosis", then probably occurs "Encoder over temperature".		
Possible Solution	1. if using Syntec encoder and version from 2.0.8 or 2.1.1, which support "over temperature self-diagnosis", then check temperature feedback and settings.		

All in one ID **2nd Single Axis ID**	**AL-344**		
1st Single Axis ID	**--**	**Alarm Name**	**Encoder Signal Noise Interference**
Alarm Content	Encoder Signal Noise Interference		
Possible Cause	Check Pn-D74 Encoder CRC error counter(Software). Check the encoder wiring.		
Possible Solution	1. Check the encoder wiring and grounding. 2. Send back to Syntec Corp.		

All in one ID **2nd Single Axis ID**	**AL-350**		
1st Single Axis ID	**-**	**Alarm Name**	**2nd Encoder Status Error**

Alarm Content	Encoder status has errors to operate normally
Possible Cause	1. if using Syntec encoder and version from 2.0.8 or 2.1.1, which support "over temperature self-diagnosis", then probably occurs "Encoder over temperature".
Possible Solution	1. if using Syntec encoder and version from 2.0.8 or 2.1.1, which support "over temperature self-diagnosis", then check temperature feedback and settings.

All in one ID **2nd Single Axis ID**	**AL-354**		
1st Single Axis ID	**--**	**Alarm Name**	**2nd Encoder Signal Noise Interference**
Alarm Content	2nd Encoder Signal Noise Interference		
Possible Cause	Check Pn-D78 2nd Encoder CRC error counter(Software). Check the encoder wiring.		
Possible Solution	1. Check the 2nd encoder wiring and grounding. 2. Send back to Syntec Corp.		

4 Tuning Alarm - ALARM-4xx

All in one ID **2nd Single Axis ID**	**AL-400**		
1st Single Axis ID	**AL-29**	**Alarm Name**	**Motor Parameter Estimation Failure - Abnormal Output Command**
Alarm Content	The search for the estimated current command fails during parameter estimation		
Possible Cause	1. Encoder malfunction 2. Mechanical abnormality or excessive motor load inhibits motor rotation 3. Abnormal current control		
Possible Solution	1. Confirm whether any alarm occurs in the "encoder function test" test. Handle the alarm during the "encoder function test" test. 2. Check whether the current reaches the 120% rated current of the motor during the estimation process. Ensure that the motor parameters are estimated when the motor is no-load. If the load cannot be removed, it is recommended to use "static induction motor tuning". 3. The voltage command exceeds 40% of the rated motor voltage during the tuning process. The setting of the internal gain ratio Pn-F2D (Fn-18) of the tuning machine starts from 100% and is gradually lowered by 20% steps		

All in one ID **2nd Single Axis ID**	**AL-401**		
1st Single Axis ID	**AL-2A**	**Alarm Name**	**Motor Parameter Estimation Failure-Abnormal Motor Speed**
Alarm Content	The motor speed is lower than 80% of the motor rated speed during the parameter estimation.		
Possible Cause	1. Encoder malfunction 2. Mechanical abnormality or excessive motor load inhibits motor rotation 3. Motor rated speed is too high 4. Abnormal current control		

Possible Solution	1. If the environment is equipped with encoder, confirm whether any alarm occurs in the "encoder function test" test. Handle the alarm during the "encoder function test" test. 2. During the rotation estimation process, the motor speed does not exceed 80% of the rated speed. Ensure that the motor parameters are estimated when the motor is no-load. If the load cannot be removed, it is recommended to use "static induction motor tuning". 3. Check whether the motor rated speed exceeds 10000 RPM. It is recommended to use "static induction motor tuning", or manually enter the motor parameters to avoid using the existing Motor tuning function. 4. Check whether the current error is too high. The setting of the internal gain ratio Pn-F2D (Fn-18) of the tuning machine starts from 100% and is gradually lowered by 20% steps.

All in one ID **2nd Single Axis ID**	**AL-402**		
1st Single Axis ID	**AL-50**	**Alarm Name**	**Current Tuning Error**
Alarm Content	Current tuning error		
Possible Cause	1. Excess current during tuning.		
Possible Solution	1. Redo the "Current Tuning" test 2. Send back to Syntec or authorized representative		

All in one ID **2nd Single Axis ID**	**AL-403**		
1st Single Axis ID	**--**	**Alarm Name**	**Motor Rotor Time Const. Estimation Failure**
Alarm Content	Frequency search failure during the estimation process of motor rotor time constant.		
Possible Cause	1. Motor Rated Speed Pn-70C is set incorrectly 2. Motor Pole Number Pn-701 is set incorrectly 3. During parameter estimation, the motor is rotated by external force		
Possible Solution	1. Correct Pn-70C 2. Correct Pn-701 3. Avoid motor rotation during parameter estimation		

All in one ID **2nd Single Axis ID**	**AL-404**		
1st Single Axis ID	**--**	**Alarm Name**	**PM Motor Parameter Tuning Fail**

Alarm Content	1. UVW cable disconnected 2. Voltage command reaches limit during tuning
Possible Cause	1. 3 phase power cables are loose 2. Voltage specification of driver and motor are matched
Possible Solution	1. Check UVW cables between motor and drive for damage or looseness. 2. Using driver that voltage specification is matche

All in one ID **2nd Single Axis ID**	~~**AL-410**~~		
1st Single Axis ID	**AL-2B**	**Alarm Name**	**Acceleration Limit Too Large**
Alarm Content	Max Jerk, acceleration or travel limit setup inappropriate.		
Possible Cause	1. Initial rotor inertia setup incorrect 2. Motor specification input error 3. Low JOG speed 4. Insufficient travel limit 5. Acceleration setup too severe 6. Low Jerk		
Possible Solution	1. Excessive intertia setup causes drive to overshoot. Refer to "Auto tuning" section of manual and reset Pn-720(P4-20) and Pn-722(P4-21). 2. Check motor parameter Pn-7XX (P3-XX). 3. Parameter Pn-304(Fn-02) too low causing tuning to fail. Minimum tuning RPM is 20%of rated motor speed. 4. Travel parameters Pn-F14(Fn-04)、Pn-F15(Fn-05) are too close causing motor speed insufficiency. Increase Pn-F14(Fn-04) and Pn-F15(Fn-05) interval to at least half of motor revolution. 5. Acceleration time Pn-306(P6-10) is so short that motor cannot catch up. Set Pn-306(P6-10) longer. 6. Jerk time Pn-307(P6-11) is so large that acceleration is unable to reach proper value. Lower jerk time Pn-307(P6-11) or lengthen acceleration time Pn-30.		

All in one ID **2nd Single Axis ID**	~~**AL-411**~~		
1st Single Axis ID	**AL-2C**	**Alarm Name**	**Initial Value of Inertia is Set Unsuitable**
Alarm Content	Triggered when initial rotor inertia setup inappropriate.		
Possible Cause	1. Incorrect rotor inertia and mechanical constant initial setup 2. Incorrect motor rotor time constant setup		

Possible Solution	1. Refer to " Auto tuning" section of manual and reset Pn-720(P4-20) and Pn-722(P4-21). 2. Observe if rotor viscosity drops until alarm is triggered. Refer to "Rotor time constant tuning" part of "Auto tuning" section of manual.

All in one ID **2nd Single Axis ID**	**AL-412**		
1st Single Axis ID	**AL-3E**	**Alarm Name**	**Inertia Tuning Startup Failure**
Alarm Content	triggered when motor doesn't run during Inertia tuning		
Possible Cause	1. Encoder wiring error 2. Motor stall 3. Default torque is too small(50%) that can't drive the load		
Possible Solution	1. Check encoder wiring, refer to "Wiring and signal" section of manual 2. The mtor should rotate during tuning with direction that Pn-504 allows (PS: Only 2nd Single Axis has this function) a. Check if UVW cables are wired correctly b. Check for mechanical locks 3. Increase【Pn-F32】Torque Command in Test Mode(【Fn-22】Torque Command in Test Mode) progressively. When the output torque is enough, the inertia tuning is finished.		

All in one ID **2nd Single Axis ID**	**AL-413**		
1st Single Axis ID	**AL-74**	**Alarm Name**	**Inertia Tuning Loading Too Large**
Alarm Content	Displacement exceeds half the motion limit while estimating gravity		
Possible Cause	1. Motion limit is set too small or motor power is insufficient		
Possible Solution	1. Check motion limit Pn-F14(Fn-04) and motor power. Raise motion limit or choose motor with larger power		

All in one ID **2nd Single Axis ID**	**AL-414**		
1st Single Axis ID	**AL-78**	**Alarm Name**	**Load Inertia Value Error**
Alarm Content	Load intertia value out of range		

Possible Cause	1. Rotor inertia value error 2. Linear motor load inertia value out of range
Possible Solution	1. Re-enter specifics' rotor inertia parameter, or re-execute rotor inertia estimation during idling. 2. Refer to "linear motor SOP Q and A", restart rotor inertia tuning instead of load inertia tuning.

All in one ID **2nd Single Axis ID**	**AL-420**		
1st Single Axis ID	**AL-3D**	**Alarm Name**	**Encoder Offset Searching Failure**
Alarm Content	Drive fails to detect accurate motor pole position		
Possible Cause	1. Encoder mount loose, causing position shift 2. Motor stall		
Possible Solution	1. Make sure encoder index and motor shaft angle are fixed 2. Motor should rotate twice during searching process a. Check if UVW cables are wired correctly b. Check for mechanical locks		

All in one ID **2nd Single Axis ID**	**AL-430**		
1st Single Axis ID	**AL-4F**	**Alarm Name**	**Encoder Calibration Stall Error**
Alarm Content	No motor rotation even as current output reaches limit		
Possible Cause	1. Motor overload 2. UVW wiring error		
Possible Solution	1. Check motor for mechanical interferences 2. Check Pn-441/Pn-444, Reset correct Pn-441/Pn-444 3. Check UVW wiring from drive to motor		

All in one ID **2nd Single Axis ID**	**AL-431**		
1st Single Axis ID	**AL-3A**	**Alarm Name**	**Encoder Pitch Compensation Error**
Alarm Content	Adjacent compensation value varies too greatly		

Possible Cause	1. Encoder's original position feedback fluctuates severely 2. Encoder's compensation fixture error 3. Encoder malfunction
Possible Solution	1. Check if 1st and 2nd feedback mechanical angle match. Change encoder polarity while ensuring motor direction is correct. Check if 1st and 2nd encoder's position error is greater than 20 during compensation. Redo compensation. Replace encoder if it keeps failing. 2. Make sure fixture is correctly mounted. Rotate motor and check if 1st feedback mechanical angle changes. 3. Rotate motor and check if 2nd feedback mechanical angle changes. If not, replace encoder and send defective to Syntec or authorized representative for repairs.

All in one ID **2nd Single Axis ID**	**AL-440**		
1st Single Axis ID	**-----**	**Alarm Name**	**Dead time calibration initial failure**
Alarm Content	Dead time calibration initial failure		
Possible Cause	1. Some axes are servo on state		
Possible Solution	1. Check all axes on servo state Servo off all axes and redo tuning		

All in one ID **2nd Single Axis ID**	**AL-450**		
1st Single Axis ID	**AL-7A**	**Alarm Name**	**Sensor Test Fail**
Alarm Content	Sensor test setting error or motor stall		
Possible Cause	1. Motion limit is set too small a. Linear motor: Whether position limit larger than 1.5 magnetic pitch. b. Rotary motor: Whether position limit larger than 2.5 electrical period. 2. Lmotor stall 3. Encoder no feedback		

Possible Solution	1. Set motion limit: a. Linear motor: Reserve a travel distance larger than 1.5 magnetic pitch. b. Rotary motor: Reserve a travel distance larger than 2.5 electrical period. 2. Check rotor position, Check Pn-441/Pn-444: a. Move motor to suitable position b. Reset Pn-441/Pn-444 3. Connect and wire encoder correctly

All in one ID **2nd Single Axis ID**	**AL-451**		
1st Single Axis ID	**AL-7B**	**Alarm Name**	**Linear Motor Magnetic Pitch Setting Error**
Alarm Content	Detected magnetic pitch (Pn-D85) and set value (Pn-702) are mismatched		
Possible Cause	1. Magnetic pitch or encoder resolution setup error		
Possible Solution	1. Set parameters correctly		

All in one ID **2nd Single Axis ID**	**AL-452**		
1st Single Axis ID		**Alarm Name**	**Proximity Switch Spindle Posing Tuning Error**
Alarm Content	The tuning of digital input filtering level failed		
Possible Cause	1. Wrong setting of gear number of motor side or screw side 2. Abnormal function of proximity switch 3. Spindle orientation check window is too narrow		
Possible Solution	1. Set parameters Pn-20A, Pn-20C, Pn-522, Pn-50A and Pn-50B correctly 2. Check the installation and signal of proximity		

All in one ID **2nd Single Axis ID**	**AL-453**		
1st Single Axis ID		**Alarm Name**	**Global Tuning Failure**
Alarm Content	Unexpected alarm occurred during tuning process		
Possible Cause	Certain axis registers the alarm during tuning process		

Possible Solution	Solve the cause of the alarm, and then execute the tuning again

5 Application Alarm - ALARM-5xx

All in one ID **2nd Single Axis ID**	**AL-500**		
1st Single Axis ID	**AL-2F**	**Alarm Name**	**Incorrect setting of operational curve for V/f control**
Alarm Content	V/f curve slope setup error		
Possible Cause	1. V/f curve slope setup error, check parameters Pn-112~Pn-115 (P2-31~P2-34)		
Possible Solution	1. Operation points 1 and 2 must increase in order. V and F of point 1 must be greater than those of point 2. 2. Frequency of operation point 2 cannot be above rated frequency. 3. Voltage of operation point 2 cannot be above rated voltage. 4. Voltage of operation point 1 must be higher than minimum VF voltage. (Observe Pn-D3B (D1-30) for further information) 5. V and f of both points cannot be 0.		

All in one ID **2nd Single Axis ID**	**AL-501**		
1st Single Axis ID	**AL-30**	**Alarm Name**	**V/f Overcurrent**
Alarm Content	1. The current feedback is continuously over the maximum current of motor in V/f mode. 2. Triggered when current feedback is greater than 120% of maximum current		
Possible Cause	1. Severe setting of acceleration time or jerk time 2. Incorrect V/f curve setting 3. The motor is overload.		
Possible Solution	1. Increase jerk time(ms) and acceleration time 2. Adjust V/f operating curve 3. Appropriately decrease the load.		
Remark	From v2.12.7 , the second trigger mechanism of alarm content has been removed.		

All in one ID **2nd Single Axis ID**	**AL-502**		
1st Single Axis ID		**Alarm Name**	**Voltage command reaches the limit**

Alarm Content	The voltage command reaches the limit for 150 millisecond after servo on when using open loop control or processing tuning function
Possible Cause	1. The belt slips 2. Gain tuning result is improper 3. UVW wiring is wrong or not connected
Possible Solution	1. Tighten or replace the belt 2. Refer to chapter "Auto Tuning" in user manual, tune gain properly 3. Refer to chapter "Wiring and signal" in user manual, and correct wiring

All in one ID **2nd Single Axis ID**	**AL-505**		
1st Single Axis ID	**-**	**Alarm Name**	**Control mode not set properly**
Alarm Content	Control mode should not be able to use with current setting or apparatus		
Possible Cause	1. None of encoder applied in position control 2. Disable position control with V/f mode setting 3. Gantry control does not support all control modes except the host position mode		
Possible Solution	1. Check if used function in position control. Make sure of correct setting on controller or encoder configuration 2. Check Pn-330 setting which is allowed to enter position control mode. Correct Pn-330 or avoid position control mode switch by controller 3. Check the controller settings or Pn-840		

All in one ID **2nd Single Axis ID**	**AL-510**		
1st Single Axis ID	**AL-3C**	**Alarm Name**	**Spindle Posing Failure**
Alarm Content	Drive couldn't complete spindle orientation within time limit		
Possible Cause	1. Spindle orientation fails to reach window set in Pn-522(P6-12) for 2 seconds after command complete 2. Encoder communication type error 3. Filtering level is too high or signal width is too short **(Only All in one ID/2nd Single Axis support)** 4. Proximity switch orientation failure 5. Proximity switch orientation has wrong gear ratio 6. Orientation is abnormally aborted 7. V/f mode or none of encoder applied do not support spindle orientation		

Possible Solution	1. Make sure parameter Pn-522(P6-12) is set in a reasonable range. Suggested value is 500(0.5 degrees) 2. Make sure Pn-900(P3-20) in single feedback control or Pn-920(P6-80) in dual feedback control is not 3 3. Check up the manual of Pn-03E and adjust it with motor running and monitoring Pn-D35 I Bits Status **(Only All in one ID/2nd Single Axis support)** 4. If using proximity switch orientation Pn-243=1(P6-29=1), check Pn-D97(D1-77) is updated each turn. Assemble proximity switch correctly Pn-50A~Pn-50B(P1-40~P1-41). 5. If using proximity switch orientation Pn-243=1(P6-29=1), check the gear ratio from controller is correctly set. Update controller software version to at least 10.116.24R(1st Single Axis) or 10.118.10(All in one/2nd Single Axis) and set gear ratio correctly. 6. Record Pn-D53(D1-40), and connect Syntec for further trouble shooting 7. Check Pn-330 and encoder setting and correct them

All in one ID **2nd Single Axis ID**	**AL-511**		
1st Single Axis ID	**AL-62**	**Alarm Name**	**Spindle Posing Deviate**
Alarm Content	Position deviated after posing complete		
Possible Cause	1. Orientation angle setting error, mechanical interference cause spindle diverge 2. Spindle orientation check window is too narrow		
Possible Solution	1. Check orientation angle and mechanical interference 2. Check whether parameter Pn-522(P6-12) is set in a reasonable range		

All in one ID **2nd Single Axis ID**	**AL-512**		
1st Single Axis ID	**-**	**Alarm Name**	**Error Digital Input Signal Index Position**
Alarm Content	1. Proximity signal may be disturbed, driver can't mark an index position		
Possible Cause	1. Digital Input Sampling Factor too low 2. Input signal too noisy 3. Gear ratio set incorrectly		
Possible Solution	1. Check Pn-03E. Please tune up level of Pn-03E and retry your test 2. Please check the installation of input wire, or proper material use 3. Replace with an more anti-noise material, or change a way of installation 4. Check gear ratio, measure and examine gear ratio again		

All in one ID **2nd Single Axis ID**	**AL-513**		
1st Single Axis ID	**-**	**Alarm Name**	**Dual Feedback parameter setting error**
Alarm Content	1. Parameters setting error in dual feedback control mode.		
Possible Cause	1. Enable velocity dual feedback control, while position dual feedback control is disabled.		
Possible Solution	1. When enable velocity dual feedback control(Pn-32A = 1), Must enable position dual feedback control(Pn-22A = 1). 2. If velocity dual feedback control is unnecessary, set Pn-32A = 0.		
Remark	Alarm has been added after version v2.12.10		

All in one ID **2nd Single Axis ID**	**AL-520**		
1st Single Axis ID	**AL-38**	**Alarm Name**	**Excessive position error between 1st and 2nd feedback**
Alarm Content	Position error between 1st and 2nd feedback exceeds allowed level		
Possible Cause	1. Belt slip 2. 2nd encoder pulse loss, no feedback or encoder polarity error 3. Gear ratio set incorrectly 4. Pn-51A set too strictly 5. Uses ABZ type as 2nd encoder and the resolution value is wrong		

Possible Solution	1. Check belt mechanism. 2. Execute "Encoder test" and observe whether any alarms are triggered. Refer to "Auto tuning" section of manual. 3. Measure and examine gear ratio again. 4. Check Pn-51A setting. Refer to 2nd Generation Driver Dual Feedback Tuning Manual(Analysis platform) or "The Pos Dual Feedback Control Of The Linear Scales with Analysis Platform" a. For spindle dual feedback, it is recommended setting this error bound (Pn-51A) as 0.1 times of the 2nd encode resolution. b. For axial dual feedback, if the resolution of the outer feedback linear scale is R pulse/mm and the mechanism has a backlash error of P mm, this parameter setting (Pn-51A) must be greater than P * R, and it is recommended to set 2 to 3 times P * R or more. 5. For axial dual feedback, please check whether【Pn-922】2nd Encoder Resolution is set correctly.

All in one ID **2nd Single Axis ID**	**AL-521**		
1st Single Axis ID	**AL-1F**	**Alarm Name**	**Excessive Following Error**
Alarm Content	Error between position command and feedback is too large		
Possible Cause	1. Torque limit too low 2. Motor overload 3. Severe speed command change 4. Rotor inertia set incorrectly 5. Parameter Pn-22C(P6-41) too low		
Possible Solution	1. Check parameter Pn-70A(P3-11). 2. Check if load ratio is continuously over 100%. 3. Check if controller's command changes severely. Adjust controller's acceleration time constant, set it larger. Reduce motor load or choose a larger rated torque of motor. 4. Rotor inertia is set too low, output current is too small, resulting incorrect control behavior. 5. Check parameter Pn-22C(P6-41). Pn-22C(P6-41) has its parameter lower bound,the minimum value of Pn-22C is 1/5 of latch frequency. 6. Make sure Pn-904/Pn-924(P3-23/P6-83) 1st/2nd encoder incremental/ absolute setup is correct.		

All in one ID **2nd Single Axis ID**	**AL-522**		
1st Single Axis ID	**AL-63**	**Alarm Name**	**Servo On Command Conflict**

Alarm Content	Servo on command conflict
Possible Cause	1. Drive receives Servo On and Auxiliary function at the same time
Possible Solution	1. Check if parameter Pn-F10(Fn-00) is set to enable auxiliary functions 2. Avoid Servo On and enabling Auxiliary function at the same time
Note	• Alarm has been delete for single axis drive version V1.6.9 and after. • Alarm has been delete for 4-in-1 drive version 4 in 1 V2.3.0 and after.

All in one ID **2nd Single Axis ID**	**AL-523**		
1st Single Axis ID	**AL-3F**	**Alarm Name**	**Parameter Saving Command is Illegal**
Alarm Content	Parameter saving command is given while Servo On		
Possible Cause	1. Parameter saving command is given while Servo On		
Possible Solution	1. Give parameter saving command while Servo Off		

All in one ID **2nd Single Axis ID**	**AL-524**		
1st Single Axis ID	**AL-81**	**Alarm Name**	**Serious Belt slip**
Alarm Content	Speed error between external encoder and estimator is too great		
Possible Cause	1. Belt slip 2. Gear ratio error		
Possible Solution	1. Change or tighten belt 2. Set gear ratio properly		

All in one ID **2nd Single Axis ID**	**AL-525**		
1st Single Axis ID	**AL-7C**	**Alarm Name**	**Electrical Gear Error**
Alarm Content	Relative setting error		
Possible Cause	1. Parameter setting error 2. Encoder communication type not supported		

Possible Solution	1. The ratio of Pn-20E/Pn-210 (P6-08/P6-09) should be integral, and be power of 2, and not more than 256. 2. If 23 bit TAMAGAWA encoder is used, Pn-20E can not more than 128. 3. Pn-210 (P6-09)must set to 1. 4. Please check Pn-900(P3-20). If in DualFeedback control, then check Pn-920(P6-80). If version is 1.6.x, this function only supports Nikon encoder; if version is v2.x, then support Nikon, Sankyo, HCFA and 23/25 bit TAMAGAWA encoders.

All in one ID **2nd Single Axis ID**	**AL-526**		
1st Single Axis ID	**-**	**Alarm Name**	**Extremely excessive position error between 1st and 2nd feedback**
Alarm Content	Position error between 1st and 2nd feedback exceeds allowed level extremely		
Possible Cause	1. Belt slip 2. 2nd encoder pulse loss or no feedback 3. Gear ratio set incorrectly		
Possible Solution	1. Check belt mechanism. 2. Execute "Encoder test" and observe whether any alarms are triggered. Refer to "Auto tuning" section of manual. 3. Measure and examine gear ratio again.		
All in one ID **2nd Single Axis ID**	**AL-527**		
1st Single Axis ID	**-**	**Alarm Name**	Gantry control position feedback critical deviation
Alarm Content	The position difference under gantry control exceeds the limit		
Possible Cause	1. Host command polarity setting error 2. The origin setting of the gantry axis is not completed 3. The position deviation alarm threshold is too strict 4. Inertia setting error 5. One of axes is stuck mechanically		
Possible Solution	1. Check the Pn-020 host command polarity of the two axes 2. Check the origin setting of the gantry axis 3. Confirm Pn-572 position deviation alarm threshold 4. Check the rotor and loader inertia or adjust the inertia 5. Check if any axis is mechanically stuck		

All in one ID 2nd Single Axis ID	AL-528		
1st Single Axis ID	-	Alarm Name	No origin point for gantry control
Alarm Content	No origin point for gantry control		
Possible Cause	No origin point for gantry control		
Possible Solution	Set the correct origin for the incremental encoder through Pn-F46 = 1		

All in one ID 2nd Single Axis ID	AL-529		
1st Single Axis ID	--	Alarm Name	Excessive Position Error Overflow
Alarm Content	Excessive overflow of pulse error between position command and feedback		
Possible Cause	1. Torque limit reach, then position error is too large		
Possible Solution	1. Check position target, and set proper position target		

All in one ID 2nd Single Axis ID	AL-52F		
1st Single Axis ID	AL-19	Alarm Name	Servo On Timeout
Alarm Content	Servo on longer than normal		
Possible Cause	1. Power of driver is loss or DC bus voltage is too low. 2. Drive configuration error.		
Possible Solution	1. Check up input voltage if lower than Pn-640(P5-00) supply voltage. Make sure of specification match between driver rated supply, wiring and Pn-640(P5-00) setting. 2. Send back to Syntec or authorized representative.		

All in one ID 2nd Single Axis ID	AL-530		
1st Single Axis ID	AL-20	Alarm Name	Zero Speed Check Fail

Alarm Content	Zero speed check time longer than normal
Possible Cause	1. Pn-502(P6-15) Zero Velocity Window is set too small 2. External overload 3. Tuning result abnormal
Possible Solution	1. Check Pn-502(P6-15) settings. Set Pn-502(P6-15) larger. 2. Pn-306(P6-10) maximum acceleration and Pn-307(P6-11) maximum JERK time are set too small. Check and set them larger. 3. Check auto tuning parameters. Refer to "Auto tuning" section of manual.

All in one ID 2nd Single Axis ID	**AL-531**		
1st Single Axis ID	**--**	**Alarm Name**	**Drive Parameter Loaded to Defaults**
Alarm Content	Do load default parameter function, parameters have been loaded to default value.		
Possible Cause	1. If Pn-F43 load default parameter function is modified, this warning will be shown after the parameter is successfully loaded.		
Possible Solution	1. Please reboot the drive and check if this warning is still exist.		

All in one ID 2nd Single Axis ID	**AL-542**		
1st Single Axis ID	**-**	**Alarm Name**	**Laser Cruise Mode Failure**
Alarm Content	Laser Cruise Mode Failure		
Possible Cause	1. 2nd encoder communication type non altimeter or LVDT 2. V/f mode or none of encoder applied do not support laser cruise mode		
Possible Solution	1. Check Pn-920 and set 2nd encoder as altimeter or LVDT 2. Check Pn-330 and encoder setting and correct them		

All in one ID 2nd Single Axis ID	**AL-543**		
1st Single Axis ID	**-**	**Alarm Name**	**The Proximity Spindle Position DI setting error**
Alarm Content	More than one DI set as the Proximity Spindle Position function		

Possible Cause	1. The Proximity Spindle Position function only can set one DI in one axis
Possible Solution	1. Check Pn-50A ~ Pn-50D, Close the redundant Proximity Spindle Position

All in one ID **2nd Single Axis ID**	**AL-690**		
1st Single Axis ID	**-**	**Alarm Name**	**Not support winding selection function**
Alarm Content	The switch function of high and low speed coil can't be opened.		
Possible Cause	1. The wrong setting of Pn-72C Motor Winding Mode 2. CNC version not support winding selection function 3. Only induction spindle support winding selection function		
Possible Solution	1. Set Pn-72C Motor Winding Mode correctly 2. Update CNC version correctly 3. Set Pn-700 Motor Type and Pn-803 Motor Application correctly, or disable Pn-01E winding selection function		

6 Special Alarm - ALARM

All in one ID **2nd Single Axis ID**	**AL-810**		
1st Single Axis ID	**AL-810**	**Alarm Name**	**Encoder Battery Low Voltage Position Loss**
Alarm Content	Encoder battery low, position data is lost.		
Possible Cause	1. Battery voltage too low or no battery. a. Nikon, Panasonic: battery voltage is less than 2.5 V. b. Mitsubishi: battery voltage is less than 2.9V. c. HCFA: battery voltage is less than 1.7V. d. Delta: battery voltage is less than 3.1V. 2. Parameter setting error.		
Possible Solution	1. Change battery a. With controller: change battery and restart system. b. Without controller: change battery, set parameter Pn-F44(Fn-34) to 1 and restart drive. 2. If not absolute encoder, set parameter Pn-904(P3-23) to 0 and restart drive.		
Detailed Instructions	【Pn-D95】Enc Error Status ALMC		

All in one ID **2nd Single Axis ID**	**AL-812**		
1st Single Axis ID	**AL-56**	**Alarm Name**	**2nd Encoder Position Loss**
Alarm Content	Second encoder battery less than 2.5V, multi-turn position data loss		
Possible Cause	1. Encoder voltage too low or no battery a. Nikon, Panasonic: battery voltage is less than 2.5 V. b. Mitsubishi: battery voltage is less than 2.9V. c. HCFA: battery voltage is less than 1.7V. d. Delta: battery voltage is less than 3.1V. 2. Parameter set incorrectly		
Possible Solution	1. Change battery a. With controller: Change battery and reboot system. b. No controller: Change battery, set parameter Pn-F44(Fn-34) to 1 and reboot d river. 2. Check parameter Pn-924(P6-83). If not using an absolute encoder, set Pn-924 to 0, save and reboot driver		

Detailed Instructions	【Pn-D96】2nd Enc Error Status ALMC

All in one ID 2nd Single Axis ID	**AL-830**		
1st Single Axis ID	**AL-830**	**Alarm Name**	**ABS Type Encoder Battery Low Voltage Alarm**
Alarm Content	ABS type encoder battery voltage lower than 3V.		
Possible Cause	1. Battery voltage too low or no battery. 2. Parameter setting error.		
Possible Solution	1. Change battery and restart drive (No need to restart if equipped with Nikon encoder). 2. If not ABS type encoder, set parameter Pn-904(P3-23) to 0 and restart drive.		

All in one ID 2nd Single Axis ID	**AL-B6B**		
1st Single Axis ID	**--**	**Alarm Name**	**Mechatrolink ASIC Malfunction**
Alarm Content	Mechatrolink ASIC Malfunction		
Possible Cause	1. Mechatrolink ASIC Malfunction		
Possible Solution	1. Please contact distributor or Syntec representative.		

All in one ID 2nd Single Axis ID	**AL-E02**		
1st Single Axis ID	**-**	**Alarm Name**	**Host Communication Synchronization Error**
Alarm Content	Host Communication packet abnormal.		
Possible Cause	1. Host Data exchange time out.		
Possible Solution	1. Check the setting of the Mechatrolink transmission cycle Pr3203.		

All in one ID 2nd Single Axis ID	**AL-E30**		
1st Single Axis ID	**-**	**Alarm Name**	**Mechatrolink position command error**

Alarm Content	Mechatrolink position command error, received position command too large.
Possible Cause	1. Position command is too large, probably abnormal increment compared with the last command
Possible Solution	1. Position command varies abnormally or unexpectedly 2. Check up software version of the controller. Please inform the manufacturer.

All in one ID **2nd Single Axis ID**	**AL-E40**		
1st Single Axis ID	**-**	**Alarm Name**	**Mechatrolink Interpolation Time Interval Setting Error**
Alarm Content	Mechatrolink interpolation time interval setting error.		
Possible Cause	1. Mechatrolink interpolation time interval setting is outside specified range.		
Possible Solution	1. Raise controller parameter Pr3203 interpolation time interval setting to appropriate value.		

All in one ID **2nd Single Axis ID**	**AL-E50**		
1st Single Axis ID	**AL-E50**	**Alarm Name**	**Host command not updated**
Alarm Content	Host communication WDT check error.		
Possible Cause	1. The controller did not update the packet correctly or the host communication chip is abnormal.		
Possible Solution	1. Check if the host command sends unexpected performance. 2. Check serial wiring, whether shielding is correct and if connections are firm.		

All in one ID **2nd Single Axis ID**	**AL-E60**		
1st Single Axis ID	**--**	**Alarm Name**	**Host communication disturbed by noise(Checked by hardware)**

Alarm Content	Host communication CRC check error(Checked by hardware).
Possible Cause	1. Host communication is disturbed by noise, which makes the packet unusable.
Possible Solution	1. Check serial wiring, whether shielding is correct and if connections are firm.

All in one ID **2nd Single Axis ID**	**AL-E61**		
1st Single Axis ID	**-**	**Alarm Name**	**Host Transmission Cycle Error**
Alarm Content	The transmission cycle interval varied in tolerance which is out of range.		
Possible Cause	1. Host communication varied in tolerance which is out of 10% of period.		
Possible Solution	1. Check serial wiring, whether shielding is correct and if connections are firm.		

All in one ID **2nd Single Axis ID**	**AL-E62**		
1st Single Axis ID	**--**	**Alarm Name**	**Host communication disturbed by noise(Checked by software)**
Alarm Content	Host communication CRC check error(Checked by software).		
Possible Cause	1. Host communication is disturbed by noise, which makes the packet unusable.		
Possible Solution	1. Check serial wiring, whether shielding is correct and if connections are firm.		

All in one ID **2nd Single Axis ID**	**AL-E63**		
1st Single Axis ID	**--**	**Alarm Name**	**Host communication sequence error**
Alarm Content	Host communication SYNC flag check error.		
Possible Cause	1. Host communication is disturbed by noise, resulting in abnormal synchronization signal.		
Possible Solution	1. Check serial wiring, whether shielding is correct and if connections are firm.		

All in one ID 2nd Single Axis ID	AL-E65		
1st Single Axis ID	--	Alarm Name	Host communication disconnect
Alarm Content	Host communication disconnect.		
Possible Cause	1. Wire falling off or loose.		
Possible Solution	1. Check serial wiring, whether connections are firm.		

All in one ID 2nd Single Axis ID	AL-E68		
1st Single Axis ID	--	Alarm Name	Host communication continuous error
Alarm Content	Host communication continuous error.		
Possible Cause	1. Host communication is disturbed by noise. 2. The controller did not update the packet correctly. 3. The host communication chip is abnormal.		
Possible Solution	1. Check serial wiring, whether shielding is correct and if connections are firm. 2. Check if the host command sends unexpected performance.		

All in one ID 2nd Single Axis ID	AL-F10		
1st Single Axis ID	-	Alarm Name	Power supply line open phase
Alarm Content	One phase of the power supply has low voltage.		
Possible Cause	1. Voltage low for more than 1 second for R, S or T phase with main power on. 2. Parameter setting error.		
Possible Solution	1. Tighten power supply wires. 2. If using single-phase power supply, set parameter Pn-036 to 1 and restart drive.		

7 Driver Warning - WARNING-9xx

All in one ID **2nd Single Axis ID**	**AL-910**		
1st Single Axis ID	**-**	**Alarm Name**	**IGBT High Temperature**
Alarm Content	The temperature of IGBT is over 85℃		
Possible Cause	1. Severe acceleration change 2. Cooling system failure 3. Drive output short-circuit 4. Ambient temperature overheat 5. Heat source nearby 6. Continuous use while exceeding drive's rated load		
Possible Solution	1. Increase Pn-307 2. Check if fan is functioning normally. 3. Check drive's output wiring, refer to "Wiring and Signal" section of manual. 4. Check if ambient temperature is below 55℃, refer to "Transportation and Installation" section of manual. 5. Check environment, remove external heat source or enhance cooling capacity. 6. Check for motor overload or over current.		

All in one ID **2nd Single Axis ID**	**AL-911**		
1st Single Axis ID	**-**	**Alarm Name**	**Power Stage Regenerative Resistor High Temperature**
Alarm Content	The temperature of regenerative resistor is over 105℃		
Possible Cause	1. The acceleration is too severe. 2. Motor or driver model selection is mismatch.		
Possible Solution	1. Check if the acceleration time setting is too short. Increase Pn-307. 2. Check if the used motor and its load match the driver's built-in regenerative resistor. a. Reduce the load on the motor or spindle. b. Use external regenerative resistor instead. c. Contact Syntec to assist in replacing the built-in regenerative resistor or driver model with larger resistor.		

All in one ID 2nd Single Axis ID	AL-920		
1st Single Axis ID	**AL-920**	**Alarm Name**	**Servo On Command Conflict**
Alarm Content	Servo On command conflict		
Possible Cause	1. Drive receives Servo ON and auxiliary function command at the same time		
Possible Solution	1. Check if parameter Pn-F10(Fn-00) is set to enable auxiliary functions. 2. Avoid giving Servo ON and auxiliary function command at the same time.		

All in one ID 2nd Single Axis ID	AL-921		
1st Single Axis ID	**-**	**Alarm Name**	**Power off pull-up function is not supported**
Alarm Content	Power off tool retraction function is not supported		
Possible Cause	1. Controller version doesn't support power off pull-up function 2. The setting of weight direction is wrong. 3. Power off detection module damaged 4. V/f mode or none of encoder applied do not support pull-up function 5. Gantry control does not support pull-up function		
Possible Solution	1. If needed, upgrade controller version 2. Please set Pn-805 to 1 or -1 3. Set Pn-804 = 0 to disable power off pull-up function, or send back to Syntec 4. Check Pn-330 and encoder setting and correct them 5. If you do not need to enable gantry control, please disable Pn-830 and Pn-840		

All in one ID 2nd Single Axis ID	AL-922		
1st Single Axis ID	**-**	**Alarm Name**	**Proximity Position is not supported**
Alarm Content	Proximity Position is not supported		
Possible Cause	1. Controller version doesn't support Proximity Position function 2. Not support Proximity Position function with Dual Feedback Control		

Possible Solution	1. Set Pn-243 = 0 to disable Posing by proximity switch function or upgrade CNC version if needed 2. Set Pn-243 = 0 to disable Posing by proximity switch function or check whether disable dual feedback control(Pn-22A)

All in one ID **2nd Single Axis ID**	**--**		
1st Single Axis ID	**AL-923**	**Alarm Name**	**Cooling Fan Error**
Alarm Content	Triggered when power stage reports abnormality		
Possible Cause	1. Cooling fan failure		
Possible Solution	1. Send back to Syntec or authorized dealer for repairs		

All in one ID **2nd Single Axis ID**	**AL-925**		
1st Single Axis ID	**-**	**Alarm Name**	**Control mode not applicable with tuning function**
Alarm Content	Corresponding tuning function is not applicable to the control mode or other settings		
Possible Cause	1. Speed control mode setting is not applicable to tuning function 2. Encoder interface, motor type or parameter setting is not applicable to tuning function		
Possible Solution	1. Check Pn-330 if the tuning function is supported with it and correct it 2. Check using conditions of tuning function and modify setting depending of those conditions. Otherwise, don't use this function with the current apparatus or configuration.		
Note	Please refer to【Pn-330】Speed Control Mode or AL-925 警报排查		

All in one ID **2nd Single Axis ID**	**AL-926**		
1st Single Axis ID	**-**	**Alarm Name**	**EEPROM Can't execute the Function of Write Data**
Alarm Content	EEPROM-Write Protect Pin Couldn't Pull-Low		

Possible Cause	1. Hardware - Frontstage can't execute pull-low to EEPROM-write protect pin 2. Software - The EEPROM's data of frontstage is error
Possible Solution	Please contact distributor or Syntec representative.

All in one ID **2nd Single Axis ID**	**AL-928**		
1st Single Axis ID	**--**	**Alarm Name**	**Insufficient permissions**
Alarm Content	Permissions check error		
Possible Cause	1. User doesn't have permission to use this feature		
Possible Solution	1. Check if permission parameter Pn-F00 is set correctly		

All in one ID **2nd Single Axis ID**	**AL-930**		
1st Single Axis ID	**AL-930**	**Alarm Name**	**Abs Type Encoder Battery Low Voltage**
Alarm Content	ABS encoder battery voltage lower than 3V		
Possible Cause	1. Battery voltage too low or no battery 2. Parameter setting error		
Possible Solution	1. Replace the battery. If using Panasonic encoder, then restart driver. If using Nikon, Mitsubish, Delta or Tamagawa encoder,then don't need to restart. 2. If not ABS encoder, set drive parameter Pn-904(P3-23) to 0, save and restart.		
Detailed Instructions	【Pn-D95】Enc Error Status ALMC		

All in one ID **2nd Single Axis ID**	**AL-931**		
1st Single Axis ID	**AL-931**	**Alarm Name**	**Encoder Low Voltage**
Alarm Content	Encoder power source voltage abnormal		
Possible Cause	1. FeeDat encoder power source voltage too great or insufficient 2. EnDat encoder power source voltage insufficient		

Possible Solution	1. Check encoder wiring and grounding 2. If this is a recurring problem, send back to Syntec or authorized dealer for repairs		
Detailed Instructions	【Pn-D95】Enc Error Status ALMC		
All in one ID **2nd Single Axis ID**	**AL-932**		
1st Single Axis ID	**AL-932**	**Alarm Name**	**Encoder Signal Abnormal**
Alarm Content	Encoder signal amplitude is too low.		
Possible Cause	1. FeeDat encoder signal amplitude is too low. D+ D- signal may be disturbed.		
Possible Solution	1. Check encoder wiring and grounding 2. If this is a recurring problem, send back to Syntec or authorized dealer for repairs		
Detailed Instructions	【Pn-D95】Enc Error Status ALMC		
All in one ID **2nd Single Axis ID**	**AL-933**		
Single Axis ID	**AL-933**	**Alarm Name**	**Encoder Z Index Abnormal**
Alarm Content	Relative position between A/B phase and Z index is different in each revolution, so feedback position of encode is error possibly.		
Possible Cause	**Syntec encoder:** 1. Syntec encoder's firmware version is outdated 2. Encoder is under noise interference, which causing feedback signal error. 3. Encoder's signal is interfering by rotor's axis with magnetic 4. Hallow magnetic ring Zindex position is differ from the setting parameter 5. Magnetic ring's non-Zindex zone has magnetic field distribution **Non-Syntec encoder:** 1. The circuit board of non-Syntec encoder is broken. 2. Non-Syntec sensor and encoder are wrong assembly.		

Possible Solution	**Syntec encoder:** 1. Update drive's version to 1.6.14 or above(Multi-Axis Servo Drive is updated to V2.2.5 or above), and update encoder's version to 2.0.7 or above. 2. Check if encoder and motor are grounded. 3. Check if joining between encoder cable and motor is double end grounded. 4. Short term countermeasure: Magnetic axle center causing AL-54 SOP Long term countermeasure: Cross-Strait motor plants import axle center inspections starting 2016/7 5. Short term countermeasure: Raise Z index trigger level of P6-60/Pn-940 encoder to 35, and position axle after executing encoder test(rated current 150%). make sure alarm AL54/ AL306 doesn't go off. Long term countermeasure: Imported ultimate solution into manufacture process since 2018/1/11 6. Send the encoder to Syntec or authorized representative for repair. **Non-Syntec encoder:** 1. Check the encoder is contaminated by dust or oil. 2. Check the gap between sensor and encoder is correctly. 3. Send back to Syntec Corp.
Detailed Explanations and SOP	AL-54 Issue Problem Shooting

All in one ID **2nd Single Axis ID**	**AL-935**		
1st Single Axis ID	**AL-935**	**Alarm Name**	**ABS Type 2nd Encoder Battery Low Voltage**
Alarm Content	2nd ABS encoder battery voltage lower than 3V		
Possible Cause	1. Battery voltage too low or no battery 2. Parameter setting error		
Possible Solution	1. Replace the battery. If using Panasonic encoder, then restart driver. If using Nikon, Mitsubish, Delta or Tamagawa encoder,then don't need to restart. 2. If not ABS encoder, set drive parameter Pn-924(P6-83) to 0, save and restart.		
Detailed Instructions	【Pn-D96】2nd Enc Error Status ALMC		

All in one ID **2nd Single Axis ID**	**AL-936**		

1st Single Axis ID	AL-936	Alarm Name	2nd Encoder Low Voltage
Alarm Content	2nd encoder power source voltage too low		
Possible Cause	1. FeeDat encoder power source voltage too great or insufficient 2. EnDat encoder power source voltage insufficient		
Possible Solution	1. Check encoder wiring and grounding 2. If this is a recurring problem, send back to Syntec or authorized dealer for repairs		
Detailed Instructions	【Pn-D96】2nd Enc Error Status ALMC		
All in one ID 2nd Single Axis ID	AL-937		
1st Single Axis ID	AL-937	Alarm Name	2nd Encoder Signal Abnormal
Alarm Content	2nd Encoder signal amplitude is too low.		
Possible Cause	1. FeeDat encoder signal amplitude is too low. D+ D- signal may be disturbed.		
Possible Solution	1. Check encoder wiring and grounding 2. If this is a recurring problem, send back to Syntec or authorized dealer for repairs		
Detailed Instructions	【Pn-D96】2nd Enc Error Status ALMC		
All in one ID 2nd Single Axis ID	AL-938		
Single Axis ID	AL-938	Alarm Name	2nd Encoder Z Index Abnormal
Alarm Content	Relative position between A/B phase and Z index is different in each revolution, so feedback position of encoder is error possibly .		

Possible Cause	**Syntec encoder:** 1. Second encoder's firmware version is outdated 2. Encoder is under noise interference, which causing feedback signal error. 3. Encoder's signal is interfering by rotor's axis with magnetic 4. Hallow magnetic ring Zindex position is different ~~than~~ from the written parameter. 5. Magnetic ring's non-Zindex zone has magnetic field distribution 6. Hardware malfunction **Non-Syntec encoder:** 1. The circuit board of non-Syntec encoder is broken. 2. Non-Syntec sensor and encoder are wrong assembly.
Possible Solution	**Syntec encoder:** 1. Update drive's version to 1.6.14 or more recent(Multi-Axis Servo Drive is updated to V2.2.5), and update encoder's version to 2.0.7 or above. 2. Check if second encoder and motor are grounded. 3. Check if joining between second encoder cable and motor ~~are~~ is double end grounded. 4. Short term countermeasure: Magnetic axle center causing AL-54 SOP Long term countermeasure: Cross-Strait motor plants import axle center inspections starting 2016/7 5. Short term countermeasure: Raise Z index trigger level of P6-60/Pn-940 encoder to 35, and position axle after executing encoder test(rated current 150%). make sure alarm AL54/ AL306 doesn't go off. Long term countermeasure: Imported ultimate solution into manufacture process since 2018/1/11 6. Send the second encoder to Syntec or authorized representative for repair. **Non-Syntec encoder:** 1. Check the encoder is contaminated by dust or oil. 2. Check the gap between sensor and encoder is correctly. 3. Send back to Syntec Corp.
Detailed Explanations and SOP	Refer to AL-54 Issue Problem Shooting

4 in 1 ID	**AL-93A**		
1st Single Axis ID	**-**	**Alarm Name**	**Encoder Setting Wrong**
Alarm Content	Encoder parameters are illegal		

Possible Cause	1. Pn-904 is not relative to Pn-900, Pn-700 2. With SYNTEC encoder, Pn-911 is not illegal according to Pn-700 3. 2nd Encoder: Pn-924 is not relative to Pn-920, Pn-335 4. With SYNTEC 2nd encoder, Pn-931 is not illegal according to Pn-335 5. With SYNTEC encoder, encoder ver. is not compatible with thermal resistance 6. With SYNTEC encoder, 2nd encoder ver. is not compatible with thermal resistance 7. With HEIDENHAIN encoder, current encoder sensing type is not supported
Possible Solution	1. Check Pn-904, Pn-900, Pn-700 settings. If using linear encoder, please set Pn-904 into 2 or 0, dependent to Pn-900. If using non-incremental encoder, please set Pn-904 into 2 or 1 instead of 0. 2. Check Pn-911, Pn-700 settings. If Pn-911 is set to 1, Pn-700 must be 0 or 2; if Pn-911 is set to 2, Pn-700 must be 1 and check Pn-282 if legal 3. Check Pn-924, Pn-920, Pn-335 settings. If using linear 2nd encoder, please set Pn-924 into 2 or 0, dependent to Pn-920. If using non-incremental 2nd encoder, please set Pn-924 into 2 or 1 instead of 0. 4. Check Pn-931, Pn-335 settings. If Pn-931 is set to 1, Pn-335 must be 0 or 2; if Pn-931 is set to 2, Pn-335 must be 1 and check Pn-284 if legal 5. Check if the type of resistance used for thermal sensing is PT1000 and encoder ver. is V2.1.0 or lower. a. If using PT1000:Update Encoder firmware to V2.1.1 or higher. And set Pn-75A into 1. b. If using KTY84:Please set Pn-75A into 0. 6. Check if the type of resistance used for thermal sensing is PT1000 and 2nd encoder ver. is V2.1.0 or lower. a. If using PT1000:Update 2nd Encoder firmware to V2.1.1 or higher. And set corresponding thermal type parameters into 1. b. If using KTY84:Please set corresponding thermal type parameters into 0. 7. Check Pn-900 and Pn-920 parameter manual to check whether the encoder sensing type is supported by the driver version a. Update to a compatible driver version for the encoder b. Substitute with a compatible type of encoder

All in one ID **2nd Single Axis ID**	**AL-941**		
1st Single Axis ID	**-**	**Alarm Name**	**Motor stop method unsupported**
Alarm Content	The setting of MOT_TYPE、 motor stop method and motor application does not support the selected motor brake method		
Possible Cause	1. Permanant magnet motor applied to spindle cannot support dynamic braking 2. Using Induction motor or power stage not support 3. Motor Stop Method is ShortBrake when Critical Alarm Stop Method is Free Run		

Possible Solution	1. When Pn-700 = 0 and Pn-803 = 1, Pn-001 cannot be 0 2. When Pn-700 = 2, Pn-004 cannot be 1 3. When Pn-001 = 2, Pn-004 cannot be 1

All in one ID **2nd Single Axis ID**	**AL-942**		
1st Single Axis ID	**-**	**Alarm Name**	**Abnormal Motor Parameter Estimation - Too Large Test Current**
Alarm Content	During motor parameter estimation, the searched current command is greater or equal to 0.707 times rated current.		
Possible Cause	1. Mechanical abnormality or excessive motor load inhibits motor rotation. 2. Wrong motor nameplate parameters lead to unexpected voltage command, rotational speed, or current command.		
Possible Solution	1. Ensure that the motor parameters are estimated when the motor is no-load. If the load cannot be removed, it is recommended to use "static induction motor tuning". 2. Check the motor nameplate parameters (rated voltage, rated current, rated speed, and so on) are correct.		

All in one ID **2nd Single Axis ID**	**AL-947**		
1st Single Axis ID	**-**	**Alarm Name**	**Parameter Setting Error**
Alarm Content	Paramter setting is not correct with specification		
Possible Cause	1. When using driver torque control mode, VLIM option listens to M3 packet 2. When STO function is active, part of IO functions are still set 3. Speed control mode wrong set 4. When regenerator protection is turned-on, driver detects the parameter of regenerative resistor is not complete. 5. Pn-10A Feedforward time constant is too small. Filter bandwidth exceeds internal limit. 6. RTD protection parameters wrong set. 7. Gantry control setting error. a. Check Pn-830. b. Check the encoder resolution of gantry control axes. c. Check that Pn-904 = 1 is a multi-turn absolute encoder. d. Check Pn-845. e. Check Pn-846 and Pn-848.		

Possible Solution	1. When using driver torque mode, set Pn-003 to zero and set Pn-407 or 0n-480 according to motor type 2. Check up the corresponding IO function used by STO function are set to 1000(default). Recover those IO function settings to default value 3. Field Orientation Control is not allowed with none of encoder applied. Please correct Pn-330 4. When regenerator protection is turned-on and driver don't have an internal resistor, please attach an external resistor and set Pn-647、Pn-648 properly. 5. Set Pn-10A = 0 as default, or increase Pn-10A 6. Using RTD protection, please check Pn-548~Pn-54A and Pn-752 setting are correct or not. 7. Check Gantry control setting a. Set the correct Pn-830. b. The encoder resolution of the gantry control axies should be the same. c. Use multi-turn absolute encoder and set Pn-904=1. d. Pn-845 link axis select cannot conflict to Pn-830. e. If Pn-845 is not zero, the difference between Pn-846 and Pn-848 cannot be zero.

All in one ID **2nd Single Axis ID**	**AL-948**		
1st Single Axis ID	**-**	**Alarm Name**	**STO Function Not Support**
Alarm Content	Driver does not support STO function		
Possible Cause	1. Driver does not support STO function		
Possible Solution	1. Please check up driver model in STO user manual 2. Please turn off Pn-037 STO Activation		

All in one ID **2nd Single Axis ID**	**AL-949**		
1st Single Axis ID	**-**	**Alarm Name**	**RTD Function Not Support**
Alarm Content	Addon card does not support RTD function		
Possible Cause	1. Addon card does not support RTD function. 2. Support RTD port numbers of addon card not match parameter setting.		
Possible Solution	1. Please check addon card spec. 2. Make sure the addon card can support RTD function. If the addon card cannot support RTD function, turn off Pn-548~Pn-54A and set Pn-752 to 0. 3. Make sure the addon card can support the setting of port number. Depends on supported port numbers, setting Pn-548~Pn-54A and Pn-752 correctly.		

All in one ID 2nd Single Axis ID	AL-94B		
1st Single Axis ID	-	Alarm Name	Mechatrolink position command error
Alarm Content	Mechatrolink position command error, received position command too large.		
Possible Cause	1. Position command is too large, probably abnormal increment compared with the last command		
Possible Solution	1. Position command varies abnormally or unexpectedly 2. Check up software version of the controller. Please inform the manufacturer.		

All in one ID 2nd Single Axis ID	AL-950		
1st Single Axis ID	-	Alarm Name	Regenerative Overload
Alarm Content	The accumulated heat energy of internal or external regenerative resistor is higher than heat dissipation threshold. Regenerative resistor may not be damaged immediately.		
Possible Cause	1. When using external resistor, Pn-647、Pn-648 is not set properly. 2. The selection or cooling condition of external regenerative resistor needs to be rechecked. 3. When using internal resistor, Pn-647、Pn-648 is not set to 0. 4. When using internal resistor, the frequency of motor acceleration/ deceleration is too high or too intense.		
Possible Solution	1. When using external resistor, please check if Pn-647、Pn-648 is set correctly. 2. When using external resistor and parameters are set correctly, please recheck the selection or cooling condition of resistor. 3. When using internal resistor, please check if Pn-647 and Pn-648 are set to 0. 4. When using internal resistor and parameters are set correctly, please decrease the frequency of motor acceleration/deceleration or increase the value of Pn-306、Pn-307. If the alarm is raised consistently, please consider using an external resistor. 5. If regenerative resistor protection is not required, please set Pn-649 to 0.		

All in one ID 2nd Single Axis ID	AL-95F		
1st Single Axis ID	-	Alarm Name	Driver Receive Illegal Command
Alarm Content	Driver receive illegal Main Command or Sub Command		

Possible Cause	1. Mechatrolink communication error.
Possible Solution	1. Check serial port wiring and shielding

All in one ID **2nd Single Axis ID**	**AL-961**		
1st Single Axis ID	**-**	**Alarm Name**	**I2C Communication Timeout**
Alarm Content	I2C communication timeout between front stage and power stage		
Possible Cause	1. Data read from power stage was failed for 30000 times connection. (if using M6S driver, still 30 seconds)		
Possible Solution	1. Check earthing of driver. 2. Send back to Syntec Corp. 3. If this alarm shows up while saving dead time compensation table or current calibration table, try saving again to reset alarm.		

All in one ID **2nd Single Axis ID**	**AL-970**		
1st Single Axis ID	**-**	**Alarm Name**	**Over Voltage**
Alarm Content	DC BUS voltage is above drive's warning level 100%		
Possible Cause	1. When motor slows, brake resistance cannot deplete regenerated energy 2. AC power source input voltage too high 3. Encoder hardware malfunction		
Possible Solution	1. Check regenerative resistor's specifics, refer to "wiring and signal" section of manual. 2. Check if AC power source matches drive specifics. 3. Ruling out the above solutions, hardware may be damaged. Send back to Syntec or authorized dealer for repairs.		

All in one ID **2nd Single Axis ID**	**AL-97A**		
1st Single Axis ID	**-**	**Alarm Name**	**Host Command Inexecutable**
Alarm Content	A command is illegal in the current communication phase		

Possible Cause	1. A command that cannot be executed in the current phase was sent by controller
Possible Solution	1. Check software version of host controller. 2. Please contact Syntec corp. or retailer

All in one ID **2nd Single Axis ID**	**AL-97B**		
1st Single Axis ID	**-**	**Alarm Name**	**Command Beyond Limit**
Alarm Content	Torque command or VLIM beyond maximum value.		
Possible Cause	1. When driver is in torque control mode, torque command is larger than motor maximum torque. 2. When driver is in torque control mode , VLIM is larger than motor maximum speed. 3. When driver is in laser cruise mode, VLIM is larger than motor maximum speed.		
Possible Solution	1. When driver in torque control mode, let the value of torque command smaller than maximum torque of motor. 2. When driver is in torque control mode, and if Pn-003 = 1, modify the VLIM from controller. If Pn-003 = 0, then make sure Pn-407 or Pn-480 is smaller than Pn-40E, according to Pn-700. 3. When driver is in laser cruise mode, make sure Pn-407 or Pn-480 is smaller than Pn-40E, according to Pn-700. You can also set Pn-809 = 0 to turn off velocity limit.		

All in one ID **2nd Single Axis ID**	**AL-980**		
1st Single Axis ID	**AL-980**	**Alarm Name**	**Speed estimator error**
Alarm Content	Speed error is greater than 5% of the speed command in steady state		
Possible Cause	1. Motor parameter error resulting in speed estimation error		
Possible Solution	1. Check motor specifics plate for parameters and redo motor tuning		

All in one ID **2nd Single Axis ID**	**AL-981**		
1st Single Axis ID	**AL-981**	**Alarm Name**	**Belt slip**

Alarm Content	Speed error between external encoder and estimator is too great
Possible Cause	1. Belt slip 2. Gear ratio error
Possible Solution	1. Change or tighten belt 2. Set gear ratio correctly

All in one ID **2nd Single Axis ID**	**AL-982**		
1st Single Axis ID	**AL-982**	**Alarm Name**	Gantry control position feedback deviation is too large
Alarm Content	Under gantry control, the position deviation of the two axes exceeds the warning check value		
Possible Cause	1. Host command polarity setting error 2. The origin setting of the gantry axis is not completed 3. The position deviation warning threshold is too strict 4. Inertia setting error 5. One of axes is stuck mechanically		
Possible Solution	1. Check the Pn-020 host command polarity of the two axes 2. Reset the encoder origin of the gantry axis or set Pn-F44 = 1 3. Confirm the position deviation threshold Pn-570 and Pn-572 4. Set the correct rotor and loader inertia, or adjust the inertia 5. Check if any axis is mechanically stuck		

All in one ID **2nd Single Axis ID**	**AL-983**		
1st Single Axis ID	**AL-983**	**Alarm Name**	**Gear ratio incorrect**
Alarm Content	The error of estimated gear ratio and setup gear ratio is too big.		
Possible Cause	1. Gear ratio setup error.		
Possible Solution	1. Check gear ratio parameter Pn-20A, Pn-20C and Pn-D5C Gear Ratio Error. 2. Set gear ratio correctly.		

All in one ID **2nd Single Axis ID**	**AL-990**		
1st Single Axis ID	**-**	**Alarm Name**	**Initialization fail when tuning**

Alarm Content	Initialization fail when tuning
Possible Cause	1. Parameter settings error 2. Wrong setting of Gear Ratio Estimation 3. The settings of Moving Direction Limit and Motion Limit are conflict 4. Wrong setting of Cogging Torque Compensation Tuning 5. Tuning not support without encoder 6. Wrong Encoder-Rotor Offset Detection setting
Possible Solution	1. Set parameters correctly, set drive parameter Pn-F10 to 0 and redo tuning. 2. Gear Ratio Estimation only supports induction motor. Please check Pn-700=2. Gear Ratio Estimation doesn't support the setting without 2nd encoder feedback, Please check. 3. The settings of Moving Direction Limit and Motion Limit are conflict. Please check the setting of Pn-504, Pn-F14 and Pn-F16. 4. Wrong setting of Cogging Torque Compensation Tuning. Please check the range of Pn-F14 and Pn-F16 is too small, or Pn-F14 and Pn-F16 has the same sign. 5. Check encoder communication type and port number of Pn-900, Pn-901, Pn-920 and Pn-921. 6. Check whether the parameter Pn-642 is equal to 2. When use Encoder-Rotor Offset Detection Method, set Pn-011 = 0 or 1

All in one ID **2nd Single Axis ID**	**AL-991**		
1st Single Axis ID	**-**	**Alarm Name**	**Unable to enable High Cycle Calculation**
Alarm Content	High Cycle Calculation unsupported		
Possible Cause	1. PWM frequency set above 8000Hz, High Cycle Calculation unsupported		
Possible Solution	1. Set Pn-642 smaller than 8000Hz, or shut off High Cycle Calculation function (Pn-643=0 automatically once alarm is triggered).		

All in one ID **2nd Single Axis ID**	**AL-9A0**		
1st Single Axis ID	**-**	**Alarm Name**	**Over Travel**
Alarm Content	laser cruise mode, location is about to exceed travel limit		

Possible Cause	1. Cutting Head Exceeds Workpiece Range 2. Capacitive feedback abnormality 3. Improper setting of travel limit
Possible Solution	1. Raise the Z axis after not ready to cut, restart after replacing the workpiece 2. Strengthening anti-jamming 3. Adjust Controller Travel Limit Settings

8 AL-1xx Driver Alarm Description

All in one ID **2nd Single Axis ID**	**AL-024**		
1st Single Axis ID	**--**	**Alarm Name**	**Driver Internal Operation Error**
Alarm Content	An internal program error occurred in the driver.		
Possible Cause	An internal program error occurred in the driver.		
Possible Solution	Please contact distributor or Syntec representative.		
All in one ID **2nd Single Axis ID**	**AL-025**		
1st Single Axis ID	**--**	**Alarm Name**	**Driver Hardware Computation Failure**
Alarm Content	Driver Hardware Computation Overflow Or Underflow		
Possible Cause	Either overflow or underflow occurs by hardware computation		
Possible Solution	Please contact distributor or Syntec representative.		

All in one ID **2nd Single Axis ID**	**AL-100**		
1st Single Axis ID	**AL-10**	**Alarm Name**	**IGBT Overheat**
Alarm Content	Generation I single axis drive power module exceeds 90℃ IGBT temperature stays above 100℃		
Possible Cause	1. Cooling system failure 2. Drive output short-circuit 3. Ambient temperature overheat 4. Heat source nearby 5. Continuous use while exceeding drive's rated load		

Possible Solution	1. Check if fan is functioning normally. 2. Check drive's output wiring, refer to "Wiring and Signal" section of manual. 3. Check if ambient temperature is below 55℃, refer to "Transportation and Installation" section of manual. 4. Check environment, remove external heat source or enhance cooling capacity. 5. Check for motor overload or over current.

All in one ID **2nd Single Axis ID**	**AL-101**		
1st Single Axis ID	**AL-72**	**Alarm Name**	**Drive Overload**
Alarm Content	Drive senses power module overload		
Possible Cause	1. Overload during operation due to mechanical factors 2. Overload 3. Encoder or motor wiring error 4. Encoder failure 5. Current gain mismatch while running encoder test, magnetic encoder correction or induction motor parameter estimation		
Possible Solution	1. Eliminate mechanical factors. 2. Check if I_{dq} current feedback Pn-D30(D1-16) has been greater than the parameter Pn-651(P5-02), if so we suggest lowering motor load. 3. Refer to "Wiring and Signal" section of manual for cable re-connection. 4. Redo "Encoder test" and check for alarms, refer to "Auto tuning" section of manual. 5. Lower Tuning Gain (Pn-F2D/Fn-18) to 20, if problem doesn't improve, gradually tune drive parameter (Pn-F2D/Fn-18) to 5.		

All in one ID **2nd Single Axis ID**	**AL-110**		
1st Single Axis ID	**AL-12**	**Alarm Name**	**Critical Over Voltage**
Alarm Content	DC BUS voltage exceeds drive's protective level		
Possible Cause	1. Excess DC BUS voltage caused by braking resistor when motor slows 2. AC power input exceeds drive's rated input voltage 3. Drive hardware failure		

Possible Solution	1. Check regenerative resistor's specs, refer to "Wiring and Signals" section of manual. 2. Check if AC power supply is compatable with drive. 3. If the above two scenarios are ruled out, contact distributor or Syntec representative to check hardware.

All in one ID **2nd Single Axis ID**	**AL-111**		
1st Single Axis ID	**AL-13**	**Alarm Name**	**Low Voltage**
Alarm Content	Power supply voltage is lower than driver's rated input voltage		
Possible Cause	1. AC power supply is too low 2. Drive hardware failure		
Possible Solution	1. check if AC power supply matches drive specs. 2. If the above scenario is ruled out, contact distributor or Syntec representative to check hardware.		

All in one ID **2nd Single Axis ID**	**AL-112**		
1st Single Axis ID	**AL-2D**	**Alarm Name**	**Power Cable Disconnected**
Alarm Content	1. Power cable disconnection detected at motor non-zero speed 2. Drive's 3 phase voltage saturates for over 0.15 seconds (0.5 seconds in 1st Single Axis)		
Possible Cause	1. 3 phase power cables are loose 2. Abnormal incremental encoder feedback 3. Acceleration time is set too short 4. Drive is under voltage when doing Encoder-rotor Offset Calibration. 5. Drive hardware failure		
Possible Solution	1. Check UVW cables between motor and drive for damage or looseness. 2. Redo "Encoder test" and check for alarms (refer to "Auto tuning" section of manual), if this alarm goes off the cause may differ. 3. Increase Pn-307(P6-11) Maximum Jerk Time. 4. a. Please check select manual. Choose the drive with bigger source voltage(220V->380V). b. Lower the rated current and the rated torque to do Encoder-rotor Offset Calibration. Then, revert the value to original value. Notice: Because drive is under voltage, the torque may be small in high speed. 5. If the above scenarios are ruled out, contact distributor or Syntec representative to check hardware.		

All in one ID **2nd Single Axis ID**	**AL-113**		
1st Single Axis ID	--	**Alarm Name**	**Power Failure**
Alarm Content	Power supply phase failure		
Possible Cause	1. Drive cables are loose 2. Power supply failure 3. Drive hardware failure		
Possible Solution	1. Check RST cables for damage or looseness. 2. Check power source. 3. If the above scenarios are ruled out, contact distributor or Syntec representative to check hardware.		
Remark	From v2.8.6, the alarm is triggered only when Pn-804=1. From v2.10.1, v2.11.0, disable to detect this alarm.		

All in one ID **2nd Single Axis ID**	**AL-114**		
1st Single Axis ID		**Alarm Name**	**Severely Low Voltage**
Alarm Content	Power supply voltage is far lower than the protective level.		
Possible Cause	1. Power supply voltage is lower than the 40% normal level. 2. Drive hardware failure.		
Possible Solution	1. Ensure the DC bus voltage is stable when the driver is working. 2. If the above scenario is ruled out, please send back to Syntec.		

All in one ID **2nd Single Axis ID**	**AL-120**		
1st Single Axis ID	**~~AL-15~~**	**Alarm Name**	**Driver Over Current**
Alarm Content	Current feedback exceeds 150% of the drive's peak current		

Possible Cause	1. Overload 2. Encoder and/or motor cable assembly error 3. Encoder error 4. Current loop gain mismatch while Encoder test, Magnetic Pole Offset Tuning or Motor Parameter Estimation 5. Unbalanced motor 3 phase resistance 6. Power module failure
Possible Solution	1. Check if I_{dq} current feedback is greater than 150% drive's peak current. 2. Check encoder and motor U,V, W cables. Refer to "Wiring and signals" section of manual. 3. Redo "Encoder test" and check for alarms, refer to "Auto tuning" section of manual. 4. Use oscilloscope to check if current feedback fluctuate badly. Lower Tuning Gain (Pn-F2D) to 20. If the problem still persist, gradually decrease Drive parameter Pn-F2D to 5. 5. Check if motor 3 phase's resistances are equal. If not, this may indicate motor coil damage, which activates this alarm. Measure if UV, UW, VW resistances are equal (Not recommended when resistance to ground is infinite). 6. Turn off drive power and measure if P/N(+/-) and U/V/W are shorted. Short circuits indicate a broken transistor. Once certain of damage, contact distributor or Syntec representative to check hardware.
Detailed Instructions	AL-15 Issue Toubleshooting
备注	• Alarm is deleted for Single Axis version V1.6.6 and after. • Alarm is deleted for 4-in-1 version V2.2.0 and after. • Alarm is restored for 4-in-1 version V2.12.3 and after.

All in one ID **2nd Single Axis ID**	**--**		
1st Single Axis ID	**AL-17**	**Alarm Name**	**Auto Tuning Over Current**
Alarm Content	Alarm to prevent against current circuit malfunction		
Possible Cause	1. Turning Gain is too high 2. Drive's PM module error		
Possible Solution	1. Check if output current oscillates, lower Tuning Gain parameter Fn-18 to 20, if problem persists, lower gradually to 5. 2. contact distributor or Syntec representative to check hardware.		

All in one ID **2nd Single Axis ID**	**AL-121**		

1st Single Axis ID	AL-1A	Alarm Name	Power Module Over Current
Alarm Content	Drive detects excessive current on power module.		
Possible Cause	1. Internal motor UVW short or UVW to ground short 2. Wire UVW short or UVW to ground short 3. Drive connector UVW short or UVW to ground short 4. Motor is mechanically stuck which leads to abnormally heavy load to drive 5. Power module failure 6. Unbalanced motor 3 phase resistance 7. Current module becomes aged		
Possible Solution	1. Bad insulation in motor, replace motor 2. Wire short, replace wire 3. Drive failure, replace drive 4. Eliminate mechanical reason, increase acceleration time and jerk time, decrease load 5. Turn off drive power, remove motor and wire, measure if P/N(+/-) and U/V/W are shorted. Short circuits indicate a broken transistor. Once certain of damage, contact distributor or Syntec representative to check hardware. 6. Check if motor 3 phase's resistances are equal. If not, this may indicate motor coil damage, which activates this alarm. Measure if UV, UW, VW resistances are equal (Not recommended when resistance to ground is infinite). Or do the encoder function test to see the IA IB IC current feedback. 7. If rotation is below 100rpm, the drive still sends alarm. It means current module may become aged and is related to hardware life. Make sure the above seven are checked and no special historical alarms, turn off drive, remove the motor and wire then restart. Once certain of damage, contact distributor or Syntec representative to check hardware.		
All in one ID **2nd Single Axis ID**	**AL-122**		
1st Single Axis ID	**AL-1D**	**Alarm Name**	**Hall sensor error 1**
Alarm Content	Hall Current Sensor(IA) failure		
Possible Cause	1. U phase current senses loop failure		
Possible Solution	1. Contact distributor or Syntec representative to check hardware.		
All in one ID **2nd Single Axis ID**	**AL-123**		

1st Single Axis ID	AL-1E	Alarm Name	Hall sensor error 2
Alarm Content	Hall Current Sensor(IB) failure		
Possible Cause	1. V phase current senses loop failure		
Possible Solution	1. Contact distributor or Syntec representative to check hardware.		

All in one ID 2nd Single Axis ID	AL-124		
1st Single Axis ID	**--**	**Alarm Name**	**Power Module Over Current 2**
Alarm Content	Drive detects excessive current on power module.		
Possible Cause	1. Overload 2. Encoder and/or motor wiring error 3. Encoder malfunction 4. Unbalanced motor 3 phase resistance 5. Power module failure		
Possible Solution	1. Check if I_{dq} current feedback exceeds drive's peak current. 2. Check encoder and motor U,V, W cables. Refer to "Wiring and signals" section of manual. 3. Redo "Encoder test" and check for alarms, refer to "Auto tuning" section of manual. 4. Check if motor 3 phase's resistances are equal. If not, this may indicate motor coil damage, which activates this alarm. Measure if UV, UW, VW resistances are equal (Not recommended when resistance to ground is infinite). 5. Turn off drive power and measure if P/N(+/-) and U/V/W are shorted. Short circuits indicate a broken transistor. Once certain of damage, contact distributor or Syntec representative to check hardware.		

All in one ID 2nd Single Axis ID	AL-129		
1st Single Axis ID		**Alarm Name**	**This axis is not supported by this driver type**
Alarm Content	This axis is not supported.		
Possible Cause	This axis is not supported, and the axis card port number in controller setting interface is wrong.		

Possible Solution	Close the communication of this axis. Follow the CNC controller manual and set the axis card port number correctly.

All in one ID **2nd Single Axis ID**	**AL-130**		
1st Single Axis ID	**AL-21**	**Alarm Name**	**Regenerative resistance error**
Alarm Content	Triggered when power stage reports abnormality.		
Possible Cause	1. Switching transistor of regenerator is failure.		
Possible Solution	1. Check if transistor of regenerator is shorted, if so, send back to distributor or Syntec representative for hardware repair.		

All in one ID **2nd Single Axis ID**	**AL-131**		
1st Single Axis ID	**AL-22**	**Alarm Name**	**Cooling Fan error**
Alarm Content	Triggered when power stage reports abnormality.		
Possible Cause	1. Cooling fan is malfunction or failure.		
Possible Solution	1. Check If cooling fan is damage, if so, send back to distributor or Syntec representative for hardware repair.		

All in one ID **2nd Single Axis ID**	**AL-132**		
1st Single Axis ID	**AL-2E**	**Alarm Name**	**Control Board Error**
Alarm Content	Triggered when drive's control board has internal communication error.		
Possible Cause	1. Control board is failure.		
Possible Solution	1. Send back to distributor or Syntec representative for hardware repair.		

All in one ID **2nd Single Axis ID**	**AL-133**		

1st Single Axis ID	AL-53	Alarm Name	Inverter Type Error
Alarm Content	**1st Single Axis:** Triggered when power stage parameters and the parameter, which is detected from power stage, is mismatch. **All in one/2nd Single Axis:** Triggered while accessing power stage information.		
Possible Cause	**1st Single Axis:** 1. Control board is incompatible with Power Stage ID(P5-07) 2. Parameter Power Stage ID(P5-07) setting error **All in one/2nd Single Axis:** 1. Triggered when power stage information stored on power stage cannot be read. 2. Triggered when the number of detected current sensors is abnormal. 3. The inverter informations of current sensor is wrong		
Possible Solution	1. Send back to distributor or Syntec representative for hardware repair. 2. 1st Single Axis: a. Change the value of Power Stage ID(P5-07) to Power Stage ID read(D1-70) if not consistent b. If Power Stage ID read(D1-70) is equal to zero, please send back to Syntec Corp.		

All in one ID 2nd Single Axis ID	AL-134		
1st Single Axis ID	**-----**	**Alarm Name**	**FRAM Operating Fail**
Alarm Content	Error occur when drive operate FRAM.		
Possible Cause	1. Save parameters while power is off. 2. Communication between drive and FRAM is disturbed. 3. FRAM reached it's maximum write limit.		
Possible Solution	1. Please save parameters while power is on. 2. If this is a recurring event, send back to distributor or Syntec representative for hardware repair.		

All in one ID 2nd Single Axis ID	AL-135		
1st Single Axis ID	**AL-18**	**Alarm Name**	**DSP Watchdog Reset**
Alarm Content	Drive DSP detects internal watchdog reset.		
Possible Cause	1. System operation is malfunction.		

Possible Solution	1. Send back to distributor or Syntec representative for hardware repair.		
All in one ID **2nd Single Axis ID**	**AL-136**		
1st Single Axis ID	**-----**	**Alarm Name**	**FRAM CRC Error**
Alarm Content	FRAM data is error.		
Possible Cause	1. The memory of parameters is damaged.		
Possible Solution	1. Check if parameters have been tampered with. Correct parameters and save. 2. If this is a recurring event, send back to distributor or Syntec representative for hardware repair.		

All in one ID **2nd Single Axis ID**	**AL-137**		
1st Single Axis ID	**-**	**Alarm Name**	**Calculation sequencal error**
Alarm Content	Insufficient calculation time.		
Possible Cause	1. Insufficient calculation time		
Possible Solution	1. Disable unnecessary functions. 2. Decrease Pn-643 High Cyclc Calculation Level.		

All in one ID **2nd Single Axis ID**	**AL-138**		
1st Single Axis ID	**-**	**Alarm Name**	**Parameters saving failed in permanent memory**
Alarm Content	There were some errors in permanent memory. It has been recovered by earlier parameter settings.		
Possible Cause	1. Parameters saving failed in permanent memory because of noise. It has been recovered by earlier parameter settings. Please check parameter settings.		
Possible Solution	1. Please set correct parameters or using earlier settings. Do alarm reset to clear alarm.		

All in one ID **2nd Single Axis ID**	**AL-139**		
1st Single Axis ID	**-**	**Alarm Name**	**PowerStage Error**
Alarm Content	PowerStage Detects Error		
Possible Cause	1. Drive detects excessive current or over heat on power module		
Possible Solution	1. Follow the instruction if any alarm shows up		

All in one ID **2nd Single 轴向轴向 ID**	**AL-13A**		
1st Single 轴向轴向 ID	**-**	**Alarm Name**	**Module ID Data Error**
Alarm Content	Reading module ID data error		
Possible Cause	1. Module ID data error causing by memory ageing or communication interfered. 2. Any of module number, extend card number, add-on card number is over range.		
Possible Solution	1. Check wiring, especially if shielding is connected to ground correctly. Then reboot the drive. 2. Check the drive, IO extend card, and add-on card are official version. 3. Send back to Syntec.		

All in one ID **2nd Single Axis ID**	**AL-13B**		
1st Single Axis ID	**-**	**Alarm Name**	**RTD Add-on Card SSI Communication Error**
Alarm Content	RTD add-on card SSI communication error		
Possible Cause	1. RTD add-on card loose or not connected. 2. FPGA version not support RTD function. 3. SPI communication error causing by memory ageing or communication interfered.		

Possible Solution	1. Check RTD add-on card connected correctly. 2. Make sure the FPGA version is v2.14.3 or up. If not, update Drive version to v2.14.105 or up. 3. If don't need to use RTD function, please set Pn-548~Pn-54A and Pn-752 to 0. Then reboot the drive. 4. Check wiring, especially if shielding is connected to ground correctly. Then reboot the drive. 5. Send back to Syntec.

All in one ID **2nd Single Axis ID**	**AL-13C**		
1st Single Axis ID	**-**	**Alarm Name**	**Front Stage Information Error**
Alarm Content	Error occurs while accessing front stage informations		
Possible Cause	The front stage informations can not be read correctly		
Possible Solution	Send back to Syntec		

All in one ID **2nd Single Axis ID**	**AL-150**		
1st Single Axis ID	**-**	**Alarm Name**	**Extreme Regenerative Overload**
Alarm Content	The accumulated heat energy of internal or external regenerative resistor is twice higher than heat dissipation threshold. Regenerative resistor may be damaged.		
Possible Cause	1. When using external resistor, Pn-647、Pn-648 is not set properly. 2. The selection or cooling condition of external regenerative resistor needs to be rechecked. 3. When using internal resistor, Pn-647、Pn-648 is not set to 0. 4. When using internal resistor, the frequency of motor acceleration/ deceleration is too high or too intense. 5. Regenerative resistor protection is not turned-off.		
Possible Solution	1. When using external resistor, please check if Pn-647、Pn-648 is set correctly. 2. When using external resistor and parameters are set correctly, please recheck the selection or cooling condition of resistor. 3. When using internal resistor, please check if Pn-647 and Pn-648 are set to 0. 4. When using internal resistor and parameters are set correctly, please decrease the frequency of motor acceleration/deceleration or increase the value of Pn-306、Pn-307. If the alarm is raised consistently, please consider using an external resistor. 5. If regenerative resistor protection is not required, please set Pn-649 to 0.		

All in one ID 2nd Single Axis ID	AL-151		
1st Single Axis ID	-	Alarm Name	Regenerative Instant Overload
Alarm Content	When using internal resistor, the regenerator is turned-on for too long.		
Possible Cause	1. Check if there is an external negative load applied on motor. 2. The resistance of internal resistor is too large.		
Possible Solution	1. Remove the external negative load. 2. Use an external resistor with smaller resistance.		

8.1 AL-17 Auto Tuning Over Current

All in one ID 2nd Single Axis ID	--		
1st Single Axis ID	AL-17	Alarm Name	Auto Tuning Over Current
Alarm Content	Alarm to prevent against current circuit malfunction		
Possible Cause	1. Turning Gain is too high 2. Drive's PM module error		
Possible Solution	1. Check if output current oscillates, lower Tuning Gain parameter Fn-18 to 20, if problem persists, lower gradually to 5. 2. contact distributor or Syntec representative to check hardware.		

8.2 AL-024 Driver Internal Operation Error

All in one ID 2nd Single Axis ID	AL-024		
1st Single Axis ID	--	Alarm Name	Driver Internal Operation Error
Alarm Content	An internal program error occurred in the driver.		
Possible Cause	An internal program error occurred in the driver.		
Possible Solution	Please contact distributor or Syntec representative.		

8.3 AL-100 IGBT Overheat

All in one ID 2nd Single Axis ID	AL-100		
1st Single Axis ID	**AL-10**	**Alarm Name**	**IGBT Overheat**
Alarm Content	Generation I single axis drive power module exceeds 90℃ IGBT temperature stays above 100℃		
Possible Cause	1. Cooling system failure 2. Drive output short-circuit 3. Ambient temperature overheat 4. Heat source nearby 5. Continuous use while exceeding drive's rated load		
Possible Solution	1. Check if fan is functioning normally. 2. Check drive's output wiring, refer to "Wiring and Signal" section of manual. 3. Check if ambient temperature is below 55℃, refer to "Transportation and Installation" section of manual. 4. Check environment, remove external heat source or enhance cooling capacity. 5. Check for motor overload or over current.		

8.4 AL-101 Drive Overload

All in one ID 2nd Single Axis ID	AL-101		
1st Single Axis ID	**AL-72**	**Alarm Name**	**Drive Overload**
Alarm Content	Drive senses power module overload		
Possible Cause	1. Overload during operation due to mechanical factors 2. Overload 3. Encoder or motor wiring error 4. Encoder failure 5. Current gain mismatch while running encoder test, magnetic encoder correction or induction motor parameter estimation		

Possible Solution	1. Eliminate mechanical factors. 2. Check if I_{dq} current feedback Pn-D30(D1-16) has been greater than the parameter Pn-651(P5-02), if so we suggest lowering motor load. 3. Refer to "Wiring and Signal" section of manual for cable re-connection. 4. Redo "Encoder test" and check for alarms, refer to "Auto tuning" section of manual. 5. Lower Tuning Gain (Pn-F2D/Fn-18) to 20, if problem doesn't improve, gradually tune drive parameter (Pn-F2D/Fn-18) to 5.

8.5 AL-110 Critical Over Voltage

All in one ID **2nd Single Axis ID**	**AL-110**		
1st Single Axis ID	**AL-12**	**Alarm Name**	**Critical Over Voltage**
Alarm Content	DC BUS voltage exceeds drive's protective level		
Possible Cause	1. Excess DC BUS voltage caused by braking resistor when motor slows 2. AC power input exceeds drive's rated input voltage 3. Drive hardware failure		
Possible Solution	1. Check regenerative resistor's specs, refer to "Wiring and Signals" section of manual. 2. Check if AC power supply is compatable with drive. 3. If the above two scenarios are ruled out, contact distributor or Syntec representative to check hardware.		

8.6 AL-111 Low Voltage

All in one ID **2nd Single Axis ID**	**AL-111**		
1st Single Axis ID	**AL-13**	**Alarm Name**	**Low Voltage**
Alarm Content	Power supply voltage is lower than driver's rated input voltage		
Possible Cause	1. AC power supply is too low 2. Drive hardware failure		
Possible Solution	1. check if AC power supply matches drive specs. 2. If the above scenario is ruled out, contact distributor or Syntec representative to check hardware.		

8.7 AL-112 Power Cable Disconnected

All in one ID 2nd Single Axis ID	AL-112		
1st Single Axis ID	**AL-2D**	**Alarm Name**	**Power Cable Disconnected**
Alarm Content	1. Power cable disconnection detected at motor non-zero speed 2. Drive's 3 phase voltage saturates for over 0.15 seconds (0.5 seconds in 1st Single Axis)		
Possible Cause	1. 3 phase power cables are loose 2. Abnormal incremental encoder feedback 3. Acceleration time is set too short 4. Drive is under voltage when doing Encoder-rotor Offset Calibration. 5. Drive hardware failure		
Possible Solution	1. Check UVW cables between motor and drive for damage or looseness. 2. Redo "Encoder test" and check for alarms (refer to "Auto tuning" section of manual), if this alarm goes off the cause may differ. 3. Increase Pn-307(P6-11) Maximum Jerk Time. 4. a. Please check select manual. Choose the drive with bigger source voltage(220V->380V). b. Lower the rated current and the rated torque to do Encoder-rotor Offset Calibration. Then, revert the value to original value. Notice: Because drive is under voltage, the torque may be small in high speed. 5. If the above scenarios are ruled out, contact distributor or Syntec representative to check hardware.		

8.8 AL-113 Power Failure

All in one ID 2nd Single Axis ID	AL-113		
1st Single Axis ID	--	**Alarm Name**	**Power Failure**
Alarm Content	Power supply phase failure		
Possible Cause	1. Drive cables are loose 2. Power supply failure 3. Drive hardware failure		
Possible Solution	1. Check RST cables for damage or looseness. 2. Check power source. 3. If the above scenarios are ruled out, contact distributor or Syntec representative to check hardware.		

Remark	From v2.8.6, the alarm is triggered only when Pn-804=1. From v2.10.1, v2.11.0, disable to detect this alarm.

8.9 AL-114 Severely Low Voltage

All in one ID **2nd Single Axis ID**	**AL-114**		
1st Single Axis ID		**Alarm Name**	**Severely Low Voltage**
Alarm Content	Power supply voltage is far lower than the protective level.		
Possible Cause	1. Power supply voltage is lower than the 40% normal level. 2. Drive hardware failure.		
Possible Solution	1. Ensure the DC bus voltage is stable when the driver is working. 2. If the above scenario is ruled out, please send back to Syntec.		

8.10 AL-120 Driver Over Current

All in one ID **2nd Single Axis ID**	**AL-120**		
1st Single Axis ID	~~**AL-15**~~	**Alarm Name**	**Driver Over Current**
Alarm Content	Current feedback exceeds 150% of the drive's peak current		
Possible Cause	1. Overload 2. Encoder and/or motor cable assembly error 3. Encoder error 4. Current loop gain mismatch while Encoder test, Magnetic Pole Offset Tuning or Motor Parameter Estimation 5. Unbalanced motor 3 phase resistance 6. Power module failure		

Possible Solution	1. Check if I_{dq} current feedback is greater than 150% drive's peak current. 2. Check encoder and motor U,V, W cables. Refer to "Wiring and signals" section of manual. 3. Redo "Encoder test" and check for alarms, refer to "Auto tuning" section of manual. 4. Use oscilloscope to check if current feedback fluctuate badly. Lower Tuning Gain (Pn-F2D) to 20. If the problem still persist, gradually decrease Drive parameter Pn-F2D to 5. 5. Check if motor 3 phase's resistances are equal. If not, this may indicate motor coil damage, which activates this alarm. Measure if UV, UW, VW resistances are equal (Not recommended when resistance to ground is infinite). 6. Turn off drive power and measure if P/N(+/-) and U/V/W are shorted. Short circuits indicate a broken transistor. Once certain of damage, contact distributor or Syntec representative to check hardware.
Detailed Instructions	AL-15 Issue Toubleshooting
备注	• Alarm is deleted for Single Axis version V1.6.6 and after. • Alarm is deleted for 4-in-1 version V2.2.0 and after. • Alarm is restored for 4-in-1 version V2.12.3 and after.

8.11 AL-121 Power Module Over Current

All in one ID **2nd Single Axis ID**	**AL-121**		
1st Single Axis ID	**AL-1A**	**Alarm Name**	**Power Module Over Current**
Alarm Content	Drive detects excessive current on power module.		
Possible Cause	1. Internal motor UVW short or UVW to ground short 2. Wire UVW short or UVW to ground short 3. Drive connector UVW short or UVW to ground short 4. Motor is mechanically stuck which leads to abnormally heavy load to drive 5. Power module failure 6. Unbalanced motor 3 phase resistance 7. Current module becomes aged		

Possible Solution	1. Bad insulation in motor, replace motor 2. Wire short, replace wire 3. Drive failure, replace drive 4. Eliminate mechanical reason, increase acceleration time and jerk time, decrease load 5. Turn off drive power, remove motor and wire, measure if P/N(+/-) and U/V/W are shorted. Short circuits indicate a broken transistor. Once certain of damage, contact distributor or Syntec representative to check hardware. 6. Check if motor 3 phase's resistances are equal. If not, this may indicate motor coil damage, which activates this alarm. Measure if UV, UW, VW resistances are equal (Not recommended when resistance to ground is infinite). Or do the encoder function test to see the IA IB IC current feedback. 7. If rotation is below 100rpm, the drive still sends alarm. It means current module may become aged and is related to hardware life. Make sure the above seven are checked and no special historical alarms, turn off drive, remove the motor and wire then restart. Once certain of damage, contact distributor or Syntec representative to check hardware.

8.12 AL-122 Hall sensor error 1

All in one ID **2nd Single Axis ID**	**AL-122**		
1st Single Axis ID	**AL-1D**	**Alarm Name**	**Hall sensor error 1**
Alarm Content	Hall Current Sensor(IA) failure		
Possible Cause	1. U phase current senses loop failure		
Possible Solution	1. Contact distributor or Syntec representative to check hardware.		

8.13 AL-123 Hall sensor error 2

All in one ID **2nd Single Axis ID**	**AL-123**		
1st Single Axis ID	**AL-1E**	**Alarm Name**	**Hall sensor error 2**
Alarm Content	Hall Current Sensor(IB) failure		

Possible Cause	1. V phase current senses loop failure
Possible Solution	1. Contact distributor or Syntec representative to check hardware.

8.14 AL-124 Power Module Over Current 2

All in one ID **2nd Single Axis ID**	**AL-124**		
1st Single Axis ID	**--**	**Alarm Name**	**Power Module Over Current 2**
Alarm Content	Drive detects excessive current on power module.		
Possible Cause	1. Overload 2. Encoder and/or motor wiring error 3. Encoder malfunction 4. Unbalanced motor 3 phase resistance 5. Power module failure		
Possible Solution	1. Check if I_{dq} current feedback exceeds drive's peak current. 2. Check encoder and motor U,V, W cables. Refer to "Wiring and signals" section of manual. 3. Redo "Encoder test" and check for alarms, refer to "Auto tuning" section of manual. 4. Check if motor 3 phase's resistances are equal. If not, this may indicate motor coil damage, which activates this alarm. Measure if UV, UW, VW resistances are equal (Not recommended when resistance to ground is infinite). 5. Turn off drive power and measure if P/N(+/-) and U/V/W are shorted. Short circuits indicate a broken transistor. Once certain of damage, contact distributor or Syntec representative to check hardware.		

8.15 AL-129 This axis is not supported by this driver type

All in one ID **2nd Single Axis ID**	**AL-129**		
1st Single Axis ID		**Alarm Name**	**This axis is not supported by this driver type**
Alarm Content	This axis is not supported.		
Possible Cause	This axis is not supported, and the axis card port number in controller setting interface is wrong.		

Possible Solution	Close the communication of this axis. Follow the CNC controller manual and set the axis card port number correctly.

8.16 AL-130 Regenerative resistance error

All in one ID **2nd Single Axis ID**	**AL-130**		
1st Single Axis ID	**AL-21**	**Alarm Name**	**Regenerative resistance error**
Alarm Content	Triggered when power stage reports abnormality.		
Possible Cause	1. Switching transistor of regenerator is failure.		
Possible Solution	1. Check if transistor of regenerator is shorted, if so, send back to distributor or Syntec representative for hardware repair.		

8.17 AL-131 Cooling Fan error

All in one ID **2nd Single Axis ID**	**AL-131**		
1st Single Axis ID	**AL-22**	**Alarm Name**	**Cooling Fan error**
Alarm Content	Triggered when power stage reports abnormality.		
Possible Cause	1. Cooling fan is malfunction or failure.		
Possible Solution	1. Check If cooling fan is damage, if so, send back to distributor or Syntec representative for hardware repair.		

8.18 AL-132 Control Board Error

All in one ID **2nd Single Axis ID**	**AL-132**		
1st Single Axis ID	**AL-2E**	**Alarm Name**	**Control Board Error**
Alarm Content	Triggered when drive's control board has internal communication error.		

Possible Cause	1. Control board is failure.
Possible Solution	1. Send back to distributor or Syntec representative for hardware repair.

8.19 AL-133 Inverter Type Error

All in one ID **2nd Single Axis ID**	**AL-133**		
1st Single Axis ID	**AL-53**	**Alarm Name**	**Inverter Type Error**
Alarm Content	**1st Single Axis:** Triggered when power stage parameters and the parameter, which is detected from power stage, is mismatch. **All in one/2nd Single Axis:** Triggered while accessing power stage information.		
Possible Cause	**1st Single Axis:** 1. Control board is incompatible with Power Stage ID(P5-07) 2. Parameter Power Stage ID(P5-07) setting error **All in one/2nd Single Axis:** 1. Triggered when power stage information stored on power stage cannot be read. 2. Triggered when the number of detected current sensors is abnormal. 3. The inverter informations of current sensor is wrong		
Possible Solution	1. Send back to distributor or Syntec representative for hardware repair. 2. 1st Single Axis: a. Change the value of Power Stage ID(P5-07) to Power Stage ID read(D1-70) if not consistent b. If Power Stage ID read(D1-70) is equal to zero, please send back to Syntec Corp.		

8.20 AL-134 FRAM Operating Fail

All in one ID **2nd Single Axis ID**	**AL-134**		
1st Single Axis ID	**-----**	**Alarm Name**	**FRAM Operating Fail**
Alarm Content	Error occur when drive operate FRAM.		
Possible Cause	1. Save parameters while power is off. 2. Communication between drive and FRAM is disturbed. 3. FRAM reached it's maximum write limit.		

Possible Solution	1. Please save parameters while power is on. 2. If this is a recurring event, send back to distributor or Syntec representative for hardware repair.

8.21 AL-135 DSP Watchdog Reset

All in one ID **2nd Single Axis ID**	**AL-135**		
1st Single Axis ID	**AL-18**	**Alarm Name**	**DSP Watchdog Reset**
Alarm Content	Drive DSP detects internal watchdog reset.		
Possible Cause	1. System operation is malfunction.		
Possible Solution	1. Send back to distributor or Syntec representative for hardware repair.		

8.22 AL-136 FRAM CRC Error

All in one ID **2nd Single Axis ID**	**AL-136**		
1st Single Axis ID	**-----**	**Alarm Name**	**FRAM CRC Error**
Alarm Content	FRAM data is error.		
Possible Cause	1. The memory of parameters is damaged.		
Possible Solution	1. Check if parameters have been tampered with. Correct parameters and save. 2. If this is a recurring event, send back to distributor or Syntec representative for hardware repair.		

8.23 AL-137 Calculation sequencal error

All in one ID **2nd Single Axis ID**	**AL-137**		
1st Single Axis ID	**-**	**Alarm Name**	**Calculation sequencal error**
Alarm Content	Insufficient calculation time.		

Possible Cause	1. Insufficient calculation time
Possible Solution	1. Disable unnecessary functions. 2. Decrease Pn-643 High Cyclc Calculation Level.

8.24 AL-138 Parameters saving failed in permanent memory

All in one ID **2nd Single Axis ID**	**AL-138**		
1st Single Axis ID	**-**	**Alarm Name**	**Parameters saving failed in permanent memory**
Alarm Content	There were some errors in permanent memory. It has been recovered by earlier parameter settings.		
Possible Cause	1. Parameters saving failed in permanent memory because of noise. It has been recovered by earlier parameter settings. Please check parameter settings.		
Possible Solution	1. Please set correct parameters or using earlier settings. Do alarm reset to clear alarm.		

8.25 AL-139 PowerStage Error

All in one ID **2nd Single Axis ID**	**AL-139**		
1st Single Axis ID	**-**	**Alarm Name**	**PowerStage Error**
Alarm Content	PowerStage Detects Error		
Possible Cause	1. Drive detects excessive current or over heat on power module		
Possible Solution	1. Follow the instruction if any alarm shows up		

8.26 AL-13A Module ID Data Error

All in one ID **2nd Single 轴向轴向 ID**	**AL-13A**		
1st Single 轴向轴向 ID	**-**	**Alarm Name**	**Module ID Data Error**

Alarm Content	Reading module ID data error
Possible Cause	1. Module ID data error causing by memory ageing or communication interfered. 2. Any of module number, extend card number, add-on card number is over range.
Possible Solution	1. Check wiring, especially if shielding is connected to ground correctly. Then reboot the drive. 2. Check the drive, IO extend card, and add-on card are official version. 3. Send back to Syntec.

8.27 AL-13B RTD Add-on Card SSI Communication Error

All in one ID **2nd Single Axis ID**	**AL-13B**		
1st Single Axis ID	**-**	**Alarm Name**	**RTD Add-on Card SSI Communication Error**
Alarm Content	RTD add-on card SSI communication error		
Possible Cause	1. RTD add-on card loose or not connected. 2. FPGA version not support RTD function. 3. SPI communication error causing by memory ageing or communication interfered.		
Possible Solution	1. Check RTD add-on card connected correctly. 2. Make sure the FPGA version is v2.14.3 or up. If not, update Drive version to v2.14.105 or up. 3. If don't need to use RTD function, please set Pn-548~Pn-54A and Pn-752 to 0. Then reboot the drive. 4. Check wiring, especially if shielding is connected to ground correctly. Then reboot the drive. 5. Send back to Syntec.		

8.28 AL-13C Front Stage Information Error

All in one ID **2nd Single Axis ID**	**AL-13C**		
1st Single Axis ID	**-**	**Alarm Name**	**Front Stage Information Error**
Alarm Content	Error occurs while accessing front stage informations		

Possible Cause	The front stage informations can not be read correctly
Possible Solution	Send back to Syntec

8.29 AL-150 Extreme Regenerative Overload

All in one ID **2nd Single Axis ID**	**AL-150**		
1st Single Axis ID	**-**	**Alarm Name**	**Extreme Regenerative Overload**
Alarm Content	The accumulated heat energy of internal or external regenerative resistor is twice higher than heat dissipation threshold. Regenerative resistor may be damaged.		
Possible Cause	1. When using external resistor, Pn-647、Pn-648 is not set properly. 2. The selection or cooling condition of external regenerative resistor needs to be rechecked. 3. When using internal resistor, Pn-647、Pn-648 is not set to 0. 4. When using internal resistor, the frequency of motor acceleration/ deceleration is too high or too intense. 5. Regenerative resistor protection is not turned-off.		
Possible Solution	1. When using external resistor, please check if Pn-647、Pn-648 is set correctly. 2. When using external resistor and parameters are set correctly, please recheck the selection or cooling condition of resistor. 3. When using internal resistor, please check if Pn-647 and Pn-648 are set to 0. 4. When using internal resistor and parameters are set correctly, please decrease the frequency of motor acceleration/deceleration or increase the value of Pn-306、Pn-307. If the alarm is raised consistently, please consider using an external resistor. 5. If regenerative resistor protection is not required, please set Pn-649 to 0.		

8.30 AL-151 Regenerative Instant Overload

All in one ID **2nd Single Axis ID**	**AL-151**		
1st Single Axis ID	**-**	**Alarm Name**	**Regenerative Instant Overload**
Alarm Content	When using internal resistor, the regenerator is turned-on for too long.		
Possible Cause	1. Check if there is an external negative load applied on motor. 2. The resistance of internal resistor is too large.		

Possible Solution	1. Remove the external negative load. 2. Use an external resistor with smaller resistance.

8.31 AL-025 Driver Hardware Computation Failure

All in one ID **2nd Single Axis ID**	**AL-025**		
1st Single Axis ID	**--**	**Alarm Name**	**Driver Hardware Computation Failure**
Alarm Content	Driver Hardware Computation Overflow Or Underflow		
Possible Cause	Either overflow or underflow occurs by hardware computation		
Possible Solution	Please contact distributor or Syntec representative.		

9 AL-2xx Motor Alarm Description

All in one ID **2nd Single Axis ID**	**AL-200**		
1st Single Axis ID	**AL-11**	**Alarm Name**	**Motor Overheat**
Alarm Content	Drive detects motor overheat.		
Possible Cause	1. Motor cooling system malfunction 2. Digital temperature sensor setting error 3. KTY84 thermal sensor setting error 4. Motor rated current setting error 5. Insufficient acceleration time 6. Overload		
Possible Solution	1. Check motor cooling system. 2. Correct parameter Pn-50A(P1-40) to Pn-50F(P1-61) according to digital temperature feedback(A or B). 3. Check if KTY84 is wired properly and if parameters P1-30 and Pn1-31 are set correctly. PS: Only 1st Single Axis have this solution. 4. Check rated current parameter Pn-710(P3-14). 5. Check acceleration parameter Pn-306(P6-10) , add acceleration/ deceleration time. 6. Check if load rate Pn-D2A(D1-10) is over 100%, consider switching to a motor with higher power.		
Detailed Instructions	AL-11 Issue Trouble Shooting		
All in one ID **2nd Single Axis ID**	**AL-201**		
1st Single Axis ID	**AL-14**	**Alarm Name**	**Motor Over Speed**
Alarm Content	Motor speed is above 120% of it's maximum speed.		
Possible Cause	1. Motor power cable U,V,W phase order incorrect 2. Encoder malfunction 3. Motor parameter loading error 4. Sever system severe overshoot 5. Severe speed command change 6. Drive software outdated 7. Encoder misses packets causing acceleration to be too great		

Possible Solution	1. Execute " Encoder test ", check if alarm AL-302(AL-24) appears. Refer to "Auto tuning" section of manual. Execute " Encoder test ", check if any alarms appear. Refer to "Auto tuning" section of manual. a. Correct power cord phase order or change parameter Pn-021(P3-22)(0 to 1 and 1 to 0). b. Once certain polarity is correct, please cosider the following causes of this alarm. 2. Check whether drive parameter Pn-7XX match motor lable parameter.If there is a mismatch between motor parameters and those on the lable, please record the motor modle and contactSuzhou or Taiwan Technical Center(Syntec) for correct motor parameters and load them. 3. If vibration of the machine can be observed, tune gain parameters Pn-100 to Pn-102(P2-01 to P2-03). 4. Check if controller's commands shift too frequently, increase controller's acceleration and deceleration time constant. 5. We have corrected drive alarm specs, please upgrade to versions 2.0.25(1.4.12). 6. Capture JOG speed wave form and observe if speed change is not continuous.Check inside the junction box where the encoder is attached, make sure the shielding wire is connected to the motor's ground wire.Observe whether there is value Pn-D73~Pn-D76 (D1-28,D1-29,D1-46,D1-47).
Detailed Instructions	AL-14 Issue Trouble Shooting

All in one ID **2nd Single Axis ID**	**AL-202**		
1st Single Axis ID	**AL-16**	**Alarm Name**	**Overload**
Alarm Content	Motor exceeds S2(short time duty) time limit.		
Possible Cause	1. Motor is stuck due to mechanical factors, leading to overload during operation 2. Continuous operation while exceeding drive's rated current 3. Encoder or motor wiring error 4. Encoder malfunction		

Possible Solution	1. Check if difference between command and motor speed feedback is too great. 2.1 Check if load rate is over 100%, enhance motor capacity, lower motor load or increase acceleration/ deceleration time constant. 2.2. Refer to motor specification to correctly set Pn-72A(P4-50) values. Increase allowed overload time limit so the alarm doesn't frequently go off when limit standards are too high.Refer to motor specification to correctly set Pn-72A(P4-50) values. Increase allowed overload time limit so the alarm doesn't frequently go off when limit standards are too high. 3.Check wiring between encoder and U,V,W cables, refer to "Wiring and Signal" section of manual. 4.Execute "Encoder test" and check for alarms, refer to "Auto tuning" section of manual.

All in one ID **2nd Single Axis ID**	**AL-203**		
1st Single Axis ID	**AL-31**	**Alarm Name**	**Over Torque 1**
Alarm Content	Motor torque exceeds torque level 1 countinuously for over torque check time 1.		
Possible Cause	1. Motor is stuck due to machanical factors, leading to overload during operation 2. Encoder or motor wiring error 3. Encoder malfunction		
Possible Solution	1. Check if difference between command and motor speed feedback is too great. 2. Check wiring between encoder and U,V,W cables, refer to "Wiring and Signal" section of manual. 3. Execute "Encoder test" and check for alarms, refer to "Auto tuning" section of manual.		

All in one ID **2nd Single Axis ID**	**AL-204**		
1st Single Axis ID	**AL-32**	**Alarm Name**	**Over Torque 2**
Alarm Content	Motor torque exceeds torque level 2 countinuously for over torque check time 2		
Possible Cause	1. Motor is stuck due to machanical factors, leading to overload during operation 2. Encoder or motor wiring error 3. Encoder malfunction		

Possible Solution	1. Check if difference between command and motor speed feedback is too great. 2. Check wiring between encoder and U,V,W cables, refer to "Wiring and Signal" section of manual. 3. Execute "Encoder test" and check for alarms, refer to "Auto tuning" section of manual.

All in one ID **2nd Single Axis ID**	**AL-210**		
1st Single Axis ID	**AL-26**	**Alarm Name**	**Motor Pole Number Error**
Alarm Content	Triggered when motor pole number or encoder pole pair number and parameter settings are mismatched		
Possible Cause	1. Motor pole number setup error 2. Encoder pole pair number setup error		
Possible Solution	1. Check if value of parameter Pn-701(P3-01) equals pole number on lable. 2. Check if value of parameter Pn-90A(P3-30) setup correct.		

All in one ID **2nd Single Axis ID**	**AL-230**		
1st Single Axis ID	**AL-77**	**Alarm Name**	**Rotor Position Error**
Alarm Content	Torque integral direction and acceleration direction are inconsistent		
Possible Cause	1. Encoder polarity error 2. Encoder-rotor pole offset error 3. Pn-502 is set too low 4. Motor vibration while servo on, speed feedback is above Pn-502		
Possible Solution	1. Redo "Encoder test" 2. Redo encoder-rotor offset tuning 3. Pn-502 should be set between 5~25RPM(mm/sec) 4. Tune motor or set lower speed loop gain Pn-100(P2-02) and position loop gain Pn102(P2-01).		
Remark	• Alarm threshold can be adjusted via Pn-502 (Zero speed check window) for 4-in1 version V2.4.6 and after. • When linear motor monitors the initial signal of the encoder, it may cause motor goes out of control. Re-boot the power can solve the problem.		

All in one ID 2nd Single Axis ID	AL-231		
1st Single Axis ID	-	Alarm Name	Command Direction Not Allowed
Alarm Content	Command direction is not corresponding to Pn-504 configuration		
Possible Cause	1. Executed moving direction is not allowable 2. Pn-242 Posing Type configuration is not corresponding to Pn-504 Moving Direction Limit Selection 3. Host command polarity wrong set		
Possible Solution	1. Check if Pn-504 setting conflicts with moving direction. Please look up specification of Pn-504 2. Reset Pn-504 or check moving direction while running 3. Check if Pn-242 setting conflicts with Pn-504 4. Modify Pn-242 according to Pn-504. Please look up specification of Pn-242 5. Check Pn-020 and command polarity in controller. If the set is wrong, please modify it.		

All in one ID 2nd Single Axis ID	AL-235		
1st Single Axis ID	-	Alarm Name	Wrong Estimated Speed
Alarm Content	Wrong estimated speed at Induction motor sensorless control mode		
Possible Cause	1. Amount of estimated speed change larger than 30% rated speed 2. Estimated speed is over 120% maximum speed 3. When the direction of speed command changed, speed error over 30% rated speed in 1 second		
Possible Solution	1. Check if the motor parameters are correct 2. Increase acceleration time 3. Lower speed loop gain		

All in one ID 2nd Single Axis ID	AL-236		
1st Single Axis ID	-	Alarm Name	RTD Over Temperature Detection
Alarm Content	RTD over temperature detection		

Possible Cause	1. The temperature is over the setting of Over Temp Level. 2. RTD sensor loose or not connected.
Possible Solution	1. Check Pn-548~Pn-54A and Pn-752~Pn-753 setting are correct or not. 2. Check RTD sensor connected correctly.

9.1 AL-200 Motor Overheat

All in one ID **2nd Single Axis ID**	**AL-200**		
1st Single Axis ID	**AL-11**	**Alarm Name**	**Motor Overheat**
Alarm Content	Drive detects motor overheat.		
Possible Cause	1. Motor cooling system malfunction 2. Digital temperature sensor setting error 3. KTY84 thermal sensor setting error 4. Motor rated current setting error 5. Insufficient acceleration time 6. Overload		
Possible Solution	1. Check motor cooling system. 2. Correct parameter Pn-50A(P1-40) to Pn-50F(P1-61) according to digital temperature feedback(A or B). 3. Check if KTY84 is wired properly and if parameters P1-30 and Pn1-31 are set correctly. PS: Only 1st Single Axis have this solution. 4. Check rated current parameter Pn-710(P3-14). 5. Check acceleration parameter Pn-306(P6-10) , add acceleration/ deceleration time. 6. Check if load rate Pn-D2A(D1-10) is over 100%, consider switching to a motor with higher power.		
Detailed Instructions	AL-11 Issue Trouble Shooting		

9.2 AL-201 Motor Over Speed

All in one ID **2nd Single Axis ID**	**AL-201**		
1st Single Axis ID	**AL-14**	**Alarm Name**	**Motor Over Speed**
Alarm Content	Motor speed is above 120% of it's maximum speed.		

Possible Cause	1. Motor power cable U,V,W phase order incorrect 2. Encoder malfunction 3. Motor parameter loading error 4. Sever system severe overshoot 5. Severe speed command change 6. Drive software outdated 7. Encoder misses packets causing acceleration to be too great
Possible Solution	1. Execute " Encoder test ", check if alarm AL-302(AL-24) appears. Refer to "Auto tuning" section of manual. Execute " Encoder test ", check if any alarms appear. Refer to "Auto tuning" section of manual. a. Correct power cord phase order or change parameter Pn-021(P3-22)(0 to 1 and 1 to 0). b. Once certain polarity is correct, please cosider the following causes of this alarm. 2. Check whether drive parameter Pn-7XX match motor lable parameter.If there is a mismatch between motor parameters and those on the lable, please record the motor modle and contactSuzhou or Taiwan Technical Center(Syntec) for correct motor parameters and load them. 3. If vibration of the machine can be observed, tune gain parameters Pn-100 to Pn-102(P2-01 to P2-03). 4. Check if controller's commands shift too frequently, increase controller's acceleration and deceleration time constant. 5. We have corrected drive alarm specs, please upgrade to versions 2.0.25(1.4.12). 6. Capture JOG speed wave form and observe if speed change is not continuous.Check inside the junction box where the encoder is attached, make sure the shielding wire is connected to the motor's ground wire.Observe whether there is value Pn-D73~Pn-D76 (D1-28,D1-29,D1-46,D1-47).
Detailed Instructions	AL-14 Issue Trouble Shooting

9.3 AL-202 Overload

All in one ID **2nd Single Axis ID**	**AL-202**		

1st Single Axis ID	AL-16	Alarm Name	Overload
Alarm Content	Motor exceeds S2(short time duty) time limit.		
Possible Cause	1. Motor is stuck due to mechanical factors, leading to overload during operation 2. Continuous operation while exceeding drive's rated current 3. Encoder or motor wiring error 4. Encoder malfunction		
Possible Solution	1. Check if difference between command and motor speed feedback is too great. 2.1 Check if load rate is over 100%, enhance motor capacity, lower motor load or increase acceleration/ deceleration time constant. 2.2. Refer to motor specification to correctly set Pn-72A(P4-50) values. Increase allowed overload time limit so the alarm doesn't frequently go off when limit standards are too high.Refer to motor specification to correctly set Pn-72A(P4-50) values. Increase allowed overload time limit so the alarm doesn't frequently go off when limit standards are too high. 3.Check wiring between encoder and U,V,W cables, refer to "Wiring and Signal" section of manual. 4.Execute "Encoder test" and check for alarms, refer to "Auto tuning" section of manual.		

9.4 AL-203 Over Torque 1

All in one ID 2nd Single Axis ID	AL-203		
1st Single Axis ID	**AL-31**	**Alarm Name**	**Over Torque 1**
Alarm Content	Motor torque exceeds torque level 1 countinuously for over torque check time 1.		
Possible Cause	1. Motor is stuck due to machanical factors, leading to overload during operation 2. Encoder or motor wiring error 3. Encoder malfunction		
Possible Solution	1. Check if difference between command and motor speed feedback is too great. 2. Check wiring between encoder and U,V,W cables, refer to "Wiring and Signal" section of manual. 3. Execute "Encoder test" and check for alarms, refer to "Auto tuning" section of manual.		

9.5 AL-204 Over Torque 2

All in one ID 2nd Single Axis ID	AL-204		
1st Single Axis ID	AL-32	Alarm Name	Over Torque 2
Alarm Content	Motor torque exceeds torque level 2 countinuously for over torque check time 2		
Possible Cause	1. Motor is stuck due to machanical factors, leading to overload during operation 2. Encoder or motor wiring error 3. Encoder malfunction		
Possible Solution	1. Check if difference between command and motor speed feedback is too great. 2. Check wiring between encoder and U,V,W cables, refer to "Wiring and Signal" section of manual. 3. Execute "Encoder test" and check for alarms, refer to "Auto tuning" section of manual.		

9.6 AL-210 Motor Pole Number Error

All in one ID 2nd Single Axis ID	AL-210		
1st Single Axis ID	AL-26	Alarm Name	Motor Pole Number Error
Alarm Content	Triggered when motor pole number or encoder pole pair number and parameter settings are mismatched		
Possible Cause	1. Motor pole number setup error 2. Encoder pole pair number setup error		
Possible Solution	1. Check if value of parameter Pn-701(P3-01) equals pole number on lable. 2. Check if value of parameter Pn-90A(P3-30) setup correct.		

9.7 AL-230 Rotor Position Error

All in one ID **2nd Single Axis ID**	**AL-230**		
1st Single Axis ID	**AL-77**	**Alarm Name**	**Rotor Position Error**
Alarm Content	Torque integral direction and acceleration direction are inconsistent		
Possible Cause	1. Encoder polarity error 2. Encoder-rotor pole offset error 3. Pn-502 is set too low 4. Motor vibration while servo on, speed feedback is above Pn-502		
Possible Solution	1. Redo "Encoder test" 2. Redo encoder-rotor offset tuning 3. Pn-502 should be set between 5~25RPM(mm/sec) 4. Tune motor or set lower speed loop gain Pn-100(P2-02) and position loop gain Pn102(P2-01).		
Remark	• Alarm threshold can be adjusted via Pn-502 (Zero speed check window) for 4-in1 version V2.4.6 and after. • When linear motor monitors the initial signal of the encoder, it may cause motor goes out of control. Re-boot the power can solve the problem.		

9.8 AL-231 Command Direction Not Allowed

All in one ID **2nd Single Axis ID**	**AL-231**		
1st Single Axis ID	**-**	**Alarm Name**	**Command Direction Not Allowed**
Alarm Content	Command direction is not corresponding to Pn-504 configuration		
Possible Cause	1. Executed moving direction is not allowable 2. Pn-242 Posing Type configuration is not corresponding to Pn-504 Moving Direction Limit Selection 3. Host command polarity wrong set		

Possible Solution	1. Check if Pn-504 setting conflicts with moving direction. Please look up specification of Pn-504 2. Reset Pn-504 or check moving direction while running 3. Check if Pn-242 setting conflicts with Pn-504 4. Modify Pn-242 according to Pn-504. Please look up specification of Pn-242 5. Check Pn-020 and command polarity in controller. If the set is wrong, please modify it.

9.9 AL-235 Wrong Estimated Speed

All in one ID **2nd Single Axis ID**	**AL-235**		
1st Single Axis ID	**-**	**Alarm Name**	**Wrong Estimated Speed**
Alarm Content	Wrong estimated speed at Induction motor sensorless control mode		
Possible Cause	1. Amount of estimated speed change larger than 30% rated speed 2. Estimated speed is over 120% maximum speed 3. When the direction of speed command changed, speed error over 30% rated speed in 1 second		
Possible Solution	1. Check if the motor parameters are correct 2. Increase acceleration time 3. Lower speed loop gain		

9.10 AL-236 RTD Over Temperature Detection

All in one ID **2nd Single Axis ID**	**AL-236**		
1st Single Axis ID	**-**	**Alarm Name**	**RTD Over Temperature Detection**
Alarm Content	RTD over temperature detection		
Possible Cause	1. The temperature is over the setting of Over Temp Level. 2. RTD sensor loose or not connected.		
Possible Solution	1. Check Pn-548~Pn-54A and Pn-752~Pn-753 setting are correct or not. 2. Check RTD sensor connected correctly.		

10 AL-3xx Encoder Alarm Description

All in one ID **2nd Single Axis ID**	**AL-300**		
1st Single Axis ID	**AL-51**	**Alarm Name**	**Encoder Halt Alarm**
Alarm Content	Encoder crashed and can't correctly send back position data.		
Possible Cause	1. Syntec encoder crash and watchdog restart encoder. Non-Syntec encoder internal error. 2. Motor overheating 3. Noise interference 4. Hardware malfunction		
Possible Solution	1. Reboot driver and observe encoder for abnormality 2. Check Pn-90E(P3-34) Encoder Reset Counter. If encoder abnormal, check whether the motor is overheated or not. 3. Make sure the shielding wire attached to encoder inside the junction box is connected to the motor's ground wire. 4. Replace encoder. 5. If this is a recurring issue, send back to authorized dealer or Syntec Corp. for repairs		
Detailed Instructions	AL-15 Issue Trouble Shooting 【Pn-D95】Enc Error Status ALMC		
All in one ID **2nd Single Axis ID**	**AL-301**		
1st Single Axis ID	**AL-23**	**Alarm Name**	**Encoder Index Error**
Alarm Content	1. Encoder didn't detect reference signal during encoder test. 2. Encoder-rotor offset calibration takes too long		
Possible Cause	1. Connector wiring is poor contact, or connection is wrong 2. Incorrect encoder setting 3. Encoder pole number (Pn-90A/P3-30) setting error 4. Communication interference 5. Encoder Hardware malfunction		

Possible Solution	1. Check encoder wiring, refer to "Wiring and Signal" section of manual. 2. Execute "Encoder test" and check for alarms . If any alarm goes off, refer to "Syntec auto tuning" section of manual. 3. Set encoder pole number correctly and reboot driver. 4. Refer to "Syntec motor encoder grounding program" section of manual 5. Slowly shift axis by MPG (manual pulse generator) and confirm whether Index Counter equals encoder resolution or not. If not , send back to distributor or Syntec representative to check hardware.
Detailed Instructions	AL-23 Issue Trouble Shooting

All in one ID **2nd Single Axis ID**	**AL-302**		
1st Single Axis ID	**AL-24**	**Alarm Name**	**Encoder Direction Error**
Alarm Content	Encoder's direction is opposite of UVW phase sequence.		
Possible Cause	1. The parameter "Encoder Polarity " setting error.		
Possible Solution	1. Check whether mechanical angle is correct or not. If mechanical angle is incorrect and motor is PMSM type, change any two of UVW power cable. If motor is NOT PMSM type, set parameter Pn-021(P3-22) (0 to 1、 1 to 0) and reboot driver. ⚠If motor is PMSM type, set parameter Pn-021(P3-22) is not recommended.		

All in one ID **2nd Single Axis ID**	**AL-302**		
1st Single Axis ID	**AL-24**	**Alarm Name**	**Encoder Direction Error**
Alarm Content	Encoder's direction is opposite of UVW phase sequence.		
Possible Cause	1. The parameter "Encoder Polarity " setting error.		
Possible Solution	1. Check whether mechanical angle is correct or not. If mechanical angle is incorrect and motor is PMSM type, change any two of UVW power cable. If motor is NOT PMSM type, set parameter Pn-021(P3-22) (0 to 1、 1 to 0) and reboot driver. ⚠If motor is PMSM type, set parameter Pn-021(P3-22) is not recommended.		

All in one ID **2nd Single Axis ID**	**AL-303**		
1st Single Axis ID	**AL-25**	**Alarm Name**	**Encoder Resolution Error**
Alarm Content	Encoder resolution error.		
Possible Cause	1. Encoder resolution Pn-902(P3-21) setting error 2. Encoder pole number Pn-90A(P3-30) setting error 3. Hardware malfunction		
Possible Solution	1. Check if parameter Pn-902(P3-21) is equal to resolution or not. If not, set encoder resolution to correct value and reboot driver 2. Check parameter Pn-90A(P3-30), set encoder pole pair number correctly and reboot driver 3. Send back to distributor or Syntec representative to check hardware		
All in one ID **2nd Single Axis ID**	**AL-304**		
1st Single Axis ID	**AL-27**	**Alarm Name**	**Encoder No Feedback**
Alarm Content	Drive fails to receive signals from the encoder .		
Possible Cause	1. With Syntec motors after manufacturing date of 2021/05, the older driver may not support its communication. 2. Encoder wire is untied or unconnected 3. Encoder communication interface setting error 4. Encoder port number setting error 5. Wire failure (shor circuit, wire breakage) 6. Encoder malfunction 7. Driver's pre-circuit board malfunction 8. Noise generated in QEP encoder 9. Encoder's baud rate is unsupported 10. Encoder firmware update failed		

Possible Solution	1. With Syntec motors after manufacturing date of 2021/05, it is recommended that upgrade driver version at least 3.0.13. 2. Check if encoder wiring and pin definitions are correct or not. Refer to "Wiring and signal" section of manual. 3. Refer to "Driver Parameter Manual", set parameters correctly and restart drive. 4. Replace encoder cable (encoder's green wire between the drive and motor), and send broken one to Suzhou Syntec. 5. Replace motor 6. Replace driver 7. Set Pn-52E(P6-65) to change the speed in startup. 8. Currently supported encoder baud rates are as follows: TAMAGAWA、SYNTEC、SANKYO、BiSSC：2.5MHz Nikon: 2.5MHz、4MHz HIWIN：2.35MHz 9. If the alarm happend after encoder firmware update, please contact syntec or authorized representative 10. If using BiSSC encoder, and the alarm happens during Encoder Offset Searching 2-4 tuning. With there is another encoder plugged, please reboot the drive. With none of encoder plugged, that means the encoder used probably not support 2-4 tuning. In this case, please using Encoder Offset Searching 3-4 tuning or contact distributor or Syntec representative.
Detailed Instructions	AL-27 Issue Trouble Shooting

All in one ID **2nd Single Axis ID**	**AL-305**		
1st Single Axis ID	**AL-28**	**Alarm Name**	**Encoder Pulse Loss**
Alarm Content	Pulse number detected is different in each revolution		
Possible Cause	1. Encoder cable malfunction 2. Encoder's signal is interfering by rotor's axis with magnetic 3. Encoder malfunction		
Possible Solution	1. Replace cable. 2. Check if joining between encoder cable and motor is double end grounded. Check if encoder and motor are grounded. 3. Send back to Syntec or authorized representative.		
All in one ID **2nd Single Axis ID**	**AL-306**		

1st Single Axis ID	AL-54	Alarm Name	Encoder Z Index Shift
Alarm Content	Relative position between A/B phase and Z index is different in each revolution, so feedback position of encode is error possibly.		
Possible Cause	**Syntec encoder:** 1. Syntec encoder's firmware version is outdated 2. Encoder is under noise interference, which causing feedback signal error. 3. Encoder's signal is interfering by rotor's axis with magnetic 4. Hallow magnetic ring Zindex position is differ from the setting parameter 5. Magnetic ring's non-Zindex zone has magnetic field distribution **Non-Syntec encoder:** 1. The circuit board of non-Syntec encoder is broken. 2. Non-Syntec sensor and encoder are wrong assembly.		
Possible Solution	**Syntec encoder:** 1. Update drive's version to 1.6.14 or above(Multi-Axis Servo Drive is updated to V2.2.5 or above), and update encoder's version to 2.0.7 or above. 2. Check if encoder and motor are grounded. 3. Check if joining between encoder cable and motor is double end grounded. 4. Short term countermeasure: Magnetic axle center causing AL-54 SOP Long term countermeasure: Cross-Strait motor plants import axle center inspections starting 2016/7 5. Short term countermeasure: Raise Z index trigger level of P6-60/Pn-940 encoder to 35, and position axle after executing encoder test(rated current 150%). make sure alarm AL54/ AL306 doesn't go off. Long term countermeasure: Imported ultimate solution into manufacture process since 2018/1/11 6. Send the encoder to Syntec or authorized representative for repair. **Non-Syntec encoder:** 1. Check the encoder is contaminated by dust or oil. 2. Check the gap between sensor and encoder is correctly. 3. Send back to Syntec Corp.		
Detailed Instructions	AL-54 Issue Trouble Shooting		
All in one ID **2nd Single Axis ID**	**AL-307**		
1st Single Axis ID	**AL-48**	**Alarm Name**	**Encoder Status Extreme Error**
Alarm Content	Encoder status has extreme errors to operate normally		

Possible Cause	1. Serial encoder communication interference 2. Serial encoder wire is untied or unconnected 3. Connector between drive and encoder has solder empty or code solder 4. Encoder's cable grounding failure 5. Encoder communication type setting error 6. Automatic search for BiSSC data length is failure 7. if the drive is v2.x servo drive with a Nikon encoder, check drive's status parameter Pn-D95 and other encode's alarms first. 8. if using Syntec encoder and version from 2.0.8 or 2.1.1, which support "over temperature self-diagnosis", then probably occurs "Encoder extreme over temperature". 9. Encoder's firmware malfunction 10. Encoder's hardware malfunction
Possible Solution	1. Check if drive's status parameter Pn-D73~Pn-D76(D1-28,D1-29,D1-46,D1-47) is zero or not. 2. Check if encoder and motor are grounded. 3. Check if joining between encoder cable and motor is double end grounded. 4. Check welding wire at the interface between encoder and drive. 5. Check welding wire at the interface between encoder and motor. 6. Check conduction between metal part of first encoder port and drive case. If it's not conduction , the drive is defected has defects. Please contact Suzhou or Taiwan Technical Center for changing procedure. 7. If it did't work by the above solutions: a. Attach magnetic ring to both sides of the encoder cable b. try to separate the encoder cable from the motor power cable or other powerful cables. 8. Refer to chapter "Drive Parameter" in user manual, set Pn-900(P3-20) to right value, and reboot 9. Check BiSSC Encoder data length. Support 18, 26, 32, 36bit BiSSC Encoder only. 10. If the drive is v2.x servo drive with a Nikon encoder, check drive's status parameter Pn-D95 and other encode's alarms first. 11. if using Syntec encoder and version from 2.0.8 or 2.1.1, which support "over temperature self-diagnosis", then check temperature feedback and settings. 12. Backup motor's parameters and record drive's and encoder's versions. Update encoder firmware's version to V1.8.14 or above. 13. Please contact Suzhou or Taiwan Technical Center.
Detailed Instructions	AL-48 Issue Problem Shooting

All in one ID **2nd Single Axis ID**	**AL-308**		
1st Single Axis ID	**AL-68**	**Alarm Name**	**1st Encoder over speed when power on**

Alarm Content	Position changes too fast leads to unfinished initialization. Note: If alarm occurs right after power on, encoder will not complete parameter readback.
Possible Cause	1. Nikon encoder's speed exceeds 250RPM when power is on 2. If alarm occurs when motor isn't running, there is possibly encoder malfunction. 3. If the first encoder is Panasonic Encoder,the motor's speed must run below 100RPM when power is on. 4. If the first encoder is Mitutoyo Encoder,the motor's speed must run below 100RPM when power is on.
Check	Check if motor is running before drive is plugged in
Possible Solution	1. Once the motor stops, reset alarm. 2. Contact motor company for repair.
Detailed Instructions	【Pn-D95】Enc Error Status ALMC

All in one ID **2nd Single Axis ID**	**AL-309**		
1st Single Axis ID	**AL-4C**	**Alarm Name**	**Serial Encoder Communication Type is Wrong**
Alarm Content	1. Encoder communication interface setting is incorrect while using serial encoder 2. If Pn-900(P3-20) is set to 12 and connected with a Nikon encoder, then it is communication issue. 3. If the Pn-900 is set to 23 and connected to the HCFA encoder, then perhaps the encoder does not support high-cycle communication. 4. This alarm occurs when power-up with HCFA/ Sankyo encoders. Please check Pn-642, Pn-643 settings if correct. 5. Setting of Pn-900 can not be used at the setting of Pn-901 6. FPGA version doesn't support this encoder type		
Possible Cause	1. The parameter of encoder communcation interface (Pn-900(P3-20)) and encoder's serial communcation are mismatched. 2. Check if encoder cables are indeed grounded and the wire has breakage or not. 3. Check if the specifications of HCFA motor support high-cycle communication. 4. With HCFA/ Sankyo encoders, frequency of communication is not legal. 5. Check if Pn-901 is set correctly 6. FPGA version doesn't support the encoder type Pn-900(P3-20) setting.		

Possible Solution	1. Set Pn-900(P3-20) correctly and reboot drive. 2. Reassemble cables, make sure there is no interference and then restart 3. Set Pn-900 to 22, and then reboot the drive 4. Please look up manual of Pn-900(P3-20). Refresh setting with correct ones. 5. Setup correct Pn-901 and restart Drive. Refer to "Syntec Parameter Manual" for setup detail 6. Upgrade drive installation package according to encoder type

All in one ID **2nd Single Axis ID**	**AL-30A**		
1st Single Axis ID	**AL-850**	**Alarm Name**	**Encoder Over Speed**
Alarm Content	1. Nikon encoder speed exceeds 6000RPM 2. FeeDat encoder over speed 3. Motor with Panasonic encoder probably revolved over 6500RPM 4. Motor with Mitutoyo encoder exceeds maximum speed		
Possible Cause	1. Check motor is over speed once or not.		
Possible Solution	1. Avoid having encoder run at maximum speed.		
Detailed Instructions	【Pn-D95】Enc Error Status ALMC		

All in one ID **2nd Single Axis ID**	**AL-30B**		
1st Single Axis ID	**-**	**Alarm Name**	**Encoder position feedback error**
Alarm Content	Encoder module error, causing encoder unable to read absolute position data		
Possible Cause	1. FeeDat encoder circuit board breakage 2. BiSSC encoder sensor and magnetic ring are assembled incorrectly. 3. Nikon's absolute position of absolute module is differ from incremental module. 4. EnDat encoder position information error. 5. The position information of Panasonic encoder is error. 6. The position information of Mitutoyo encoder is error. 7. The position information of Mitsubsihi encoder is error. 8. The position information of Delta encoder is error.		
Possible Solution	1. Make sure encoder sensor and optical ruler are assembled correctly 2. Check encoder for dust or oil contamination 3. If this is a recurring issue, send back to authorized dealer or Syntec Corp. for repairs		

Detailed Instructions	【Pn-D95】Enc Error Status ALMC

All in one ID **2nd Single Axis ID**	**AL-30C**		
1st Single Axis ID	**AL-66**	**Alarm Name**	**Encoder multi-turn data error**
Alarm Content	Encoder module error, causing encoder unable to read multi-turn data		
Possible Cause	1. Nikon encoder's multi-turn data is incompatible to single-turn data 2. Panasonic encoder's multi-turn data is incompatible to single-turn data. 3. Mitsubishi encoder's multi-turn data is incompatible to single-turn data. 4. Tamagawa encoder's multi-turn data is incompatible to single-turn data. 5. HIWIN encoder's multi-turn data is incompatible to single-turn data. 6. Sankyo encoder's multi-turn data is incompatible to single-turn data. 7. HCFA encoder's multi-turn data is incompatible to single-turn data.		
Possible Solution	1. Check encoder for dust or oil contamination 2. If this is a recurring issue, send back to authorized dealer or Syntec Corp. for repairs		
Detailed Instructions	【Pn-D95】Enc Error Status ALMC		

All in one ID **2nd Single Axis ID**	**AL-30E**		
1st Single Axis ID	**-**	**Alarm Name**	**Encoder Battery Over Voltage**
Alarm Content	Encoder battery supply is over voltage, which may lead to encoder damage.		
Possible Cause	1. Encoder battery voltage is over the certain threshold of specification		
Possible Solution	1. Check the wiring of encoder 2. Delta: Check the voltage of the battery if over 3.8V		

All in one ID **2nd Single Axis ID**	**AL-311**		
1st Single Axis ID	**AL-33**	**Alarm Name**	**2nd Encoder Index Error**

Alarm Content	1. Encoder didn't detect reference signal during encoder test. 2. Encoder-rotor offset calibration takes too long.
Possible Cause	1. Connector wiring is poor contact, or connection is wrong. 2. Second encoder setting error. 3. Second encoder pole number(Pn-92A/P6-90) setting error. 4. Communication interference 5. Second encoder hardware malfunction
Possible Solution	1. Check wiring of second encoder, refer to "Wiring and Signal" section of manual. 2. Execute "Encoder test". If any alarms goes off, refer to "Syntec auto tuning" section of manual. 3. Set encoder pole number correctly and reboot driver. 4. Refer to "Syntec motor encoder grounding program" section of manual 5. Slowly shift axis by MPG (manual pulse generator) and confirm whether Index Counter equals encoder resolution or not. If not , send back to distributor or Syntec representative to check hardware.

All in one ID **2nd Single Axis ID**	**AL-312**		
1st Single Axis ID	**AL-34**	**Alarm Name**	**2nd Encoder Direction Error**
Alarm Content	Second encoder's direction is opposite of UVW phase sequence.		
Possible Cause	1. The parameter "Second encoder polarity " setting error		
Possible Solution	1. Check whether mechanical angle is correct or not. If mechanical angle is incorrect and motor is PMSM type, change any two of UVW power cable. If motor is NOT PMSM type, set parameter Pn-022(P6-82) (0 to 1、 1 to 0) and reboot driver. ⚠If motor is PMSM type, set parameter Pn-022(P6-82) is not recommended.		

All in one ID **2nd Single Axis ID**	**AL-313**		
1st Single Axis ID	**AL-35**	**Alarm Name**	**2nd Encoder resolution error**
Alarm Content	Second encoder resolution error.		
Possible Cause	1. 2nd encoder resolution Pn-922(P6-81) setting error 2. 2nd Encoder pole number Pn-92A(P6-90) setting error. 3. Second encoder hardware malfunction		

Possible Solution	1. Check if parameter Pn-922(P6-81) is equal to and resolution or not. If they differ not, set encoder resolution to correct value correct encoder resolution value and restart drive and reboot drive. 2. Check parameter Pn-92A(P6-90), set encoder pole pair number correctly and reboot driver 3. Send back to authorized dealer or Syntec Corp. for repairs.		
All in one ID **2nd Single Axis ID**	**AL-314**		
1st Single Axis ID	**AL-36**	**Alarm Name**	**2nd Encoder no feedback**
Alarm Content	Drive fails to receive signals from the second encoder .		
Possible Cause	1. Second encoder wire is untied or unconnected. 2. Encoder communication interface setting error. 3. Encoder port number setting error. 4. Wire failure (shor circuit, wire breakage) 5. Encoder malfunction 6. Driver's pre-circuit board malfunction 7. In dual feedback control and 2nd encoder type is QEP, mechanical problem and machining condition may cause alarm 8. Encoder's baud rate is unsupported 9. Encoder firmware update failed		
Possible Solution	1. Check if serial encoder wiring and pin definitions for errors are correct or not. Refer to "Wiring and signal" section of manual. 2. Refer to "Drive Parameter Manual", set parameters correctly and reboot driver. 3. Replace encoder cable (encoder's green wire between the drive and motor), and send broken one to Suzhou Syntec. 4. Replace motor 5. Replace driver 6. Refer to "Dual feedback control and outer feedback using linear scale" section of manual, change Pn-52F properly 7. Currently supported encoder baud rates are as follows: TAMAGAWA、SYNTEC、SANKYO、BiSSC：2.5MHz Nikon: 2.5MHz、4MHz HIWIN：2.35MHz 8. If the alarm happend after encoder firmware update, please contact syntec or authorized representative 9. If using BiSSC encoder, and the alarm happens during Encoder Offset Searching 2-4 tuning. With there is another encoder plugged, please reboot the drive. With none of encoder plugged, that means the encoder used probably not support 2-4 tuning. In this case, please using Encoder Offset Searching 3-4 tuning or contact distributor or Syntec representative.		

All in one ID **2nd Single Axis ID**	**AL-315**		
1st Single Axis ID	**AL-39**	**Alarm Name**	**2nd Encoder Pulse Loss**
Alarm Content	Pulse number detected is different in each revolution		
Possible Cause	1. Second encoder's cable problem 2. Second encoder's signal is interfering by rotor's axis with magnetic 3. Second encoder malfunction		
Possible Solution	1. Replace cable. 2. Check if joining between encoder cable and motor is double end grounded. Check if encoder and motor are grounded. 3. Send back to Syntec or authorized representative.		

All in one ID **2nd Single Axis ID**	**AL-316**		
1st Single Axis ID	**AL-55**	**Alarm Name**	**2nd Encoder Z Index Shift**
Alarm Content	Relative position between A/B phase and Z index is different in each revolution, so feedback position of encoder is error possibly .		
Possible Cause	**Syntec encoder:** 1. Second encoder's firmware version is outdated 2. Encoder is under noise interference, which causing feedback signal error. 3. Encoder's signal is interfering by rotor's axis with magnetic 4. Hallow magnetic ring Zindex position is different ~~than~~ from the written parameter. 5. Magnetic ring's non-Zindex zone has magnetic field distribution 6. Hardware malfunction **Non-Syntec encoder:** 1. The circuit board of non-Syntec encoder is broken. 2. Non-Syntec sensor and encoder are wrong assembly.		

Possible Solution	**Syntec encoder:** 1. Update drive's version to 1.6.14 or more recent(Multi-Axis Servo Drive is updated to V2.2.5), and update encoder's version to 2.0.7 or above. 2. Check if second encoder and motor are grounded. 3. Check if joining between second encoder cable and motor ~~are~~ is double end grounded. 4. Short term countermeasure: Magnetic axle center causing AL-54 SOP Long term countermeasure: Cross-Strait motor plants import axle center inspections starting 2016/7 5. Short term countermeasure: Raise Z index trigger level of P6-60/Pn-940 encoder to 35, and position axle after executing encoder test(rated current 150%). make sure alarm AL54/AL306 doesn't go off. Long term countermeasure: Imported ultimate solution into manufacture process since 2018/1/11 6. Send the second encoder to Syntec or authorized representative for repair. **Non-Syntec encoder:** 1. Check the encoder is contaminated by dust or oil. 2. Check the gap between sensor and encoder is correctly. 3. Send back to Syntec Corp.
Detailed Instructions	AL-54 Issue Trouble Shooting

All in one ID **2nd Single Axis ID**	**AL-317**		
1st Single Axis ID	**AL-49**	**Alarm Name**	**2nd Encoder Status Extreme Error**
Alarm Content	2nd Encoder status has extreme errors to operate normally		
Possible Cause	1. Second encoder communication interference. 2. Second Serial encoder wire is untied or unconnected 3. Connector between drive and encoder has solder empty or code solder 4. Second encoder's cable grounding failure 5. Second encoder communication type setting error. 6. Automatic search for BiSSC data length is failure 7. If the drive is v2.x servo drive with a Nikon encoder, check drive's status parameter Pn-D96 and other encode's alarms first. 8. If using Syntec encoder and version from 2.0.8 or 2.1.1, which support "over temperature self-diagnosis", then probably occurs "Encoder extreme over temperature". 9. Second encoder's firmware malfunction 10. Second encoder's hardware malfunction		

Possible Solution	1. Check if drive's status parameter Pn-D77~Pn-D7A(D1-42,D1-43,D1-59,D1-60) is zero or not. 2. Check if encoder and motor are grounded. 3. Check if joining between encoder cable and motor double end grounded. 4. Check welding wire at the interface between encoder and drive. 5. Check welding wire at the interface between encoder and motor. 6. Check conduction between metal part of first encoder port and drive case. If it's not conduction , the drive has defects. Please contact Suzhou or Taiwan Technical Center for changing procedure. 7. If it did't work by the above solutions, a. Attach magnetic ring to both sides of the encoder cable b.try to separate the encoder cable from the motor power cable or other powerful cables. 8. Refer to chapter "Drive Parameter" in user manual, set Pn-920(P6-80) to right value, and reboot 9. Check BiSSC Encoder data length. Support 18, 26, 32, 36bit BiSSC Encoder only. 10. If the drive is v2.x servo drive with a Nikon encoder, check drive's status parameter Pn-D96 and other encode's alarms first. 11. If using Syntec encoder and version from 2.0.8 or 2.1.1, which support "over temperature self-diagnosis", then check temperature feedback and settings. 12. Backup motor's parameters and record drive's and encoder's versions. Update encoder firmware's version to V1.8.14 or above. 13. Please contact Suzhou or Taiwan Technical Center.

All in one ID **2nd Single Axis ID**	**AL-318**		
1st Single Axis ID	**AL-69**	**Alarm Name**	**2nd Encoder over speed when power on**
Alarm Content	Position changes too fast leads to unfinished initialization. Note: If alarm occurs right after power on, encoder will not complete parameter readback.		
Possible Cause	1. Nikon encoder speed exceeds 250RPM right after power on. 2. If alarm occurs when motor isn't running, encoder malfunction is possible 3. If the second encoder is Panasonic Encoder,the motor's speed must run below 100RPM when power is on. 4. If the second encoder is Mitutoyo Encoder,the motor's speed must run below 100RPM when power is on.		
Check	Observe if motor is running before drive power-on.		
Possible Solution	1. Once the motor stops, reset alarm. 2. Contact motor company for repairs.		
Detailed Instructions	【Pn-D96】2nd Enc Error Status ALMC		

All in one ID 2nd Single Axis ID	AL-319		
1st Single Axis ID	AL-4D	Alarm Name	2nd Serial Encoder Communication Type is Wrong
Alarm Content	1. Encoder communication interface setting is incorrect while using second serial encoder. 2. If Pn-920(P6-80) is set to 12 and connected with a Nikon encoder, then the problem is with communication there is a communication problem 3. If the Pn-920 is set to 23 and connected to the HCFA encoder, then perhaps the encoder does not support high-cycle communication. 4. This alarm occurs when power-up with HCFA/ Sankyo encoders. Please check Pn-642, Pn-643 settings if correct. 5. Setting of Pn-920 can not be used at the setting of Pn-921 6. FPGA version doesn't support this encoder type.		
Possible Cause	1. The parameter of encoder communcation interface Pn-920(P6-80) and encoder's serial communcation are mismatched. 2. Check if encoder cables are indeed grounded and the wire has breakage or not. 3. Check if the specifications of HCFA motor support high-cycle communication. 4. With HCFA/ Sankyo encoders, frequency of communication is not legal. 5. Check if Pn-921 is set correctly 6. FPGA version doesn't support the encoder type Pn-920(P6-80) setting encoder type.		
Possible Solution	1. Set Pn-920(P6-80) correctly and reboot driver 2. Reassemble cables, make sure there is no interference and then reboot driver 3. Set Pn-920 to 22, and then reboot the drive 4. Please look up manual of Pn-920(P6-80). Refresh setting with correct ones. 5. Setup correct Pn-921 and restart Drive. Refer to "Syntec Parameter Manual" for setup detail 6. Upgrade drive installation package according to encoder type.		

All in one ID 2nd Single Axis ID	AL-31A		
1st Single Axis ID	AL-8A5	Alarm Name	2nd Encoder Over Speed
Alarm Content	1. Nikon second encoder speed exceeds 6000RPM 2. FeeDat second encoder over speed 3. Motor with Panasonic second encoder probably revolved over 6500RPM 4. Motor with Mitutoyo second encoder exceeds maximum speed		
Possible Cause	1. Check motor is over speed once or not. command		
Possible Solution	1. Avoid having encoder run at maximum speed		
Detailed Instructions	【Pn-D96】2nd Enc Error Status ALMC		

All in one ID 2nd Single Axis ID	AL-31B		
1st Single Axis ID	-	Alarm Name	2nd Encoder position feedback error
Alarm Content	2nd Encoder module error, causing encoder unable to read absolute position data		
Possible Cause	1. FeeDat second encoder circuit board breakage 2. BiSSC second encoder sensor and magnetic ring are assembled incorrectly 3. Nikon encoder's multi-turn data is incompatible to single-turn data 4. EnDat second encoder position information error 5. The position information of Panasonic encoder is error. 6. The position information of Mitutoyo encoder is error. 7. The position information of Mitsubsihi encoder is error. 8. The position information of Delta encoder is error.		
Possible Solution	1. Make sure encoder sensor and optical ruler are assembled correctly 2. Check encoder for dust or oil contamination 3. If this is a recurring issue, send back to authorized dealer or Syntec Corp. for repairs		
Detailed Instructions	【Pn-D96】2nd Enc Error Status ALMC		

All in one ID 2nd Single Axis ID	AL-31C		
1st Single Axis ID	AL-67	Alarm Name	2nd Encoder multi-turn data error
Alarm Content	Encoder module error, causing encoder unable to read multi-turn data.		
Possible Cause	1. Nikon 2nd encoder's multi-turn data is incompatible to single-turn data 2. Panasonic 2nd encoder's multi-turn data is incompatible to single-turn data. 3. Mitsubishi 2nd encoder's multi-turn data is incompatible to single-turn data. 4. Tamagawa 2nd encoder's multi-turn data is incompatible to single-turn data. 5. HIWIN 2nd encoder's multi-turn data is incompatible to single-turn data. 6. Sankyo 2nd encoder's multi-turn data is incompatible to single-turn data. 7. HCFA 2nd encoder's multi-turn data is incompatible to single-turn data.		
Possible Solution	1. Check encoder for dust or oil contamination 2. If this is a recurring issue, send back to authorized dealer or Syntec Corp. for repairs		

Detailed Instructions	【Pn-D96】2nd Enc Error Status ALMC		
All in one ID **2nd Single Axis ID**	**AL-31D**		
1st Single Axis ID	**-**	**Alarm Name**	**2nd Encoder Unable to Finish Operation Configuration**
Alarm Content	Failed to set operation configuration		
Possible Cause	1. While setting operation configuration, unable to write the corresponding memory or meet access failure 2. Fail to access 2nd encoder memory		
Possible Solution	1. Check Pn-D9C and encoder software version, and update to the right version 2. Check if communication ever failed and then check up wiring of this encoder		

All in one ID **2nd Single Axis ID**	**AL-31E**		
1st Single Axis ID	**-**	**Alarm Name**	**2nd Encoder Battery Over Voltage**
Alarm Content	2nd Encoder battery supply is over voltage, which may lead to encoder damage.		
Possible Cause	1. Encoder battery voltage is over the certain threshold of specification		
Possible Solution	1. Check the wiring of encoder 2. Delta: Check the voltage of the battery if over 3.8V		

All in one ID **2nd Single Axis ID**	**AL-321**		
1st Single Axis ID	**AL-41**	**Alarm Name**	**Encoder external(1) Thermal Sensor Over Temperature**
Alarm Content	The temperature that encoder external(1)'s Thermal Sensor detect is over drive's protective limit.		

Possible Cause	1. Motor cooling system failure 2. Version compatability 3. Thermal sensor signal error 4. Motor's Thermal Sensor wire unconnected to Encoder external(1)'s temperature sensing wire(the yellow and green line of the encoder, respectively) 5. With SYNTEC encoder, encoder external(1) thermal sensor type setting error 6. Encoder hardware malfunction		
Possible Solution	1. Check and change motor cooling system. 2. If recently updated from V1.2.27~V1.2.31 to V1.2.32 or above, set parameter Pn-743(P1-33) to correct protective temperature limit. 3. Make sure parameter Pn-743 "Syntec Encoder internal(1) Thermal Sensor overheat threshold" is set correctly. 4. Connect Thermal Sensor wire and Encoder external(1)'s temperature sensing wire. If floating, alarms will be prone to happen as temperature display will be 145 degrees. 5. Check the type of resistance used for encoder external(1) thermal sensing. If using PT1000:Update drive firmware to V3.0.0 or higher, and 2nd Encoder firmware to V2.1.1 or higher. And set Pn-75B into 1. 6. If all above solutions fail to solve the problem, Thermal Sensor may have malfunctioned. Please contact Suzhou or Taiwan Tech Center.		
Detailed Instructions	AL-40, AL-41, AL-42 Issue Trouble Shooting		
All in one ID **2nd Single Axis ID**	**AL-322**		
1st Single Axis ID	**AL-42**	**Alarm Name**	**Encoder External(2) Thermal Sensor Over Temperature**
Alarm Content	The temperature that encoder external(2)'s Thermal Sensor detect is over drive's protective limit.		
Possible Cause	1. Cooling system failure 2. Version compatibility 3. Parameter error 4. With SYNTEC encoder, encoder external(2) thermal sensor type setting error		
Possible Solution	1. Check and change cooling system. 2. If recently updated from V1.2.27~V1.2.31 to V1.2.32 or above, set parameter Pn-744(P1-34) to correct protective temperature limit. 3. Make sure parameter Pn-744 "Syntec Encoder external(2) Thermal Sensor overheat threshold" is not 0. If temperature sensing wires are floating, alarms will be prone to happen as temperature display will be 145 degrees. 4. Check the type of resistance used for encoder external(2) thermal sensing. If using PT1000:Update drive firmware to V3.0.0 or higher, and 2nd Encoder firmware to V2.1.1 or higher. And set Pn-75C into 1.		

Detailed Instructions	AL-40, AL-41, AL-42 Issue Trouble Shooting		
All in one ID **2nd Single Axis ID**	**AL-324**		
1st Single Axis ID	**AL-8A6**	**Alarm Name**	**2nd Encoder Internal Over Temperature**
Alarm Content	1. Syntec encoder: Encoder temperature over protective limit setting by drive 2. Nikon encoder: Encoder internal temperature over protection level Pn-746. 3. FeeDat encoder: Encoder internal is overheating 4. Panasonic encoder: Encoder internal temperature over 100 degrees Celsius or protection level Pn-746. 5. Mitutoyo encoder: Encoder internal temperature over 65 degrees Celsius. 6. Mitsubishi encoder: Encoder internal temperature over 115 degrees Celsius or protection level Pn-746. 7. Delta encoder: Encoder internal temperature is higher than 105 Celsius degree. 8. Tamagawa 23 bit encoder: Encoder internal temperature is higher than 85 Celsius degree or protection level Pn-746. 9. Tamagawa 25 bit encoder: Encoder internal temperature is higher than 105 Celsius degree or protection level Pn-746.		
Possible Cause	1. Cooling system failure 2. Version compatibility 3. Thermal sensor signal error 4. With SYNTEC encoder, 2nd encoder internal thermal sensor type setting error 5. Encoder hardware malfunction		
Possible Solution	1. Check and change cooling system. 2. If using SYNTEC, Nikon, Panasonic, Mitsubishi encoders, please check up Pn-D61. 3. If using FeeDat, Tamagawa or Delta encoders, please resolve problem and restart driver. 4. If recently updated from V1.2.27~V1.2.31 to V1.2.32 or above, set parameter Pn-746(P1-36) to correct protective temperature limit. 5. Make sure parameter Pn-748 "Syntec Encoder internal(1) thermal sensor overheat threshold" is set correctly. 6. Check the type of resistance used for 2nd encoder internal thermal sensing. If using PT1000:Update drive firmware to V3.0.0 or higher, and 2nd Encoder firmware to V2.1.1 or higher. And set Pn-75E into 1. 7. If all above solutions fail to solve the problem, Thermal Sensor may have malfunctioned. Please contact Suzhou or Taiwan Tech Center.		
Detailed Instructions	【Pn-D96】2nd Enc Error Status ALMC		

All in one ID **2nd Single Axis ID**	**AL-325**		
1st Single Axis ID	**AL-45**	**Alarm Name**	**2nd Encoder External(1) Thermal Sensor Over Temperature**
Alarm Content	The temperature that 2nd encoder external(1)'s Thermal Sensor detect is over drive's protective limit.		
Possible Cause	1. Cooling system failure 2. Version compatibility 3. Thermal sensor signal error 4. Motor's Thermal Sensor wire unconnected to Encoder external(1)'s temperature sensing wire(the yellow and green line of the encoder, respectively) 5. With SYNTEC encoder, 2nd encoder external(1) thermal sensor type setting error 6. Encoder hardware malfunction		
Possible Solution	1. Check and change cooling system. 2. If recently updated from V1.2.27~V1.2.31 to V1.2.32 or above, set parameter Pn-746(P1-36) to correct protective temperature limit. 3. Make sure parameter Pn-748 (P1-38)"Syntec Encoder internal(1) Thermal Sensor overheat threshold" is set correctly. 4. Connect Thermal Sensor wire and Encoder external(1)'s temperature sensing wire. If floating, alarms will be prone to happen as temperature display will be 145 degrees. 5. Check the type of resistance used for 2nd encoder external(1) thermal sensing. If using PT1000:Update drive firmware to V3.0.0 or higher, and 2nd Encoder firmware to V2.1.1 or higher. And set Pn-75F into 1. 6. If all above solutions fail to solve the problem, Thermal Sensor may have malfunctioned. Please contact Suzhou or Taiwan Tech Center.		
All in one ID **2nd Single Axis ID**	**AL-326**		
1st Single Axis ID	**AL-46**	**Alarm Name**	**2nd Encoder External(2) Thermal Sensor Over Temperature**
Alarm Content	Encoder External(2) detects Thermal Sensor's temperature over drive's protective limit		

Possible Cause	1. Cooling system failure 2. Version compatibility 3. Thermal sensor signal error 4. Motor's Thermal Sensor wire unconnected to Encoder external(2)'s temperature sensing wire(the yellow and green line of the encoder, respectively) 5. With SYNTEC encoder, 2nd encoder external(2) thermal sensor type setting error 6. Encoder hardware malfunction
Possible Solution	1. Check and change cooling system. 2. If recently updated from V1.2.27~V1.2.31 to V1.2.32 or above, set parameter Pn-748(P1-38) to correct protective temperature limit. 3. Make sure parameter Pn-748 (P1-38)"Syntec Encoder internal(2) Thermal Sensor overheat threshold" is set correctly. 4. Connect Thermal Sensor wire and Encoder external(2)'s temperature sensing wire. If floating, alarms will be prone to happen as temperature display will be 145 degrees. 5. Check the type of resistance used for 2nd encoder external(2) thermal sensing. If using PT1000:Update drive firmware to V3.0.0 or higher, and 2nd Encoder firmware to V2.1.1 or higher. And set Pn-760 into 1. 6. If all above solutions fail to solve the problem, Thermal Sensor may have malfunctioned. Please contact Suzhou or Taiwan Tech Center.

All in one ID **2nd Single Axis ID**	**AL-328**		
1st Single Axis ID	**AL-5A**	**Alarm Name**	**Encoder Internal Thermal Sensor Error**
Alarm Content	Encoder Internal Thermal Sensor Error		
Possible Cause	1. Encoder Internal Thermal Sensor Error 2. With SYNTEC encoder, encoder internal thermal sensor type setting error		
Possible Solution	1. If encoder Internal Thermal Sensor is not needed, set parameter Pn-74A(P1-70) to 1. 2. Check the type of resistance used for encoder internal thermal sensing a. If using PT1000:Update drive firmware to V3.0.0 or higher, and 2nd Encoder firmware to V2.1.1 or higher. And set Pn-75A into 1. b. If using KTY84:Please set Pn-75A into 0. 3. Send back to dealer or Syntec Corp.		

All in one ID **2nd Single Axis ID**	**AL-329**		
1st Single Axis ID	**AL-5B**	**Alarm Name**	**Encoder External(1) Thermal Sensor is Unplugged**

Alarm Content	Encoder External(1) Thermal Sensor is unplugged
Possible Cause	1. Encoder External(1) Thermal Sensor is not plugged correctly 2. Encoder external(1) Thermal Sensor is broken 3. Abnormal power supply voltage of 1st encoder 4. With SYNTEC encoder, encoder external(1) thermal sensor type setting error
Possible Solution	1. (a) Make sure encoder external(1) Thermal Sensor is wired properly. (b) If encoder External(1) Thermal Sensor is not needed, set parameter Pn-74B(P1-71) to 1. 2. Measure the resistance of encoder external(1) Thermal Sensor at ambient temperature, and check if the measured value of resistance is in the operating range from 500Ω to 1500 Ω. If the measured value of resistance appears to be wrong, then please replace encoder external(1) Thermal Sensor with a new one. 3. Check if the value of drive parameter Pn-D70【The 5V Detection of 1st Encoder】is lower than 5V. If so, please check the power supply voltage of 1st encoder port on the drive by probing the output pin. If the supply voltage is normal, then the 1st encoder may be broken; otherwise, check if the drive is working correctly. 4. Check the type of resistance used for encoder external(1) thermal sensing a. If using PT1000:Update drive firmware to V3.0.0 or higher, and 2nd Encoder firmware to V2.1.1 or higher. And set Pn-75B into 1. b. If using KTY84:Please set Pn-75B into 0.

All in one ID **2nd Single Axis ID**	**AL-32A**		
1st Single Axis ID	**AL-5C**	**Alarm Name**	**Encoder External(2) Thermal Sensor is Unplugged**
Alarm Content	Encoder External(2) Thermal Sensor is Unplugged		
Possible Cause	1. Encoder External(2) Thermal Sensor is not plugged correctly 2. Encoder external(2) Thermal Sensor is broken 3. Abnormal power supply voltage of 1st encoder 4. With SYNTEC encoder, encoder external(2) thermal sensor type setting error		

Possible Solution	1. (a) Make sure encoder external(2) Thermal Sensor is wired properly. (b) If encoder External(2) Thermal Sensor is not needed, set parameter Pn-74C(P1-72) to 1. 2. Measure the resistance of encoder external(2) Thermal Sensor at ambient temperature, and check if the measured value of resistance is in the operating range from 500Ω to 1500Ω. If the measured value of resistance appears to be wrong, then please replace encoder external(2) Thermal Sensor with a new one. 3. Check if the value of drive parameter Pn-D70【The 5V Detection of 1st Encoder】is lower than 5V. If so, please check the power supply voltage of 1st encoder port on the drive by probing the output pin. If the supply voltage is normal, then the 1st encoder may be broken; otherwise, check if the drive is working correctly. 4. Check the type of resistance used for encoder external(2) thermal sensing a. If using PT1000:Update drive firmware to V3.0.0 or higher, and 2nd Encoder firmware to V2.1.1 or higher. And set Pn-75C into 1. b. If using KTY84:Please set Pn-75C into 0.

All in one ID **2nd Single Axis ID**	**AL-32C**		
1st Single Axis ID	**AL-5E**	**Alarm Name**	**2nd Encoder internal Thermal Sensor Error**
Alarm Content	2nd Encoder internal Thermal Sensor Error		
Possible Cause	1. 2nd Encoder internal Thermal Sensor Error 2. With SYNTEC encoder, 2nd encoder internal thermal sensor type setting error		
Possible Solution	1. If 2nd encoder internal Thermal Sensor is not needed, set parameter Pn-74E(P1-74) to 1. 2. Check the type of resistance used for 2nd encoder internal thermal sensing a. If using PT1000:Update drive firmware to V3.0.0 or higher, and 2nd Encoder firmware to V2.1.1 or higher. And set Pn-75E into 1. b. If using KTY84:Please set Pn-75E into 0. 3. Send back to dealer or Syntec Corp. for repairs.		

All in one ID **2nd Single Axis ID**	**AL-32D**		
1st Single Axis ID	**AL-5F**	**Alarm Name**	**2nd Encoder External(1) Thermal Sensor is Unplugged**
Alarm Content	2nd Encoder External(1) Thermal Sensor is Unplugged		

Possible Cause	1. 2nd Encoder External(1) Thermal Sensor is not plugged correctly 2. 2nd Encoder external(1) Thermal Sensor is broken 3. Abnormal power supply voltage of 2nd encoder 4. With SYNTEC encoder, 2nd encoder external(1) thermal sensor type setting error		
Possible Solution	1. (a) Make sure 2nd encoder external(1) Thermal Sensor is wired properly. (b) If 2nd encoder external(1) Thermal Sensor is not needed, set parameter Pn-74F(P1-75) to 1. 2. Measure the resistance of 2nd encoder external(1) Thermal Sensor at ambient temperature, and check if the measured value of resistance is in the operating range from 500Ω to 1500Ω. If the measured value of resistance appears to be wrong, then please replace the 2nd encoder external(1) Thermal Sensor with a new one. 3. Check if the value of drive parameter Pn-D7B【The 5V Detection of 2nd Encoder】is lower than 5V. If so, please check the power supply voltage of 2nd encoder port on the drive by probing the output pin. If the supply voltage is normal, then the 2nd encoder may be broken; otherwise, check if the drive is working correctly. 4. Check the type of resistance used for 2nd encoder external(1) thermal sensing a. If using PT1000:Update drive firmware to V3.0.0 or higher, and 2nd Encoder firmware to V2.1.1 or higher. And set Pn-75F into 1. b. If using KTY84:Please set Pn-75F into 0.		
All in one ID **2nd Single Axis ID**	**AL-32E**		
1st Single Axis ID	**AL-60**	**Alarm Name**	**2nd Encoder External(2) Thermal Sensor is Unplugged**
Alarm Content	2nd Encoder External(2) Thermal Sensor is Unplugged		
Possible Cause	1. 2nd Encoder External(2) Thermal Sensor is not plugged correctly 2. 2nd Encoder external(2) Thermal Sensor is broken 3. Abnormal power supply voltage of 2nd encoder 4. With SYNTEC encoder, 2nd encoder external(2) thermal sensor type setting error		

Possible Solution	1. (a) Make sure 2nd encoder external(2) Thermal Sensor is wired properly. (b) If 2nd encoder external(2) Thermal Sensor is not needed, set parameter Pn -750(P1-76) to 1. 2. Measure the resistance of 2nd encoder external(2) Thermal Sensor at ambient temperature, and check if the measured value of resistance is in the operating range from 500Ω to 1500Ω. If the measured value of resistance appears to be wrong, then please replace the 2nd encoder external(1) Thermal Sensor with a new one. 3. Check if the value of drive parameter Pn-D7B【The 5V Detection of 2nd Encoder】is lower than 5V. If so, please check the power supply voltage of 2nd encoder port on the drive by probing the output pin. If the supply voltage is normal, then the 2nd encoder may be broken; otherwise, check if the drive is working correctly. 4. Check the type of resistance used for 2nd encoder external(2) thermal sensing a. If using PT1000:Update drive firmware to V3.0.0 or higher, and 2nd Encoder firmware to V2.1.1 or higher. And set Pn-760 into 1. b. If using KTY84:Please set Pn-760 into 0.

All in one ID **2nd Single Axis ID**	**AL-330**		
1st Single Axis ID	-	**Alarm Name**	**Encoder Port Setting Error**
Alarm Content	Encoder Port (Parameter Pn-901) setting error		
Possible Cause	1. Parameter Pn-900 encoder type is set but parameter Pn-901 is not. 2. Port number setting is the same as another encoder port setting 3. Parameter Pn-901 is greater than actual port number		
Possible Solution	1. Set parameter Pn-901 correctly according to the actual application.		

All in one ID **2nd Single Axis ID**	**AL-331**		
1st Single Axis ID	-	**Alarm Name**	**2nd Encoder port setting error**
Alarm Content	2nd encoder Port (Parameter Pn-921) setting error		
Possible Cause	1. Parameter Pn-920 encoder type is set but parameter Pn-921 is not. 2. Port number setting is the same as another encoder port setting 3. Parameter Pn-921 is greater than actual port number		
Possible Solution	1. Set parameter Pn-921 correctly according to the actual application.		

All in one ID **2nd Single Ax is ID**	**AL-332**		
1st Single Axis ID	**AL-6A**	**Alarm Name**	**Encoder not recognized**
Alarm Content	Drive doesn't support the version of encoder version. Do not run this motor and modify any parameters about this motor.		
Possible Cause	1. The version of encoder is outdated. 2. Parameter specifics cannot be recognized if the motor is not supplied by Syntec. 3. Data read from encoder is unable to be interpreted.		
Possible Solution	1. Upgrade driver version. 2. Problems from the motor not supplied by Syntec shall be resolved in following steps: a. First ensure the encoder communication type is supported by the current software version of Syntec driver. b. Then inquire the retailer or manufacturer for trouble shooting. 3. Inquire the retailer or manufacturer for trouble shooting.		

All in one ID **2nd Single Axis ID**	**AL-333**		
1st Single Axis ID	**AL-6B**	**Alarm Name**	**2nd Encoder not recognized**
Alarm Content	Drive doesn't support the version of second encoder version. Do not run this motor and modify any parameters about this motor		
Possible Cause	1. The version of encoder is outdated. 2. Parameter specifics cannot be recognized if the motor is not supplied by Syntec. 3. Data read from encoder is unable to be interpreted.		
Possible Solution	1. Upgrade driver version. 2. Problems from the motor not supplied by Syntec shall be resolved in following steps: a. First ensure the encoder communication type is supported by the current software version of Syntec driver. b. Then inquire the retailer or manufacturer for trouble shooting. 3. Inquire the retailer or manufacturer for trouble shooting.		

All in one ID **2nd Single Axis ID**	**AL-334**		

1st Single Axis ID	AL-58	Alarm Name	Encoder Download Parameters Fail
Alarm Content	Encoder parameter download process is unsuccessful		
Possible Cause	1. With Syntec motors after manufacturing date of 2021/05, the older driver may not support its communication. 2. 1st encoder still not ready after drive power on for 1 second. 3. The parameters read back from encoder is incorrect. 4. Signal transfer error due to the poor contact of the first encoder's pin 5. With hallow type encoder(mini encoder), check whether motor serial number is not zero		
Possible Solution	1. With Syntec motors after manufacturing date of 2021/05, it is recommended that upgrade driver version at least 3.0.13. 2. Check status parameter "First encoder parameter read back status", single axis' parameter is D2-97, four in one's status parameter is Pn-E5F. 3. Check if encoder is wired correctly and whether there are interferences. 4. Check connectivity of encoder connector pins 5. with hallowed encoder, please set motor serial number as 0 and reboot *With this alarm occurring, we would not recommend saving parameters permanently. If alarm doesn't occur after rebooting, parameters have been read correctly. If this problem reoccurs, please contact dealer or Syntec Corp. for repairs.		

All in one ID 2nd Single Axis ID	AL-335		
1st Single Axis ID	**AL-59**	**Alarm Name**	**2nd Encoder Download Parameters Fail**
Alarm Content	2nd Encoder parameter download process unsuccessful		
Possible Cause	1. 2nd encoder still not ready after drive power on for 1 second. 2. The parameters read back from 2nd encoder is incorrect. 3. Signal transfer error due to the poor contact of the 2nd encoder's pin 4. With hallow type encoder(mini encoder), check whether motor serial number is not zero		

Possible Solution	1. Check status parameter "2nd encoder parameter read back status", single axis' parameter is D2-98, four in one's status parameter is Pn-E60. 2. Check if encoder is wired correctly and whether there are interferences. 3. Check connectivity of encoder connector pins *With this alarm occurring, we would not recommend saving parameters permanently. If alarm doesn't occur after rebooting, parameters have been read correctly. If this problem reoccurs, please contact dealer or Syntec Corp. for repairs. Refer to AL-58问题处置 for alarm trouble shooting.

All in one ID 2nd Single Axis ID	**AL-336**		
1st Single Axis ID	**AL-4A**	**Alarm Name**	**Syntec Encoder Runs in Bootloader Mode**
Alarm Content	When 1st encoder is Syntec Encoder and is Running in Bootloader Mode, alarm occurs.		
Possible Cause	1. Power failure or disconnection during firmware update process		
Possible Solution	1. Update firmware again and restart.		

All in one ID 2nd Single Axis ID	**AL-337**		
1st Single Axis ID	**AL-4B**	**Alarm Name**	**2nd Syntec Encoder Runs in Bootloader Mode**
Alarm Content	When 2nd is Syntec Encoder and is Running in Bootloader Mode, alarm occurs.		
Possible Cause	1. Power failure or disconnection during firmware update process		
Possible Solution	1. Update firmware again and restart.		

All in one ID 2nd Single Axis ID	**AL-338**		
1st Single Axis ID	**AL-75**	**Alarm Name**	**Encoder Register Access Error**
Alarm Content	Encoder Register Access Error		

Possible Cause	1. Error count is too high while accessing encoder register
Possible Solution	1. Preclude encoder wiring interferences, reinforce grounding a. Status surveillance: i. Pn-D73(D1-28) Serial Encoder CRC error count(hardware) ii. Pn-D74(D1-29) Serial Encoder CRC error count(software) iii. Pn-D76(D1-47) Serial Encoder overtime error count b. If this alarm occurs when saving parameters, reset alarm and permanently resave parameters again. c. If issue is recurring, contact dealer or Syntec Corp. for repairs.

All in one ID **2nd Single Axis ID**	**AL-339**		
1st Single Axis ID	**AL-76**	**Alarm Name**	**2nd Encoder Register Access Error**
Alarm Content	2nd Encoder Register Access Error		
Possible Cause	1. Error count is too high while accessing 2nd encoder register		
Possible Solution	Preclude encoder wiring interferences, reinforce grounding a. Status surveillance: i.Pn-D77(D1-42) Serial Encoder CRC error count(hardware) ii.Pn-D78(D1-43) Serial Encoder CRC error count(software) iii.Pn-D7A(D1-60) Serial Encoder overtime error count b.If this alarm occurs when saving parameters, reset alarm and permanently resave parameters again. c.If issue is recurring, contact dealer or Syntec Corp. for repairs		

All in one ID **2nd Single Axis ID**	**AL-33A**		
1st Single Axis ID	**-**	**Alarm Name**	**Encoder not support type auto detection**
Alarm Content	Type auto detection only support syntec motors		
Possible Cause	1. Setting Pn-900 Encoder Communiation Type to 12 with non-Syntec motors or non-Nikon encoders. 2. Pn-706 Motor Serial Number exception error.		
Possible Solution	1. Please check up and correct Pn-900 setting. 2. Please contact Syntec Corp.		

All in one ID **2nd Single Axis ID**	**AL-33B**		
1st Single Axis ID	**-**	**Alarm Name**	**2nd Encoder not support type auto detection**
Alarm Content	Type auto detection not support 2nd encoders		
Possible Cause	1. Setting Pn-920 2nd Encoder Communication Type to 12 with non-Nikon encoders		
Possible Solution	1. Please check up and correct Pn-920 setting.		

All in one ID **2nd Single Axis ID**	**AL-340**		
1st Single Axis ID	**-**	**Alarm Name**	**Encoder Status Error**
Alarm Content	Encoder status has errors to operate normally		
Possible Cause	1. if using Syntec encoder and version from 2.0.8 or 2.1.1, which support "over temperature self-diagnosis", then probably occurs "Encoder over temperature".		
Possible Solution	1. if using Syntec encoder and version from 2.0.8 or 2.1.1, which support "over temperature self-diagnosis", then check temperature feedback and settings.		

All in one ID **2nd Single Axis ID**	**AL-344**		
1st Single Axis ID	**--**	**Alarm Name**	**Encoder Signal Noise Interference**
Alarm Content	Encoder Signal Noise Interference		
Possible Cause	Check Pn-D74 Encoder CRC error counter(Software). Check the encoder wiring.		
Possible Solution	1. Check the encoder wiring and grounding. 2. Send back to Syntec Corp.		

All in one ID **2nd Single Axis ID**	**AL-350**		
1st Single Axis ID	**-**	**Alarm Name**	**2nd Encoder Status Error**

Alarm Content	Encoder status has errors to operate normally
Possible Cause	1. if using Syntec encoder and version from 2.0.8 or 2.1.1, which support "over temperature self-diagnosis", then probably occurs "Encoder over temperature".
Possible Solution	1. if using Syntec encoder and version from 2.0.8 or 2.1.1, which support "over temperature self-diagnosis", then check temperature feedback and settings.

All in one ID **2nd Single Axis ID**	**AL-354**		
1st Single Axis ID	**--**	**Alarm Name**	**2nd Encoder Signal Noise Interference**
Alarm Content	2nd Encoder Signal Noise Interference		
Possible Cause	Check Pn-D78 2nd Encoder CRC error counter(Software). Check the encoder wiring.		
Possible Solution	1. Check the 2nd encoder wiring and grounding. 2. Send back to Syntec Corp.		

10.1 AL-30A Encoder Over Speed

All in one ID **2nd Single Axis ID**	**AL-30A**		
1st Single Axis ID	**AL-850**	**Alarm Name**	**Encoder Over Speed**
Alarm Content	1. Nikon encoder speed exceeds 6000RPM 2. FeeDat encoder over speed 3. Motor with Panasonic encoder probably revolved over 6500RPM 4. Motor with Mitutoyo encoder exceeds maximum speed		
Possible Cause	1. Check motor is over speed once or not.		
Possible Solution	1. Avoid having encoder run at maximum speed.		
Detailed Instructions	【Pn-D95】Enc Error Status ALMC		

10.2 AL-30B Encoder position feedback error

All in one ID 2nd Single Axis ID	AL-30B		
1st Single Axis ID	**-**	**Alarm Name**	**Encoder position feedback error**
Alarm Content	Encoder module error, causing encoder unable to read absolute position data		
Possible Cause	1. FeeDat encoder circuit board breakage 2. BiSSC encoder sensor and magnetic ring are assembled incorrectly. 3. Nikon's absolute position of absolute module is differ from incremental module. 4. EnDat encoder position information error. 5. The position information of Panasonic encoder is error. 6. The position information of Mitutoyo encoder is error. 7. The position information of Mitsubsihi encoder is error. 8. The position information of Delta encoder is error.		
Possible Solution	1. Make sure encoder sensor and optical ruler are assembled correctly 2. Check encoder for dust or oil contamination 3. If this is a recurring issue, send back to authorized dealer or Syntec Corp. for repairs		
Detailed Instructions	【Pn-D95】Enc Error Status ALMC		

10.3 AL-30C Encoder multi-turn data error

All in one ID 2nd Single Axis ID	AL-30C		
1st Single Axis ID	**AL-66**	**Alarm Name**	**Encoder multi-turn data error**
Alarm Content	Encoder module error, causing encoder unable to read multi-turn data		
Possible Cause	1. Nikon encoder's multi-turn data is incompatible to single-turn data 2. Panasonic encoder's multi-turn data is incompatible to single-turn data. 3. Mitsubishi encoder's multi-turn data is incompatible to single-turn data. 4. Tamagawa encoder's multi-turn data is incompatible to single-turn data. 5. HIWIN encoder's multi-turn data is incompatible to single-turn data. 6. Sankyo encoder's multi-turn data is incompatible to single-turn data. 7. HCFA encoder's multi-turn data is incompatible to single-turn data.		

Possible Solution	1. Check encoder for dust or oil contamination 2. If this is a recurring issue, send back to authorized dealer or Syntec Corp. for repairs
Detailed Instructions	【Pn-D95】Enc Error Status ALMC

10.4 AL-30D Encoder Unable to Finish Operation Configuration

All in one ID **2nd Single 轴向轴向 ID**	**AL-30D**		
1st Single 轴向轴向 ID	**-**	**Alarm Name**	**Encoder Unable to Finish Operation Configuration**
Alarm Content	Failed to set operation configuration		
Possible Cause	1. While setting operation configuration, unable to write the corresponding memory or meet access failure 2. Fail to access encoder memory		
Possible Solution	1. Check Pn-D9B and encoder software version, and update to the right version 2. Check if communication ever failed and then check up wiring of this encoder		

10.5 AL-30E Encoder Battery Over Voltage

All in one ID **2nd Single Axis ID**	**AL-30E**		
1st Single Axis ID	**-**	**Alarm Name**	**Encoder Battery Over Voltage**
Alarm Content	Encoder battery supply is over voltage, which may lead to encoder damage.		
Possible Cause	1. Encoder battery voltage is over the certain threshold of specification		
Possible Solution	1. Check the wiring of encoder 2. Delta: Check the voltage of the battery if over 3.8V		

10.6 AL-31A 2nd Encoder Over Speed

All in one ID 2nd Single Axis ID	AL-31A		
1st Single Axis ID	**AL-8A5**	**Alarm Name**	**2nd Encoder Over Speed**
Alarm Content	1. Nikon second encoder speed exceeds 6000RPM 2. FeeDat second encoder over speed 3. Motor with Panasonic second encoder probably revolved over 6500RPM 4. Motor with Mitutoyo second encoder exceeds maximum speed		
Possible Cause	1. Check motor is over speed once or not. command		
Possible Solution	1. Avoid having encoder run at maximum speed		
Detailed Instructions	【Pn-D96】2nd Enc Error Status ALMC		

10.7 AL-31B 2nd Encoder position feedback error

All in one ID 2nd Single Axis ID	AL-31B		
1st Single Axis ID	**-**	**Alarm Name**	**2nd Encoder position feedback error**
Alarm Content	2nd Encoder module error, causing encoder unable to read absolute position data		
Possible Cause	1. FeeDat second encoder circuit board breakage 2. BiSSC second encoder sensor and magnetic ring are assembled incorrectly 3. Nikon encoder's multi-turn data is incompatible to single-turn data 4. EnDat second encoder position information error 5. The position information of Panasonic encoder is error. 6. The position information of Mitutoyo encoder is error. 7. The position information of Mitsubsihi encoder is error. 8. The position information of Delta encoder is error.		
Possible Solution	1. Make sure encoder sensor and optical ruler are assembled correctly 2. Check encoder for dust or oil contamination 3. If this is a recurring issue, send back to authorized dealer or Syntec Corp. for repairs		
Detailed Instructions	【Pn-D96】2nd Enc Error Status ALMC		

10.8 AL-31C 2nd Encoder multi-turn data error

All in one ID **2nd Single Axis ID**	**AL-31C**		
1st Single Axis ID	**AL-67**	**Alarm Name**	**2nd Encoder multi-turn data error**
Alarm Content	Encoder module error, causing encoder unable to read multi-turn data.		
Possible Cause	1. Nikon 2nd encoder's multi-turn data is incompatible to single-turn data 2. Panasonic 2nd encoder's multi-turn data is incompatible to single-turn data. 3. Mitsubishi 2nd encoder's multi-turn data is incompatible to single-turn data. 4. Tamagawa 2nd encoder's multi-turn data is incompatible to single-turn data. 5. HIWIN 2nd encoder's multi-turn data is incompatible to single-turn data. 6. Sankyo 2nd encoder's multi-turn data is incompatible to single-turn data. 7. HCFA 2nd encoder's multi-turn data is incompatible to single-turn data.		
Possible Solution	1. Check encoder for dust or oil contamination 2. If this is a recurring issue, send back to authorized dealer or Syntec Corp. for repairs		
Detailed Instructions	【Pn-D96】2nd Enc Error Status ALMC		

10.9 AL-31D 2nd Encoder Unable to Finish Operation Configuration

All in one ID **2nd Single Axis ID**	**AL-31D**		
1st Single Axis ID	**-**	**Alarm Name**	**2nd Encoder Unable to Finish Operation Configuration**
Alarm Content	Failed to set operation configuration		
Possible Cause	1. While setting operation configuration, unable to write the corresponding memory or meet access failure 2. Fail to access 2nd encoder memory		
Possible Solution	1. Check Pn-D9C and encoder software version, and update to the right version 2. Check if communication ever failed and then check up wiring of this encoder		

10.10 AL-31E 2nd Encoder Battery Over Voltage

All in one ID **2nd Single Axis ID**	**AL-31E**		
1st Single Axis ID	**-**	**Alarm Name**	**2nd Encoder Battery Over Voltage**
Alarm Content	2nd Encoder battery supply is over voltage, which may lead to encoder damage.		
Possible Cause	1. Encoder battery voltage is over the certain threshold of specification		
Possible Solution	1. Check the wiring of encoder 2. Delta: Check the voltage of the battery if over 3.8V		

10.11 AL-32A Encoder External(2) Thermal Sensor is Unplugged

All in one ID **2nd Single Axis ID**	**AL-32A**		
1st Single Axis ID	**AL-5C**	**Alarm Name**	**Encoder External(2) Thermal Sensor is Unplugged**
Alarm Content	Encoder External(2) Thermal Sensor is Unplugged		
Possible Cause	1. Encoder External(2) Thermal Sensor is not plugged correctly 2. Encoder external(2) Thermal Sensor is broken 3. Abnormal power supply voltage of 1st encoder 4. With SYNTEC encoder, encoder external(2) thermal sensor type setting error		

Possible Solution	1. (a) Make sure encoder external(2) Thermal Sensor is wired properly. (b) If encoder External(2) Thermal Sensor is not needed, set parameter Pn-74C(P1-72) to 1. 2. Measure the resistance of encoder external(2) Thermal Sensor at ambient temperature, and check if the measured value of resistance is in the operating range from 500Ω to 1500Ω. If the measured value of resistance appears to be wrong, then please replace encoder external(2) Thermal Sensor with a new one. 3. Check if the value of drive parameter Pn-D70【The 5V Detection of 1st Encoder】is lower than 5V. If so, please check the power supply voltage of 1st encoder port on the drive by probing the output pin. If the supply voltage is normal, then the 1st encoder may be broken; otherwise, check if the drive is working correctly. 4. Check the type of resistance used for encoder external(2) thermal sensing a. If using PT1000:Update drive firmware to V3.0.0 or higher, and 2nd Encoder firmware to V2.1.1 or higher. And set Pn-75C into 1. b. If using KTY84:Please set Pn-75C into 0.

10.12 AL-32C 2nd Encoder internal Thermal Sensor Error

All in one ID **2nd Single Axis ID**	**AL-32C**		
1st Single Axis ID	**AL-5E**	**Alarm Name**	**2nd Encoder internal Thermal Sensor Error**
Alarm Content	2nd Encoder internal Thermal Sensor Error		
Possible Cause	1. 2nd Encoder internal Thermal Sensor Error 2. With SYNTEC encoder, 2nd encoder internal thermal sensor type setting error		
Possible Solution	1. If 2nd encoder internal Thermal Sensor is not needed, set parameter Pn-74E(P1-74) to 1. 2. Check the type of resistance used for 2nd encoder internal thermal sensing a. If using PT1000:Update drive firmware to V3.0.0 or higher, and 2nd Encoder firmware to V2.1.1 or higher. And set Pn-75E into 1. b. If using KTY84:Please set Pn-75E into 0. 3. Send back to dealer or Syntec Corp. for repairs.		

10.13 AL-32D 2nd Encoder External(1) Thermal Sensor is Unplugged

All in one ID **2nd Single Axis ID**	**AL-32D**		
1st Single Axis ID	**AL-5F**	**Alarm Name**	**2nd Encoder External(1) Thermal Sensor is Unplugged**

Alarm Content	2nd Encoder External(1) Thermal Sensor is Unplugged
Possible Cause	1. 2nd Encoder External(1) Thermal Sensor is not plugged correctly 2. 2nd Encoder external(1) Thermal Sensor is broken 3. Abnormal power supply voltage of 2nd encoder 4. With SYNTEC encoder, 2nd encoder external(1) thermal sensor type setting error
Possible Solution	1. (a) Make sure 2nd encoder external(1) Thermal Sensor is wired properly. (b) If 2nd encoder external(1) Thermal Sensor is not needed, set parameter Pn-74F(P1-75) to 1. 2. Measure the resistance of 2nd encoder external(1) Thermal Sensor at ambient temperature, and check if the measured value of resistance is in the operating range from 500Ω to 1500Ω. If the measured value of resistance appears to be wrong, then please replace the 2nd encoder external(1) Thermal Sensor with a new one. 3. Check if the value of drive parameter Pn-D7B【The 5V Detection of 2nd Encoder】is lower than 5V. If so, please check the power supply voltage of 2nd encoder port on the drive by probing the output pin. If the supply voltage is normal, then the 2nd encoder may be broken; otherwise, check if the drive is working correctly. 4. Check the type of resistance used for 2nd encoder external(1) thermal sensing a. If using PT1000:Update drive firmware to V3.0.0 or higher, and 2nd Encoder firmware to V2.1.1 or higher. And set Pn-75F into 1. b. If using KTY84:Please set Pn-75F into 0.

10.14 AL-32E 2nd Encoder External(2) Thermal Sensor is Unplugged

All in one ID **2nd Single Axis ID**	**AL-32E**		
1st Single Axis ID	**AL-60**	**Alarm Name**	**2nd Encoder External(2) Thermal Sensor is Unplugged**
Alarm Content	2nd Encoder External(2) Thermal Sensor is Unplugged		
Possible Cause	1. 2nd Encoder External(2) Thermal Sensor is not plugged correctly 2. 2nd Encoder external(2) Thermal Sensor is broken 3. Abnormal power supply voltage of 2nd encoder 4. With SYNTEC encoder, 2nd encoder external(2) thermal sensor type setting error		

Possible Solution	1. (a) Make sure 2nd encoder external(2) Thermal Sensor is wired properly. (b) If 2nd encoder external(2) Thermal Sensor is not needed, set parameter Pn -750(P1-76) to 1. 2. Measure the resistance of 2nd encoder external(2) Thermal Sensor at ambient temperature, and check if the measured value of resistance is in the operating range from 500Ω to 1500Ω. If the measured value of resistance appears to be wrong, then please replace the 2nd encoder external(1) Thermal Sensor with a new one. 3. Check if the value of drive parameter Pn-D7B【The 5V Detection of 2nd Encoder】is lower than 5V. If so, please check the power supply voltage of 2nd encoder port on the drive by probing the output pin. If the supply voltage is normal, then the 2nd encoder may be broken; otherwise, check if the drive is working correctly. 4. Check the type of resistance used for 2nd encoder external(2) thermal sensing a. If using PT1000:Update drive firmware to V3.0.0 or higher, and 2nd Encoder firmware to V2.1.1 or higher. And set Pn-760 into 1. b. If using KTY84:Please set Pn-760 into 0.

10.15 AL-33A Encoder not support type auto detection

All in one ID **2nd Single Axis ID**	**AL-33A**		
1st Single Axis ID	**-**	**Alarm Name**	**Encoder not support type auto detection**
Alarm Content	Type auto detection only support syntec motors		
Possible Cause	1. Setting Pn-900 Encoder Communiation Type to 12 with non-Syntec motors or non-Nikon encoders. 2. Pn-706 Motor Serial Number exception error.		
Possible Solution	1. Please check up and correct Pn-900 setting. 2. Please contact Syntec Corp.		

10.16 AL-33B Encoder not support type auto detection

All in one ID **2nd Single Axis ID**	**AL-33B**		
1st Single Axis ID	**-**	**Alarm Name**	**2nd Encoder not support type auto detection**
Alarm Content	Type auto detection not support 2nd encoders		

Possible Cause	1. Setting Pn-920 2nd Encoder Communication Type to 12 with non-Nikon encoders
Possible Solution	1. Please check up and correct Pn-920 setting.

10.17 AL-64 1st Encoder Memory Error

All in one ID **2nd Single Axis ID**	**--**		
1st Single Axis ID	**AL-64**	**Alarm Name**	**1st Encoder** Memory Error
Alarm Content	Nikon's 1st Encoder internal memory error		
Possible Cause	Nikon encoder read and write function error		
Check	Reboot the driver, oberve if problem is fixed		
Possible Solution	Send back to dealer or Syntec Corp. for repairs		

10.18 AL-65 2nd Encoder Memory Error

All in one ID **2nd Single 軸向軸向 ID**	**--**		
1st Single 軸向軸向 ID	**AL-65**	**Alarm Name**	**2nd Encoder** Memory Error
Alarm Content	2nd Encoder internal memory error		
Possible Cause	Nikon encoder read and write function error		
Check	Reboot the driver, oberve if problem is fixed		
Possible Solution	Send back to dealer or Syntec Corp. for repairs		

10.19 AL-300 Encoder Halt Alarm

All in one ID 2nd Single Axis ID	AL-300		
1st Single Axis ID	**AL-51**	**Alarm Name**	**Encoder Halt Alarm**
Alarm Content	Encoder crashed and can't correctly send back position data.		
Possible Cause	1. Syntec encoder crash and watchdog restart encoder. Non-Syntec encoder internal error. 2. Motor overheating 3. Noise interference 4. Hardware malfunction		
Possible Solution	1. Reboot driver and observe encoder for abnormality 2. Check Pn-90E(P3-34) Encoder Reset Counter. If encoder abnormal, check whether the motor is overheated or not. 3. Make sure the shielding wire attached to encoder inside the junction box is connected to the motor's ground wire. 4. Replace encoder. 5. If this is a recurring issue, send back to authorized dealer or Syntec Corp. for repairs		
Detailed Instructions	AL-15 Issue Trouble Shooting 【Pn-D95】Enc Error Status ALMC		

10.20 AL-301 Encoder Index Error

All in one ID 2nd Single Axis ID	AL-301		
1st Single Axis ID	**AL-23**	**Alarm Name**	**Encoder Index Error**
Alarm Content	1. Encoder didn't detect reference signal during encoder test. 2. Encoder-rotor offset calibration takes too long		
Possible Cause	1. Connector wiring is poor contact, or connection is wrong 2. Incorrect encoder setting 3. Encoder pole number (Pn-90A/P3-30) setting error 4. Communication interference 5. Encoder Hardware malfunction		

Possible Solution	1. Check encoder wiring, refer to "Wiring and Signal" section of manual. 2. Execute "Encoder test" and check for alarms . If any alarm goes off, refer to "Syntec auto tuning" section of manual. 3. Set encoder pole number correctly and reboot driver. 4. Refer to "Syntec motor encoder grounding program" section of manual 5. Slowly shift axis by MPG (manual pulse generator) and confirm whether Index Counter equals encoder resolution or not. If not , send back to distributor or Syntec representative to check hardware.
Detailed Instructions	AL-23 Issue Trouble Shooting

10.21 AL-302 Encoder Direction Error

All in one ID **2nd Single Axis ID**	**AL-302**		
1st Single Axis ID	**AL-24**	**Alarm Name**	**Encoder Direction Error**
Alarm Content	Encoder's direction is opposite of UVW phase sequence.		
Possible Cause	1. The parameter "Encoder Polarity " setting error.		
Possible Solution	1. Check whether mechanical angle is correct or not. If mechanical angle is incorrect and motor is PMSM type, change any two of UVW power cable. If motor is NOT PMSM type, set parameter Pn-021(P3-22) (0 to 1、 1 to 0) and reboot driver. ⚠If motor is PMSM type, set parameter Pn-021(P3-22) is not recommended.		

10.22 AL-303 Encoder Resolution Error

All in one ID **2nd Single Axis ID**	**AL-303**		
1st Single Axis ID	**AL-25**	**Alarm Name**	**Encoder Resolution Error**
Alarm Content	Encoder resolution error.		
Possible Cause	1. Encoder resolution Pn-902(P3-21) setting error 2. Encoder pole number Pn-90A(P3-30) setting error 3. Hardware malfunction		

Possible Solution	1. Check if parameter Pn-902(P3-21) is equal to resolution or not. If not, set encoder resolution to correct value and reboot driver 2. Check parameter Pn-90A(P3-30), set encoder pole pair number correctly and reboot driver 3. Send back to distributor or Syntec representative to check hardware

10.23 AL-304 Encoder No Feedback

All in one ID **2nd Single Axis ID**	**AL-304**		
1st Single Axis ID	**AL-27**	**Alarm Name**	**Encoder No Feedback**
Alarm Content	Drive fails to receive signals from the encoder .		
Possible Cause	1. With Syntec motors after manufacturing date of 2021/05, the older driver may not support its communication. 2. Encoder wire is untied or unconnected 3. Encoder communication interface setting error 4. Encoder port number setting error 5. Wire failure (shor circuit, wire breakage) 6. Encoder malfunction 7. Driver's pre-circuit board malfunction 8. Noise generated in QEP encoder 9. Encoder's baud rate is unsupported 10. Encoder firmware update failed		

Possible Solution	1. With Syntec motors after manufacturing date of 2021/05, it is recommended that upgrade driver version at least 3.0.13. 2. Check if encoder wiring and pin definitions are correct or not. Refer to "Wiring and signal" section of manual. 3. Refer to "Driver Parameter Manual", set parameters correctly and restart drive. 4. Replace encoder cable (encoder's green wire between the drive and motor), and send broken one to Suzhou Syntec. 5. Replace motor 6. Replace driver 7. Set Pn-52E(P6-65) to change the speed in startup. 8. Currently supported encoder baud rates are as follows: TAMAGAWA、SYNTEC、SANKYO、BiSSC：2.5MHz Nikon: 2.5MHz、4MHz HIWIN：2.35MHz 9. If the alarm happend after encoder firmware update, please contact syntec or authorized representative 10. If using BiSSC encoder, and the alarm happens during Encoder Offset Searching 2-4 tuning. With there is another encoder plugged, please reboot the drive. With none of encoder plugged, that means the encoder used probably not support 2-4 tuning. In this case, please using Encoder Offset Searching 3-4 tuning or contact distributor or Syntec representative.
Detailed Instructions	AL-27 Issue Trouble Shooting

10.24 AL-305 Encoder Pulse Loss

All in one ID **2nd Single Axis ID**	**AL-305**		
1st Single Axis ID	**AL-28**	**Alarm Name**	**Encoder Pulse Loss**
Alarm Content	Pulse number detected is different in each revolution		
Possible Cause	1. Encoder cable malfunction 2. Encoder's signal is interfering by rotor's axis with magnetic 3. Encoder malfunction		
Possible Solution	1. Replace cable. 2. Check if joining between encoder cable and motor is double end grounded. Check if encoder and motor are grounded. 3. Send back to Syntec or authorized representative.		

10.25 AL-306 Encoder Z Index Shift

All in one ID **2nd Single Axis ID**	**AL-306**		
1st Single Axis ID	**AL-54**	**Alarm Name**	**Encoder Z Index Shift**
Alarm Content	Relative position between A/B phase and Z index is different in each revolution, so feedback position of encode is error possibly.		
Possible Cause	**Syntec encoder:** 1. Syntec encoder's firmware version is outdated 2. Encoder is under noise interference, which causing feedback signal error. 3. Encoder's signal is interfering by rotor's axis with magnetic 4. Hallow magnetic ring Zindex position is differ from the setting parameter 5. Magnetic ring's non-Zindex zone has magnetic field distribution **Non-Syntec encoder:** 1. The circuit board of non-Syntec encoder is broken. 2. Non-Syntec sensor and encoder are wrong assembly.		
Possible Solution	**Syntec encoder:** 1. Update drive's version to 1.6.14 or above(Multi-Axis Servo Drive is updated to V2.2.5 or above), and update encoder's version to 2.0.7 or above. 2. Check if encoder and motor are grounded. 3. Check if joining between encoder cable and motor is double end grounded. 4. Short term countermeasure: Magnetic axle center causing AL-54 SOP Long term countermeasure: Cross-Strait motor plants import axle center inspections starting 2016/7 5. Short term countermeasure: Raise Z index trigger level of P6-60/Pn-940 encoder to 35, and position axle after executing encoder test(rated current 150%). make sure alarm AL54/ AL306 doesn't go off. Long term countermeasure: Imported ultimate solution into manufacture process since 2018/1/11 6. Send the encoder to Syntec or authorized representative for repair. **Non-Syntec encoder:** 1. Check the encoder is contaminated by dust or oil. 2. Check the gap between sensor and encoder is correctly. 3. Send back to Syntec Corp.		
Detailed Instructions	AL-54 Issue Trouble Shooting		

10.26 AL-307 Encoder Status Extreme Error

All in one ID 2nd Single Axis ID	AL-307		
1st Single Axis ID	**AL-48**	**Alarm Name**	**Encoder Status Extreme Error**
Alarm Content	Encoder status has extreme errors to operate normally		
Possible Cause	1. Serial encoder communication interference 2. Serial encoder wire is untied or unconnected 3. Connector between drive and encoder has solder empty or code solder 4. Encoder's cable grounding failure 5. Encoder communication type setting error 6. Automatic search for BiSSC data length is failure 7. if the drive is v2.x servo drive with a Nikon encoder, check drive's status parameter Pn-D95 and other encode's alarms first. 8. if using Syntec encoder and version from 2.0.8 or 2.1.1, which support "over temperature self-diagnosis", then probably occurs "Encoder extreme over temperature". 9. Encoder's firmware malfunction 10. Encoder's hardware malfunction		
Possible Solution	1. Check if drive's status parameter Pn-D73~Pn-D76(D1-28,D1-29,D1-46,D1-47) is zero or not. 2. Check if encoder and motor are grounded. 3. Check if joining between encoder cable and motor is double end grounded. 4. Check welding wire at the interface between encoder and drive. 5. Check welding wire at the interface between encoder and motor. 6. Check conduction between metal part of first encoder port and drive case. If it's not conduction , the drive is defected has defects. Please contact Suzhou or Taiwan Technical Center for changing procedure. 7. If it did't work by the above solutions: a. Attach magnetic ring to both sides of the encoder cable b. try to separate the encoder cable from the motor power cable or other powerful cables. 8. Refer to chapter "Drive Parameter" in user manual, set Pn-900(P3-20) to right value, and reboot 9. Check BiSSC Encoder data length. Support 18, 26, 32, 36bit BiSSC Encoder only. 10. If the drive is v2.x servo drive with a Nikon encoder, check drive's status parameter Pn-D95 and other encode's alarms first. 11. if using Syntec encoder and version from 2.0.8 or 2.1.1, which support "over temperature self-diagnosis", then check temperature feedback and settings. 12. Backup motor's parameters and record drive's and encoder's versions. Update encoder firmware's version to V1.8.14 or above. 13. Please contact Suzhou or Taiwan Technical Center.		

Detailed Instructions	AL-48 Issue Problem Shooting

10.27 AL-308 1st Encoder over speed when power on

All in one ID **2nd Single Axis ID**	**AL-308**		
1st Single Axis ID	**AL-68**	**Alarm Name**	**1st Encoder over speed when power on**
Alarm Content	Position changes too fast leads to unfinished initialization. Note: If alarm occurs right after power on, encoder will not complete parameter readback.		
Possible Cause	1. Nikon encoder's speed exceeds 250RPM when power is on 2. If alarm occurs when motor isn't running, there is possibly encoder malfunction. 3. If the first encoder is Panasonic Encoder,the motor's speed must run below 100RPM when power is on. 4. If the first encoder is Mitutoyo Encoder,the motor's speed must run below 100RPM when power is on.		
Check	Check if motor is running before drive is plugged in		
Possible Solution	1. Once the motor stops, reset alarm. 2. Contact motor company for repair.		
Detailed Instructions	【Pn-D95】Enc Error Status ALMC		

10.28 AL-309 Serial Encoder Communication Type is Wrong

All in one ID **2nd Single Axis ID**	**AL-309**		
1st Single Axis ID	**AL-4C**	**Alarm Name**	**Serial Encoder Communication Type is Wrong**

Alarm Content	1. Encoder communication interface setting is incorrect while using serial encoder 2. If Pn-900(P3-20) is set to 12 and connected with a Nikon encoder, then it is communication issue. 3. If the Pn-900 is set to 23 and connected to the HCFA encoder, then perhaps the encoder does not support high-cycle communication. 4. This alarm occurs when power-up with HCFA/ Sankyo encoders. Please check Pn-642, Pn-643 settings if correct. 5. Setting of Pn-900 can not be used at the setting of Pn-901 6. FPGA version doesn't support this encoder type
Possible Cause	1. The parameter of encoder communcation interface (Pn-900(P3-20)) and encoder's serial communcation are mismatched. 2. Check if encoder cables are indeed grounded and the wire has breakage or not. 3. Check if the specifications of HCFA motor support high-cycle communication. 4. With HCFA/ Sankyo encoders, frequency of communication is not legal. 5. Check if Pn-901 is set correctly 6. FPGA version doesn't support the encoder type Pn-900(P3-20) setting.
Possible Solution	1. Set Pn-900(P3-20) correctly and reboot drive. 2. Reassemble cables, make sure there is no interference and then restart 3. Set Pn-900 to 22, and then reboot the drive 4. Please look up manual of Pn-900(P3-20). Refresh setting with correct ones. 5. Setup correct Pn-901 and restart Drive. Refer to "Syntec Parameter Manual" for setup detail 6. Upgrade drive installation package according to encoder type

10.29 AL-310 2nd Encoder Halt Alarm

All in one ID **2nd Single Axis ID**	**AL-310**		
1st Single Axis ID	**AL-52**	**Alarm Name**	**2nd Encoder Halt Alarm**
Alarm Content	Second encoder cashes, unable to send back position data		
Possible Cause	1. Syntec encoder crash and watchdog restart encoder. Non-Syntec encoder internal error. 2. Motor overheating 3. Noise interference 4. Hardware malfunction		

Possible Solution	1. Restart and observe second encoder for abnormality 2. Check Pn-92E(P6-94) 2nd Encoder Reset Counter. If encoder abnormal, check whether the motor is overheated or not 3. Check whether the motor is overheated or not, if the parameter Pn-92E(P6-94) is 5 4. Make sure the shielding wire attached to encoder inside the junction box is connected to the motor's ground wire. 5. Replace encoder. 6. If this is a recurring issue, send back to authorized dealer or Syntec Corp. for repairs
Detailed Instructions	【Pn-D96】2nd Enc Error Status ALMC

10.30 AL-311 2nd Encoder Index Error

All in one ID **2nd Single Axis ID**	**AL-311**		
1st Single Axis ID	**AL-33**	**Alarm Name**	**2nd Encoder Index Error**
Alarm Content	1. Encoder didn't detect reference signal during encoder test. 2. Encoder-rotor offset calibration takes too long.		
Possible Cause	1. Connector wiring is poor contact, or connection is wrong. 2. Second encoder setting error. 3. Second encoder pole number(Pn-92A/P6-90) setting error. 4. Communication interference 5. Second encoder hardware malfunction		
Possible Solution	1. Check wiring of second encoder, refer to "Wiring and Signal" section of manual. 2. Execute "Encoder test". If any alarms goes off, refer to "Syntec auto tuning" section of manual. 3. Set encoder pole number correctly and reboot driver. 4. Refer to "Syntec motor encoder grounding program" section of manual 5. Slowly shift axis by MPG (manual pulse generator) and confirm whether Index Counter equals encoder resolution or not. If not , send back to distributor or Syntec representative to check hardware.		

10.31 AL-312 2nd Encoder Direction Error

All in one ID **2nd Single Axis ID**	**AL-312**		
1st Single Axis ID	**AL-34**	**Alarm Name**	**2nd Encoder Direction Error**

Alarm Content	Second encoder's direction is opposite of UVW phase sequence.
Possible Cause	1. The parameter "Second encoder polarity " setting error
Possible Solution	1. Check whether mechanical angle is correct or not. If mechanical angle is incorrect and motor is PMSM type, change any two of UVW power cable. If motor is NOT PMSM type, set parameter Pn-022(P6-82) (0 to 1、 1 to 0) and reboot driver. ⚠If motor is PMSM type, set parameter Pn-022(P6-82) is not recommended.

10.32 AL-313 2nd Encoder resolution error

All in one ID **2nd Single Axis ID**	**AL-313**		
1st Single Axis ID	**AL-35**	**Alarm Name**	**2nd Encoder resolution error**
Alarm Content	Second encoder resolution error.		
Possible Cause	1. 2nd encoder resolution Pn-922(P6-81) setting error 2. 2nd Encoder pole number Pn-92A(P6-90) setting error. 3. Second encoder hardware malfunction		
Possible Solution	1. Check if parameter Pn-922(P6-81) is equal to and resolution or not. If they differ not, set encoder resolution to correct value correct encoder resolution value and restart drive and reboot drive. 2. Check parameter Pn-92A(P6-90), set encoder pole pair number correctly and reboot driver 3. Send back to authorized dealer or Syntec Corp. for repairs.		

10.33 AL-314 2nd Encoder no feedback

All in one ID **2nd Single Axis ID**	**AL-314**		
1st Single Axis ID	**AL-36**	**Alarm Name**	**2nd Encoder no feedback**
Alarm Content	Drive fails to receive signals from the second encoder .		

Possible Cause	1. Second encoder wire is untied or unconnected. 2. Encoder communication interface setting error. 3. Encoder port number setting error. 4. Wire failure (shor circuit, wire breakage) 5. Encoder malfunction 6. Driver's pre-circuit board malfunction 7. In dual feedback control and 2nd encoder type is QEP, mechanical problem and machining condition may cause alarm 8. Encoder's baud rate is unsupported 9. Encoder firmware update failed
Possible Solution	1. Check if serial encoder wiring and pin definitions for errors are correct or not. Refer to "Wiring and signal" section of manual. 2. Refer to "Drive Parameter Manual", set parameters correctly and reboot driver. 3. Replace encoder cable (encoder's green wire between the drive and motor), and send broken one to Suzhou Syntec. 4. Replace motor 5. Replace driver 6. Refer to "Dual feedback control and outer feedback using linear scale" section of manual, change Pn-52F properly 7. Currently supported encoder baud rates are as follows: TAMAGAWA、SYNTEC、SANKYO、BiSSC：2.5MHz Nikon: 2.5MHz、4MHz HIWIN：2.35MHz 8. If the alarm happend after encoder firmware update, please contact syntec or authorized representative 9. If using BiSSC encoder, and the alarm happens during Encoder Offset Searching 2-4 tuning. With there is another encoder plugged, please reboot the drive. With none of encoder plugged, that means the encoder used probably not support 2-4 tuning. In this case, please using Encoder Offset Searching 3-4 tuning or contact distributor or Syntec representative.

10.34 AL-315 2nd Encoder Pulse Loss

All in one ID **2nd Single Axis ID**	**AL-315**		
1st Single Axis ID	**AL-39**	**Alarm Name**	**2nd Encoder Pulse Loss**
Alarm Content	Pulse number detected is different in each revolution		
Possible Cause	1. Second encoder's cable problem 2. Second encoder's signal is interfering by rotor's axis with magnetic 3. Second encoder malfunction		

Possible Solution	1. Replace cable. 2. Check if joining between encoder cable and motor is double end grounded. Check if encoder and motor are grounded. 3. Send back to Syntec or authorized representative.

10.35 AL-316 2nd Encoder Z Index Shift

All in one ID **2nd Single Axis ID**	**AL-316**		
1st Single Axis ID	**AL-55**	**Alarm Name**	**2nd Encoder Z Index Shift**
Alarm Content	Relative position between A/B phase and Z index is different in each revolution, so feedback position of encoder is error possibly .		
Possible Cause	**Syntec encoder:** 1. Second encoder's firmware version is outdated 2. Encoder is under noise interference, which causing feedback signal error. 3. Encoder's signal is interfering by rotor's axis with magnetic 4. Hallow magnetic ring Zindex position is different ~~than~~ from the written parameter. 5. Magnetic ring's non-Zindex zone has magnetic field distribution 6. Hardware malfunction **Non-Syntec encoder:** 1. The circuit board of non-Syntec encoder is broken. 2. Non-Syntec sensor and encoder are wrong assembly.		
Possible Solution	**Syntec encoder:** 1. Update drive's version to 1.6.14 or more recent(Multi-Axis Servo Drive is updated to V2.2.5), and update encoder's version to 2.0.7 or above. 2. Check if second encoder and motor are grounded. 3. Check if joining between second encoder cable and motor ~~are~~ is double end grounded. 4. Short term countermeasure: Magnetic axle center causing AL-54 SOP Long term countermeasure: Cross-Strait motor plants import axle center inspections starting 2016/7 5. Short term countermeasure: Raise Z index trigger level of P6-60/Pn-940 encoder to 35, and position axle after executing encoder test(rated current 150%). make sure alarm AL54/AL306 doesn't go off. Long term countermeasure: Imported ultimate solution into manufacture process since 2018/1/11 6. Send the second encoder to Syntec or authorized representative for repair. **Non-Syntec encoder:** 1. Check the encoder is contaminated by dust or oil. 2. Check the gap between sensor and encoder is correctly. 3. Send back to Syntec Corp.		

Detailed Instructions	AL-54 Issue Trouble Shooting

10.36 AL-317 2nd Encoder Status Extreme Error

All in one ID **2nd Single Axis ID**	**AL-317**		
1st Single Axis ID	**AL-49**	**Alarm Name**	**2nd Encoder Status Extreme Error**
Alarm Content	2nd Encoder status has extreme errors to operate normally		
Possible Cause	1. Second encoder communication interference. 2. Second Serial encoder wire is untied or unconnected 3. Connector between drive and encoder has solder empty or code solder 4. Second encoder's cable grounding failure 5. Second encoder communication type setting error. 6. Automatic search for BiSSC data length is failure 7. If the drive is v2.x servo drive with a Nikon encoder, check drive's status parameter Pn-D96 and other encode's alarms first. 8. If using Syntec encoder and version from 2.0.8 or 2.1.1, which support "over temperature self-diagnosis", then probably occurs "Encoder extreme over temperature". 9. Second encoder's firmware malfunction 10. Second encoder's hardware malfunction		

Possible Solution	1. Check if drive's status parameter Pn-D77~Pn-D7A(D1-42,D1-43,D1-59,D1-60) is zero or not. 2. Check if encoder and motor are grounded. 3. Check if joining between encoder cable and motor double end grounded. 4. Check welding wire at the interface between encoder and drive. 5. Check welding wire at the interface between encoder and motor. 6. Check conduction between metal part of first encoder port and drive case. If it's not conduction , the drive has defects. Please contact Suzhou or Taiwan Technical Center for changing procedure. 7. If it did't work by the above solutions, a. Attach magnetic ring to both sides of the encoder cable b.try to separate the encoder cable from the motor power cable or other powerful cables. 8. Refer to chapter "Drive Parameter" in user manual, set Pn-920(P6-80) to right value, and reboot 9. Check BiSSC Encoder data length. Support 18, 26, 32, 36bit BiSSC Encoder only. 10. If the drive is v2.x servo drive with a Nikon encoder, check drive's status parameter Pn-D96 and other encode's alarms first. 11. If using Syntec encoder and version from 2.0.8 or 2.1.1, which support "over temperature self-diagnosis", then check temperature feedback and settings. 12. Backup motor's parameters and record drive's and encoder's versions. Update encoder firmware's version to V1.8.14 or above. 13. Please contact Suzhou or Taiwan Technical Center.

10.37 AL-318 2nd Encoder over speed when power on

All in one ID **2nd Single Axis ID**	**AL-318**		
1st Single Axis ID	**AL-69**	**Alarm Name**	**2nd Encoder over speed when power on**
Alarm Content	Position changes too fast leads to unfinished initialization. Note: If alarm occurs right after power on, encoder will not complete parameter readback.		
Possible Cause	1. Nikon encoder speed exceeds 250RPM right after power on. 2. If alarm occurs when motor isn't running, encoder malfunction is possible 3. If the second encoder is Panasonic Encoder,the motor's speed must run below 100RPM when power is on. 4. If the second encoder is Mitutoyo Encoder,the motor's speed must run below 100RPM when power is on.		
Check	Observe if motor is running before drive power-on.		
Possible Solution	1. Once the motor stops, reset alarm. 2. Contact motor company for repairs.		

Detailed Instructions	【Pn-D96】2nd Enc Error Status ALMC

10.38 AL-319 2nd Serial Encoder Communication Type is Wrong

All in one ID **2nd Single Axis ID**	**AL-319**		
1st Single Axis ID	**AL-4D**	**Alarm Name**	**2nd Serial Encoder Communication Type is Wrong**
Alarm Content	1. Encoder communication interface setting is incorrect while using second serial encoder. 2. If Pn-920(P6-80) is set to 12 and connected with a Nikon encoder, then the problem is with communication there is a communication problem 3. If the Pn-920 is set to 23 and connected to the HCFA encoder, then perhaps the encoder does not support high-cycle communication. 4. This alarm occurs when power-up with HCFA/ Sankyo encoders. Please check Pn-642, Pn-643 settings if correct. 5. Setting of Pn-920 can not be used at the setting of Pn-921 6. FPGA version doesn't support this encoder type.		
Possible Cause	1. The parameter of encoder communcation interface Pn-920(P6-80) and encoder's serial communcation are mismatched. 2. Check if encoder cables are indeed grounded and the wire has breakage or not. 3. Check if the specifications of HCFA motor support high-cycle communication. 4. With HCFA/ Sankyo encoders, frequency of communication is not legal. 5. Check if Pn-921 is set correctly 6. FPGA version doesn't support the encoder type Pn-920(P6-80) setting encoder type.		
Possible Solution	1. Set Pn-920(P6-80) correctly and reboot driver 2. Reassemble cables, make sure there is no interference and then reboot driver 3. Set Pn-920 to 22, and then reboot the drive 4. Please look up manual of Pn-920(P6-80). Refresh setting with correct ones. 5. Setup correct Pn-921 and restart Drive. Refer to "Syntec Parameter Manual" for setup detail 6. Upgrade drive installation package according to encoder type.		

10.39 AL-320 Encoder Internal Over Temperature

All in one ID **2nd Single 轴向轴向 ID**	**AL-320**		
1st Single 轴向轴向 ID	**AL-860**	**Alarm Name**	**Encoder Internal Over Temperature**

Alarm Content	1. Syntec encoder: Encoder temperature over protective limit setting by drive 2. Nikon encoder: Encoder internal temperature over protection level Pn-742. 3. FeeDat encoder: Encoder internal is overheating 4. Panasonic encoder: Encoder internal temperature over 100 degrees Celsius or protection level Pn-742. 5. Mitutoyo encoder: Encoder internal temperature over 65 degrees Celsius. 6. Mitsubishi encoder: Encoder internal temperature over 115 degrees Celsius or protection level Pn-742. 7. Delta encoder: Encoder internal temperature is higher than 105 Celsius degree. 8. Tamagawa 23 bit encoder: Encoder internal temperature is higher than 85 Celsius degree or protection level Pn-742. 9. Tamagawa 25 bit encoder: Encoder internal temperature is higher than 105 Celsius degree or protection level Pn-742.
Possible Cause	1. Motor cooling system failure 2. Version compatibility 3. Thermal sensor signal error 4. With SYNTEC encoder, encoder internal thermal sensor type setting error 5. Encoder hardware malfunction
Possible Solution	1. Check and change motor cooling system. 2. If using SYNTEC, Nikon, Panasonic, Mitsubishi encoders, please check up Pn-D61. 3. If using FeeDat, Tamagawa or Delta encoders, please resolve problem and restart driver. 4. If recently updated from V1.2.27~V1.2.31 to V1.2.32 or above, set parameter Pn-742(P1-32) to correct protective temperature limit. 5. Make sure parameter Pn-742 "Syntec Encoder internal(1) KTY84 overheat threshold" is set correctly. 6. Check the type of resistance used for encoder internal thermal sensing. If using PT1000:Update drive firmware to V3.0.0 or higher, and 2nd Encoder firmware to V2.1.1 or higher. And set Pn-75A into 1. 7. If all above solutions fail to solve the problem, KTY84 may have malfunctioned. Please contact Suzhou or Taiwan Tech Center.
Detailed Instructions	AL-40, AL-41, AL-42 Issue Trouble Shooting 【Pn-D95】Enc Error Status ALMC

10.40 AL-321 Encoder external(1) Thermal Sensor Over Temperature

All in one ID **2nd Single Axis ID**	**AL-321**		
1st Single Axis ID	**AL-41**	**Alarm Name**	**Encoder external(1) Thermal Sensor Over Temperature**

Alarm Content	The temperature that encoder external(1)'s Thermal Sensor detect is over drive's protective limit.
Possible Cause	1. Motor cooling system failure 2. Version compatability 3. Thermal sensor signal error 4. Motor's Thermal Sensor wire unconnected to Encoder external(1)'s temperature sensing wire(the yellow and green line of the encoder, respectively) 5. With SYNTEC encoder, encoder external(1) thermal sensor type setting error 6. Encoder hardware malfunction
Possible Solution	1. Check and change motor cooling system. 2. If recently updated from V1.2.27~V1.2.31 to V1.2.32 or above, set parameter Pn-743(P1-33) to correct protective temperature limit. 3. Make sure parameter Pn-743 "Syntec Encoder internal(1) Thermal Sensor overheat threshold" is set correctly. 4. Connect Thermal Sensor wire and Encoder external(1)'s temperature sensing wire. If floating, alarms will be prone to happen as temperature display will be 145 degrees. 5. Check the type of resistance used for encoder external(1) thermal sensing. If using PT1000:Update drive firmware to V3.0.0 or higher, and 2nd Encoder firmware to V2.1.1 or higher. And set Pn-75B into 1. 6. If all above solutions fail to solve the problem, Thermal Sensor may have malfunctioned. Please contact Suzhou or Taiwan Tech Center.
Detailed Instructions	AL-40, AL-41, AL-42 Issue Trouble Shooting

10.41 AL-322 Encoder External(2) Thermal Sensor Over Temperature

All in one ID **2nd Single Axis ID**	**AL-322**		
1st Single Axis ID	**AL-42**	**Alarm Name**	**Encoder External(2) Thermal Sensor Over Temperature**
Alarm Content	The temperature that encoder external(2)'s Thermal Sensor detect is over drive's protective limit.		
Possible Cause	1. Cooling system failure 2. Version compatibility 3. Parameter error 4. With SYNTEC encoder, encoder external(2) thermal sensor type setting error		

Possible Solution	1. Check and change cooling system. 2. If recently updated from V1.2.27~V1.2.31 to V1.2.32 or above, set parameter Pn-744(P1-34) to correct protective temperature limit. 3. Make sure parameter Pn-744 "Syntec Encoder external(2) Thermal Sensor overheat threshold" is not 0. If temperature sensing wires are floating, alarms will be prone to happen as temperature display will be 145 degrees. 4. Check the type of resistance used for encoder external(2) thermal sensing. If using PT1000:Update drive firmware to V3.0.0 or higher, and 2nd Encoder firmware to V2.1.1 or higher. And set Pn-75C into 1.
Detailed Instructions	AL-40, AL-41, AL-42 Issue Trouble Shooting

10.42 AL-324 2nd Encoder Internal Over Temperature

All in one ID **2nd Single Axis ID**	**AL-324**		
1st Single Axis ID	**AL-8A6**	**Alarm Name**	**2nd Encoder Internal Over Temperature**
Alarm Content	1. Syntec encoder: Encoder temperature over protective limit setting by drive 2. Nikon encoder: Encoder internal temperature over protection level Pn-746. 3. FeeDat encoder: Encoder internal is overheating 4. Panasonic encoder: Encoder internal temperature over 100 degrees Celsius or protection level Pn-746. 5. Mitutoyo encoder: Encoder internal temperature over 65 degrees Celsius. 6. Mitsubishi encoder: Encoder internal temperature over 115 degrees Celsius or protection level Pn-746. 7. Delta encoder: Encoder internal temperature is higher than 105 Celsius degree. 8. Tamagawa 23 bit encoder: Encoder internal temperature is higher than 85 Celsius degree or protection level Pn-746. 9. Tamagawa 25 bit encoder: Encoder internal temperature is higher than 105 Celsius degree or protection level Pn-746.		
Possible Cause	1. Cooling system failure 2. Version compatibility 3. Thermal sensor signal error 4. With SYNTEC encoder, 2nd encoder internal thermal sensor type setting error 5. Encoder hardware malfunction		

Possible Solution	1. Check and change cooling system. 2. If using SYNTEC, Nikon, Panasonic, Mitsubishi encoders, please check up Pn-D61. 3. If using FeeDat, Tamagawa or Delta encoders, please resolve problem and restart driver. 4. If recently updated from V1.2.27~V1.2.31 to V1.2.32 or above, set parameter Pn-746(P1-36) to correct protective temperature limit. 5. Make sure parameter Pn-748 "Syntec Encoder internal(1) thermal sensor overheat threshold" is set correctly. 6. Check the type of resistance used for 2nd encoder internal thermal sensing. If using PT1000:Update drive firmware to V3.0.0 or higher, and 2nd Encoder firmware to V2.1.1 or higher. And set Pn-75E into 1. 7. If all above solutions fail to solve the problem, Thermal Sensor may have malfunctioned. Please contact Suzhou or Taiwan Tech Center.
Detailed Instructions	【Pn-D96】2nd Enc Error Status ALMC

10.43 AL-325 2nd Encoder External(1) Thermal Sensor Over Temperature

All in one ID **2nd Single Axis ID**	**AL-325**		
1st Single Axis ID	**AL-45**	**Alarm Name**	**2nd Encoder External(1) Thermal Sensor Over Temperature**
Alarm Content	The temperature that 2nd encoder external(1)'s Thermal Sensor detect is over drive's protective limit.		
Possible Cause	1. Cooling system failure 2. Version compatibility 3. Thermal sensor signal error 4. Motor's Thermal Sensor wire unconnected to Encoder external(1)'s temperature sensing wire(the yellow and green line of the encoder, respectively) 5. With SYNTEC encoder, 2nd encoder external(1) thermal sensor type setting error 6. Encoder hardware malfunction		

Possible Solution	1. Check and change cooling system. 2. If recently updated from V1.2.27~V1.2.31 to V1.2.32 or above, set parameter Pn-746(P1-36) to correct protective temperature limit. 3. Make sure parameter Pn-748 (P1-38)"Syntec Encoder internal(1) Thermal Sensor overheat threshold" is set correctly. 4. Connect Thermal Sensor wire and Encoder external(1)'s temperature sensing wire. If floating, alarms will be prone to happen as temperature display will be 145 degrees. 5. Check the type of resistance used for 2nd encoder external(1) thermal sensing. If using PT1000:Update drive firmware to V3.0.0 or higher, and 2nd Encoder firmware to V2.1.1 or higher. And set Pn-75F into 1. 6. If all above solutions fail to solve the problem, Thermal Sensor may have malfunctioned. Please contact Suzhou or Taiwan Tech Center.

10.44 AL-326 2nd Encoder External(2) Thermal Sensor Over Temperature

All in one ID **2nd Single Axis ID**	**AL-326**		
1st Single Axis ID	**AL-46**	**Alarm Name**	**2nd Encoder External(2) Thermal Sensor Over Temperature**
Alarm Content	Encoder External(2) detects Thermal Sensor's temperature over drive's protective limit		
Possible Cause	1. Cooling system failure 2. Version compatibility 3. Thermal sensor signal error 4. Motor's Thermal Sensor wire unconnected to Encoder external(2)'s temperature sensing wire(the yellow and green line of the encoder, respectively) 5. With SYNTEC encoder, 2nd encoder external(2) thermal sensor type setting error 6. Encoder hardware malfunction		
Possible Solution	1. Check and change cooling system. 2. If recently updated from V1.2.27~V1.2.31 to V1.2.32 or above, set parameter Pn-748(P1-38) to correct protective temperature limit. 3. Make sure parameter Pn-748 (P1-38)"Syntec Encoder internal(2) Thermal Sensor overheat threshold" is set correctly. 4. Connect Thermal Sensor wire and Encoder external(2)'s temperature sensing wire. If floating, alarms will be prone to happen as temperature display will be 145 degrees. 5. Check the type of resistance used for 2nd encoder external(2) thermal sensing. If using PT1000:Update drive firmware to V3.0.0 or higher, and 2nd Encoder firmware to V2.1.1 or higher. And set Pn-760 into 1. 6. If all above solutions fail to solve the problem, Thermal Sensor may have malfunctioned. Please contact Suzhou or Taiwan Tech Center.		

10.45 AL-328 Encoder Internal Thermal Sensor Error

All in one ID **2nd Single Axis ID**	**AL-328**		
1st Single Axis ID	**AL-5A**	**Alarm Name**	**Encoder Internal Thermal Sensor Error**
Alarm Content	Encoder Internal Thermal Sensor Error		
Possible Cause	1. Encoder Internal Thermal Sensor Error 2. With SYNTEC encoder, encoder internal thermal sensor type setting error		
Possible Solution	1. If encoder Internal Thermal Sensor is not needed, set parameter Pn-74A(P1-70) to 1. 2. Check the type of resistance used for encoder internal thermal sensing a. If using PT1000:Update drive firmware to V3.0.0 or higher, and 2nd Encoder firmware to V2.1.1 or higher. And set Pn-75A into 1. b. If using KTY84:Please set Pn-75A into 0. 3. Send back to dealer or Syntec Corp.		

10.46 AL-329 Encoder External(1) Thermal Sensor is Unplugged

All in one ID **2nd Single Axis ID**	**AL-329**		
1st Single Axis ID	**AL-5B**	**Alarm Name**	**Encoder External(1) Thermal Sensor is Unplugged**
Alarm Content	Encoder External(1) Thermal Sensor is unplugged		
Possible Cause	1. Encoder External(1) Thermal Sensor is not plugged correctly 2. Encoder external(1) Thermal Sensor is broken 3. Abnormal power supply voltage of 1st encoder 4. With SYNTEC encoder, encoder external(1) thermal sensor type setting error		

Possible Solution	1. (a) Make sure encoder external(1) Thermal Sensor is wired properly. (b) If encoder External(1) Thermal Sensor is not needed, set parameter Pn-74B(P1-71) to 1. 2. Measure the resistance of encoder external(1) Thermal Sensor at ambient temperature, and check if the measured value of resistance is in the operating range from 500Ω to 1500 Ω. If the measured value of resistance appears to be wrong, then please replace encoder external(1) Thermal Sensor with a new one. 3. Check if the value of drive parameter Pn-D70【The 5V Detection of 1st Encoder】is lower than 5V. If so, please check the power supply voltage of 1st encoder port on the drive by probing the output pin. If the supply voltage is normal, then the 1st encoder may be broken; otherwise, check if the drive is working correctly. 4. Check the type of resistance used for encoder external(1) thermal sensing a. If using PT1000:Update drive firmware to V3.0.0 or higher, and 2nd Encoder firmware to V2.1.1 or higher. And set Pn-75B into 1. b. If using KTY84:Please set Pn-75B into 0.

10.47 AL-330 Encoder Port Setting Error

All in one ID **2nd Single Axis ID**	**AL-330**		
1st Single Axis ID	-	**Alarm Name**	**Encoder Port Setting Error**
Alarm Content	Encoder Port (Parameter Pn-901) setting error		
Possible Cause	1. Parameter Pn-900 encoder type is set but parameter Pn-901 is not. 2. Port number setting is the same as another encoder port setting 3. Parameter Pn-901 is greater than actual port number		
Possible Solution	1. Set parameter Pn-901 correctly according to the actual application.		

10.48 AL-331 2nd Encoder port setting error

All in one ID **2nd Single Axis ID**	**AL-331**		
1st Single Axis ID	-	**Alarm Name**	**2nd Encoder port setting error**
Alarm Content	2nd encoder Port (Parameter Pn-921) setting error		
Possible Cause	1. Parameter Pn-920 encoder type is set but parameter Pn-921 is not. 2. Port number setting is the same as another encoder port setting 3. Parameter Pn-921 is greater than actual port number		
Possible Solution	1. Set parameter Pn-921 correctly according to the actual application.		

10.49 AL-332 Encoder not recognized

All in one ID **2nd Single Ax is ID**	**AL-332**		
1st Single Axis ID	**AL-6A**	**Alarm Name**	**Encoder not recognized**
Alarm Content	Drive doesn't support the version of encoder version. Do not run this motor and modify any parameters about this motor.		
Possible Cause	1. The version of encoder is outdated. 2. Parameter specifics cannot be recognized if the motor is not supplied by Syntec. 3. Data read from encoder is unable to be interpreted.		
Possible Solution	1. Upgrade driver version. 2. Problems from the motor not supplied by Syntec shall be resolved in following steps: a. First ensure the encoder communication type is supported by the current software version of Syntec driver. b. Then inquire the retailer or manufacturer for trouble shooting. 3. Inquire the retailer or manufacturer for trouble shooting.		

10.50 AL-333 2nd Encoder not recognized

All in one ID **2nd Single Axis ID**	**AL-333**		
1st Single Axis ID	**AL-6B**	**Alarm Name**	**2nd Encoder not recognized**
Alarm Content	Drive doesn't support the version of second encoder version. Do not run this motor and modify any parameters about this motor		
Possible Cause	1. The version of encoder is outdated. 2. Parameter specifics cannot be recognized if the motor is not supplied by Syntec. 3. Data read from encoder is unable to be interpreted.		
Possible Solution	1. Upgrade driver version. 2. Problems from the motor not supplied by Syntec shall be resolved in following steps: a. First ensure the encoder communication type is supported by the current software version of Syntec driver. b. Then inquire the retailer or manufacturer for trouble shooting. 3. Inquire the retailer or manufacturer for trouble shooting.		

10.51 AL-334 Encoder Download Parameters Fail

All in one ID **2nd Single Axis ID**	**AL-334**		
1st Single Axis ID	**AL-58**	**Alarm Name**	**Encoder Download Parameters Fail**
Alarm Content	Encoder parameter download process is unsuccessful		
Possible Cause	1. With Syntec motors after manufacturing date of 2021/05, the older driver may not support its communication. 2. 1st encoder still not ready after drive power on for 1 second. 3. The parameters read back from encoder is incorrect. 4. Signal transfer error due to the poor contact of the first encoder's pin 5. With hallow type encoder(mini encoder), check whether motor serial number is not zero		
Possible Solution	1. With Syntec motors after manufacturing date of 2021/05, it is recommended that upgrade driver version at least 3.0.13. 2. Check status parameter "First encoder parameter read back status", single axis' parameter is D2-97, four in one's status parameter is Pn-E5F. 3. Check if encoder is wired correctly and whether there are interferences. 4. Check connectivity of encoder connector pins 5. with hallowed encoder, please set motor serial number as 0 and reboot *With this alarm occurring, we would not recommend saving parameters permanently. If alarm doesn't occur after rebooting, parameters have been read correctly. If this problem reoccurs, please contact dealer or Syntec Corp. for repairs.		

10.52 AL-335 2nd Encoder Download Parameters Fail

All in one ID **2nd Single Axis ID**	**AL-335**		
1st Single Axis ID	**AL-59**	**Alarm Name**	**2nd Encoder Download Parameters Fail**
Alarm Content	2nd Encoder parameter download process unsuccessful		

Possible Cause	1. 2nd encoder still not ready after drive power on for 1 second. 2. The parameters read back from 2nd encoder is incorrect. 3. Signal transfer error due to the poor contact of the 2nd encoder's pin 4. With hallow type encoder(mini encoder), check whether motor serial number is not zero
Possible Solution	1. Check status parameter "2nd encoder parameter read back status", single axis' parameter is D2-98, four in one's status parameter is Pn-E60. 2. Check if encoder is wired correctly and whether there are interferences. 3. Check connectivity of encoder connector pins *With this alarm occurring, we would not recommend saving parameters permanently. If alarm doesn't occur after rebooting, parameters have been read correctly. If this problem reoccurs, please contact dealer or Syntec Corp. for repairs. Refer to AL-58问题处置 for alarm trouble shooting.

10.53 AL-336 Syntec Encoder Runs in Bootloader Mode

All in one ID **2nd Single Axis ID**	**AL-336**		
1st Single Axis ID	**AL-4A**	**Alarm Name**	**Syntec Encoder Runs in Bootloader Mode**
Alarm Content	When 1st encoder is Syntec Encoder and is Running in Bootloader Mode, alarm occurs.		
Possible Cause	1. Power failure or disconnection during firmware update process		
Possible Solution	1. Update firmware again and restart.		

10.54 AL-337 2nd Syntec Encoder Runs in Bootloader Mode

All in one ID **2nd Single Axis ID**	**AL-337**		
1st Single Axis ID	**AL-4B**	**Alarm Name**	**2nd Syntec Encoder Runs in Bootloader Mode**
Alarm Content	When 2nd is Syntec Encoder and is Running in Bootloader Mode, alarm occurs.		

Possible Cause	1. Power failure or disconnection during firmware update process
Possible Solution	1. Update firmware again and restart.

10.55 AL-338 Encoder Register Access Error

All in one ID **2nd Single Axis ID**	**AL-338**		
1st Single Axis ID	**AL-75**	**Alarm Name**	**Encoder Register Access Error**
Alarm Content	Encoder Register Access Error		
Possible Cause	1. Error count is too high while accessing encoder register		
Possible Solution	1. Preclude encoder wiring interferences, reinforce grounding a. Status surveillance: i. Pn-D73(D1-28) Serial Encoder CRC error count(hardware) ii. Pn-D74(D1-29) Serial Encoder CRC error count(software) iii. Pn-D76(D1-47) Serial Encoder overtime error count b. If this alarm occurs when saving parameters, reset alarm and permanently resave parameters again. c. If issue is recurring, contact dealer or Syntec Corp. for repairs.		

10.56 AL-339 2nd Encoder Register Access Error

All in one ID **2nd Single Axis ID**	**AL-339**		
1st Single Axis ID	**AL-76**	**Alarm Name**	**2nd Encoder Register Access Error**
Alarm Content	2nd Encoder Register Access Error		
Possible Cause	1. Error count is too high while accessing 2nd encoder register		

Possible Solution	Preclude encoder wiring interferences, reinforce grounding a. Status surveillance: i.Pn-D77(D1-42) Serial Encoder CRC error count(hardware) ii.Pn-D78(D1-43) Serial Encoder CRC error count(software) iii.Pn-D7A(D1-60) Serial Encoder overtime error count b.If this alarm occurs when saving parameters, reset alarm and permanently resave parameters again. c.If issue is recurring, contact dealer or Syntec Corp. for repairs

10.57 AL-340 Encoder Status Error

All in one ID **2nd Single Axis ID**	**AL-340**		
1st Single Axis ID	**-**	**Alarm Name**	**Encoder Status Error**
Alarm Content	Encoder status has errors to operate normally		
Possible Cause	1. if using Syntec encoder and version from 2.0.8 or 2.1.1, which support "over temperature self-diagnosis", then probably occurs "Encoder over temperature".		
Possible Solution	1. if using Syntec encoder and version from 2.0.8 or 2.1.1, which support "over temperature self-diagnosis", then check temperature feedback and settings.		

10.58 AL-341 Encoder Extremely Internal Over Temperature

All in one ID **2nd Single 轴向轴向 ID**	**AL-341**		
1st Single 轴向轴向 ID	**-**	**Alarm Name**	**Encoder Extremely Internal Over Temperature**
Alarm Content	1. Syntec encoder: Encoder temperature over 100 Celsius degrees 2. Nikon encoder: Encoder internal temperature out of operation temperature range		
Possible Cause	1. Motor cooling system failure 2. Version compatibility 3. Thermal sensor signal error 4. With SYNTEC encoder, encoder internal thermal sensor type setting error 5. Encoder hardware malfunction		

Possible Solution	1. Check and change motor cooling system. 2. Please check up Pn-D61. 3. Check the type of resistance used for encoder internal thermal sensing. If using PT1000:Update drive firmware to V3.0.0 or higher, and 2nd Encoder firmware to V2.1.1 or higher. And set Pn-75A into 1. 4. If all above solutions fail to solve the problem, Thermal Sensor may have malfunctioned. Please contact Suzhou or Taiwan Tech Center.

10.59 AL-342 Encoder Extremely External(1) Thermal Sensor Over Temperature

All in one ID **2nd Single Axis ID**	**AL-342**		
1st Single Axis ID	**-**	**Alarm Name**	**Encoder Extremely External(1) Thermal Sensor over temperature**
Alarm Content	The temperature that encoder external(1)'s Thermal Sensor detect is 20 Celsius degrees higher than protection level Pn-743.		
Possible Cause	1. Motor cooling system failure 2. Thermal sensor signal error 3. Motor's Thermal Sensor wire unconnected to Encoder external(1)'s temperature sensing wire(the yellow and green line of the encoder, respectively) 4. With SYNTEC encoder, encoder external(1) thermal sensor type setting error 5. Encoder hardware malfunction		
Possible Solution	1. Check and change motor cooling system. 2. Make sure parameter Pn-743 is set correctly. 3. Check the type of resistance used for encoder external(1) thermal sensing. If using PT1000:Update drive firmware to V3.0.0 or higher, and 2nd Encoder firmware to V2.1.1 or higher. And set Pn-75B into 1. 4. If all above solutions fail to solve the problem, Thermal Sensor may have malfunctioned. Please contact Suzhou or Taiwan Tech Center.		

10.60 AL-343 Encoder Extremely External(2) Thermal Sensor Over Temperature

All in one ID **2nd Single Axis ID**	**AL-343**		
1st Single Axis ID	**-**	**Alarm Name**	**Encoder Extremely External(2) Thermal Sensor over temperature**

Alarm Content	The temperature that encoder external(2)'s Thermal Sensor detect is 20 Celsius degrees higher than protection level Pn-744.
Possible Cause	1. Motor cooling system failure 2. Thermal sensor signal error 3. Motor's Thermal Sensor wire unconnected to Encoder external(2)'s temperature sensing wire(the pink and gray line of the encoder, respectively) 4. With SYNTEC encoder, encoder external(2) thermal sensor type setting error 5. Encoder hardware malfunction
Possible Solution	1. Check and change motor cooling system. 2. Make sure parameter Pn-744 is set correctly. 3. Check the type of resistance used for encoder external(2) thermal sensing. If using PT1000:Update drive firmware to V3.0.0 or higher, and 2nd Encoder firmware to V2.1.1 or higher. And set Pn-75C into 1. 4. If all above solutions fail to solve the problem, Thermal Sensor may have malfunctioned. Please contact Suzhou or Taiwan Tech Center.

10.61 AL-344 Encoder Signal Noise Interference

All in one ID **2nd Single Axis ID**	**AL-344**		
1st Single Axis ID	**--**	**Alarm Name**	**Encoder Signal Noise Interference**
Alarm Content	Encoder Signal Noise Interference		
Possible Cause	Check Pn-D74 Encoder CRC error counter(Software). Check the encoder wiring.		
Possible Solution	1. Check the encoder wiring and grounding. 2. Send back to Syntec Corp.		

10.62 AL-350 2nd Encoder Status Error

All in one ID **2nd Single Axis ID**	**AL-350**		
1st Single Axis ID	**-**	**Alarm Name**	**2nd Encoder Status Error**
Alarm Content	Encoder status has errors to operate normally		
Possible Cause	1. if using Syntec encoder and version from 2.0.8 or 2.1.1, which support "over temperature self-diagnosis", then probably occurs "Encoder over temperature".		

Possible Solution	1. if using Syntec encoder and version from 2.0.8 or 2.1.1, which support "over temperature self-diagnosis", then check temperature feedback and settings.

10.63 AL-351 2nd Encoder Extremely Internal Over Temperature

All in one ID **2nd Single 轴向轴向 ID**	**AL-351**		
1st Single 轴向轴向 ID	**-**	**Alarm Name**	**2nd Encoder Extremely Internal Over Temperature**
Alarm Content	1. Syntec encoder: Encoder temperature over 100 Celsius degrees 2. Nikon encoder: Encoder internal temperature out of operation temperature range		
Possible Cause	1. Motor cooling system failure 2. Version compatibility 3. Thermal sensor signal error 4. With SYNTEC encoder, 2nd encoder internal thermal sensor type setting error 5. Encoder hardware malfunction		
Possible Solution	1. Check and change motor cooling system. 2. Please check up Pn-D65. 3. Check the type of resistance used for 2nd encoder internal thermal sensing. If using PT1000:Update drive firmware to V3.0.0 or higher, and 2nd Encoder firmware to V2.1.1 or higher. And set Pn-75E into 1. 4. If all above solutions fail to solve the problem, Thermal Sensor may have malfunctioned. Please contact Suzhou or Taiwan Tech Center.		

10.64 AL-352 2nd Encoder Extremely External(1) Thermal Sensor Over Temperature

All in one ID **2nd Single Axis ID**	**AL-352**		
1st Single Axis ID	**-**	**Alarm Name**	**2nd Encoder Extremely External(1) Thermal Sensor over temperature**
Alarm Content	The temperature that 2nd encoder external(1)'s Thermal Sensor detect is 20 Celsius degrees higher than protection level Pn-747.		

Possible Cause	1. Motor cooling system failure 2. Thermal sensor signal error 3. Motor's Thermal Sensor wire unconnected to Encoder external(1)'s temperature sensing wire(the yellow and green line of the encoder, respectively) 4. With SYNTEC encoder, 2nd encoder external(1) thermal sensor type setting error 5. Encoder hardware malfunction
Possible Solution	1. Check and change motor cooling system. 2. Make sure parameter Pn-747 is set correctly. 3. Check the type of resistance used for 2nd encoder external(1) thermal sensing. If using PT1000:Update drive firmware to V3.0.0 or higher, and 2nd Encoder firmware to V2.1.1 or higher. And set Pn-75F into 1. 4. If all above solutions fail to solve the problem, Thermal Sensor may have malfunctioned. Please contact Suzhou or Taiwan Tech Center.

10.65 AL-353 2nd Encoder Extremely External(2) Thermal Sensor Over Temperature

All in one ID **2nd Single Axis ID**	**AL-353**		
1st Single Axis ID	**-**	**Alarm Name**	**2nd Encoder Extremely External(2) Thermal Sensor over temperature**
Alarm Content	The temperature that 2nd encoder external(2)'s Thermal Sensor detect is 20 Celsius degrees higher than protection level Pn-748.		
Possible Cause	1. Motor cooling system failure 2. Thermal sensor signal error 3. Motor's Thermal Sensor wire unconnected to Encoder external(2)'s temperature sensing wire(the pink and gray line of the encoder, respectively) 4. With SYNTEC encoder, 2nd encoder external(2) thermal sensor type setting error 5. Encoder hardware malfunction		
Possible Solution	1. Check and change motor cooling system. 2. Make sure parameter Pn-748 is set correctly. 3. Check the type of resistance used for 2nd encoder external(2) thermal sensing. If using PT1000:Update drive firmware to V3.0.0 or higher, and 2nd Encoder firmware to V2.1.1 or higher. And set Pn-760 into 1. 4. If all above solutions fail to solve the problem, Thermal Sensor may have malfunctioned. Please contact Suzhou or Taiwan Tech Center.		

10.66 AL-354 2nd Encoder Signal Noise Interference

All in one ID **2nd Single Axis ID**	**AL-354**		
1st Single Axis ID	**--**	**Alarm Name**	**2nd Encoder Signal Noise Interference**
Alarm Content	2nd Encoder Signal Noise Interference		
Possible Cause	Check Pn-D78 2nd Encoder CRC error counter(Software). Check the encoder wiring.		
Possible Solution	1. Check the 2nd encoder wiring and grounding. 2. Send back to Syntec Corp.		

11 AL-4xx Tuning Alarm Description

All in one ID **2nd Single Axis ID**	**AL-400**		
1st Single Axis ID	**AL-29**	**Alarm Name**	**Motor Parameter Estimation Failure - Abnormal Output Command**
Alarm Content	The search for the estimated current command fails during parameter estimation		
Possible Cause	1. Encoder malfunction 2. Mechanical abnormality or excessive motor load inhibits motor rotation 3. Abnormal current control		
Possible Solution	1. Confirm whether any alarm occurs in the "encoder function test" test. Handle the alarm during the "encoder function test" test. 2. Check whether the current reaches the 120% rated current of the motor during the estimation process. Ensure that the motor parameters are estimated when the motor is no-load. If the load cannot be removed, it is recommended to use "static induction motor tuning". 3. The voltage command exceeds 40% of the rated motor voltage during the tuning process. The setting of the internal gain ratio Pn-F2D (Fn-18) of the tuning machine starts from 100% and is gradually lowered by 20% steps		

All in one ID **2nd Single Axis ID**	**AL-401**		
1st Single Axis ID	**AL-2A**	**Alarm Name**	**Motor Parameter Estimation Failure-Abnormal Motor Speed**
Alarm Content	The motor speed is lower than 80% of the motor rated speed during the parameter estimation.		
Possible Cause	1. Encoder malfunction 2. Mechanical abnormality or excessive motor load inhibits motor rotation 3. Motor rated speed is too high 4. Abnormal current control		

Possible Solution	1. If the environment is equipped with encoder, confirm whether any alarm occurs in the "encoder function test" test. Handle the alarm during the "encoder function test" test. 2. During the rotation estimation process, the motor speed does not exceed 80% of the rated speed. Ensure that the motor parameters are estimated when the motor is no-load. If the load cannot be removed, it is recommended to use "static induction motor tuning". 3. Check whether the motor rated speed exceeds 10000 RPM. It is recommended to use "static induction motor tuning", or manually enter the motor parameters to avoid using the existing Motor tuning function. 4. Check whether the current error is too high. The setting of the internal gain ratio Pn-F2D (Fn-18) of the tuning machine starts from 100% and is gradually lowered by 20% steps.

All in one ID **2nd Single Axis ID**	**AL-402**		
1st Single Axis ID	**AL-50**	**Alarm Name**	**Current Tuning Error**
Alarm Content	Current tuning error		
Possible Cause	1. Excess current during tuning.		
Possible Solution	1. Redo the "Current Tuning" test 2. Send back to Syntec or authorized representative		

All in one ID **2nd Single Axis ID**	**AL-403**		
1st Single Axis ID	**--**	**Alarm Name**	**Motor Rotor Time Const. Estimation Failure**
Alarm Content	Frequency search failure during the estimation process of motor rotor time constant.		
Possible Cause	1. Motor Rated Speed Pn-70C is set incorrectly 2. Motor Pole Number Pn-701 is set incorrectly 3. During parameter estimation, the motor is rotated by external force		
Possible Solution	1. Correct Pn-70C 2. Correct Pn-701 3. Avoid motor rotation during parameter estimation		

All in one ID **2nd Single Axis ID**	**AL-404**		
1st Single Axis ID	**--**	**Alarm Name**	**PM Motor Parameter Tuning Fail**

Alarm Content	1. UVW cable disconnected 2. Voltage command reaches limit during tuning
Possible Cause	1. 3 phase power cables are loose 2. Voltage specification of driver and motor are matched
Possible Solution	1. Check UVW cables between motor and drive for damage or looseness. 2. Using driver that voltage specification is matche

All in one ID **2nd Single Axis ID**	~~**AL-410**~~		
1st Single Axis ID	**AL-2B**	**Alarm Name**	**Acceleration Limit Too Large**
Alarm Content	Max Jerk, acceleration or travel limit setup inappropriate.		
Possible Cause	1. Initial rotor inertia setup incorrect 2. Motor specification input error 3. Low JOG speed 4. Insufficient travel limit 5. Acceleration setup too severe 6. Low Jerk		
Possible Solution	1. Excessive intertia setup causes drive to overshoot. Refer to "Auto tuning" section of manual and reset Pn-720(P4-20) and Pn-722(P4-21). 2. Check motor parameter Pn-7XX (P3-XX). 3. Parameter Pn-304(Fn-02) too low causing tuning to fail. Minimum tuning RPM is 20%of rated motor speed. 4. Travel parameters Pn-F14(Fn-04)、Pn-F15(Fn-05) are too close causing motor speed insufficiency. Increase Pn-F14(Fn-04) and Pn-F15(Fn-05) interval to at least half of motor revolution. 5. Acceleration time Pn-306(P6-10) is so short that motor cannot catch up. Set Pn-306(P6-10) longer. 6. Jerk time Pn-307(P6-11) is so large that acceleration is unable to reach proper value. Lower jerk time Pn-307(P6-11) or lengthen acceleration time Pn-30.		

All in one ID **2nd Single Axis ID**	~~**AL-411**~~		
1st Single Axis ID	**AL-2C**	**Alarm Name**	**Initial Value of Inertia is Set Unsuitable**
Alarm Content	Triggered when initial rotor inertia setup inappropriate.		
Possible Cause	1. Incorrect rotor inertia and mechanical constant initial setup 2. Incorrect motor rotor time constant setup		

Possible Solution	1. Refer to " Auto tuning" section of manual and reset Pn-720(P4-20) and Pn-722(P4-21). 2. Observe if rotor viscosity drops until alarm is triggered. Refer to "Rotor time constant tuning" part of "Auto tuning" section of manual.

All in one ID **2nd Single Axis ID**	**AL-412**		
1st Single Axis ID	**AL-3E**	**Alarm Name**	**Inertia Tuning Startup Failure**
Alarm Content	triggered when motor doesn't run during Inertia tuning		
Possible Cause	1. Encoder wiring error 2. Motor stall 3. Default torque is too small(50%) that can't drive the load		
Possible Solution	1. Check encoder wiring, refer to "Wiring and signal" section of manual 2. The mtor should rotate during tuning with direction that Pn-504 allows (PS: Only 2nd Single Axis has this function) a. Check if UVW cables are wired correctly b. Check for mechanical locks 3. Increase【Pn-F32】Torque Command in Test Mode(【Fn-22】Torque Command in Test Mode) progressively. When the output torque is enough, the inertia tuning is finished.		

All in one ID **2nd Single Axis ID**	**AL-413**		
1st Single Axis ID	**AL-74**	**Alarm Name**	**Inertia Tuning Loading Too Large**
Alarm Content	Displacement exceeds half the motion limit while estimating gravity		
Possible Cause	1. Motion limit is set too small or motor power is insufficient		
Possible Solution	1. Check motion limit Pn-F14(Fn-04) and motor power. Raise motion limit or choose motor with larger power		

All in one ID **2nd Single Axis ID**	**AL-414**		
1st Single Axis ID	**AL-78**	**Alarm Name**	**Load Inertia Value Error**
Alarm Content	Load intertia value out of range		

Possible Cause	1. Rotor inertia value error 2. Linear motor load inertia value out of range
Possible Solution	1. Re-enter specifics' rotor inertia parameter, or re-execute rotor inertia estimation during idling. 2. Refer to "linear motor SOP Q and A", restart rotor inertia tuning instead of load inertia tuning.

All in one ID **2nd Single Axis ID**	**AL-420**		
1st Single Axis ID	**AL-3D**	**Alarm Name**	**Encoder Offset Searching Failure**
Alarm Content	Drive fails to detect accurate motor pole position		
Possible Cause	1. Encoder mount loose, causing position shift 2. Motor stall		
Possible Solution	1. Make sure encoder index and motor shaft angle are fixed 2. Motor should rotate twice during searching process a. Check if UVW cables are wired correctly b. Check for mechanical locks		

All in one ID **2nd Single Axis ID**	**AL-430**		
1st Single Axis ID	**AL-4F**	**Alarm Name**	**Encoder Calibration Stall Error**
Alarm Content	No motor rotation even as current output reaches limit		
Possible Cause	1. Motor overload 2. UVW wiring error		
Possible Solution	1. Check motor for mechanical interferences 2. Check Pn-441/Pn-444, Reset correct Pn-441/Pn-444 3. Check UVW wiring from drive to motor		

All in one ID **2nd Single Axis ID**	**AL-431**		
1st Single Axis ID	**AL-3A**	**Alarm Name**	**Encoder Pitch Compensation Error**
Alarm Content	Adjacent compensation value varies too greatly		

Possible Cause	1. Encoder's original position feedback fluctuates severely 2. Encoder's compensation fixture error 3. Encoder malfunction
Possible Solution	1. Check if 1st and 2nd feedback mechanical angle match. Change encoder polarity while ensuring motor direction is correct. Check if 1st and 2nd encoder's position error is greater than 20 during compensation. Redo compensation. Replace encoder if it keeps failing. 2. Make sure fixture is correctly mounted. Rotate motor and check if 1st feedback mechanical angle changes. 3. Rotate motor and check if 2nd feedback mechanical angle changes. If not, replace encoder and send defective to Syntec or authorized representative for repairs.

All in one ID **2nd Single Axis ID**	**AL-440**		
1st Single Axis ID	**-----**	**Alarm Name**	**Dead time calibration initial failure**
Alarm Content	Dead time calibration initial failure		
Possible Cause	1. Some axes are servo on state		
Possible Solution	1. Check all axes on servo state Servo off all axes and redo tuning		

All in one ID **2nd Single Axis ID**	**AL-450**		
1st Single Axis ID	**AL-7A**	**Alarm Name**	**Sensor Test Fail**
Alarm Content	Sensor test setting error or motor stall		
Possible Cause	1. Motion limit is set too small a. Linear motor: Whether position limit larger than 1.5 magnetic pitch. b. Rotary motor: Whether position limit larger than 2.5 electrical period. 2. Lmotor stall 3. Encoder no feedback		

Possible Solution	1. Set motion limit: a. Linear motor: Reserve a travel distance larger than 1.5 magnetic pitch. b. Rotary motor: Reserve a travel distance larger than 2.5 electrical period. 2. Check rotor position, Check Pn-441/Pn-444: a. Move motor to suitable position b. Reset Pn-441/Pn-444 3. Connect and wire encoder correctly

All in one ID **2nd Single Axis ID**	**AL-451**		
1st Single Axis ID	**AL-7B**	**Alarm Name**	**Linear Motor Magnetic Pitch Setting Error**
Alarm Content	Detected magnetic pitch (Pn-D85) and set value (Pn-702) are mismatched		
Possible Cause	1. Magnetic pitch or encoder resolution setup error		
Possible Solution	1. Set parameters correctly		

All in one ID **2nd Single Axis ID**	**AL-452**		
1st Single Axis ID		**Alarm Name**	**Proximity Switch Spindle Posing Tuning Error**
Alarm Content	The tuning of digital input filtering level failed		
Possible Cause	1. Wrong setting of gear number of motor side or screw side 2. Abnormal function of proximity switch 3. Spindle orientation check window is too narrow		
Possible Solution	1. Set parameters Pn-20A, Pn-20C, Pn-522, Pn-50A and Pn-50B correctly 2. Check the installation and signal of proximity		

All in one ID **2nd Single Axis ID**	**AL-453**		
1st Single Axis ID		**Alarm Name**	**Global Tuning Failure**
Alarm Content	Unexpected alarm occurred during tuning process		
Possible Cause	Certain axis registers the alarm during tuning process		

Possible Solution	Solve the cause of the alarm, and then execute the tuning again

11.1 AL-2B Acceleration Limit Too Large

All in one ID **2nd Single Axis ID**	~~**AL-410**~~		
1st Single Axis ID	**AL-2B**	**Alarm Name**	**Acceleration Limit Too Large**
Alarm Content	Max Jerk, acceleration or travel limit setup inappropriate.		
Possible Cause	1. Initial rotor inertia setup incorrect 2. Motor specification input error 3. Low JOG speed 4. Insufficient travel limit 5. Acceleration setup too severe 6. Low Jerk		
Possible Solution	1. Excessive intertia setup causes drive to overshoot. Refer to "Auto tuning" section of manual and reset Pn-720(P4-20) and Pn-722(P4-21). 2. Check motor parameter Pn-7XX (P3-XX). 3. Parameter Pn-304(Fn-02) too low causing tuning to fail. Minimum tuning RPM is 20%of rated motor speed. 4. Travel parameters Pn-F14(Fn-04)、Pn-F15(Fn-05) are too close causing motor speed insufficiency. Increase Pn-F14(Fn-04) and Pn-F15(Fn-05) interval to at least half of motor revolution. 5. Acceleration time Pn-306(P6-10) is so short that motor cannot catch up. Set Pn-306(P6-10) longer. 6. Jerk time Pn-307(P6-11) is so large that acceleration is unable to reach proper value. Lower jerk time Pn-307(P6-11) or lengthen acceleration time Pn-30.		

11.2 AL-2C Initial Value of Inertia is Set Unsuitable

All in one ID **2nd Single Axis ID**	~~**AL-411**~~		
1st Single Axis ID	**AL-2C**	**Alarm Name**	**Initial Value of Inertia is Set Unsuitable**
Alarm Content	Triggered when initial rotor inertia setup inappropriate.		
Possible Cause	1. Incorrect rotor inertia and mechanical constant initial setup 2. Incorrect motor rotor time constant setup		

Possible Solution	1. Refer to " Auto tuning" section of manual and reset Pn-720(P4-20) and Pn-722(P4-21). 2. Observe if rotor viscosity drops until alarm is triggered. Refer to "Rotor time constant tuning" part of "Auto tuning" section of manual.

11.3 AL-210 Motor Pole Number Error_Tuning Alarm Description

All in one ID **2nd Single 轴向轴向 ID**	**AL-210**		
1st Single 轴向轴向 ID	**AL-26**	**Alarm Name**	**Motor Pole Number Error**
Alarm Content	Triggered when determined motor pole number and parameter settings are mismatched.		
Possible Cause	1. Motor pole number setup error		
Possible Solution	1. Check if value of parameter Pn-701 equals pole number on lable.		

11.4 AL-301 Encoder Index Error_Tuning Alarm Description

All in one ID **2nd Single Axis ID**	**AL-301**		
1st Single Axis ID	**AL-23**	**Alarm Name**	**Encoder Index Error**
Alarm Content	1. Encoder didn't detect reference signal during encoder test. 2. Encoder-rotor offset calibration takes too long		
Possible Cause	1. Connector wiring is poor contact, or connection is wrong 2. Encoder malfunction 3. Syntec encoder pole number (Pn-90A/P3-30) setting error 4. Communication interference 5. Hardware malfunction		

Possible Solution	1. Check encoder wiring, refer to "Wiring and Signal" section of manual. 2. Execute "Encoder test" and check for alarms . If any alarm goes off, refer to "Syntec auto tuning" section of manual. 3. Slowly shift axis by MPG (manual pulse generator) and confirm whether Index Counter equals encoder resolution or not. If not , send back to distributor or Syntec representative to check hardware. 4. Set encoder pole number correctly and reboot driver. 5. Refer to "Syntec motor encoder grounding program" section of manual 6. Replace encoder
Detailed Instructions	AL-23 Issue Trouble Shooting

11.5 AL-302 Encoder Direction Error_Tuning Alarm Description

All in one ID **2nd Single Axis ID**	**AL-302**		
1st Single Axis ID	**AL-24**	**Alarm Name**	**Encoder Direction Error**
Alarm Content	Encoder's direction is opposite of UVW phase sequence.		
Possible Cause	1. The parameter "Encoder Polarity " setting error.		
Possible Solution	1. Check if machanical angle is correct or not. If not, set parameter Pn-021(P3-22) (0 to1, 1 to 0) and reboot driver.		

11.6 AL-303 Encoder Resolution Error_Tuning Alarm Description

All in one ID **2nd Single 轴向轴向 ID**	**AL-303**		
1st Single 轴向轴向 ID	**AL-25**	**Alarm Name**	**Encoder Resolution Error**
Alarm Content	The parameter "Encoder Resolution" setting error		
Possible Cause	1. The parameter "Encoder Resolution" setting error 2. Hardware malfunction 3. Encoder pole number(Pn-90A/P3-30) setting error		
Possible Solution	1. Check if parameter Pn-902(P3-21) is equal to ~~and~~ resolution or not. If not, set encoder resolution to correct value and reboot driver 2. Send back to distributor or Syntec representative to check hardware 3. Set encoder pole pair number correctly and reboot driver		

11.7 AL-305 Encoder Pulse Loss_Tuning Alarm Description

All in one ID **2nd Single 轴向轴向 ID**	**AL-305**		
1st Single 轴向轴向 ID	**AL-28**	**Alarm Name**	**Encoder Pulse Loss**
Alarm Content	Pulse number detected is different in each revolution		
Possible Cause	1. Encoder cable malfunction 2. Encoder malfunction		
Possible Solution	1. Replace cable. 2. Send to Syntec or authorized representative.		

11.8 AL-400 Motor Parameter Estimation Failure - Abnormal Output Command

All in one ID **2nd Single Axis ID**	**AL-400**		
1st Single Axis ID	**AL-29**	**Alarm Name**	**Motor Parameter Estimation Failure - Abnormal Output Command**
Alarm Content	The search for the estimated current command fails during parameter estimation		
Possible Cause	1. Encoder malfunction 2. Mechanical abnormality or excessive motor load inhibits motor rotation 3. Abnormal current control		
Possible Solution	1. Confirm whether any alarm occurs in the "encoder function test" test. Handle the alarm during the "encoder function test" test. 2. Check whether the current reaches the 120% rated current of the motor during the estimation process. Ensure that the motor parameters are estimated when the motor is no-load. If the load cannot be removed, it is recommended to use "static induction motor tuning". 3. The voltage command exceeds 40% of the rated motor voltage during the tuning process. The setting of the internal gain ratio Pn-F2D (Fn-18) of the tuning machine starts from 100% and is gradually lowered by 20% steps		

11.9 AL-401 Motor Parameter Estimation Failure-Abnormal Motor Speed

All in one ID **2nd Single Axis ID**	**AL-401**		
1st Single Axis ID	**AL-2A**	**Alarm Name**	**Motor Parameter Estimation Failure-Abnormal Motor Speed**
Alarm Content	The motor speed is lower than 80% of the motor rated speed during the parameter estimation.		
Possible Cause	1. Encoder malfunction 2. Mechanical abnormality or excessive motor load inhibits motor rotation 3. Motor rated speed is too high 4. Abnormal current control		
Possible Solution	1. If the environment is equipped with encoder, confirm whether any alarm occurs in the "encoder function test" test. Handle the alarm during the "encoder function test" test. 2. During the rotation estimation process, the motor speed does not exceed 80% of the rated speed. Ensure that the motor parameters are estimated when the motor is no-load. If the load cannot be removed, it is recommended to use "static induction motor tuning". 3. Check whether the motor rated speed exceeds 10000 RPM. It is recommended to use "static induction motor tuning", or manually enter the motor parameters to avoid using the existing Motor tuning function. 4. Check whether the current error is too high. The setting of the internal gain ratio Pn-F2D (Fn-18) of the tuning machine starts from 100% and is gradually lowered by 20% steps.		

11.10 AL-402 Current Tuning Error

All in one ID **2nd Single Axis ID**	**AL-402**		
1st Single Axis ID	**AL-50**	**Alarm Name**	**Current Tuning Error**
Alarm Content	Current tuning error		
Possible Cause	1. Excess current during tuning.		
Possible Solution	1. Redo the "Current Tuning" test 2. Send back to Syntec or authorized representative		

11.11 AL-403 Motor Rotor Time Const. Estimation Failure

All in one ID **2nd Single Axis ID**	**AL-403**		
1st Single Axis ID	**--**	**Alarm Name**	**Motor Rotor Time Const. Estimation Failure**
Alarm Content	Frequency search failure during the estimation process of motor rotor time constant.		
Possible Cause	1. Motor Rated Speed Pn-70C is set incorrectly 2. Motor Pole Number Pn-701 is set incorrectly 3. During parameter estimation, the motor is rotated by external force		
Possible Solution	1. Correct Pn-70C 2. Correct Pn-701 3. Avoid motor rotation during parameter estimation		

11.12 AL-404 PM Motor Parameter Tuning Fail

All in one ID **2nd Single Axis ID**	**AL-404**		
1st Single Axis ID	**--**	**Alarm Name**	**PM Motor Parameter Tuning Fail**
Alarm Content	1. UVW cable disconnected 2. Voltage command reaches limit during tuning		
Possible Cause	1. 3 phase power cables are loose 2. Voltage specification of driver and motor are matched		
Possible Solution	1. Check UVW cables between motor and drive for damage or looseness. 2. Using driver that voltage specification is matche		

11.13 AL-412 Inertia Tuning Startup Failure

All in one ID **2nd Single Axis ID**	**AL-412**		
1st Single Axis ID	**AL-3E**	**Alarm Name**	**Inertia Tuning Startup Failure**
Alarm Content	triggered when motor doesn't run during Inertia tuning		

Possible Cause	1. Encoder wiring error 2. Motor stall 3. Default torque is too small(50%) that can't drive the load
Possible Solution	1. Check encoder wiring, refer to "Wiring and signal" section of manual 2. The mtor should rotate during tuning with direction that Pn-504 allows (PS: Only 2nd Single Axis has this function) a. Check if UVW cables are wired correctly b. Check for mechanical locks 3. Increase【Pn-F32】Torque Command in Test Mode(【Fn-22】Torque Command in Test Mode) progressively. When the output torque is enough, the inertia tuning is finished.

11.14 AL-413 Inertia Tuning Loading Too Large

All in one ID **2nd Single Axis ID**	**AL-413**		
1st Single Axis ID	**AL-74**	**Alarm Name**	**Inertia Tuning Loading Too Large**
Alarm Content	Displacement exceeds half the motion limit while estimating gravity		
Possible Cause	1. Motion limit is set too small or motor power is insufficient		
Possible Solution	1. Check motion limit Pn-F14(Fn-04) and motor power. Raise motion limit or choose motor with larger power		

11.15 AL-414 Load Inertia Value Error

All in one ID **2nd Single Axis ID**	**AL-414**		
1st Single Axis ID	**AL-78**	**Alarm Name**	**Load Inertia Value Error**
Alarm Content	Load intertia value out of range		
Possible Cause	1. Rotor inertia value error 2. Linear motor load inertia value out of range		
Possible Solution	1. Re-enter specifics' rotor inertia parameter, or re-execute rotor inertia estimation during idling. 2. Refer to "linear motor SOP Q and A", restart rotor inertia tuning instead of load inertia tuning.		

11.16 AL-420 Encoder Offset Searching Failure

All in one ID **2nd Single Axis ID**	**AL-420**		
1st Single Axis ID	**AL-3D**	**Alarm Name**	**Encoder Offset Searching Failure**
Alarm Content	Drive fails to detect accurate motor pole position		
Possible Cause	1. Encoder mount loose, causing position shift 2. Motor stall		
Possible Solution	1. Make sure encoder index and motor shaft angle are fixed 2. Motor should rotate twice during searching process a. Check if UVW cables are wired correctly b. Check for mechanical locks		

11.17 AL-421 Initail Electrical Angle Detection Fail

All in one ID **2nd Single 轴向轴向 ID**	**AL-421**		
1st Single 轴向轴向 ID	**--**	**Alarm Name**	**Initial electrical angle detection fail**
Alarm Content	initial electrical angle detection fail		
Possible Cause	1. Unexpected rotation during detection 2. Motor does not rotate during polarity detect 3. Wrong initial angle detect method of linear motor		
Possible Solution	1. Check whether disturbance cause rotation during detection. Eliminate any mechanical disturbance causing rotation. 2. Motor is locked during detection. Eliminate any mechanical brake of the motor. 3. Motor's Inductance parameter is wrong. Correct the inductance parameter. 4. Set Pn-72D manually, and set it opposite sign. 5. Use linear motor and set Pn-011 as 2. When use linear motor, set Pn-011 = 0 or 1.		

11.18 AL-430 Encoder Calibration Stall Error

All in one ID **2nd Single Axis ID**	**AL-430**		

1st Single Axis ID	AL-4F	Alarm Name	Encoder Calibration Stall Error
Alarm Content	No motor rotation even as current output reaches limit		
Possible Cause	1. Motor overload 2. UVW wiring error		
Possible Solution	1. Check motor for mechanical interferences 2. Check Pn-441/Pn-444, Reset correct Pn-441/Pn-444 3. Check UVW wiring from drive to motor		

11.19 AL-431 Encoder Pitch Compensation Error

All in one ID 2nd Single Axis ID	AL-431		
1st Single Axis ID	**AL-3A**	**Alarm Name**	**Encoder Pitch Compensation Error**
Alarm Content	Adjacent compensation value varies too greatly		
Possible Cause	1. Encoder's original position feedback fluctuates severely 2. Encoder's compensation fixture error 3. Encoder malfunction		
Possible Solution	1. Check if 1st and 2nd feedback mechanical angle match. Change encoder polarity while ensuring motor direction is correct. Check if 1st and 2nd encoder's position error is greater than 20 during compensation. Redo compensation. Replace encoder if it keeps failing. 2. Make sure fixture is correctly mounted. Rotate motor and check if 1st feedback mechanical angle changes. 3. Rotate motor and check if 2nd feedback mechanical angle changes. If not, replace encoder and send defective to Syntec or authorized representative for repairs.		

11.20 AL-440 Dead time calibration initial failure

All in one ID 2nd Single Axis ID	AL-440		
1st Single Axis ID	**-----**	**Alarm Name**	**Dead time calibration initial failure**
Alarm Content	Dead time calibration initial failure		

Possible Cause	1. Some axes are servo on state
Possible Solution	1. Check all axes on servo state Servo off all axes and redo tuning

11.21 AL-450 Sensor Test Fail

All in one ID **2nd Single Axis ID**	**AL-450**		
1st Single Axis ID	**AL-7A**	**Alarm Name**	**Sensor Test Fail**
Alarm Content	Sensor test setting error or motor stall		
Possible Cause	1. Motion limit is set too small a. Linear motor: Whether position limit larger than 1.5 magnetic pitch. b. Rotary motor: Whether position limit larger than 2.5 electrical period. 2. Lmotor stall 3. Encoder no feedback		
Possible Solution	1. Set motion limit: a. Linear motor: Reserve a travel distance larger than 1.5 magnetic pitch. b. Rotary motor: Reserve a travel distance larger than 2.5 electrical period. 2. Check rotor position, Check Pn-441/Pn-444: a. Move motor to suitable position b. Reset Pn-441/Pn-444 3. Connect and wire encoder correctly		

11.22 AL-451 Linear Motor Magnetic Pitch Setting Error

All in one ID **2nd Single Axis ID**	**AL-451**		
1st Single Axis ID	**AL-7B**	**Alarm Name**	**Linear Motor Magnetic Pitch Setting Error**
Alarm Content	Detected magnetic pitch (Pn-D85) and set value (Pn-702) are mismatched		
Possible Cause	1. Magnetic pitch or encoder resolution setup error		

Possible Solution	1. Set parameters correctly

11.23 AL-452 Proximity Switch Spindle Posing Tuning Error

All in one ID **2nd Single Axis ID**	**AL-452**		
1st Single Axis ID		**Alarm Name**	**Proximity Switch Spindle Posing Tuning Error**
Alarm Content	The tuning of digital input filtering level failed		
Possible Cause	1. Wrong setting of gear number of motor side or screw side 2. Abnormal function of proximity switch 3. Spindle orientation check window is too narrow		
Possible Solution	1. Set parameters Pn-20A, Pn-20C, Pn-522, Pn-50A and Pn-50B correctly 2. Check the installation and signal of proximity		

11.24 AL-453 Global tuning failure

All in one ID **2nd Single Axis ID**	**AL-453**		
1st Single Axis ID		**Alarm Name**	**Global Tuning Failure**
Alarm Content	Unexpected alarm occurred during tuning process		
Possible Cause	Certain axis registers the alarm during tuning process		
Possible Solution	Solve the cause of the alarm, and then execute the tuning again		

12 AL-5xx Application Alarm Description

All in one ID 2nd Single Axis ID	**AL-500**		
1st Single Axis ID	**AL-2F**	**Alarm Name**	**Incorrect setting of operational curve for V/f control**
Alarm Content	V/f curve slope setup error		
Possible Cause	1. V/f curve slope setup error, check parameters Pn-112~Pn-115 (P2-31~P2-34)		
Possible Solution	1. Operation points 1 and 2 must increase in order. V and F of point 1 must be greater than those of point 2. 2. Frequency of operation point 2 cannot be above rated frequency. 3. Voltage of operation point 2 cannot be above rated voltage. 4. Voltage of operation point 1 must be higher than minimum VF voltage. (Observe Pn-D3B (D1-30) for further information) 5. V and f of both points cannot be 0.		

All in one ID 2nd Single Axis ID	**AL-501**		
1st Single Axis ID	**AL-30**	**Alarm Name**	**V/f Overcurrent**
Alarm Content	1. The current feedback is continuously over the maximum current of motor in V/f mode. 2. Triggered when current feedback is greater than 120% of maximum current		
Possible Cause	1. Severe setting of acceleration time or jerk time 2. Incorrect V/f curve setting 3. The motor is overload.		
Possible Solution	1. Increase jerk time(ms) and acceleration time 2. Adjust V/f operating curve 3. Appropriately decrease the load.		
Remark	From v2.12.7 , the second trigger mechanism of alarm content has been removed.		

All in one ID 2nd Single Axis ID	**AL-502**		
1st Single Axis ID		**Alarm Name**	**Voltage command reaches the limit**

Alarm Content	The voltage command reaches the limit for 150 millisecond after servo on when using open loop control or processing tuning function
Possible Cause	1. The belt slips 2. Gain tuning result is improper 3. UVW wiring is wrong or not connected
Possible Solution	1. Tighten or replace the belt 2. Refer to chapter "Auto Tuning" in user manual, tune gain properly 3. Refer to chapter "Wiring and signal" in user manual, and correct wiring

All in one ID **2nd Single Axis ID**	**AL-505**		
1st Single Axis ID	**-**	**Alarm Name**	**Control mode not set properly**
Alarm Content	Control mode should not be able to use with current setting or apparatus		
Possible Cause	1. None of encoder applied in position control 2. Disable position control with V/f mode setting 3. Gantry control does not support all control modes except the host position mode		
Possible Solution	1. Check if used function in position control. Make sure of correct setting on controller or encoder configuration 2. Check Pn-330 setting which is allowed to enter position control mode. Correct Pn-330 or avoid position control mode switch by controller 3. Check the controller settings or Pn-840		

All in one ID **2nd Single Axis ID**	**AL-510**		
1st Single Axis ID	**AL-3C**	**Alarm Name**	**Spindle Posing Failure**
Alarm Content	Drive couldn't complete spindle orientation within time limit		
Possible Cause	1. Spindle orientation fails to reach window set in Pn-522(P6-12) for 2 seconds after command complete 2. Encoder communication type error 3. Filtering level is too high or signal width is too short **(Only All in one ID/2nd Single Axis support)** 4. Proximity switch orientation failure 5. Proximity switch orientation has wrong gear ratio 6. Orientation is abnormally aborted 7. V/f mode or none of encoder applied do not support spindle orientation		

Possible Solution	1. Make sure parameter Pn-522(P6-12) is set in a reasonable range. Suggested value is 500(0.5 degrees) 2. Make sure Pn-900(P3-20) in single feedback control or Pn-920(P6-80) in dual feedback control is not 3 3. Check up the manual of Pn-03E and adjust it with motor running and monitoring Pn-D35 I Bits Status **(Only All in one ID/2nd Single Axis support)** 4. If using proximity switch orientation Pn-243=1(P6-29=1), check Pn-D97(D1-77) is updated each turn. Assemble proximity switch correctly Pn-50A~Pn-50B(P1-40~P1-41). 5. If using proximity switch orientation Pn-243=1(P6-29=1), check the gear ratio from controller is correctly set. Update controller software version to at least 10.116.24R(1st Single Axis) or 10.118.10(All in one/2nd Single Axis) and set gear ratio correctly. 6. Record Pn-D53(D1-40), and connect Syntec for further trouble shooting 7. Check Pn-330 and encoder setting and correct them

All in one ID **2nd Single Axis ID**	**AL-511**		
1st Single Axis ID	**AL-62**	**Alarm Name**	**Spindle Posing Deviate**
Alarm Content	Position deviated after posing complete		
Possible Cause	1. Orientation angle setting error, mechanical interference cause spindle diverge 2. Spindle orientation check window is too narrow		
Possible Solution	1. Check orientation angle and mechanical interference 2. Check whether parameter Pn-522(P6-12) is set in a reasonable range		

All in one ID **2nd Single Axis ID**	**AL-512**		
1st Single Axis ID	**-**	**Alarm Name**	**Error Digital Input Signal Index Position**
Alarm Content	1. Proximity signal may be disturbed, driver can't mark an index position		
Possible Cause	1. Digital Input Sampling Factor too low 2. Input signal too noisy 3. Gear ratio set incorrectly		
Possible Solution	1. Check Pn-03E. Please tune up level of Pn-03E and retry your test 2. Please check the installation of input wire, or proper material use 3. Replace with an more anti-noise material, or change a way of installation 4. Check gear ratio, measure and examine gear ratio again		

All in one ID **2nd Single Axis ID**	**AL-513**		
1st Single Axis ID	**-**	**Alarm Name**	**Dual Feedback parameter setting error**
Alarm Content	1. Parameters setting error in dual feedback control mode.		
Possible Cause	1. Enable velocity dual feedback control, while position dual feedback control is disabled.		
Possible Solution	1. When enable velocity dual feedback control(Pn-32A = 1), Must enable position dual feedback control(Pn-22A = 1). 2. If velocity dual feedback control is unnecessary, set Pn-32A = 0.		
Remark	Alarm has been added after version v2.12.10		

All in one ID **2nd Single Axis ID**	**AL-520**		
1st Single Axis ID	**AL-38**	**Alarm Name**	**Excessive position error between 1st and 2nd feedback**
Alarm Content	Position error between 1st and 2nd feedback exceeds allowed level		
Possible Cause	1. Belt slip 2. 2nd encoder pulse loss, no feedback or encoder polarity error 3. Gear ratio set incorrectly 4. Pn-51A set too strictly 5. Uses ABZ type as 2nd encoder and the resolution value is wrong		

Possible Solution	1. Check belt mechanism. 2. Execute "Encoder test" and observe whether any alarms are triggered. Refer to "Auto tuning" section of manual. 3. Measure and examine gear ratio again. 4. Check Pn-51A setting. Refer to 2nd Generation Driver Dual Feedback Tuning Manual(Analysis platform) or "The Pos Dual Feedback Control Of The Linear Scales with Analysis Platform" a. For spindle dual feedback, it is recommended setting this error bound (Pn-51A) as 0.1 times of the 2nd encode resolution. b. For axial dual feedback, if the resolution of the outer feedback linear scale is R pulse/mm and the mechanism has a backlash error of P mm, this parameter setting (Pn-51A) must be greater than P * R, and it is recommended to set 2 to 3 times P * R or more. 5. For axial dual feedback, please check whether【Pn-922】2nd Encoder Resolution is set correctly.

All in one ID **2nd Single Axis ID**	**AL-521**		
1st Single Axis ID	**AL-1F**	**Alarm Name**	**Excessive Following Error**
Alarm Content	Error between position command and feedback is too large		
Possible Cause	1. Torque limit too low 2. Motor overload 3. Severe speed command change 4. Rotor inertia set incorrectly 5. Parameter Pn-22C(P6-41) too low		
Possible Solution	1. Check parameter Pn-70A(P3-11). 2. Check if load ratio is continuously over 100%. 3. Check if controller's command changes severely. Adjust controller's acceleration time constant, set it larger. Reduce motor load or choose a larger rated torque of motor. 4. Rotor inertia is set too low, output current is too small, resulting incorrect control behavior. 5. Check parameter Pn-22C(P6-41). Pn-22C(P6-41) has its parameter lower bound,the minimum value of Pn-22C is 1/5 of latch frequency. 6. Make sure Pn-904/Pn-924(P3-23/P6-83) 1st/2nd encoder incremental/ absolute setup is correct.		

All in one ID **2nd Single Axis ID**	**AL-522**		
1st Single Axis ID	**AL-63**	**Alarm Name**	**Servo On Command Conflict**

Alarm Content	Servo on command conflict
Possible Cause	1. Drive receives Servo On and Auxiliary function at the same time
Possible Solution	1. Check if parameter Pn-F10(Fn-00) is set to enable auxiliary functions 2. Avoid Servo On and enabling Auxiliary function at the same time
Note	• Alarm has been delete for single axis drive version V1.6.9 and after. • Alarm has been delete for 4-in-1 drive version 4 in 1 V2.3.0 and after.

All in one ID **2nd Single Axis ID**	**AL-523**		
1st Single Axis ID	**AL-3F**	**Alarm Name**	**Parameter Saving Command is Illegal**
Alarm Content	Parameter saving command is given while Servo On		
Possible Cause	1. Parameter saving command is given while Servo On		
Possible Solution	1. Give parameter saving command while Servo Off		

All in one ID **2nd Single Axis ID**	**AL-524**		
1st Single Axis ID	**AL-81**	**Alarm Name**	**Serious Belt slip**
Alarm Content	Speed error between external encoder and estimator is too great		
Possible Cause	1. Belt slip 2. Gear ratio error		
Possible Solution	1. Change or tighten belt 2. Set gear ratio properly		

All in one ID **2nd Single Axis ID**	**AL-525**		
1st Single Axis ID	**AL-7C**	**Alarm Name**	**Electrical Gear Error**
Alarm Content	Relative setting error		
Possible Cause	1. Parameter setting error 2. Encoder communication type not supported		

Possible Solution	1. The ratio of Pn-20E/Pn-210 (P6-08/P6-09) should be integral, and be power of 2, and not more than 256. 2. If 23 bit TAMAGAWA encoder is used, Pn-20E can not more than 128. 3. Pn-210 (P6-09)must set to 1. 4. Please check Pn-900(P3-20). If in DualFeedback control, then check Pn-920(P6-80). If version is 1.6.x, this function only supports Nikon encoder; if version is v2.x, then support Nikon, Sankyo, HCFA and 23/25 bit TAMAGAWA encoders.

All in one ID **2nd Single Axis ID**	**AL-526**		
1st Single Axis ID	**-**	**Alarm Name**	**Extremely excessive position error between 1st and 2nd feedback**
Alarm Content	Position error between 1st and 2nd feedback exceeds allowed level extremely		
Possible Cause	1. Belt slip 2. 2nd encoder pulse loss or no feedback 3. Gear ratio set incorrectly		
Possible Solution	1. Check belt mechanism. 2. Execute "Encoder test" and observe whether any alarms are triggered. Refer to "Auto tuning" section of manual. 3. Measure and examine gear ratio again.		
All in one ID **2nd Single Axis ID**	**AL-527**		
1st Single Axis ID	**-**	**Alarm Name**	Gantry control position feedback critical deviation
Alarm Content	The position difference under gantry control exceeds the limit		
Possible Cause	1. Host command polarity setting error 2. The origin setting of the gantry axis is not completed 3. The position deviation alarm threshold is too strict 4. Inertia setting error 5. One of axes is stuck mechanically		
Possible Solution	1. Check the Pn-020 host command polarity of the two axes 2. Check the origin setting of the gantry axis 3. Confirm Pn-572 position deviation alarm threshold 4. Check the rotor and loader inertia or adjust the inertia 5. Check if any axis is mechanically stuck		

All in one ID 2nd Single Axis ID	AL-528		
1st Single Axis ID	-	Alarm Name	No origin point for gantry control
Alarm Content	No origin point for gantry control		
Possible Cause	No origin point for gantry control		
Possible Solution	Set the correct origin for the incremental encoder through Pn-F46 = 1		

All in one ID 2nd Single Axis ID	AL-529		
1st Single Axis ID	--	Alarm Name	Excessive Position Error Overflow
Alarm Content	Excessive overflow of pulse error between position command and feedback		
Possible Cause	1. Torque limit reach, then position error is too large		
Possible Solution	1. Check position target, and set proper position target		

All in one ID 2nd Single Axis ID	AL-52F		
1st Single Axis ID	AL-19	Alarm Name	Servo On Timeout
Alarm Content	Servo on longer than normal		
Possible Cause	1. Power of driver is loss or DC bus voltage is too low. 2. Drive configuration error.		
Possible Solution	1. Check up input voltage if lower than Pn-640(P5-00) supply voltage. Make sure of specification match between driver rated supply, wiring and Pn-640(P5-00) setting. 2. Send back to Syntec or authorized representative.		

All in one ID 2nd Single Axis ID	AL-530		
1st Single Axis ID	AL-20	Alarm Name	Zero Speed Check Fail

Alarm Content	Zero speed check time longer than normal
Possible Cause	1. Pn-502(P6-15) Zero Velocity Window is set too small 2. External overload 3. Tuning result abnormal
Possible Solution	1. Check Pn-502(P6-15) settings. Set Pn-502(P6-15) larger. 2. Pn-306(P6-10) maximum acceleration and Pn-307(P6-11) maximum JERK time are set too small. Check and set them larger. 3. Check auto tuning parameters. Refer to "Auto tuning" section of manual.

All in one ID 2nd Single Axis ID	**AL-531**		
1st Single Axis ID	**--**	**Alarm Name**	**Drive Parameter Loaded to Defaults**
Alarm Content	Do load default parameter function, parameters have been loaded to default value.		
Possible Cause	1. If Pn-F43 load default parameter function is modified, this warning will be shown after the parameter is successfully loaded.		
Possible Solution	1. Please reboot the drive and check if this warning is still exist.		

All in one ID 2nd Single Axis ID	**AL-542**		
1st Single Axis ID	**-**	**Alarm Name**	**Laser Cruise Mode Failure**
Alarm Content	Laser Cruise Mode Failure		
Possible Cause	1. 2nd encoder communication type non altimeter or LVDT 2. V/f mode or none of encoder applied do not support laser cruise mode		
Possible Solution	1. Check Pn-920 and set 2nd encoder as altimeter or LVDT 2. Check Pn-330 and encoder setting and correct them		

All in one ID 2nd Single Axis ID	**AL-543**		
1st Single Axis ID	**-**	**Alarm Name**	**The Proximity Spindle Position DI setting error**
Alarm Content	More than one DI set as the Proximity Spindle Position function		

Possible Cause	1. The Proximity Spindle Position function only can set one DI in one axis
Possible Solution	1. Check Pn-50A ~ Pn-50D, Close the redundant Proximity Spindle Position

All in one ID **2nd Single Axis ID**	**AL-690**		
1st Single Axis ID	**-**	**Alarm Name**	**Not support winding selection function**
Alarm Content	The switch function of high and low speed coil can't be opened.		
Possible Cause	1. The wrong setting of Pn-72C Motor Winding Mode 2. CNC version not support winding selection function 3. Only induction spindle support winding selection function		
Possible Solution	1. Set Pn-72C Motor Winding Mode correctly 2. Update CNC version correctly 3. Set Pn-700 Motor Type and Pn-803 Motor Application correctly, or disable Pn-01E winding selection function		

12.1 AL-52F Servo On Timeout

All in one ID **2nd Single Axis ID**	**AL-52F**		
1st Single Axis ID	**AL-19**	**Alarm Name**	**Servo On Timeout**
Alarm Content	Servo on longer than normal		
Possible Cause	1. Power of driver is loss or DC bus voltage is too low. 2. Drive configuration error.		
Possible Solution	1. Check up input voltage if lower than Pn-640(P5-00) supply voltage. Make sure of specification match between driver rated supply, wiring and Pn-640(P5-00) setting. 2. Send back to Syntec or authorized representative.		

12.2 AL-500 Incorrect setting of operational curve for V/f control

All in one ID 2nd Single Axis ID	AL-500		
1st Single Axis ID	**AL-2F**	**Alarm Name**	**Incorrect setting of operational curve for V/f control**
Alarm Content	V/f curve slope setup error		
Possible Cause	1. V/f curve slope setup error, check parameters Pn-112~Pn-115 (P2-31~P2-34)		
Possible Solution	1. Operation points 1 and 2 must increase in order. V and F of point 1 must be greater than those of point 2. 2. Frequency of operation point 2 cannot be above rated frequency. 3. Voltage of operation point 2 cannot be above rated voltage. 4. Voltage of operation point 1 must be higher than minimum VF voltage. (Observe Pn-D3B (D1-30) for further information) 5. V and f of both points cannot be 0.		

12.3 AL-501 V/f Overcurrent

All in one ID 2nd Single Axis ID	AL-501		
1st Single Axis ID	**AL-30**	**Alarm Name**	**V/f Overcurrent**
Alarm Content	1. The current feedback is continuously over the maximum current of motor in V/f mode. 2. Triggered when current feedback is greater than 120% of maximum current		
Possible Cause	1. Severe setting of acceleration time or jerk time 2. Incorrect V/f curve setting 3. The motor is overload.		
Possible Solution	1. Increase jerk time(ms) and acceleration time 2. Adjust V/f operating curve 3. Appropriately decrease the load.		
Remark	From v2.12.7 , the second trigger mechanism of alarm content has been removed.		

12.4 AL-502 Voltage command reaches the limit

All in one ID 2nd Single Axis ID	AL-502		
1st Single Axis ID		**Alarm Name**	**Voltage command reaches the limit**
Alarm Content	The voltage command reaches the limit for 150 millisecond after servo on when using open loop control or processing tuning function		
Possible Cause	1. The belt slips 2. Gain tuning result is improper 3. UVW wiring is wrong or not connected		
Possible Solution	1. Tighten or replace the belt 2. Refer to chapter "Auto Tuning" in user manual, tune gain properly 3. Refer to chapter "Wiring and signal" in user manual, and correct wiring		

12.5 AL-505 Control mode not set properly

All in one ID 2nd Single Axis ID	AL-505		
1st Single Axis ID	-	**Alarm Name**	**Control mode not set properly**
Alarm Content	Control mode should not be able to use with current setting or apparatus		
Possible Cause	1. None of encoder applied in position control 2. Disable position control with V/f mode setting 3. Gantry control does not support all control modes except the host position mode		
Possible Solution	1. Check if used function in position control. Make sure of correct setting on controller or encoder configuration 2. Check Pn-330 setting which is allowed to enter position control mode. Correct Pn-330 or avoid position control mode switch by controller 3. Check the controller settings or Pn-840		

12.6 AL-510 Spindle Posing Failure

All in one ID 2nd Single Axis ID	AL-510		

1st Single Axis ID	AL-3C	Alarm Name	Spindle Posing Failure
Alarm Content	Drive couldn't complete spindle orientation within time limit		
Possible Cause	1. Spindle orientation fails to reach window set in Pn-522(P6-12) for 2 seconds after command complete 2. Encoder communication type error 3. Filtering level is too high or signal width is too short **(Only All in one ID/2nd Single Axis support)** 4. Proximity switch orientation failure 5. Proximity switch orientation has wrong gear ratio 6. Orientation is abnormally aborted 7. V/f mode or none of encoder applied do not support spindle orientation		
Possible Solution	1. Make sure parameter Pn-522(P6-12) is set in a reasonable range. Suggested value is 500(0.5 degrees) 2. Make sure Pn-900(P3-20) in single feedback control or Pn-920(P6-80) in dual feedback control is not 3 3. Check up the manual of Pn-03E and adjust it with motor running and monitoring Pn-D35 I Bits Status **(Only All in one ID/2nd Single Axis support)** 4. If using proximity switch orientation Pn-243=1(P6-29=1), check Pn-D97(D1-77) is updated each turn. Assemble proximity switch correctly Pn-50A~Pn-50B(P1-40~P1-41). 5. If using proximity switch orientation Pn-243=1(P6-29=1), check the gear ratio from controller is correctly set. Update controller software version to at least 10.116.24R(1st Single Axis) or 10.118.10(All in one/2nd Single Axis) and set gear ratio correctly. 6. Record Pn-D53(D1-40), and connect Syntec for further trouble shooting 7. Check Pn-330 and encoder setting and correct them		

12.7 AL-511 Spindle Posing Deviate

All in one ID 2nd Single Axis ID	AL-511		
1st Single Axis ID	**AL-62**	**Alarm Name**	**Spindle Posing Deviate**
Alarm Content	Position deviated after posing complete		
Possible Cause	1. Orientation angle setting error, mechanical interference cause spindle diverge 2. Spindle orientation check window is too narrow		
Possible Solution	1. Check orientation angle and mechanical interference 2. Check whether parameter Pn-522(P6-12) is set in a reasonable range		

12.8 AL-512 Error Digital Input Signal Index Position

All in one ID 2nd Single Axis ID	AL-512		
1st Single Axis ID	**-**	**Alarm Name**	**Error Digital Input Signal Index Position**
Alarm Content	1. Proximity signal may be disturbed, driver can't mark an index position		
Possible Cause	1. Digital Input Sampling Factor too low 2. Input signal too noisy 3. Gear ratio set incorrectly		
Possible Solution	1. Check Pn-03E. Please tune up level of Pn-03E and retry your test 2. Please check the installation of input wire, or proper material use 3. Replace with an more anti-noise material, or change a way of installation 4. Check gear ratio, measure and examine gear ratio again		

12.9 AL-513 Dual Feedback parameter setting error

All in one ID 2nd Single Axis ID	AL-513		
1st Single Axis ID	**-**	**Alarm Name**	**Dual Feedback parameter setting error**
Alarm Content	1. Parameters setting error in dual feedback control mode.		
Possible Cause	1. Enable velocity dual feedback control, while position dual feedback control is disabled.		
Possible Solution	1. When enable velocity dual feedback control(Pn-32A = 1), Must enable position dual feedback control(Pn-22A = 1). 2. If velocity dual feedback control is unnecessary, set Pn-32A = 0.		
Remark	Alarm has been added after version v2.12.10		

12.10 AL-520 Excessive position error between 1st and 2nd feedback

All in one ID 2nd Single Axis ID	AL-520		

1st Single Axis ID	AL-38	Alarm Name	Excessive position error between 1st and 2nd feedback
Alarm Content	Position error between 1st and 2nd feedback exceeds allowed level		
Possible Cause	1. Belt slip 2. 2nd encoder pulse loss, no feedback or encoder polarity error 3. Gear ratio set incorrectly 4. Pn-51A set too strictly 5. Uses ABZ type as 2nd encoder and the resolution value is wrong		
Possible Solution	1. Check belt mechanism. 2. Execute "Encoder test" and observe whether any alarms are triggered. Refer to "Auto tuning" section of manual. 3. Measure and examine gear ratio again. 4. Check Pn-51A setting. Refer to 2nd Generation Driver Dual Feedback Tuning Manual(Analysis platform) or "The Pos Dual Feedback Control Of The Linear Scales with Analysis Platform" a. For spindle dual feedback, it is recommended setting this error bound (Pn-51A) as 0.1 times of the 2nd encode resolution. b. For axial dual feedback, if the resolution of the outer feedback linear scale is R pulse/mm and the mechanism has a backlash error of P mm, this parameter setting (Pn-51A) must be greater than P * R, and it is recommended to set 2 to 3 times P * R or more. 5. For axial dual feedback, please check whether【Pn-922】2nd Encoder Resolution is set correctly.		

12.11 AL-521 Excessive Following Error

All in one ID 2nd Single Axis ID	AL-521		
1st Single Axis ID	**AL-1F**	**Alarm Name**	**Excessive Following Error**
Alarm Content	Error between position command and feedback is too large		
Possible Cause	1. Torque limit too low 2. Motor overload 3. Severe speed command change 4. Rotor inertia set incorrectly 5. Parameter Pn-22C(P6-41) too low		

Possible Solution	1. Check parameter Pn-70A(P3-11). 2. Check if load ratio is continuously over 100%. 3. Check if controller's command changes severely. Adjust controller's acceleration time constant, set it larger. Reduce motor load or choose a larger rated torque of motor. 4. Rotor inertia is set too low, output current is too small, resulting incorrect control behavior. 5. Check parameter Pn-22C(P6-41). Pn-22C(P6-41) has its parameter lower bound,the minimum value of Pn-22C is 1/5 of latch frequency. 6. Make sure Pn-904/Pn-924(P3-23/P6-83) 1st/2nd encoder incremental/ absolute setup is correct.

12.12 AL-522 Servo On Command Conflict

All in one ID **2nd Single Axis ID**	**AL-522**		
1st Single Axis ID	**AL-63**	**Alarm Name**	**Servo On Command Conflict**
Alarm Content	Servo on command conflict		
Possible Cause	1. Drive receives Servo On and Auxiliary function at the same time		
Possible Solution	1. Check if parameter Pn-F10(Fn-00) is set to enable auxiliary functions 2. Avoid Servo On and enabling Auxiliary function at the same time		
Note	• Alarm has been delete for single axis drive version V1.6.9 and after. • Alarm has been delete for 4-in-1 drive version 4 in 1 V2.3.0 and after.		

12.13 AL-523 Parameter Saving Command is Illegal

All in one ID **2nd Single Axis ID**	**AL-523**		
1st Single Axis ID	**AL-3F**	**Alarm Name**	**Parameter Saving Command is Illegal**
Alarm Content	Parameter saving command is given while Servo On		
Possible Cause	1. Parameter saving command is given while Servo On		
Possible Solution	1. Give parameter saving command while Servo Off		

12.14 AL-524 Serious Belt slip

All in one ID 2nd Single Axis ID	AL-524		
1st Single Axis ID	**AL-81**	**Alarm Name**	**Serious Belt slip**
Alarm Content	Speed error between external encoder and estimator is too great		
Possible Cause	1. Belt slip 2. Gear ratio error		
Possible Solution	1. Change or tighten belt 2. Set gear ratio properly		

12.15 AL-525 Electrical Gear Error

All in one ID 2nd Single Axis ID	AL-525		
1st Single Axis ID	**AL-7C**	**Alarm Name**	**Electrical Gear Error**
Alarm Content	Relative setting error		
Possible Cause	1. Parameter setting error 2. Encoder communication type not supported		
Possible Solution	1. The ratio of Pn-20E/Pn-210 (P6-08/P6-09) should be integral, and be power of 2, and not more than 256. 2. If 23 bit TAMAGAWA encoder is used, Pn-20E can not more than 128. 3. Pn-210 (P6-09)must set to 1. 4. Please check Pn-900(P3-20). If in DualFeedback control, then check Pn-920(P6-80). If version is 1.6.x, this function only supports Nikon encoder; if version is v2.x, then support Nikon, Sankyo, HCFA and 23/25 bit TAMAGAWA encoders.		

12.16 AL-526 Extremely excessive position error between 1st and 2nd feedback

All in one ID 2nd Single Axis ID	AL-526		

1st Single Axis ID	-	Alarm Name	Extremely excessive position error between 1st and 2nd feedback
Alarm Content	Position error between 1st and 2nd feedback exceeds allowed level extremely		
Possible Cause	1. Belt slip 2. 2nd encoder pulse loss or no feedback 3. Gear ratio set incorrectly		
Possible Solution	1. Check belt mechanism. 2. Execute "Encoder test" and observe whether any alarms are triggered. Refer to "Auto tuning" section of manual. 3. Measure and examine gear ratio again.		

12.17 AL-527 Gantry control position feedback critical deviation

All in one ID 2nd Single Axis ID	AL-527		
1st Single Axis ID	-	Alarm Name	Gantry control position feedback critical deviation
Alarm Content	The position difference under gantry control exceeds the limit		
Possible Cause	1. Host command polarity setting error 2. The origin setting of the gantry axis is not completed 3. The position deviation alarm threshold is too strict 4. Inertia setting error 5. One of axes is stuck mechanically		
Possible Solution	1. Check the Pn-020 host command polarity of the two axes 2. Check the origin setting of the gantry axis 3. Confirm Pn-572 position deviation alarm threshold 4. Check the rotor and loader inertia or adjust the inertia 5. Check if any axis is mechanically stuck		

12.18 AL-528 Gantry control has no origin point

All in one ID 2nd Single Axis ID	AL-528		
1st Single Axis ID	-	Alarm Name	No origin point for gantry control

Alarm Content	No origin point for gantry control
Possible Cause	No origin point for gantry control
Possible Solution	Set the correct origin for the incremental encoder through Pn-F46 = 1

12.19 AL-529 Excessive Position Error Overflow

All in one ID 2nd Single Axis ID	**AL-529**		
1st Single Axis ID	**--**	**Alarm Name**	Excessive Position Error Overflow
Alarm Content	Excessive overflow of pulse error between position command and feedback		
Possible Cause	1. Torque limit reach, then position error is too large		
Possible Solution	1. Check position target, and set proper position target		

12.20 AL-530 Zero Speed Check Fail

All in one ID 2nd Single Axis ID	**AL-530**		
1st Single Axis ID	**AL-20**	**Alarm Name**	**Zero Speed Check Fail**
Alarm Content	Zero speed check time longer than normal		
Possible Cause	1. Pn-502(P6-15) Zero Velocity Window is set too small 2. External overload 3. Tuning result abnormal		
Possible Solution	1. Check Pn-502(P6-15) settings. Set Pn-502(P6-15) larger. 2. Pn-306(P6-10) maximum acceleration and Pn-307(P6-11) maximum JERK time are set too small. Check and set them larger. 3. Check auto tuning parameters. Refer to "Auto tuning" section of manual.		

12.21 AL-531 Drive Parameter Loaded to Defaults

All in one ID 2nd Single Axis ID	AL-531		
1st Single Axis ID	--	Alarm Name	Drive Parameter Loaded to Defaults
Alarm Content	Do load default parameter function, parameters have been loaded to default value.		
Possible Cause	1. If Pn-F43 load default parameter function is modified, this warning will be shown after the parameter is successfully loaded.		
Possible Solution	1. Please reboot the drive and check if this warning is still exist.		

12.22 AL-532 STO Function Execution

All in one ID 2nd Single 軸向 軸向 ID	AL-532		

1st Single轴向轴向ID	--	Alarm Name	STO Function Execution
Alarm Content	STO Function is on. Motor stops running.		
Possible Cause	STO_A or STO_B circuit is triggered.		
Possible Solution	Check up STO_A, STO_B signals are connected or triggered.		

12.23 AL-542 Laser Cruise Mode Failure

All in one ID **2nd Single Axis ID**	**AL-542**		
1st Single Axis ID	**-**	**Alarm Name**	**Laser Cruise Mode Failure**
Alarm Content	Laser Cruise Mode Failure		
Possible Cause	1. 2nd encoder communication type non altimeter or LVDT 2. V/f mode or none of encoder applied do not support laser cruise mode		
Possible Solution	1. Check Pn-920 and set 2nd encoder as altimeter or LVDT 2. Check Pn-330 and encoder setting and correct them		

12.24 AL-543 The Proximity Spindle Position DI setting error

All in one ID **2nd Single Axis ID**	**AL-543**		
1st Single Axis ID	**-**	**Alarm Name**	**The Proximity Spindle Position DI setting error**
Alarm Content	More than one DI set as the Proximity Spindle Position function		
Possible Cause	1. The Proximity Spindle Position function only can set one DI in one axis		
Possible Solution	1. Check Pn-50A ~ Pn-50D, Close the redundant Proximity Spindle Position		

12.25 AL-690 Not support winding selection function

All in one ID **2nd Single Axis ID**	**AL-690**		
1st Single Axis ID	**-**	**Alarm Name**	**Not support winding selection function**
Alarm Content	The switch function of high and low speed coil can't be opened.		

Possible Cause	1. The wrong setting of Pn-72C Motor Winding Mode 2. CNC version not support winding selection function 3. Only induction spindle support winding selection function
Possible Solution	1. Set Pn-72C Motor Winding Mode correctly 2. Update CNC version correctly 3. Set Pn-700 Motor Type and Pn-803 Motor Application correctly, or disable Pn-01E winding selection function

13 Particular Alarm Description

All in one ID 2nd Single Axis ID	**AL-810**		
1st Single Axis ID	**AL-810**	**Alarm Name**	**Encoder Battery Low Voltage Position Loss**
Alarm Content	Encoder battery low, position data is lost.		
Possible Cause	1. Battery voltage too low or no battery. a. Nikon, Panasonic: battery voltage is less than 2.5 V. b. Mitsubishi: battery voltage is less than 2.9V. c. HCFA: battery voltage is less than 1.7V. d. Delta: battery voltage is less than 3.1V. 2. Parameter setting error.		
Possible Solution	1. Change battery a. With controller: change battery and restart system. b. Without controller: change battery, set parameter Pn-F44(Fn-34) to 1 and restart drive. 2. If not absolute encoder, set parameter Pn-904(P3-23) to 0 and restart drive.		
Detailed Instructions	【Pn-D95】Enc Error Status ALMC		

All in one ID 2nd Single Axis ID	**AL-812**		
1st Single Axis ID	**AL-56**	**Alarm Name**	**2nd Encoder Position Loss**
Alarm Content	Second encoder battery less than 2.5V, multi-turn position data loss		
Possible Cause	1. Encoder voltage too low or no battery a. Nikon, Panasonic: battery voltage is less than 2.5 V. b. Mitsubishi: battery voltage is less than 2.9V. c. HCFA: battery voltage is less than 1.7V. d. Delta: battery voltage is less than 3.1V. 2. Parameter set incorrectly		
Possible Solution	1. Change battery a. With controller: Change battery and reboot system. b. No controller: Change battery, set parameter Pn-F44(Fn-34) to 1 and reboot d river. 2. Check parameter Pn-924(P6-83). If not using an absolute encoder, set Pn-924 to 0, save and reboot driver		

Detailed Instructions	【Pn-D96】2nd Enc Error Status ALMC		
All in one ID 2nd Single Axis ID	**AL-830**		
1st Single Axis ID	**AL-830**	**Alarm Name**	**ABS Type Encoder Battery Low Voltage Alarm**
Alarm Content	ABS type encoder battery voltage lower than 3V.		
Possible Cause	1. Battery voltage too low or no battery. 2. Parameter setting error.		
Possible Solution	1. Change battery and restart drive (No need to restart if equipped with Nikon encoder). 2. If not ABS type encoder, set parameter Pn-904(P3-23) to 0 and restart drive.		

All in one ID 2nd Single Axis ID	**AL-B6B**		
1st Single Axis ID	**--**	**Alarm Name**	**Mechatrolink ASIC Malfunction**
Alarm Content	Mechatrolink ASIC Malfunction		
Possible Cause	1. Mechatrolink ASIC Malfunction		
Possible Solution	1. Please contact distributor or Syntec representative.		

All in one ID 2nd Single Axis ID	**AL-E02**		
1st Single Axis ID	**-**	**Alarm Name**	**Host Communication Synchronization Error**
Alarm Content	Host Communication packet abnormal.		
Possible Cause	1. Host Data exchange time out.		
Possible Solution	1. Check the setting of the Mechatrolink transmission cycle Pr3203.		

All in one ID 2nd Single Axis ID	**AL-E30**		
1st Single Axis ID	**-**	**Alarm Name**	**Mechatrolink position command error**

Alarm Content	Mechatrolink position command error, received position command too large.
Possible Cause	1. Position command is too large, probably abnormal increment compared with the last command
Possible Solution	1. Position command varies abnormally or unexpectedly 2. Check up software version of the controller. Please inform the manufacturer.

All in one ID **2nd Single Axis ID**	**AL-E40**		
1st Single Axis ID	**-**	**Alarm Name**	**Mechatrolink Interpolation Time Interval Setting Error**
Alarm Content	Mechatrolink interpolation time interval setting error.		
Possible Cause	1. Mechatrolink interpolation time interval setting is outside specified range.		
Possible Solution	1. Raise controller parameter Pr3203 interpolation time interval setting to appropriate value.		

All in one ID **2nd Single Axis ID**	**AL-E50**		
1st Single Axis ID	**AL-E50**	**Alarm Name**	**Host command not updated**
Alarm Content	Host communication WDT check error.		
Possible Cause	1. The controller did not update the packet correctly or the host communication chip is abnormal.		
Possible Solution	1. Check if the host command sends unexpected performance. 2. Check serial wiring, whether shielding is correct and if connections are firm.		

All in one ID **2nd Single Axis ID**	**AL-E60**		
1st Single Axis ID	**--**	**Alarm Name**	**Host communication disturbed by noise(Checked by hardware)**

Alarm Content	Host communication CRC check error(Checked by hardware).
Possible Cause	1. Host communication is disturbed by noise, which makes the packet unusable.
Possible Solution	1. Check serial wiring, whether shielding is correct and if connections are firm.

All in one ID **2nd Single Axis ID**	**AL-E61**		
1st Single Axis ID	**-**	**Alarm Name**	**Host Transmission Cycle Error**
Alarm Content	The transmission cycle interval varied in tolerance which is out of range.		
Possible Cause	1. Host communication varied in tolerance which is out of 10% of period.		
Possible Solution	1. Check serial wiring, whether shielding is correct and if connections are firm.		

All in one ID **2nd Single Axis ID**	**AL-E62**		
1st Single Axis ID	**--**	**Alarm Name**	**Host communication disturbed by noise(Checked by software)**
Alarm Content	Host communication CRC check error(Checked by software).		
Possible Cause	1. Host communication is disturbed by noise, which makes the packet unusable.		
Possible Solution	1. Check serial wiring, whether shielding is correct and if connections are firm.		

All in one ID **2nd Single Axis ID**	**AL-E63**		
1st Single Axis ID	**--**	**Alarm Name**	**Host communication sequence error**
Alarm Content	Host communication SYNC flag check error.		
Possible Cause	1. Host communication is disturbed by noise, resulting in abnormal synchronization signal.		
Possible Solution	1. Check serial wiring, whether shielding is correct and if connections are firm.		

All in one ID 2nd Single Axis ID	AL-E65		
1st Single Axis ID	--	Alarm Name	Host communication disconnect
Alarm Content	Host communication disconnect.		
Possible Cause	1. Wire falling off or loose.		
Possible Solution	1. Check serial wiring, whether connections are firm.		

All in one ID 2nd Single Axis ID	AL-E68		
1st Single Axis ID	--	Alarm Name	Host communication continuous error
Alarm Content	Host communication continuous error.		
Possible Cause	1. Host communication is disturbed by noise. 2. The controller did not update the packet correctly. 3. The host communication chip is abnormal.		
Possible Solution	1. Check serial wiring, whether shielding is correct and if connections are firm. 2. Check if the host command sends unexpected performance.		

All in one ID 2nd Single Axis ID	AL-F10		
1st Single Axis ID	-	Alarm Name	Power supply line open phase
Alarm Content	One phase of the power supply has low voltage.		
Possible Cause	1. Voltage low for more than 1 second for R, S or T phase with main power on. 2. Parameter setting error.		
Possible Solution	1. Tighten power supply wires. 2. If using single-phase power supply, set parameter Pn-036 to 1 and restart drive.		

13.1 AL-810 Encoder Battery Low Voltage Position Loss

All in one ID **2nd Single Axis ID**	**AL-810**		
1st Single Axis ID	**AL-810**	**Alarm Name**	**Encoder Battery Low Voltage Position Loss**
Alarm Content	Encoder battery low, position data is lost.		
Possible Cause	1. Battery voltage too low or no battery. a. Nikon, Panasonic: battery voltage is less than 2.5 V. b. Mitsubishi: battery voltage is less than 2.9V. c. HCFA: battery voltage is less than 1.7V. d. Delta: battery voltage is less than 3.1V. 2. Parameter setting error.		
Possible Solution	1. Change battery a. With controller: change battery and restart system. b. Without controller: change battery, set parameter Pn-F44(Fn-34) to 1 and restart drive. 2. If not absolute encoder, set parameter Pn-904(P3-23) to 0 and restart drive.		
Detailed Instructions	【Pn-D95】Enc Error Status ALMC		

13.2 AL-812 2nd Encoder Position Loss

All in one ID **2nd Single Axis ID**	**AL-812**		
1st Single Axis ID	**AL-56**	**Alarm Name**	**2nd Encoder Position Loss**
Alarm Content	Second encoder battery less than 2.5V, multi-turn position data loss		
Possible Cause	1. Encoder voltage too low or no battery a. Nikon, Panasonic: battery voltage is less than 2.5 V. b. Mitsubishi: battery voltage is less than 2.9V. c. HCFA: battery voltage is less than 1.7V. d. Delta: battery voltage is less than 3.1V. 2. Parameter set incorrectly		

Possible Solution	1. Change battery a. With controller: Change battery and reboot system. b. No controller: Change battery, set parameter Pn-F44(Fn-34) to 1 and reboot d river. 2. Check parameter Pn-924(P6-83). If not using an absolute encoder, set Pn-924 to 0, save and reboot driver
Detailed Instructions	【Pn-D96】2nd Enc Error Status ALMC

13.3 AL-830 ABS Type Encoder Battery Low Voltage Alarm

All in one ID **2nd Single Axis ID**	**AL-830**		
1st Single Axis ID	**AL-830**	**Alarm Name**	**ABS Type Encoder Battery Low Voltage Alarm**
Alarm Content	ABS type encoder battery voltage lower than 3V.		
Possible Cause	1. Battery voltage too low or no battery. 2. Parameter setting error.		
Possible Solution	1. Change battery and restart drive (No need to restart if equipped with Nikon encoder). 2. If not ABS type encoder, set parameter Pn-904(P3-23) to 0 and restart drive.		

13.4 AL-B6B Mechatrolink ASIC Malfunction

All in one ID **2nd Single Axis ID**	**AL-B6B**		
1st Single Axis ID	**--**	**Alarm Name**	**Mechatrolink ASIC Malfunction**
Alarm Content	Mechatrolink ASIC Malfunction		
Possible Cause	1. Mechatrolink ASIC Malfunction		
Possible Solution	1. Please contact distributor or Syntec representative.		

13.5 AL-E02 Host Communication Synchronization Error

All in one ID 2nd Single Axis ID	AL-E02		
1st Single Axis ID	-	Alarm Name	Host Communication Synchronization Error
Alarm Content	Host Communication packet abnormal.		
Possible Cause	1. Host Data exchange time out.		
Possible Solution	1. Check the setting of the Mechatrolink transmission cycle Pr3203.		

13.6 AL-E30 Mechatrolink position command error

All in one ID 2nd Single Axis ID	AL-E30		
1st Single Axis ID	-	Alarm Name	Mechatrolink position command error
Alarm Content	Mechatrolink position command error, received position command too large.		
Possible Cause	1. Position command is too large, probably abnormal increment compared with the last command		
Possible Solution	1. Position command varies abnormally or unexpectedly 2. Check up software version of the controller. Please inform the manufacturer.		

13.7 AL-E40 Mechatrolink Interpolation Time Interval Setting Error

All in one ID 2nd Single Axis ID	AL-E40		
1st Single Axis ID	-	Alarm Name	Mechatrolink Interpolation Time Interval Setting Error
Alarm Content	Mechatrolink interpolation time interval setting error.		
Possible Cause	1. Mechatrolink interpolation time interval setting is outside specified range.		

Possible Solution	1. Raise controller parameter Pr3203 interpolation time interval setting to appropriate value.

13.8 AL-E50 Host command not updated

All in one ID **2nd Single Axis ID**	**AL-E50**		
1st Single Axis ID	**AL-E50**	**Alarm Name**	**Host command not updated**
Alarm Content	Host communication WDT check error.		
Possible Cause	1. The controller did not update the packet correctly or the host communication chip is abnormal.		
Possible Solution	1. Check if the host command sends unexpected performance. 2. Check serial wiring, whether shielding is correct and if connections are firm.		

13.9 AL-E60 Host communication disturbed by noise(Checked by hardware)

All in one ID **2nd Single Axis ID**	**AL-E60**		
1st Single Axis ID	**--**	**Alarm Name**	**Host communication disturbed by noise(Checked by hardware)**
Alarm Content	Host communication CRC check error(Checked by hardware).		
Possible Cause	1. Host communication is disturbed by noise, which makes the packet unusable.		
Possible Solution	1. Check serial wiring, whether shielding is correct and if connections are firm.		

13.10 AL-E61 Host Transmission Cycle Error

All in one ID **2nd Single Axis ID**	**AL-E61**		

1st Single Axis ID	-	Alarm Name	Host Transmission Cycle Error
Alarm Content	The transmission cycle interval varied in tolerance which is out of range.		
Possible Cause	1. Host communication varied in tolerance which is out of 10% of period.		
Possible Solution	1. Check serial wiring, whether shielding is correct and if connections are firm.		

13.11 AL-E62 Host communication disturbed by noise(Checked by software)

All in one ID 2nd Single Axis ID	AL-E62		
1st Single Axis ID	--	Alarm Name	Host communication disturbed by noise(Checked by software)
Alarm Content	Host communication CRC check error(Checked by software).		
Possible Cause	1. Host communication is disturbed by noise, which makes the packet unusable.		
Possible Solution	1. Check serial wiring, whether shielding is correct and if connections are firm.		

13.12 AL-E63 Host communication sequence error

All in one ID 2nd Single Axis ID	AL-E63		
1st Single Axis ID	--	Alarm Name	Host communication sequence error
Alarm Content	Host communication SYNC flag check error.		
Possible Cause	1. Host communication is disturbed by noise, resulting in abnormal synchronization signal.		
Possible Solution	1. Check serial wiring, whether shielding is correct and if connections are firm.		

13.13 AL-E65 Host communication disconnect

All in one ID **2nd Single Axis ID**	**AL-E65**		
1st Single Axis ID	**--**	**Alarm Name**	**Host communication disconnect**
Alarm Content	Host communication disconnect.		
Possible Cause	1. Wire falling off or loose.		
Possible Solution	1. Check serial wiring, whether connections are firm.		

13.14 AL-E68 Host communication continuous error

All in one ID **2nd Single Axis ID**	**AL-E68**		
1st Single Axis ID	**--**	**Alarm Name**	**Host communication continuous error**
Alarm Content	Host communication continuous error.		
Possible Cause	1. Host communication is disturbed by noise. 2. The controller did not update the packet correctly. 3. The host communication chip is abnormal.		
Possible Solution	1. Check serial wiring, whether shielding is correct and if connections are firm. 2. Check if the host command sends unexpected performance.		

13.15 AL-F10 Power supply line open phase

All in one ID **2nd Single Axis ID**	**AL-F10**		
1st Single Axis ID	**-**	**Alarm Name**	**Power supply line open phase**
Alarm Content	One phase of the power supply has low voltage.		

Possible Cause	1. Voltage low for more than 1 second for R, S or T phase with main power on. 2. Parameter setting error.
Possible Solution	1. Tighten power supply wires. 2. If using single-phase power supply, set parameter Pn-036 to 1 and restart drive.

14 AL-9xx Driver Warning Description

All in one ID **2nd Single Axis ID**	**AL-910**		
1st Single Axis ID	**-**	**Alarm Name**	**IGBT High Temperature**
Alarm Content	The temperature of IGBT is over 85℃		
Possible Cause	1. Severe acceleration change 2. Cooling system failure 3. Drive output short-circuit 4. Ambient temperature overheat 5. Heat source nearby 6. Continuous use while exceeding drive's rated load		
Possible Solution	1. Increase Pn-307 2. Check if fan is functioning normally. 3. Check drive's output wiring, refer to "Wiring and Signal" section of manual. 4. Check if ambient temperature is below 55℃, refer to "Transportation and Installation" section of manual. 5. Check environment, remove external heat source or enhance cooling capacity. 6. Check for motor overload or over current.		

All in one ID **2nd Single Axis ID**	**AL-911**		
1st Single Axis ID	**-**	**Alarm Name**	**Power Stage Regenerative Resistor High Temperature**
Alarm Content	The temperature of regenerative resistor is over 105℃		
Possible Cause	1. The acceleration is too severe. 2. Motor or driver model selection is mismatch.		
Possible Solution	1. Check if the acceleration time setting is too short. Increase Pn-307. 2. Check if the used motor and its load match the driver's built-in regenerative resistor. a. Reduce the load on the motor or spindle. b. Use external regenerative resistor instead. c. Contact Syntec to assist in replacing the built-in regenerative resistor or driver model with larger resistor.		

All in one ID 2nd Single Axis ID	AL-920		
1st Single Axis ID	**AL-920**	**Alarm Name**	**Servo On Command Conflict**
Alarm Content	Servo On command conflict		
Possible Cause	1. Drive receives Servo ON and auxiliary function command at the same time		
Possible Solution	1. Check if parameter Pn-F10(Fn-00) is set to enable auxiliary functions. 2. Avoid giving Servo ON and auxiliary function command at the same time.		

All in one ID 2nd Single Axis ID	AL-921		
1st Single Axis ID	**-**	**Alarm Name**	**Power off pull-up function is not supported**
Alarm Content	Power off tool retraction function is not supported		
Possible Cause	1. Controller version doesn't support power off pull-up function 2. The setting of weight direction is wrong. 3. Power off detection module damaged 4. V/f mode or none of encoder applied do not support pull-up function 5. Gantry control does not support pull-up function		
Possible Solution	1. If needed, upgrade controller version 2. Please set Pn-805 to 1 or -1 3. Set Pn-804 = 0 to disable power off pull-up function, or send back to Syntec 4. Check Pn-330 and encoder setting and correct them 5. If you do not need to enable gantry control, please disable Pn-830 and Pn-840		

All in one ID 2nd Single Axis ID	AL-922		
1st Single Axis ID	**-**	**Alarm Name**	**Proximity Position is not supported**
Alarm Content	Proximity Position is not supported		
Possible Cause	1. Controller version doesn't support Proximity Position function 2. Not support Proximity Position function with Dual Feedback Control		

Possible Solution	1. Set Pn-243 = 0 to disable Posing by proximity switch function or upgrade CNC version if needed 2. Set Pn-243 = 0 to disable Posing by proximity switch function or check whether disable dual feedback control(Pn-22A)

All in one ID **2nd Single Axis ID**	**--**		
1st Single Axis ID	**AL-923**	**Alarm Name**	**Cooling Fan Error**
Alarm Content	Triggered when power stage reports abnormality		
Possible Cause	1. Cooling fan failure		
Possible Solution	1. Send back to Syntec or authorized dealer for repairs		

All in one ID **2nd Single Axis ID**	**AL-925**		
1st Single Axis ID	**-**	**Alarm Name**	**Control mode not applicable with tuning function**
Alarm Content	Corresponding tuning function is not applicable to the control mode or other settings		
Possible Cause	1. Speed control mode setting is not applicable to tuning function 2. Encoder interface, motor type or parameter setting is not applicable to tuning function		
Possible Solution	1. Check Pn-330 if the tuning function is supported with it and correct it 2. Check using conditions of tuning function and modify setting depending of those conditions. Otherwise, don't use this function with the current apparatus or configuration.		
Note	Please refer to【Pn-330】Speed Control Mode or AL-925 警报排查		

All in one ID **2nd Single Axis ID**	**AL-926**		
1st Single Axis ID	**-**	**Alarm Name**	**EEPROM Can't execute the Function of Write Data**
Alarm Content	EEPROM-Write Protect Pin Couldn't Pull-Low		

Possible Cause	1. Hardware - Frontstage can't execute pull-low to EEPROM-write protect pin 2. Software - The EEPROM's data of frontstage is error
Possible Solution	Please contact distributor or Syntec representative.

All in one ID **2nd Single Axis ID**	**AL-928**		
1st Single Axis ID	**--**	**Alarm Name**	**Insufficient permissions**
Alarm Content	Permissions check error		
Possible Cause	1. User doesn't have permission to use this feature		
Possible Solution	1. Check if permission parameter Pn-F00 is set correctly		

All in one ID **2nd Single Axis ID**	**AL-930**		
1st Single Axis ID	**AL-930**	**Alarm Name**	**Abs Type Encoder Battery Low Voltage**
Alarm Content	ABS encoder battery voltage lower than 3V		
Possible Cause	1. Battery voltage too low or no battery 2. Parameter setting error		
Possible Solution	1. Replace the battery. If using Panasonic encoder, then restart driver. If using Nikon, Mitsubish, Delta or Tamagawa encoder,then don't need to restart. 2. If not ABS encoder, set drive parameter Pn-904(P3-23) to 0, save and restart.		
Detailed Instructions	【Pn-D95】Enc Error Status ALMC		

All in one ID **2nd Single Axis ID**	**AL-931**		
1st Single Axis ID	**AL-931**	**Alarm Name**	**Encoder Low Voltage**
Alarm Content	Encoder power source voltage abnormal		
Possible Cause	1. FeeDat encoder power source voltage too great or insufficient 2. EnDat encoder power source voltage insufficient		

Possible Solution	1. Check encoder wiring and grounding 2. If this is a recurring problem, send back to Syntec or authorized dealer for repairs		
Detailed Instructions	【Pn-D95】Enc Error Status ALMC		
All in one ID **2nd Single Axis ID**	**AL-932**		
1st Single Axis ID	**AL-932**	**Alarm Name**	**Encoder Signal Abnormal**
Alarm Content	Encoder signal amplitude is too low.		
Possible Cause	1. FeeDat encoder signal amplitude is too low. D+ D- signal may be disturbed.		
Possible Solution	1. Check encoder wiring and grounding 2. If this is a recurring problem, send back to Syntec or authorized dealer for repairs		
Detailed Instructions	【Pn-D95】Enc Error Status ALMC		
All in one ID **2nd Single Axis ID**	**AL-933**		
Single Axis ID	**AL-933**	**Alarm Name**	**Encoder Z Index Abnormal**
Alarm Content	Relative position between A/B phase and Z index is different in each revolution, so feedback position of encode is error possibly.		
Possible Cause	**Syntec encoder:** 1. Syntec encoder's firmware version is outdated 2. Encoder is under noise interference, which causing feedback signal error. 3. Encoder's signal is interfering by rotor's axis with magnetic 4. Hallow magnetic ring Zindex position is differ from the setting parameter 5. Magnetic ring's non-Zindex zone has magnetic field distribution **Non-Syntec encoder:** 1. The circuit board of non-Syntec encoder is broken. 2. Non-Syntec sensor and encoder are wrong assembly.		

Possible Solution	**Syntec encoder:** 1. Update drive's version to 1.6.14 or above(Multi-Axis Servo Drive is updated to V2.2.5 or above), and update encoder's version to 2.0.7 or above. 2. Check if encoder and motor are grounded. 3. Check if joining between encoder cable and motor is double end grounded. 4. Short term countermeasure: Magnetic axle center causing AL-54 SOP Long term countermeasure: Cross-Strait motor plants import axle center inspections starting 2016/7 5. Short term countermeasure: Raise Z index trigger level of P6-60/Pn-940 encoder to 35, and position axle after executing encoder test(rated current 150%). make sure alarm AL54/ AL306 doesn't go off. Long term countermeasure: Imported ultimate solution into manufacture process since 2018/1/11 6. Send the encoder to Syntec or authorized representative for repair. **Non-Syntec encoder:** 1. Check the encoder is contaminated by dust or oil. 2. Check the gap between sensor and encoder is correctly. 3. Send back to Syntec Corp.
Detailed Explanations and SOP	AL-54 Issue Problem Shooting

All in one ID **2nd Single Axis ID**	**AL-935**		
1st Single Axis ID	**AL-935**	**Alarm Name**	**ABS Type 2nd Encoder Battery Low Voltage**
Alarm Content	2nd ABS encoder battery voltage lower than 3V		
Possible Cause	1. Battery voltage too low or no battery 2. Parameter setting error		
Possible Solution	1. Replace the battery. If using Panasonic encoder, then restart driver. If using Nikon, Mitsubish, Delta or Tamagawa encoder,then don't need to restart. 2. If not ABS encoder, set drive parameter Pn-924(P6-83) to 0, save and restart.		
Detailed Instructions	【Pn-D96】2nd Enc Error Status ALMC		

All in one ID **2nd Single Axis ID**	**AL-936**		

1st Single Axis ID	AL-936	Alarm Name	2nd Encoder Low Voltage
Alarm Content	2nd encoder power source voltage too low		
Possible Cause	1. FeeDat encoder power source voltage too great or insufficient 2. EnDat encoder power source voltage insufficient		
Possible Solution	1. Check encoder wiring and grounding 2. If this is a recurring problem, send back to Syntec or authorized dealer for repairs		
Detailed Instructions	【Pn-D96】2nd Enc Error Status ALMC		
All in one ID 2nd Single Axis ID	AL-937		
1st Single Axis ID	AL-937	Alarm Name	2nd Encoder Signal Abnormal
Alarm Content	2nd Encoder signal amplitude is too low.		
Possible Cause	1. FeeDat encoder signal amplitude is too low. D+ D- signal may be disturbed.		
Possible Solution	1. Check encoder wiring and grounding 2. If this is a recurring problem, send back to Syntec or authorized dealer for repairs		
Detailed Instructions	【Pn-D96】2nd Enc Error Status ALMC		
All in one ID 2nd Single Axis ID	AL-938		
Single Axis ID	AL-938	Alarm Name	2nd Encoder Z Index Abnormal
Alarm Content	Relative position between A/B phase and Z index is different in each revolution, so feedback position of encoder is error possibly .		

Possible Cause	**Syntec encoder:** 1. Second encoder's firmware version is outdated 2. Encoder is under noise interference, which causing feedback signal error. 3. Encoder's signal is interfering by rotor's axis with magnetic 4. Hallow magnetic ring Zindex position is different ~~than~~ from the written parameter. 5. Magnetic ring's non-Zindex zone has magnetic field distribution 6. Hardware malfunction **Non-Syntec encoder:** 1. The circuit board of non-Syntec encoder is broken. 2. Non-Syntec sensor and encoder are wrong assembly.
Possible Solution	**Syntec encoder:** 1. Update drive's version to 1.6.14 or more recent(Multi-Axis Servo Drive is updated to V2.2.5), and update encoder's version to 2.0.7 or above. 2. Check if second encoder and motor are grounded. 3. Check if joining between second encoder cable and motor ~~are~~ is double end grounded. 4. Short term countermeasure: Magnetic axle center causing AL-54 SOP Long term countermeasure: Cross-Strait motor plants import axle center inspections starting 2016/7 5. Short term countermeasure: Raise Z index trigger level of P6-60/Pn-940 encoder to 35, and position axle after executing encoder test(rated current 150%). make sure alarm AL54/ AL306 doesn't go off. Long term countermeasure: Imported ultimate solution into manufacture process since 2018/1/11 6. Send the second encoder to Syntec or authorized representative for repair. **Non-Syntec encoder:** 1. Check the encoder is contaminated by dust or oil. 2. Check the gap between sensor and encoder is correctly. 3. Send back to Syntec Corp.
Detailed Explanations and SOP	Refer to AL-54 Issue Problem Shooting

4 in 1 ID	**AL-93A**		
1st Single Axis ID	**-**	**Alarm Name**	**Encoder Setting Wrong**
Alarm Content	Encoder parameters are illegal		

Possible Cause	1. Pn-904 is not relative to Pn-900, Pn-700 2. With SYNTEC encoder, Pn-911 is not illegal according to Pn-700 3. 2nd Encoder: Pn-924 is not relative to Pn-920, Pn-335 4. With SYNTEC 2nd encoder, Pn-931 is not illegal according to Pn-335 5. With SYNTEC encoder, encoder ver. is not compatible with thermal resistance 6. With SYNTEC encoder, 2nd encoder ver. is not compatible with thermal resistance 7. With HEIDENHAIN encoder, current encoder sensing type is not supported
Possible Solution	1. Check Pn-904, Pn-900, Pn-700 settings. If using linear encoder, please set Pn-904 into 2 or 0, dependent to Pn-900. If using non-incremental encoder, please set Pn-904 into 2 or 1 instead of 0. 2. Check Pn-911, Pn-700 settings. If Pn-911 is set to 1, Pn-700 must be 0 or 2; if Pn-911 is set to 2, Pn-700 must be 1 and check Pn-282 if legal 3. Check Pn-924, Pn-920, Pn-335 settings. If using linear 2nd encoder, please set Pn-924 into 2 or 0, dependent to Pn-920. If using non-incremental 2nd encoder, please set Pn-924 into 2 or 1 instead of 0. 4. Check Pn-931, Pn-335 settings. If Pn-931 is set to 1, Pn-335 must be 0 or 2; if Pn-931 is set to 2, Pn-335 must be 1 and check Pn-284 if legal 5. Check if the type of resistance used for thermal sensing is PT1000 and encoder ver. is V2.1.0 or lower. a. If using PT1000:Update Encoder firmware to V2.1.1 or higher. And set Pn-75A into 1. b. If using KTY84:Please set Pn-75A into 0. 6. Check if the type of resistance used for thermal sensing is PT1000 and 2nd encoder ver. is V2.1.0 or lower. a. If using PT1000:Update 2nd Encoder firmware to V2.1.1 or higher. And set corresponding thermal type parameters into 1. b. If using KTY84:Please set corresponding thermal type parameters into 0. 7. Check Pn-900 and Pn-920 parameter manual to check whether the encoder sensing type is supported by the driver version a. Update to a compatible driver version for the encoder b. Substitute with a compatible type of encoder

All in one ID **2nd Single Axis ID**	**AL-941**		
1st Single Axis ID	**-**	**Alarm Name**	**Motor stop method unsupported**
Alarm Content	The setting of MOT_TYPE、 motor stop method and motor application does not support the selected motor brake method		
Possible Cause	1. Permanant magnet motor applied to spindle cannot support dynamic braking 2. Using Induction motor or power stage not support 3. Motor Stop Method is ShortBrake when Critical Alarm Stop Method is Free Run		

Possible Solution	1. When Pn-700 = 0 and Pn-803 = 1, Pn-001 cannot be 0 2. When Pn-700 = 2, Pn-004 cannot be 1 3. When Pn-001 = 2, Pn-004 cannot be 1

All in one ID **2nd Single Axis ID**	**AL-942**		
1st Single Axis ID	**-**	**Alarm Name**	**Abnormal Motor Parameter Estimation - Too Large Test Current**
Alarm Content	During motor parameter estimation, the searched current command is greater or equal to 0.707 times rated current.		
Possible Cause	1. Mechanical abnormality or excessive motor load inhibits motor rotation. 2. Wrong motor nameplate parameters lead to unexpected voltage command, rotational speed, or current command.		
Possible Solution	1. Ensure that the motor parameters are estimated when the motor is no-load. If the load cannot be removed, it is recommended to use "static induction motor tuning". 2. Check the motor nameplate parameters (rated voltage, rated current, rated speed, and so on) are correct.		

All in one ID **2nd Single Axis ID**	**AL-947**		
1st Single Axis ID	**-**	**Alarm Name**	**Parameter Setting Error**
Alarm Content	Paramter setting is not correct with specification		
Possible Cause	1. When using driver torque control mode, VLIM option listens to M3 packet 2. When STO function is active, part of IO functions are still set 3. Speed control mode wrong set 4. When regenerator protection is turned-on, driver detects the parameter of regenerative resistor is not complete. 5. Pn-10A Feedforward time constant is too small. Filter bandwidth exceeds internal limit. 6. RTD protection parameters wrong set. 7. Gantry control setting error. a. Check Pn-830. b. Check the encoder resolution of gantry control axes. c. Check that Pn-904 = 1 is a multi-turn absolute encoder. d. Check Pn-845. e. Check Pn-846 and Pn-848.		

Possible Solution	1. When using driver torque mode, set Pn-003 to zero and set Pn-407 or 0n-480 according to motor type 2. Check up the corresponding IO function used by STO function are set to 1000(default). Recover those IO function settings to default value 3. Field Orientation Control is not allowed with none of encoder applied. Please correct Pn-330 4. When regenerator protection is turned-on and driver don't have an internal resistor, please attach an external resistor and set Pn-647、Pn-648 properly. 5. Set Pn-10A = 0 as default, or increase Pn-10A 6. Using RTD protection, please check Pn-548~Pn-54A and Pn-752 setting are correct or not. 7. Check Gantry control setting a. Set the correct Pn-830. b. The encoder resolution of the gantry control axies should be the same. c. Use multi-turn absolute encoder and set Pn-904=1. d. Pn-845 link axis select cannot conflict to Pn-830. e. If Pn-845 is not zero, the difference between Pn-846 and Pn-848 cannot be zero.

All in one ID **2nd Single Axis ID**	**AL-948**		
1st Single Axis ID	**-**	**Alarm Name**	**STO Function Not Support**
Alarm Content	Driver does not support STO function		
Possible Cause	1. Driver does not support STO function		
Possible Solution	1. Please check up driver model in STO user manual 2. Please turn off Pn-037 STO Activation		

All in one ID **2nd Single Axis ID**	**AL-949**		
1st Single Axis ID	**-**	**Alarm Name**	**RTD Function Not Support**
Alarm Content	Addon card does not support RTD function		
Possible Cause	1. Addon card does not support RTD function. 2. Support RTD port numbers of addon card not match parameter setting.		
Possible Solution	1. Please check addon card spec. 2. Make sure the addon card can support RTD function. If the addon card cannot support RTD function, turn off Pn-548~Pn-54A and set Pn-752 to 0. 3. Make sure the addon card can support the setting of port number. Depends on supported port numbers, setting Pn-548~Pn-54A and Pn-752 correctly.		

All in one ID 2nd Single Axis ID	AL-94B		
1st Single Axis ID	-	Alarm Name	Mechatrolink position command error
Alarm Content	Mechatrolink position command error, received position command too large.		
Possible Cause	1. Position command is too large, probably abnormal increment compared with the last command		
Possible Solution	1. Position command varies abnormally or unexpectedly 2. Check up software version of the controller. Please inform the manufacturer.		

All in one ID 2nd Single Axis ID	AL-950		
1st Single Axis ID	-	Alarm Name	Regenerative Overload
Alarm Content	The accumulated heat energy of internal or external regenerative resistor is higher than heat dissipation threshold. Regenerative resistor may not be damaged immediately.		
Possible Cause	1. When using external resistor, Pn-647、Pn-648 is not set properly. 2. The selection or cooling condition of external regenerative resistor needs to be rechecked. 3. When using internal resistor, Pn-647、Pn-648 is not set to 0. 4. When using internal resistor, the frequency of motor acceleration/ deceleration is too high or too intense.		
Possible Solution	1. When using external resistor, please check if Pn-647、Pn-648 is set correctly. 2. When using external resistor and parameters are set correctly, please recheck the selection or cooling condition of resistor. 3. When using internal resistor, please check if Pn-647 and Pn-648 are set to 0. 4. When using internal resistor and parameters are set correctly, please decrease the frequency of motor acceleration/deceleration or increase the value of Pn-306、Pn-307. If the alarm is raised consistently, please consider using an external resistor. 5. If regenerative resistor protection is not required, please set Pn-649 to 0.		

All in one ID 2nd Single Axis ID	AL-95F		
1st Single Axis ID	-	Alarm Name	Driver Receive Illegal Command
Alarm Content	Driver receive illegal Main Command or Sub Command		

Possible Cause	1. Mechatrolink communication error.
Possible Solution	1. Check serial port wiring and shielding

All in one ID **2nd Single Axis ID**	**AL-961**		
1st Single Axis ID	**-**	**Alarm Name**	**I2C Communication Timeout**
Alarm Content	I2C communication timeout between front stage and power stage		
Possible Cause	1. Data read from power stage was failed for 30000 times connection. (if using M6S driver, still 30 seconds)		
Possible Solution	1. Check earthing of driver. 2. Send back to Syntec Corp. 3. If this alarm shows up while saving dead time compensation table or current calibration table, try saving again to reset alarm.		

All in one ID **2nd Single Axis ID**	**AL-970**		
1st Single Axis ID	**-**	**Alarm Name**	**Over Voltage**
Alarm Content	DC BUS voltage is above drive's warning level 100%		
Possible Cause	1. When motor slows, brake resistance cannot deplete regenerated energy 2. AC power source input voltage too high 3. Encoder hardware malfunction		
Possible Solution	1. Check regenerative resistor's specifics, refer to "wiring and signal" section of manual. 2. Check if AC power source matches drive specifics. 3. Ruling out the above solutions, hardware may be damaged. Send back to Syntec or authorized dealer for repairs.		

All in one ID **2nd Single Axis ID**	**AL-97A**		
1st Single Axis ID	**-**	**Alarm Name**	**Host Command Inexecutable**
Alarm Content	A command is illegal in the current communication phase		

Possible Cause	1. A command that cannot be executed in the current phase was sent by controller
Possible Solution	1. Check software version of host controller. 2. Please contact Syntec corp. or retailer

All in one ID **2nd Single Axis ID**	**AL-97B**		
1st Single Axis ID	**-**	**Alarm Name**	**Command Beyond Limit**
Alarm Content	Torque command or VLIM beyond maximum value.		
Possible Cause	1. When driver is in torque control mode, torque command is larger than motor maximum torque. 2. When driver is in torque control mode , VLIM is larger than motor maximum speed. 3. When driver is in laser cruise mode, VLIM is larger than motor maximum speed.		
Possible Solution	1. When driver in torque control mode, let the value of torque command smaller than maximum torque of motor. 2. When driver is in torque control mode, and if Pn-003 = 1, modify the VLIM from controller. If Pn-003 = 0, then make sure Pn-407 or Pn-480 is smaller than Pn-40E, according to Pn-700. 3. When driver is in laser cruise mode, make sure Pn-407 or Pn-480 is smaller than Pn-40E, according to Pn-700. You can also set Pn-809 = 0 to turn off velocity limit.		

All in one ID **2nd Single Axis ID**	**AL-980**		
1st Single Axis ID	**AL-980**	**Alarm Name**	**Speed estimator error**
Alarm Content	Speed error is greater than 5% of the speed command in steady state		
Possible Cause	1. Motor parameter error resulting in speed estimation error		
Possible Solution	1. Check motor specifics plate for parameters and redo motor tuning		

All in one ID **2nd Single Axis ID**	**AL-981**		
1st Single Axis ID	**AL-981**	**Alarm Name**	**Belt slip**

Alarm Content	Speed error between external encoder and estimator is too great
Possible Cause	1. Belt slip 2. Gear ratio error
Possible Solution	1. Change or tighten belt 2. Set gear ratio correctly

All in one ID **2nd Single Axis ID**	**AL-982**		
1st Single Axis ID	**AL-982**	**Alarm Name**	Gantry control position feedback deviation is too large
Alarm Content	Under gantry control, the position deviation of the two axes exceeds the warning check value		
Possible Cause	1. Host command polarity setting error 2. The origin setting of the gantry axis is not completed 3. The position deviation warning threshold is too strict 4. Inertia setting error 5. One of axes is stuck mechanically		
Possible Solution	1. Check the Pn-020 host command polarity of the two axes 2. Reset the encoder origin of the gantry axis or set Pn-F44 = 1 3. Confirm the position deviation threshold Pn-570 and Pn-572 4. Set the correct rotor and loader inertia, or adjust the inertia 5. Check if any axis is mechanically stuck		

All in one ID **2nd Single Axis ID**	**AL-983**		
1st Single Axis ID	**AL-983**	**Alarm Name**	**Gear ratio incorrect**
Alarm Content	The error of estimated gear ratio and setup gear ratio is too big.		
Possible Cause	1. Gear ratio setup error.		
Possible Solution	1. Check gear ratio parameter Pn-20A, Pn-20C and Pn-D5C Gear Ratio Error. 2. Set gear ratio correctly.		

All in one ID **2nd Single Axis ID**	**AL-990**		
1st Single Axis ID	**-**	**Alarm Name**	**Initialization fail when tuning**

Alarm Content	Initialization fail when tuning
Possible Cause	1. Parameter settings error 2. Wrong setting of Gear Ratio Estimation 3. The settings of Moving Direction Limit and Motion Limit are conflict 4. Wrong setting of Cogging Torque Compensation Tuning 5. Tuning not support without encoder 6. Wrong Encoder-Rotor Offset Detection setting
Possible Solution	1. Set parameters correctly, set drive parameter Pn-F10 to 0 and redo tuning. 2. Gear Ratio Estimation only supports induction motor. Please check Pn-700=2. Gear Ratio Estimation doesn't support the setting without 2nd encoder feedback, Please check. 3. The settings of Moving Direction Limit and Motion Limit are conflict. Please check the setting of Pn-504, Pn-F14 and Pn-F16. 4. Wrong setting of Cogging Torque Compensation Tuning. Please check the range of Pn-F14 and Pn-F16 is too small, or Pn-F14 and Pn-F16 has the same sign. 5. Check encoder communication type and port number of Pn-900, Pn-901, Pn-920 and Pn-921. 6. Check whether the parameter Pn-642 is equal to 2. When use Encoder-Rotor Offset Detection Method, set Pn-011 = 0 or 1

All in one ID **2nd Single Axis ID**	**AL-991**		
1st Single Axis ID	**-**	**Alarm Name**	**Unable to enable High Cycle Calculation**
Alarm Content	High Cycle Calculation unsupported		
Possible Cause	1. PWM frequency set above 8000Hz, High Cycle Calculation unsupported		
Possible Solution	1. Set Pn-642 smaller than 8000Hz, or shut off High Cycle Calculation function (Pn-643=0 automatically once alarm is triggered).		

All in one ID **2nd Single Axis ID**	**AL-9A0**		
1st Single Axis ID	**-**	**Alarm Name**	**Over Travel**
Alarm Content	laser cruise mode, location is about to exceed travel limit		

Possible Cause	1. Cutting Head Exceeds Workpiece Range 2. Capacitive feedback abnormality 3. Improper setting of travel limit
Possible Solution	1. Raise the Z axis after not ready to cut, restart after replacing the workpiece 2. Strengthening anti-jamming 3. Adjust Controller Travel Limit Settings

14.1 AL-910 IGBT High Temperature

All in one ID **2nd Single Axis ID**	**AL-910**		
1st Single Axis ID	**-**	**Alarm Name**	**IGBT High Temperature**
Alarm Content	The temperature of IGBT is over 85℃		
Possible Cause	1. Severe acceleration change 2. Cooling system failure 3. Drive output short-circuit 4. Ambient temperature overheat 5. Heat source nearby 6. Continuous use while exceeding drive's rated load		
Possible Solution	1. Increase Pn-307 2. Check if fan is functioning normally. 3. Check drive's output wiring, refer to "Wiring and Signal" section of manual. 4. Check if ambient temperature is below 55℃, refer to "Transportation and Installation" section of manual. 5. Check environment, remove external heat source or enhance cooling capacity. 6. Check for motor overload or over current.		

14.2 AL-911 Power Stage Regenerative Resistor High Temperature

All in one ID **2nd Single Axis ID**	**AL-911**		
1st Single Axis ID	**-**	**Alarm Name**	**Power Stage Regenerative Resistor High Temperature**
Alarm Content	The temperature of regenerative resistor is over 105℃		

Possible Cause	1. The acceleration is too severe. 2. Motor or driver model selection is mismatch.
Possible Solution	1. Check if the acceleration time setting is too short. Increase Pn-307. 2. Check if the used motor and its load match the driver's built-in regenerative resistor. a. Reduce the load on the motor or spindle. b. Use external regenerative resistor instead. c. Contact Syntec to assist in replacing the built-in regenerative resistor or driver model with larger resistor.

14.3 AL-920 Servo On Command Conflict_Driver Warning Description

All in one ID **2nd Single Axis ID**	**AL-920**		
1st Single Axis ID	**AL-920**	**Alarm Name**	**Servo On Command Conflict**
Alarm Content	Servo On command conflict		
Possible Cause	1. Drive receives Servo ON and auxiliary function command at the same time		
Possible Solution	1. Check if parameter Pn-F10(Fn-00) is set to enable auxiliary functions. 2. Avoid giving Servo ON and auxiliary function command at the same time.		

14.4 AL-921 Power off pull-up function is not supported

All in one ID **2nd Single Axis ID**	**AL-921**		
1st Single Axis ID	**-**	**Alarm Name**	**Power off pull-up function is not supported**
Alarm Content	Power off tool retraction function is not supported		
Possible Cause	1. Controller version doesn't support power off pull-up function 2. The setting of weight direction is wrong. 3. Power off detection module damaged 4. V/f mode or none of encoder applied do not support pull-up function 5. Gantry control does not support pull-up function		

Possible Solution	1. If needed, upgrade controller version 2. Please set Pn-805 to 1 or -1 3. Set Pn-804 = 0 to disable power off pull-up function, or send back to Syntec 4. Check Pn-330 and encoder setting and correct them 5. If you do not need to enable gantry control, please disable Pn-830 and Pn-840

14.5 AL-922 Proximity Position is not supported

All in one ID **2nd Single Axis ID**	**AL-922**		
1st Single Axis ID	**-**	**Alarm Name**	**Proximity Position is not supported**
Alarm Content	Proximity Position is not supported		
Possible Cause	1. Controller version doesn't support Proximity Position function 2. Not support Proximity Position function with Dual Feedback Control		
Possible Solution	1. Set Pn-243 = 0 to disable Posing by proximity switch function or upgrade CNC version if needed 2. Set Pn-243 = 0 to disable Posing by proximity switch function or check whether disable dual feedback control(Pn-22A)		

14.6 AL-923 Cooling Fan Error

All in one ID **2nd Single Axis ID**	**--**		
1st Single Axis ID	**AL-923**	**Alarm Name**	**Cooling Fan Error**
Alarm Content	Triggered when power stage reports abnormality		
Possible Cause	1. Cooling fan failure		
Possible Solution	1. Send back to Syntec or authorized dealer for repairs		

14.7 AL-928 Insufficient permissions

All in one ID **2nd Single Axis ID**	**AL-928**		

1st Single Axis ID	--	Alarm Name	Insufficient permissions
Alarm Content	Permissions check error		
Possible Cause	1. User doesn't have permission to use this feature		
Possible Solution	1. Check if permission parameter Pn-F00 is set correctly		

14.8 AL-925 Control mode not applicable with tuning function

All in one ID 2nd Single Axis ID	AL-925		
1st Single Axis ID	**-**	**Alarm Name**	**Control mode not applicable with tuning function**
Alarm Content	Corresponding tuning function is not applicable to the control mode or other settings		
Possible Cause	1. Speed control mode setting is not applicable to tuning function 2. Encoder interface, motor type or parameter setting is not applicable to tuning function		
Possible Solution	1. Check Pn-330 if the tuning function is supported with it and correct it 2. Check using conditions of tuning function and modify setting depending of those conditions. Otherwise, don't use this function with the current apparatus or configuration.		
Note	Please refer to【Pn-330】Speed Control Mode or AL-925 警报排查		

14.9 AL-926 EEPROM Can't Execute the Function of Write Data

All in one ID 2nd Single Axis ID	AL-926		
1st Single Axis ID	**-**	**Alarm Name**	**EEPROM Can't execute the Function of Write Data**
Alarm Content	EEPROM-Write Protect Pin Couldn't Pull-Low		
Possible Cause	1. Hardware - Frontstage can't execute pull-low to EEPROM-write protect pin 2. Software - The EEPROM's data of frontstage is error		
Possible Solution	Please contact distributor or Syntec representative.		

14.10 AL-930 Abs Type Encoder Battery Low Voltage

All in one ID 2nd Single Axis ID	AL-930		
1st Single Axis ID	**AL-930**	**Alarm Name**	**Abs Type Encoder Battery Low Voltage**
Alarm Content	ABS encoder battery voltage lower than 3V		
Possible Cause	1. Battery voltage too low or no battery 2. Parameter setting error		
Possible Solution	1. Replace the battery. If using Panasonic encoder, then restart driver. If using Nikon, Mitsubish, Delta or Tamagawa encoder,then don't need to restart. 2. If not ABS encoder, set drive parameter Pn-904(P3-23) to 0, save and restart.		
Detailed Instructions	【Pn-D95】Enc Error Status ALMC		

14.11 AL-931 Encoder Low Voltage

All in one ID 2nd Single Axis ID	AL-931		
1st Single Axis ID	**AL-931**	**Alarm Name**	**Encoder Low Voltage**
Alarm Content	Encoder power source voltage abnormal		
Possible Cause	1. FeeDat encoder power source voltage too great or insufficient 2. EnDat encoder power source voltage insufficient		
Possible Solution	1. Check encoder wiring and grounding 2. If this is a recurring problem, send back to Syntec or authorized dealer for repairs		
Detailed Instructions	【Pn-D95】Enc Error Status ALMC		

14.12 AL-932 Encoder Signal Abnormal

All in one ID 2nd Single Axis ID	AL-932		

1st Single Axis ID	AL-932	Alarm Name	Encoder Signal Abnormal
Alarm Content	Encoder signal amplitude is too low.		
Possible Cause	1. FeeDat encoder signal amplitude is too low. D+ D- signal may be disturbed.		
Possible Solution	1. Check encoder wiring and grounding 2. If this is a recurring problem, send back to Syntec or authorized dealer for repairs		
Detailed Instructions	【Pn-D95】Enc Error Status ALMC		

14.13 AL-933 Encoder Z Index Abnormal

All in one ID 2nd Single Axis ID	AL-933		
Single Axis ID	**AL-933**	**Alarm Name**	**Encoder Z Index Abnormal**
Alarm Content	Relative position between A/B phase and Z index is different in each revolution, so feedback position of encode is error possibly.		
Possible Cause	**Syntec encoder:** 1. Syntec encoder's firmware version is outdated 2. Encoder is under noise interference, which causing feedback signal error. 3. Encoder's signal is interfering by rotor's axis with magnetic 4. Hallow magnetic ring Zindex position is differ from the setting parameter 5. Magnetic ring's non-Zindex zone has magnetic field distribution **Non-Syntec encoder:** 1. The circuit board of non-Syntec encoder is broken. 2. Non-Syntec sensor and encoder are wrong assembly.		

Possible Solution	**Syntec encoder:** 1. Update drive's version to 1.6.14 or above(Multi-Axis Servo Drive is updated to V2.2.5 or above), and update encoder's version to 2.0.7 or above. 2. Check if encoder and motor are grounded. 3. Check if joining between encoder cable and motor is double end grounded. 4. Short term countermeasure: Magnetic axle center causing AL-54 SOP Long term countermeasure: Cross-Strait motor plants import axle center inspections starting 2016/7 5. Short term countermeasure: Raise Z index trigger level of P6-60/Pn-940 encoder to 35, and position axle after executing encoder test(rated current 150%). make sure alarm AL54/ AL306 doesn't go off. Long term countermeasure: Imported ultimate solution into manufacture process since 2018/1/11 6. Send the encoder to Syntec or authorized representative for repair. **Non-Syntec encoder:** 1. Check the encoder is contaminated by dust or oil. 2. Check the gap between sensor and encoder is correctly. 3. Send back to Syntec Corp.
Detailed Explanations and SOP	AL-54 Issue Problem Shooting

14.14 AL-935 ABS Type 2nd Encoder Battery Low Voltage

All in one ID **2nd Single Axis ID**	**AL-935**		
1st Single Axis ID	**AL-935**	**Alarm Name**	**ABS Type 2nd Encoder Battery Low Voltage**
Alarm Content	2nd ABS encoder battery voltage lower than 3V		
Possible Cause	1. Battery voltage too low or no battery 2. Parameter setting error		
Possible Solution	1. Replace the battery. If using Panasonic encoder, then restart driver. If using Nikon, Mitsubish, Delta or Tamagawa encoder,then don't need to restart. 2. If not ABS encoder, set drive parameter Pn-924(P6-83) to 0, save and restart.		
Detailed Instructions	【Pn-D96】2nd Enc Error Status ALMC		

14.15 AL-936 2nd Encoder Low Voltage

All in one ID **2nd Single Axis ID**	**AL-936**		
1st Single Axis ID	**AL-936**	**Alarm Name**	**2nd Encoder Low Voltage**
Alarm Content	2nd encoder power source voltage too low		
Possible Cause	1. FeeDat encoder power source voltage too great or insufficient 2. EnDat encoder power source voltage insufficient		
Possible Solution	1. Check encoder wiring and grounding 2. If this is a recurring problem, send back to Syntec or authorized dealer for repairs		
Detailed Instructions	【Pn-D96】2nd Enc Error Status ALMC		

14.16 AL-937 2nd Encoder Signal Abnormal

All in one ID **2nd Single Axis ID**	**AL-937**		
1st Single Axis ID	**AL-937**	**Alarm Name**	**2nd Encoder Signal Abnormal**
Alarm Content	2nd Encoder signal amplitude is too low.		
Possible Cause	1. FeeDat encoder signal amplitude is too low. D+ D- signal may be disturbed.		
Possible Solution	1. Check encoder wiring and grounding 2. If this is a recurring problem, send back to Syntec or authorized dealer for repairs		
Detailed Instructions	【Pn-D96】2nd Enc Error Status ALMC		

14.17 AL-938 2nd Encoder Z Index Abnormal

All in one ID **2nd Single Axis ID**	**AL-938**		
Single Axis ID	**AL-938**	**Alarm Name**	**2nd Encoder Z Index Abnormal**

Alarm Content	Relative position between A/B phase and Z index is different in each revolution, so feedback position of encoder is error possibly .
Possible Cause	**Syntec encoder:** 1. Second encoder's firmware version is outdated 2. Encoder is under noise interference, which causing feedback signal error. 3. Encoder's signal is interfering by rotor's axis with magnetic 4. Hallow magnetic ring Zindex position is different ~~than~~ from the written parameter. 5. Magnetic ring's non-Zindex zone has magnetic field distribution 6. Hardware malfunction **Non-Syntec encoder:** 1. The circuit board of non-Syntec encoder is broken. 2. Non-Syntec sensor and encoder are wrong assembly.
Possible Solution	**Syntec encoder:** 1. Update drive's version to 1.6.14 or more recent(Multi-Axis Servo Drive is updated to V2.2.5), and update encoder's version to 2.0.7 or above. 2. Check if second encoder and motor are grounded. 3. Check if joining between second encoder cable and motor ~~are~~ is double end grounded. 4. Short term countermeasure: Magnetic axle center causing AL-54 SOP Long term countermeasure: Cross-Strait motor plants import axle center inspections starting 2016/7 5. Short term countermeasure: Raise Z index trigger level of P6-60/Pn-940 encoder to 35, and position axle after executing encoder test(rated current 150%). make sure alarm AL54/ AL306 doesn't go off. Long term countermeasure: Imported ultimate solution into manufacture process since 2018/1/11 6. Send the second encoder to Syntec or authorized representative for repair. **Non-Syntec encoder:** 1. Check the encoder is contaminated by dust or oil. 2. Check the gap between sensor and encoder is correctly. 3. Send back to Syntec Corp.
Detailed Explanations and SOP	Refer to AL-54 Issue Problem Shooting

14.18 AL-93A Encoder Setting Wrong

4 in 1 ID	**AL-93A**		
1st Single Axis ID	**-**	**Alarm Name**	**Encoder Setting Wrong**

Alarm Content	Encoder parameters are illegal
Possible Cause	1. Pn-904 is not relative to Pn-900, Pn-700 2. With SYNTEC encoder, Pn-911 is not illegal according to Pn-700 3. 2nd Encoder: Pn-924 is not relative to Pn-920, Pn-335 4. With SYNTEC 2nd encoder, Pn-931 is not illegal according to Pn-335 5. With SYNTEC encoder, encoder ver. is not compatible with thermal resistance 6. With SYNTEC encoder, 2nd encoder ver. is not compatible with thermal resistance 7. With HEIDENHAIN encoder, current encoder sensing type is not supported
Possible Solution	1. Check Pn-904, Pn-900, Pn-700 settings. If using linear encoder, please set Pn-904 into 2 or 0, dependent to Pn-900. If using non-incremental encoder, please set Pn-904 into 2 or 1 instead of 0. 2. Check Pn-911, Pn-700 settings. If Pn-911 is set to 1, Pn-700 must be 0 or 2; if Pn-911 is set to 2, Pn-700 must be 1 and check Pn-282 if legal 3. Check Pn-924, Pn-920, Pn-335 settings. If using linear 2nd encoder, please set Pn-924 into 2 or 0, dependent to Pn-920. If using non-incremental 2nd encoder, please set Pn-924 into 2 or 1 instead of 0. 4. Check Pn-931, Pn-335 settings. If Pn-931 is set to 1, Pn-335 must be 0 or 2; if Pn-931 is set to 2, Pn-335 must be 1 and check Pn-284 if legal 5. Check if the type of resistance used for thermal sensing is PT1000 and encoder ver. is V2.1.0 or lower. a. If using PT1000:Update Encoder firmware to V2.1.1 or higher. And set Pn-75A into 1. b. If using KTY84:Please set Pn-75A into 0. 6. Check if the type of resistance used for thermal sensing is PT1000 and 2nd encoder ver. is V2.1.0 or lower. a. If using PT1000:Update 2nd Encoder firmware to V2.1.1 or higher. And set corresponding thermal type parameters into 1. b. If using KTY84:Please set corresponding thermal type parameters into 0. 7. Check Pn-900 and Pn-920 parameter manual to check whether the encoder sensing type is supported by the driver version a. Update to a compatible driver version for the encoder b. Substitute with a compatible type of encoder

14.19 AL-940 Parameter was modified in servo-on state

All in one ID **2nd Single 轴向轴向 ID**	**AL-940**		
1st Single 轴向轴向 ID	**-**	**Alarm Name**	**Parameter was modified in servo-on state**
Alarm Content	Write parameters Pn-6XX~Pn-9XX while Servo ON		
Possible Cause	1. Check if controller is servo-off or if the drive is in tuning mode		

Possible Solution	1. Servo off the controller or turn off tuning function of drive (Pn-F10=0)

14.20 AL-941 Motor stop method unsupported

All in one ID **2nd Single Axis ID**	**AL-941**		
1st Single Axis ID	**-**	**Alarm Name**	**Motor stop method unsupported**
Alarm Content	The setting of MOT_TYPE、 motor stop method and motor application does not support the selected motor brake method		
Possible Cause	1. Permanant magnet motor applied to spindle cannot support dynamic braking 2. Using Induction motor or power stage not support 3. Motor Stop Method is ShortBrake when Critical Alarm Stop Method is Free Run		
Possible Solution	1. When Pn-700 = 0 and Pn-803 = 1, Pn-001 cannot be 0 2. When Pn-700 = 2, Pn-004 cannot be 1 3. When Pn-001 = 2, Pn-004 cannot be 1		

14.21 AL-947 Parameter Setting Error

All in one ID **2nd Single Axis ID**	**AL-947**		
1st Single Axis ID	**-**	**Alarm Name**	**Parameter Setting Error**
Alarm Content	Paramter setting is not correct with specification		

Possible Cause	1. When using driver torque control mode, VLIM option listens to M3 packet 2. When STO function is active, part of IO functions are still set 3. Speed control mode wrong set 4. When regenerator protection is turned-on, driver detects the parameter of regenerative resistor is not complete. 5. Pn-10A Feedforward time constant is too small. Filter bandwidth exceeds internal limit. 6. RTD protection parameters wrong set. 7. Gantry control setting error. a. Check Pn-830. b. Check the encoder resolution of gantry control axes. c. Check that Pn-904 = 1 is a multi-turn absolute encoder. d. Check Pn-845. e. Check Pn-846 and Pn-848.
Possible Solution	1. When using driver torque mode, set Pn-003 to zero and set Pn-407 or 0n-480 according to motor type 2. Check up the corresponding IO function used by STO function are set to 1000(default). Recover those IO function settings to default value 3. Field Orientation Control is not allowed with none of encoder applied. Please correct Pn-330 4. When regenerator protection is turned-on and driver don't have an internal resistor, please attach an external resistor and set Pn-647、Pn-648 properly. 5. Set Pn-10A = 0 as default, or increase Pn-10A 6. Using RTD protection, please check Pn-548~Pn-54A and Pn-752 setting are correct or not. 7. Check Gantry control setting a. Set the correct Pn-830. b. The encoder resolution of the gantry control axies should be the same. c. Use multi-turn absolute encoder and set Pn-904=1. d. Pn-845 link axis select cannot conflict to Pn-830. e. If Pn-845 is not zero, the difference between Pn-846 and Pn-848 cannot be zero.

14.22 AL-948 STO Function Not Support

All in one ID **2nd Single Axis ID**	**AL-948**		
1st Single Axis ID	**-**	**Alarm Name**	**STO Function Not Support**
Alarm Content	Driver does not support STO function		
Possible Cause	1. Driver does not support STO function		

Possible Solution	1. Please check up driver model in STO user manual 2. Please turn off Pn-037 STO Activation

14.23 AL-949 RTD Function Not Support

All in one ID **2nd Single Axis ID**	**AL-949**		
1st Single Axis ID	**-**	**Alarm Name**	**RTD Function Not Support**
Alarm Content	Addon card does not support RTD function		
Possible Cause	1. Addon card does not support RTD function. 2. Support RTD port numbers of addon card not match parameter setting.		
Possible Solution	1. Please check addon card spec. 2. Make sure the addon card can support RTD function. If the addon card cannot support RTD function, turn off Pn-548~Pn-54A and set Pn-752 to 0. 3. Make sure the addon card can support the setting of port number. Depends on supported port numbers, setting Pn-548~Pn-54A and Pn-752 correctly.		

14.24 AL-94B Mechatrolink position command error_Driver Warning Description

All in one ID **2nd Single Axis ID**	**AL-94B**		
1st Single Axis ID	**-**	**Alarm Name**	**Mechatrolink position command error**
Alarm Content	Mechatrolink position command error, received position command too large.		
Possible Cause	1. Position command is too large, probably abnormal increment compared with the last command		
Possible Solution	1. Position command varies abnormally or unexpectedly 2. Check up software version of the controller. Please inform the manufacturer.		

14.25 AL-95A Unsatisfied Command Condition

All in one ID **2nd Single 轴向轴向 ID**	**AL-95A**		

1st Single 轴向轴向 ID	-	Alarm Name	Unsatisfied Command Condition
Alarm Content	When entering or leaving torque command mode, the condition is not satisfied.		
Possible Cause	1. Before entering torque command mode, the speed of motor is not zero. 2. Before leaving torque command mode, the speed of motor is not zero.		
Possible Solution	1. Make sure the speed of motor is zero before entering torque command mode. 2. Make sure the speed of motor is zero before leaving torque command mode.		

14.26 AL-95F Driver Receive Illegal Command

All in one ID 2nd Single Axis ID	AL-95F		
1st Single Axis ID	-	**Alarm Name**	**Driver Receive Illegal Command**
Alarm Content	Driver receive illegal Main Command or Sub Command		
Possible Cause	1. Mechatrolink communication error.		
Possible Solution	1. Check serial port wiring and shielding		

14.27 AL-961 I2C Communication Timeout

All in one ID 2nd Single Axis ID	AL-961		
1st Single Axis ID	-	**Alarm Name**	**I2C Communication Timeout**
Alarm Content	I2C communication timeout between front stage and power stage		
Possible Cause	1. Data read from power stage was failed for 30000 times connection. (if using M6S driver, still 30 seconds)		
Possible Solution	1. Check earthing of driver. 2. Send back to Syntec Corp. 3. If this alarm shows up while saving dead time compensation table or current calibration table, try saving again to reset alarm.		

14.28 AL-970 Over Voltage

All in one ID 2nd Single Axis ID	AL-970		
1st Single Axis ID	**-**	**Alarm Name**	**Over Voltage**
Alarm Content	DC BUS voltage is above drive's warning level 100%		
Possible Cause	1. When motor slows, brake resistance cannot deplete regenerated energy 2. AC power source input voltage too high 3. Encoder hardware malfunction		
Possible Solution	1. Check regenerative resistor's specifics, refer to "wiring and signal" section of manual. 2. Check if AC power source matches drive specifics. 3. Ruling out the above solutions, hardware may be damaged. Send back to Syntec or authorized dealer for repairs.		

14.29 AL-97A Host Command Inexecutable

All in one ID 2nd Single Axis ID	AL-97A		
1st Single Axis ID	**-**	**Alarm Name**	**Host Command Inexecutable**
Alarm Content	A command is illegal in the current communication phase		
Possible Cause	1. A command that cannot be executed in the current phase was sent by controller		
Possible Solution	1. Check software version of host controller. 2. Please contact Syntec corp. or retailer		

14.30 AL-97B Command Beyond Limit

All in one ID 2nd Single Axis ID	AL-97B		
1st Single Axis ID	**-**	**Alarm Name**	**Command Beyond Limit**
Alarm Content	Torque command or VLIM beyond maximum value.		

Possible Cause	1. When driver is in torque control mode, torque command is larger than motor maximum torque. 2. When driver is in torque control mode , VLIM is larger than motor maximum speed. 3. When driver is in laser cruise mode, VLIM is larger than motor maximum speed.
Possible Solution	1. When driver in torque control mode, let the value of torque command smaller than maximum torque of motor. 2. When driver is in torque control mode, and if Pn-003 = 1, modify the VLIM from controller. If Pn-003 = 0, then make sure Pn-407 or Pn-480 is smaller than Pn-40E, according to Pn-700. 3. When driver is in laser cruise mode, make sure Pn-407 or Pn-480 is smaller than Pn-40E, according to Pn-700. You can also set Pn-809 = 0 to turn off velocity limit.

14.31 AL-980 Speed estimator error

All in one ID **2nd Single Axis ID**	**AL-980**		
1st Single Axis ID	**AL-980**	**Alarm Name**	**Speed estimator error**
Alarm Content	Speed error is greater than 5% of the speed command in steady state		
Possible Cause	1. Motor parameter error resulting in speed estimation error		
Possible Solution	1. Check motor specifics plate for parameters and redo motor tuning		

14.32 AL-981 Belt slip

All in one ID **2nd Single Axis ID**	**AL-981**		
1st Single Axis ID	**AL-981**	**Alarm Name**	**Belt slip**
Alarm Content	Speed error between external encoder and estimator is too great		
Possible Cause	1. Belt slip 2. Gear ratio error		
Possible Solution	1. Change or tighten belt 2. Set gear ratio correctly		

14.33 AL-982 Gantry control position feedback deviation is too large

All in one ID **2nd Single Axis ID**	**AL-982**		
1st Single Axis ID	**AL-982**	**Alarm Name**	Gantry control position feedback deviation is too large
Alarm Content	Under gantry control, the position deviation of the two axes exceeds the warning check value		
Possible Cause	1. Host command polarity setting error 2. The origin setting of the gantry axis is not completed 3. The position deviation warning threshold is too strict 4. Inertia setting error 5. One of axes is stuck mechanically		
Possible Solution	1. Check the Pn-020 host command polarity of the two axes 2. Reset the encoder origin of the gantry axis or set Pn-F44 = 1 3. Confirm the position deviation threshold Pn-570 and Pn-572 4. Set the correct rotor and loader inertia, or adjust the inertia 5. Check if any axis is mechanically stuck		

14.34 AL-983 Gear ratio incorrect

All in one ID **2nd Single Axis ID**	**AL-983**		
1st Single Axis ID	**AL-983**	**Alarm Name**	**Gear ratio incorrect**
Alarm Content	The error of estimated gear ratio and setup gear ratio is too big.		
Possible Cause	1. Gear ratio setup error.		
Possible Solution	1. Check gear ratio parameter Pn-20A, Pn-20C and Pn-D5C Gear Ratio Error. 2. Set gear ratio correctly.		

14.35 AL-990 Initialization fail when tuning

All in one ID **2nd Single Axis ID**	**AL-990**		
1st Single Axis ID	**-**	**Alarm Name**	**Initialization fail when tuning**

Alarm Content	Initialization fail when tuning
Possible Cause	1. Parameter settings error 2. Wrong setting of Gear Ratio Estimation 3. The settings of Moving Direction Limit and Motion Limit are conflict 4. Wrong setting of Cogging Torque Compensation Tuning 5. Tuning not support without encoder 6. Wrong Encoder-Rotor Offset Detection setting
Possible Solution	1. Set parameters correctly, set drive parameter Pn-F10 to 0 and redo tuning. 2. Gear Ratio Estimation only supports induction motor. Please check Pn-700=2. Gear Ratio Estimation doesn't support the setting without 2nd encoder feedback, Please check. 3. The settings of Moving Direction Limit and Motion Limit are conflict. Please check the setting of Pn-504, Pn-F14 and Pn-F16. 4. Wrong setting of Cogging Torque Compensation Tuning. Please check the range of Pn-F14 and Pn-F16 is too small, or Pn-F14 and Pn-F16 has the same sign. 5. Check encoder communication type and port number of Pn-900, Pn-901, Pn-920 and Pn-921. 6. Check whether the parameter Pn-642 is equal to 2. When use Encoder-Rotor Offset Detection Method, set Pn-011 = 0 or 1

14.36 AL-991 Unable to enable High Cycle Calculation

All in one ID **2nd Single Axis ID**	**AL-991**		
1st Single Axis ID	**-**	**Alarm Name**	**Unable to enable High Cycle Calculation**
Alarm Content	High Cycle Calculation unsupported		
Possible Cause	1. PWM frequency set above 8000Hz, High Cycle Calculation unsupported		
Possible Solution	1. Set Pn-642 smaller than 8000Hz, or shut off High Cycle Calculation function (Pn-643=0 automatically once alarm is triggered).		

14.37 AL-9A0 Over Travel

All in one ID **2nd Single Axis ID**	**AL-9A0**		

1st Single Axis ID	-	Alarm Name	Over Travel
Alarm Content	laser cruise mode, location is about to exceed travel limit		
Possible Cause	1. Cutting Head Exceeds Workpiece Range 2. Capacitive feedback abnormality 3. Improper setting of travel limit		
Possible Solution	1. Raise the Z axis after not ready to cut, restart after replacing the workpiece 2. Strengthening anti-jamming 3. Adjust Controller Travel Limit Settings		

14.38 AL-950 Regenerative Overload

All in one ID 2nd Single Axis ID	AL-950		
1st Single Axis ID	-	**Alarm Name**	**Regenerative Overload**
Alarm Content	The accumulated heat energy of internal or external regenerative resistor is higher than heat dissipation threshold. Regenerative resistor may not be damaged immediately.		
Possible Cause	1. When using external resistor, Pn-647、Pn-648 is not set properly. 2. The selection or cooling condition of external regenerative resistor needs to be rechecked. 3. When using internal resistor, Pn-647、Pn-648 is not set to 0. 4. When using internal resistor, the frequency of motor acceleration/ deceleration is too high or too intense.		
Possible Solution	1. When using external resistor, please check if Pn-647、Pn-648 is set correctly. 2. When using external resistor and parameters are set correctly, please recheck the selection or cooling condition of resistor. 3. When using internal resistor, please check if Pn-647 and Pn-648 are set to 0. 4. When using internal resistor and parameters are set correctly, please decrease the frequency of motor acceleration/deceleration or increase the value of Pn-306、Pn-307. If the alarm is raised consistently, please consider using an external resistor. 5. If regenerative resistor protection is not required, please set Pn-649 to 0.		

14.39 AL-942 Abnormal Motor Parameter Estimation - Too Large Test Current

All in one ID **2nd Single Axis ID**	**AL-942**		
1st Single Axis ID	**-**	**Alarm Name**	**Abnormal Motor Parameter Estimation - Too Large Test Current**
Alarm Content	During motor parameter estimation, the searched current command is greater or equal to 0.707 times rated current.		
Possible Cause	1. Mechanical abnormality or excessive motor load inhibits motor rotation. 2. Wrong motor nameplate parameters lead to unexpected voltage command, rotational speed, or current command.		
Possible Solution	1. Ensure that the motor parameters are estimated when the motor is no-load. If the load cannot be removed, it is recommended to use "static induction motor tuning". 2. Check the motor nameplate parameters (rated voltage, rated current, rated speed, and so on) are correct.		