

Driver Alarm Manual.

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SYNTEC

1 Driver Alarm - ALARM-1xx

All in one ID 2nd Single Axis ID	AL-024				
1st Single Axis ID		Alarm Name	Drive	r Internal Operation Error	
Alarm Content	An internal progra	am error occurred in the dr	river.		
Possible Cause	An internal progra	am error occurred in the dr	river.		
Possible Solution	Please contact di	stributor or Syntec represe	entative.		
All in one ID 2nd Single Axis ID	AL-025				
1st Single Axis ID		Alarm Name	Drive Failui	r Hardware Computation e	
Alarm Content	Driver Hardware	Computation Overflow Or I	Underflo	b.	
Possible Cause	Either overflow of	r underflow occurs by hard	lware co	omputation	
Possible Solution	Please contact dis	stributor or Syntec represe	entative.		
All in one ID 2nd Single Axis ID	AL-100				
1st Single Axis ID	AL-10	Alarm Name	Alarm Name IGBT Overheat		
Alarm Content	Generation I single axis drive power module exceeds 90℃ IGBT temperature stays above 100℃				
Possible Cause	 Cooling system failure Drive output short-circuit Ambient temperature overheat Heat source nearby Continuous use while exceeding drive's rated load 				

Possible Solution	 Check if fan is functioning normally. Check drive's output wiring, refer to "Wiring and Signal" section of manual. Check if ambient temperature is below 55°C, refer to "Transportation and Installation" section of manual. Check environment, remove external heat source or enhance cooling capacity. 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 powe	r module overload			
Possible Cause Possible Solution	 Overload Encoder or mod Encoder failur Current gain m correction or i Eliminate med Check if I_{dq} cur parameter Pn- 	e nismatch while running end nduction motor parameter hanical factors. rrent feedback Pn-D30(D1-1 -651(P5-02), if so we sugges	oder test, magnetic encoder estimation 16) has been greater than the t lowering motor load.		
	 Refer to "Wiring and Signal" section of manual for cable re-connection. Redo "Encoder test" and check for alarms, refer to "Auto tuning" section of manual. 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	 Excess DC BUS voltage caused by braking resistor when motor slows AC power input exceeds drive's rated input voltage Drive hardware failure 				

Possible Solution	 Check regenerative resistor's specs, refer to "Wiring and Signals" section of manual. Check if AC power supply is compatable with drive. 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 ve	oltage is	lower than driver	's rated	input voltage	
Possible Cause	 AC power st Drive hardw 					
Possible Solution	2. If the above	scenario	pply matches driv is ruled out, con eck hardware.		s. tributor or Syntec	
All in one ID 2nd Single Axis ID	AL-112	AL-112				
1st Single Axis ID	AL-2D	Α	larm Name	Pow	er Cable Disconnected	
Alarm Content		 Power cable disconnection detected at motor non-zero speed Drive's 3 phase voltage saturates for over 0.15 seconds (0.5 seconds in 1st Single Axis) 				
Possible Cause	 Abnormal increase Acceleration ti Drive is under 	 3 phase power cables are loose Abnormal incremental encoder feedback Acceleration time is set too short Drive is under voltage when doing Encoder-rotor Offset Calibration. Drive hardware failure 				
Possible Solution	 Redo "Encoder manual), if this Increase Pn-30 a. Please check voltage(220V-> b. Lower the ra Calibration. The under voltage, If the above sc 	 Drive hardware failure Check UVW cables between motor and drive for damage or looseness. Redo "Encoder test" and check for alarms (refer to "Auto tuning" section of manual), if this alarm goes off the cause may differ. Increase Pn-307(P6-11) Maximum Jerk Time. 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. 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 pha	se failure				
Possible Cause	 Drive cables a Power supply Drive hardwar 	failure				
Possible Solution	 Check powers If the above so 	 Check RST cables for damage or looseness. Check power source. If the above scenarios are ruled out, contact distributor or Syntec representative to check hardware. 				
Remark		larm is triggered only when I 1.0, disable to detect this ala				
All in one ID 2nd Single Axis ID	AL-114					
1st Single Axis ID		Alarm Name	Severely Low Voltage			
Alarm Content	Power supply voltag	ge is far lower than the prote	ctive level.			
Possible Cause	 Power supply vo Drive hardware 	bltage is lower than the 40% failure.	normal level.			
Possible Solution	 Ensure the DC bus voltage is stable when the driver is working. 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					

1st Single Axis ID	AL-1A	Alarm Name	Power Module Over Current				
Alarm Content	Drive detects exces	Drive detects excessive current on power module.					
Possible Cause	 Internal motor UVW short or UVW to ground short Wire UVW short or UVW to ground short Drive connector UVW short or UVW to ground short Motor is mechanically stuck which leads to abnormally heavy load to drive Power module failure Unbalanced motor 3 phase resistance Current module becomes aged 						
Possible Solution	 Wire short, rep Drive failure, ref Eliminate mech decrease load Turn off drive p W are shorted. Once certain of check hardwar Check if motor motor coil dam Measure if UV, resistance to g Or do the enco If rotation is be module may be 	 Bad insulation in motor, replace motor Wire short, replace wire Drive failure, replace drive Eliminate mechanical reason, increase acceleration time and jerk time, decrease load 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. 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. If rotation is below 100rpm, the drive still sends alarm. It means current module may become aged and is related to hardware life. 					
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 Axi	s 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 repre	sentati	ve to check hardware.	
All in one ID 2nd Single Axis ID	AL-124					
1st Single Axis ID			Alarm Name	Pov	ver Module Over Current 2	
Alarm Content	Drive dete	ects excessive	current on power module.			
Possible Cause	3. Encoc 4. Unbal	ler and/or mot ler malfunctio	3 phase resistance			
Possible Solution	 Check manu Redo Check dama Measu groun Turn o indica 	o "Encoder test" and check for alarms, refer to "Auto tuning" section of manual. ck if motor 3 phase's resistances are equal. If not, this may indicate motor coil hage, which activates this alarm. sure if UV, UW, VW resistances are equal (Not recommended when resistance to and is infinite). off drive power and measure if P/N(+/-) and U/V/W are shorted. Short circuits cate a broken transistor. e certain of damage, contact distributor or Syntec representative to check				
All in one ID 2nd Single Axis ID	AL-1	29				
1st Single Axis ID		Alarm Name This axis is not supported by 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	s ID	AL-21	Alarm Name	Regenerative resistance error	
Alarm Content		Triggered when po	ower stage reports abnorm	ality.	
Possible Cause		1. Switching trar	nsistor of regenerator is fail	ure.	
Possible Solution			stor of regenerator is short entative for hardware repai	ed, if so, send back to distributor or r.	
All in one ID 2nd Single Axis ID	AL-131				
1st Single Axis ID	AL-22		Alarm Name	Cooling Fan error	
Alarm Content	Triggerec	l when power stage	reports abnormality.		
Possible Cause	1. Cooli	ng fan is malfunctio	on or failure.		
Possible Solution		k If cooling fan is da ardware repair.	mage, if so, send back to d	istributor or Syntec representative	
All in one I 2nd Single Ax	_	AL-132			
1st Single Axi	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	AL-133	
2nd Single Axi s ID		
510		

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: 						
	 Triggered when power stage information stored on power stage cannot be read. Triggered when the number of detected current sensors is abnormal. The inverter informations of current sensor is wrong 						
Possible Solution	2. 1st Single Axis: a. Change consiste	ge the value of Power Stage ID(P5-07) to Power Stage ID read(D1-70) if not					

All in one ID 2nd Single Axis ID	AL-134				
1st Single Axis ID		Alarm Name	FRAM Operating Fail		
Alarm Content	Error occur when d	rive operate FRAM.			
Possible Cause	 Save parameters while power is off. Communication between drive and FRAM is disturbed. FRAM reached it's maximum write limit. 				
Possible Solution		•	tributor or Syntec representative		
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	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 Nam	e	FRAM CRC Error	
Alarm Content	FRAM data is e	error.				
Possible Cause	1. The mem	ory of	parameters is dama	aged.		
Possible Solution	save. 2. If this is a	 Check if parameters have been tampered with. Correct parameters and save. 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	Cal	culation sequencal error	
Alarm Content	Insufficient calc	ulatio	n time.			
Possible Cause	1. Insufficient	calcul	ation time			
Possible Solution	 Disable unn Decrease Pr 		ary functions. High Cyclc Calculati	on Level.		
All in one ID 2nd Single Axis ID	AL-138					
1st Single Axis ID			Alarm Name		eters saving failed in nent 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 co alarm.	rrect p	parameters or using	earlier s	ettings. Do alarm reset to clear	

All in one ID 2nd Single Axis ID	AL-139				
1st Single Axis ID	-		Alarm Name		PowerStage Error
Alarm Content	PowerStage D	etect	s Error		
Possible Cause	1. Drive dete	cts e	xcessive current or ov	ver hea	t on power module
Possible Solution	1. Follow the	inst	ruction if any alarm sl	hows u	р
All in one ID 2nd Single 轴向轴向 ID	AL-13A	AL-13A			
1st Single 轴向轴向 ID	-		Alarm Name		Module ID Data Error
Alarm Content	Reading modul	e ID d	data error		
Possible Cause	interfered.				eing or communication r, add-on card number is over
Possible Solution	reboot the	drive Irive,	IO extend card, and a		ected to ground correctly. Then card are official version.
All in one ID	AL-13B				
2nd Single Axis ID					
1st Single Axis ID	- Alarm Name RTD Add-on Card SSI Communication Error				
Alarm Content	RTD add-on card SSI communication error				
Possible Cause	 RTD add-on card loose or not connected. FPGA version not support RTD function. SPI communication error causing by memory ageing or communication interfered. 				

Possible Solution	 Check RTD add-on card connected correctly. Make sure the FPGA version is v2.14.3 or up. If not, update Drive version to v2.14.105 or up. If don't need to use RTD function, please set Pn-548~Pn-54A and Pn-752 to 0. Then reboot the drive. Check wiring, especially if shielding is connected to ground correctly. Then reboot the drive. Send back to Syntec. 				
All in one ID 2nd Single Axis ID	AL-13C	AL-13C			
1st Single Axis ID	-	Alarm Name	Front Stage Information Error		
Alarm Content	Error occurs while	accessing front stage info	rmations		
Possible Cause	The front stage in	formations can not be reac	l correctly		
Possible Solution	Send back to Synt	ec			
All in one ID 2nd Single Axis ID	AL-150				
1st Single Axis ID	-	Alarm Name	Extreme Regenerative Overload		
Alarm Content			external regenerative resistor is . Regenerative resistor may be		
Possible Cause	 When using external resistor, Pn-647 Pn-648 is not set properly. The selection or cooling condition of external regenerative resistor needs to be rechecked. When using internal resistor, Pn-647 Pn-648 is not set to 0. When using internal resistor, the frequency of motor acceleration/ deceleration is too high or too intense. Regenerative resistor protection is not turned-off. 				
Possible Solution	 When using external resistor, please check if Pn-647 Pn-648 is set correctly. When using external resistor and parameters are set correctly, please recheck the selection or cooling condition of resistor. When using internal resistor, please check if Pn-647 and Pn-648 are set to 0. 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. 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	 Check if there is an external negative load applied on motor. The resistance of internal resistor is too large. 				
Possible Solution	 Remove the external negative load. 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 moto	r overheat.						
Possible Cause	 Digital tempera KTY84 thermal Motor rated cur 	 Motor cooling system malfunction Digital temperature sensor setting error KTY84 thermal sensor setting error Motor rated current setting error Insufficient acceleration time Overload 						
Possible Solution	 Check motor cooling system. Correct parameter Pn-50A(P1-40) to Pn-50F(P1-61) according to digital temperature feedback(A or B). 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. Check rated current parameter Pn-710(P3-14). Check acceleration parameter Pn-306(P6-10) , add acceleration/ deceleration time. 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 abo	ve 120% of it's maximum spe	eed.					
Possible Cause	 Motor power cable U,V,W phase order incorrect Encoder malfunction Motor parameter loading error Sever system severe overshoot Severe speed command change Drive software outdated Encoder misses packets causing acceleration to be too great 							
	(. Encoder misses	s packets causing acceleratio	n to be too great					

Possible Solutio	n	 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. 				
		а	. Correct power cord phase order or or Pn-021(P3-22)(0 to 1 and 1 to 0).	change parameter		
		b	 Once certain polarity is correct, plea of this alarm. 	ase cosider the following causes		
		there pleas	k whether drive parameter Pn-7XX ma e is a mismatch between motor param se record the motor modle and contac ser(Syntec) for correct motor param	eters and those on the lable, t Suzhou or Taiwan Technical		
			ration of the machine can be observed -102(P2-01 to P2-03).	l, tune gain parameters Pn-100		
			k if controller's commands shift too fr leration and deceleration time consta			
		5. We have corrected drive alarm specs, please upgrade to versions 2.0.25(1. 4.12).				
		 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 Ins	tructions	AL-14 lss	ue Trouble Shooting			
All in one ID 2nd Single Axi s ID	AL-20	2				
1st Single Axis ID	AL-10	5	Alarm Name	Overload		
Alarm Content	Motor exceeds S2(short time duty) time limit.					
Possible Cause	 Continuor Encoder of 	 Motor is stuck due to mechanical factors, leading to overload during operation Continuous operation while exceeding drive's rated current Encoder or motor wiring error Encoder malfunction 				

Possible Solution	 Check if difference between command and motor speed feedback is too great. Check if load rate is over 100%, enhance motor capacity, lower motor load or increase acceleration/ deceleration time constant. 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. Check wiring between encoder and U,V,W cables, refer to "Wiring and Signal" section of manual. Execute "Encoder test" and check for alarms, refer to "Auto tuning" section of manual. 					
All in one ID 2nd Single Axis ID		L-203				
1st Single Axis ID	Į.	\L-31	Alarm Name	Over Torque 1		
Alarm Content	Motor torqu	ue exceeds torque	level 1 countinuously for over t	orque check time 1.		
Possible Cause	2. Encode	 Motor is stuck due to machanical factors, leading to overload during operation Encoder or motor wiring error Encoder malfunction 				
Possible Solution	2. Check v of man	 Check if difference between command and motor speed feedback is too great. Check wiring between encoder and U,V,W cables, refer to "Wiring and Signal" section of manual. Execute "Encoder test" and check for alarms, refer to "Auto tuning" section of manual. 				
All in on	e ID	AL-204				
2nd Single	Axis ID					
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		 Motor is stuck due to machanical factors, leading to overload during operation Encoder or motor wiring error Encoder malfunction 				

Possible Solution	great. 2. Check wiring Signal" secti			between encoder and on of manual. oder test" and check fo	U,V,\	nd motor speed feedback is too N cables, refer to "Wiring and arms, refer to "Auto tuning"
All in one ID 2nd Single Axis ID	AL-210					
1st Single Axis ID	A	L-26		Alarm Name	Мо	tor Pole Number Error
Alarm Content	Triggered when motor po are mismatched			umber or encoder pole	pair	number and parameter settings
Possible Cause		pole number s ler pole pair nu				
Possible Solution				er Pn-701(P3-01) equal: er Pn-90A(P3-30) setup		
All in one I 2nd Single Ax		AL-230				
1st Single Axi	s ID	AL-77		Alarm Name		Rotor Position Error
Alarm Content		Torque integr	al dir	ection and acceleratio	n dire	ection are inconsistent
Possible Cause		 Encoder polarity error Encoder-rotor pole offset error Pn-502 is set too low Motor vibration while servo on, speed feedback is above Pn-502 				
Possible Solution		 Redo "Encoder test" Redo encoder-rotor offset tuning Pn-502 should be set between 5~25RPM(mm/sec) Tune motor or set lower speed loop gain Pn-100(P2-02) and position loop gain Pn102(P2-01). 				
Remark		 gain Pn102(P2-01). 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	 Executed moving direction is not allowable Pn-242 Posing Type configuration is not corresponding to Pn-504 Moving Direction Limit Selection Host command polarity wrong set 						
Possible Solution	 Check if Pn-504 setting conflicts with moving direction. Please look up specification of Pn-504 Reset Pn-504 or check moving direction while running Check if Pn-242 setting conflicts with Pn-504 Modify Pn-242 according to Pn-504. Please look up specification of Pn-242 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	 Amount of estimated speed change larger than 30% rated speed Estimated speed is over 120% maximum speed When the direction of speed command changed, speed error over 30% rated speed in 1 second 				
Possible Solution	 Check if the n Increase acce Lower speed 		ect		
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	 The temperature is over the setting of Over Temp Level. RTD sensor loose or not connected. 	
Possible Solution	 Check Pn-548~Pn-54A and Pn-752~Pn-753 setting are correct or not. 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 a	nd can't correctly send bac	k position data.			
Possible Cause	 Syntec encoder crash and watchdog restart encoder. Non-Syntec encoder internal error. Motor overheating Noise interference Hardware malfunction 					
Possible Solution	 Reboot driver and observe encoder for abnormality Check Pn-90E(P3-34) Encoder Reset Counter. If encoder abnormal, check whether the motor is overheated or not. Make sure the shielding wire attached to encoder inside the junction box is connected to the motor's ground wire. Replace encoder. If this is a recurring issue, send back to authorized dealer or Syntec Corp. for repairs 					
Detailed Instructions	AL-15 Issue Troubl 【Pn-D95】Enc Error	-				
All in one ID 2nd Single Axis ID	AL-301					
1st Single Axis ID	AL-23	Alarm Name	Encoder Index Error			
Alarm Content	 Encoder didn't detect reference signal during encoder test. Encoder-rotor offset calibration takes too long 					
Possible Cause	 Connector wiring is poor contact, or connection is wrong Incorrect encoder setting Encoder pole number (Pn-90A/P3-30) setting error Communication interference Encoder Hardware malfunction 					

Possible Solution	 Check encoder wiring, refer to "Wiring and Signal" section of manual. Execute "Encoder test" and check for alarms . If any alarm goes off, refer to "Syntec auto tuning" section of manual. Set encoder pole number correctly and reboot driver. Refer to "Syntec motor encoder grounding program" section of manual 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 Troub	le 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 directio	n is opposite of UVW phase	sequence.		
Possible Cause	1. The parameter	r "Encoder Polarity " setting	g error.		
Possible Solution	 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	 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. 				

AL-303			
AL-25	Alarm Name	Encoder Resolution Error	
Encoder resolution	n error.		
2. Encoder pole r	number Pn-90A(P3-30) setti		
 Check if parameter Pn-902(P3-21) is equal to resolution or not. If not, set encoder resolution to correct value and reboot driver Check parameter Pn-90A(P3-30), set encoder pole pair number correctly and reboot driver Send back to distributor or Syntec representative to check hardware 			
AL-304			
AL-27	Alarm Name	Encoder No Feedback	
Drive fails to recei	ve signals from the encode	r.	
 With Syntec motors after manufacturing date of 2021/05, the older driver may not support its communication. Encoder wire is untied or unconnected Encoder communication interface setting error Encoder port number setting error Wire failure (shor circuit, wire breakage) Encoder malfunction Driver's pre-circuit board malfunction Noise generated in QEP encoder Encoder's baud rate is unsupported Encoder firmware update failed 			
	AL-25 Encoder resolution 1. Encoder resolution 2. Encoder poler 3. Hardware male 1. Check if parame encoder resolut 2. Check parame and reboot dri 3. Send back to compose the solution AL-304 AL-27 Drive fails to recein 1. With Syntee may not support 2. Encoder wire 3. Encoder common to support 3. Encoder common to support 3. Encoder malfut 7. Driver's pre-ci 8. Noise generation	AL-25 Alarm Name Encoder resolution error. 1. Encoder resolution Pn-902(P3-21) setting 2. Encoder pole number Pn-90A(P3-30) setti 3. Hardware malfunction 1. Check if parameter Pn-902(P3-21) is equal encoder resolution to correct value and resolution and reboot driver 3. Send back to distributor or Syntec repression AL-304 AL-304 Image: Alarm Name Drive fails to receive signals from the encode Image: Alarm Name 1. With Syntec motors after manufacturing may not support its communication. Image: Alarm Name 2. Encoder wire is untied or unconnected Image: Alarm Name 3. Encoder communication interface setting Image: Alarm Name 4. Encoder port number setti	

Possible Solution	 With Syntec motors after manufacturing date of 2021/05, it is recommended that upgrade driver version at least 3.0.13. Check if encoder wiring and pin definitions are correct or not. Refer to "Wiring and signal" section of manual. Refer to "Driver Parameter Manual", set parameters correctly and restart drive. Replace encoder cable (encoder's green wire between the drive and motor), and send broken one to Suzhou Syntec. Replace motor Replace driver Set Pn-52E(P6-65) to change the speed in startup. Currently supported encoder baud rates are as follows: TAMAGAWA, SYNTEC, SANKYO, BISSC : 2.5MHz Nikon: 2.5MHz, 4MHz HIWIN : 2.35MHz If the alarm happend after encoder firmware update, please contact syntec or authorized representative 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 dete	ected is different in each revo	olution	
Possible Cause	 Encoder cable malfunction Encoder's signal is interfering by rotor's axis with magnetic Encoder malfunction 			
Possible Solution	 Replace cable. Check if joining between encoder cable and motor is double end grounded. Check if encoder and motor are grounded. 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	 Encoder is un Encoder's sign Hallow magnetic ring Non-Syntec enco The circuit bo 	 Syntec encoder: Syntec encoder's firmware version is outdated Encoder is under noise interference, which causing feedback signal error. Encoder's signal is interfering by rotor's axis with magnetic Hallow magnetic ring Zindex position is differ from the setting parameter Magnetic ring's non-Zindex zone has magnetic field distribution Non-Syntec encoder: The circuit board of non-Syntec encoder is broken. Non-Syntec sensor and encoder are wrong assembly. 				
Possible Solution	Syntec encoder: 1. Update drive'	s version to 1.6.14 or above	e(Multi-Axis Servo Drive is updated			
	 Check if encod Check if joinin Short term con Magnetic axle Long term con Cross-Strait m Short term con Raise Z index after executin AL306 doesn'n Long term con Imported ultin Send the encod Check the encod 	 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. Check if encoder and motor are grounded. Check if joining between encoder cable and motor is double end grounded. Short term countermeasure: Magnetic axle center causing AL-54 SOP Long term countermeasure: Cross-Strait motor plants import axle center inspections starting 2016/7 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 Send the encoder to Syntec or authorized representative for repair. Non-Syntec encoder: Check the encoder is contaminated by dust or oil. Check the gap between sensor and encoder is correctly. 				
Detailed Instructions	AL-54 Issue Troub	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	s extreme errors to operate	normally			

Possible Cause	 Serial encoder communication interference Serial encoder wire is untied or unconnected Connector between drive and encoder has solder empty or code solder Encoder's cable grounding failure Encoder communication type setting error Automatic search for BiSSC data length is failure 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. 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". Encoder's firmware malfunction 				
Possible Solution	Check if drive's status parameter Pn-D73~Pn-D76(D1-28,D1-29,D1-46,D1-47) is zero or not. Check if encoder and motor are grounded. Check if joining between encoder cable and motor is double end grounded Check welding wire at the interface between encoder and drive. Check welding wire at the interface between encoder and motor. Check welding wire at the interface between encoder and motor. 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. 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	308				
1st Single Axis ID	L-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	 If alarm occurs v If the first encod 100RPM when po 	ler is Panasonic Encoder,t ower is on. ler is Mitutoyo Encoder,the	vhen power is on there is possibly encoder malfunction. he motor's speed must run below e motor's speed must run below	
Check	Check if motor is rur	nning before drive is plugg	zed in	
Possible Solution	 Once the motor Contact motor c 			
Detailed Instructions	[Pn-D95]Enc Error S	tatus 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	 Encoder communication interface setting is incorrect while using serial encoder If Pn-900(P3-20) is set to 12 and connected with a Nikon encoder, then it is communication issue. If the Pn-900 is set to 23 and connected to the HCFA encoder, then perhaps the encoder does not support high-cycle communication. This alarm occurs when power-up with HCFA/ Sankyo encoders. Please check Pn-642, Pn-643 settings if correct. Setting of Pn-900 can not be used at the setting of Pn-901 FPGA version doesn't support this encoder type 			
Possible Cause	 The parameter of encoder communcation interface (Pn-900(P3-20)) and encoder's serial communcation are mismatched. Check if encoder cables are indeed grounded and the wire has breakage or not. Check if the specifications of HCFA motor support high-cycle communication. With HCFA/ Sankyo encoders, frequency of communication is not legal. Check if Pn-901 is set correctly FPGA version doesn't support the encoder type Pn-900(P3-20) setting. 			

Possible Solution	2 3 4 5	 Set Pn-900(P3-20) correctly and reboot drive. Reassemble cables, make sure there is no interference and then restart Set Pn-900 to 22, and then reboot the drive Please look up manual of Pn-900(P3-20). Refresh setting with correct ones. Setup correct Pn-901 and restart Drive. Refer to "Syntec Parameter Manual" for setup detail Upgrade drive installation package according to encoder type 				
All in one 2nd Single Az		AL-30A				
1st Single Ax	tis ID	AL-850	Alarm Name	Encoder Over Spee	d	
Alarm Content		 FeeDat encode Motor with 	der speed exceeds 6000R oder over speed Panasonic encoder proba Mitutoyo encoder exceed	ably revolved over 650	0RPM	
Possible Cause		1. Check moto	or is over speed once or n	ot.		
Possible Solution		1. Avoid havin	g encoder run at maximu	ım speed.		
Detailed Instru	ıctions	[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 m data	odule error, causi	ng encoder unable to rea	d absolute position		
Possible Cause	 BiSSC (Nikon' al mod EnDat The po The po The po The po 	at encoder circuit board breakage encoder sensor and magnetic ring are assembled incorrectly. 's absolute position of absolute module is differ from increment dule. encoder position information error. osition information of Panasonic encoder is error. osition information of Mitutoyo encoder is error. osition information of Mitsubsihi encoder is error. osition information of Delta encoder is error.				
Possible Solution	 Check If this is 	sure encoder sensor and optical ruler are assembled correctly encoder for dust or oil contamination is a recurring issue, send back to authorized dealer or Syntec for repairs				

Detailed Instructions	【Pn-D95	[Pn-D95]Enc Error Status ALMC				
All in one ID 2nd Single Axis ID	AL-3	30C				
1st Single Axis ID	AL-	66 Ala	rm Name	Encoder multi-turn data error		
Alarm Content	Encode	er module erro	or, causing	encoder unable to read multi-turn data		
Possible Cause	2. Par 3. Mit 4. Tar 5. HIV 6. Sar	kon encoder's multi-turn data is incompatible to single-turn data anasonic encoder's multi-turn data is incompatible to single-turn data. itsubishi encoder's multi-turn data is incompatible to single-turn data. amagawa encoder's multi-turn data is incompatible to single-turn data. WIN encoder's multi-turn data is incompatible to single-turn data. ankyo encoder's multi-turn data is incompatible to single-turn data. CFA encoder's multi-turn data is incompatible to single-turn data.				
Possible Solution				il contamination end back to authorized dealer or Syntec Cor	p. for repairs	
Detailed Instructions	【Pn-D9	5]Enc Error S	tatus ALMC			
All in one ID 2nd Single Axis ID	AL-30E					
1st Single Axis ID	-	Alarm Na	ame En	coder Battery Over Voltage		
Alarm Content	Encoder b	attery supply	is over vol	tage, which may lead to encoder damage.		
Possible Cause	1. Encoc	1. Encoder battery voltage is over the certain threshold of specification				
Possible Solution	 Check the wiring of encoder Delta: Check the voltage of the battery if over 3.8V 					
All in one ID 2nd Single Axis ID	AL-31 1					
1st Single Axis ID	AL-33	Alarm Name	e 2nd En	coder Index Error		

Alarm Content	 Encoder didn't detect reference signal during encoder test. Encoder-rotor offset calibration takes too long. 					
Possible Cause	2. Secon 3. Secon 4. Comm	d encoder setting e	nber(Pn-92A/P6-90) setting nce	-		
Possible Solution	 Check wiring of second encoder, refer to "Wiring and Signal" section of manual. Execute "Encoder test". If any alarms goes off, refer to "Syntec auto tuning" section of manual. Set encoder pole number correctly and reboot driver. Refer to "Syntec motor encoder grounding program" section of manual 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		on Error		
Alarm Content	Second end	coder's direction is o	opposite of UVW phase sec	quence.		
Possible Cause	1. The par	rameter "Second en	coder polarity " setting er	ror		
Possible Solution	 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 2nd Single A		AL-313				
1st Single A	xis ID	AL-35	Alarm Name	2nd Encoder resolution error		
Alarm Content		Second encoder resolution error.				
Possible Cause		2. 2nd Encoder p	esolution Pn-922(P6-81) se ole number Pn-92A(P6-90 er hardware malfunction	•		

Possible Solution	 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. Check parameter Pn-92A(P6-90), set encoder pole pair number correctly and reboot driver 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 receiv	ve signals from the second	encoder .		
Possible Cause	 Second encoder wire is untied or unconnected. Encoder communication interface setting error. Encoder port number setting error. Wire failure (shor circuit, wire breakage) Encoder malfunction Driver's pre-circuit board malfunction In dual feedback control and 2nd encoder type is QEP, mechanical problem and machining condition may cause alarm Encoder's baud rate is unsupported Encoder firmware update failed 				
Possible Solution	 Check if serial encoder wiring and pin definitions for errors are correct or not. Refer to "Wiring and signal" section of manual. Refer to "Drive Parameter Manual", set parameters correctly and reboot driver. Replace encoder cable (encoder's green wire between the drive and motor), and send broken one to Suzhou Syntec. Replace motor Replace driver 				
	 Refer to "Dual feedback control and outer feedback using linear scale" section of manual, change Pn-52F properly Currently supported encoder baud rates are as follows: TAMAGAWA、SYNTEC、SANKYO、BiSSC: 2.5MHz Nikon: 2.5MHz、4MHz HIWIN: 2.35MHz If the alarm happend after encoder firmware update, please contact syntec or authorized representative 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 				

All in one ID 2nd Single Axis ID		AL-315				
1st Single A	xis ID	AL-39	Alarm Name	2nd Encoder Pulse Loss		
Alarm Content		Pulse number de	tected is different in each rev	olution		
Possible Cause		2. Second enco	 Second encoder's cable problem Second encoder's signal is interfering by rotor's axis with magnetic Second encoder malfunction 			
Possible Solution	I	 Replace cable. Check if joining between encoder cable and motor is double end grounded. Check if encoder and motor are grounded. 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			phase and Z index is differen er is error possibly .	t in each revolution,		
Possible Cause	 Syntec encoder: Second encoder's firmware version is outdated Encoder is under noise interference, which causing feedback signal error. Encoder's signal is interfering by rotor's axis with magnetic Hallow magnetic ring Zindex position is different than from the written parameter. Magnetic ring's non-Zindex zone has magnetic field distribution Hardware malfunction Non-Syntec encoder: The circuit board of non-Syntec encoder is broken. Non-Syntec sensor and encoder are wrong assembly. 					

Possible	Syntec en	coder:				
Solution	 V2.2.5) 2. Check 3. Check 4. Short t Magne Long to Cross-3 5. Short t Raise Z execut Long to Import 6. Send t Non-Synte 1. Check 2. Check 	ec encoder: update drive's version to 1.6.14 or more recent(Multi-Axis Servo Drive is updated to 2.2.5), and update encoder's version to 2.0.7 or above. heck if second encoder and motor are grounded. heck if joining between second encoder cable and motor are is double end grounded. hort term countermeasure: lagnetic axle center causing AL-54 SOP ong term countermeasure: ross-Strait motor plants import axle center inspections starting 2016/7 hort term countermeasure: aise Z index trigger level of P6-60/Pn-940 encoder to 35, and position axle after xecuting encoder test(rated current 150%). make sure alarm AL54/AL306 doesn't go off. ong term countermeasure: nported ultimate solution into manufacture process since 2018/1/11 end the second encoder to Syntec or authorized representative for repair. Syntec encoder: heck the encoder is contaminated by dust or oil. heck the gap between sensor and encoder is correctly. end back to Syntec Corp.				
Detailed Instructions	AL-54 Issue	e Trouble Shooting				
All in one 2nd Single A		AL-317				
1st Single A	xis ID	AL-49	Alarm Name	2nd Encoder Status Extreme Error		
Alarm Content		2nd Encoder statu	us has extreme errors to op	erate normally		
Possible Cause	Possible Cause 1. Second encode 2. Second Serial 3. Connector be 3. Connector be 4. Second encode 5. Second encode 6. Automatic set 7. If the drive is parameter Pr 8. If using Synte 8. If using Synte temperature 9. Second encode 9. Second encode		and encoder communication interference. and Serial encoder wire is untied or unconnected nector between drive and encoder has solder empty or code solder and encoder's cable grounding failure and encoder communication type setting error. amatic search for BiSSC data length is failure e drive is v2.x servo drive with a Nikon encoder, check drive's status meter Pn-D96 and other encode's alarms first. ing Syntec encoder and version from 2.0.8 or 2.1.1, which support "over berature self-diagnosis", then probably occurs "Encoder extreme over berature". and encoder's firmware malfunction and encoder's hardware malfunction			

Possible Solution	 is zero o 2. Check if 3. Check if 4. Check w 5. Check w 6. Check construction 6. Check construction 7. If it did't 7. If it did't 7. If it did't 8. Refer to right value 9. Check Bioonly. 10. If the dring paramete 11. If using Statempera 12. Backup nu Update e 	r not. encoder and motor joining between en elding wire at the ir elding wire at the ir onduction between conduction between conduction , the d Fechnical Center for work by the above magnetic ring to b separate the encode l cables. chapter "Drive Para ue, and reboot SSC Encoder data l ve is v2.x servo driv er Pn-D96 and othe Syntec encoder and ture self-diagnosis' motor's parameters	coder cable and motor double end grounded. Interface between encoder and drive. Interface between encoder and motor. Interface between encoder port and drive case. Interface between encoder port and drive case.		
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		-	o unfinished initialization. oower on, encoder will not complete parameter		
Possible Cause	 Nikon encoder speed exceeds 250RPM right after power on. If alarm occurs when motor isn't running, encoder malfunction is possible If the second encoder is Panasonic Encoder, the motor's speed must run below 100RPM when power is on. 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		motor stops, reset notor company for			
Detailed Instructions	[Pn-D96]2nd	Enc Error Status Al	MC		

All in one ID 2nd Single Axis ID	AL-319			
1st Single Axis ID	AL-4D	Alarm Name	2nd Serial Encoder C	Communication Type is Wrong
Alarm Content	 Encoder communication interface setting is incorrect while using second serial encoder. 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 If the Pn-920 is set to 23 and connected to the HCFA encoder, then perhaps the encoder does not support high-cycle communication. This alarm occurs when power-up with HCFA/ Sankyo encoders. Please check Pn-642, Pn-643 settings if correct. Setting of Pn-920 can not be used at the setting of Pn-921 FPGA version doesn't support this encoder type. 			
Possible Cause	 The parameter of encoder communcation interface Pn-920(P6-80) and encoder's serial communcation are mismatched. Check if encoder cables are indeed grounded and the wire has breakage or not. Check if the specifications of HCFA motor support high-cycle communication. With HCFA/ Sankyo encoders, frequency of communication is not legal. Check if Pn-921 is set correctly FPGA version doesn't support the encoder type Pn-920(P6-80) setting encoder type. 			
Possible Solution	 Set Pn-920(P6-80) correctly and reboot driver Reassemble cables, make sure there is no interference and then reboot driver Set Pn-920 to 22, and then reboot the drive Please look up manual of Pn-920(P6-80). Refresh setting with correct ones. Setup correct Pn-921 and restart Drive. Refer to "Syntec Parameter Manual" for setup detail 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		 Nikon second encoder speed exceeds 6000RPM FeeDat second encoder over speed Motor with Panasonic second encoder probably revolved over 6500RPM 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 I 2nd Single Ax		AL-31B				
1st Single Axi	is ID	-	Ala	rm Name	2nd Encoder position feedback error	
Alarm Content 2nd Encoder module error, causing encoder unable data					r unable to read absolute position	
Possible Cause		 FeeDat second encoder circuit board breakage BiSSC second encoder sensor and magnetic ring are assembled incorrectly Nikon encoder's multi-turn data is incompatible to single-turn data EnDat second encoder position information error The position information of Panasonic encoder is error. The position information of Mitutoyo encoder is error. The position information of Mitsubsihi encoder is error. The position information of Delta encoder is error. 				
Possible Solution		 Make sure encoder sensor and optical ruler are assembled correctly Check encoder for dust or oil contamination If this is a recurring issue, send back to authorized dealer or Syntec Corp. for repairs 				
Detailed Instru	ctions	[Pn-D96]2nd Enc Error Status ALMC				
All in one ID 2nd Single Axis ID	AL-31(c				
1st Single Axis ID	AL-67	Y Alarm N	ame	2nd Encoder m	ulti-turn data error	
Alarm Content	Encoder	module error, caus	ing encode	er unable to read	l multi-turn data.	
Possible Cause	 Nikon 2nd encoder's multi-turn data is incompatible to single-turn data Panasonic 2nd encoder's multi-turn data is incompatible to single-turn data. Mitsubishi 2nd encoder's multi-turn data is incompatible to single-turn data. Tamagawa 2nd encoder's multi-turn data is incompatible to single-turn data. HIWIN 2nd encoder's multi-turn data is incompatible to single-turn data. Sankyo 2nd encoder's multi-turn data is incompatible to single-turn data. HCFA 2nd encoder's multi-turn data is incompatible to single-turn data. 					
Possible Solution		k encoder for dust s is a recurring issue			dealer or Syntec Corp. for repairs	

Detailed Instructions	[Pn-D96]2nd Enc Error Status ALMC					
All in one I 2nd Single Ax		AL-31D				
1st Single Ax	is ID	-	Alarm Name	2nd Encoder Unable to Finish Operation Configuration		
Alarm Content		Failed to set oper	ration configuration			
Possible Cause	 While setting operation configuration, unable to write the correspondin memory or meet access failure Fail to access 2nd encoder memory 					
Possible Solution	 Check Pn-D9C and encoder software version, and update to the right versio Check if communication ever failed and then check up wiring of this encod 					
All in one ID 2nd Single Axis ID	AL-31E					
1st Single Axis ID	-	Alarm Name	2nd Encoder Battery Over Voltage			
Alarm Content	2nd Enco	oder battery supply	v is over voltage, which m	ay lead to encoder damage.		
Possible Cause	1. Enco	der battery voltage	e is over the certain thres	hold of specification		
Possible Solution		k the wiring of enc a: Check the voltag	oder e of the battery if over 3.8	3V		
All in one I 2nd Single Ax		AL-321				
1st Single Axis ID AL-41			Alarm Name	Encoder external(1) Thermal Sensor Over Temperature		
Alarm Content		The temperature protective limit.	that encoder external(1)	's Thermal Sensor detect is over drive's		

Possible Cause	 Motor cooling system failure Version compatability Thermal sensor signal error Motor's Thermal Sensor wire unconnected to Encoder external(1)'s temperature sensing wire(the yellow and green line of the encoder, respectively) With SYNTEC encoder, encoder external(1) thermal sensor type setting error Encoder hardware malfunction 					
Possible Solution	 Check and change motor cooling system. 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. Make sure parameter Pn-743 "Syntec Encoder internal(1) Thermal Sensor overheat threshold" is set correctly. 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. 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. 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 Shootin	g			
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 protective limit.	e that encoder external(2)	's Thermal Sensor detect is over drive's			
Possible Cause	 Cooling system failure Version compatibility Parameter error With SYNTEC encoder, encoder external(2) thermal sensor type setting error 					
Possible Solution	 With SYNTEC encoder, encoder external(2) thermal sensor type setting error Check and change cooling system. 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. 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. 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	 Nikon encode FeeDat encode Panasonic en or protection Mitutoyo enc Mitsubishi en or protection Delta encode degree. Tamagawa 23 Celsius degree 	 Tamagawa 23 bit encoder: Encoder internal temperature is higher than 85 Celsius degree or protection level Pn-746. Tamagawa 25 bit encoder: Encoder internal temperature is higher than 105 				
Possible Cause	 Cooling system failure Version compatibility Thermal sensor signal error With SYNTEC encoder, 2nd encoder internal thermal sensor type setting error Encoder hardware malfunction 					
Possible Solution	 Encoder nardware maifunction Check and change cooling system. If using SYNTEC, Nikon, Panasonic, Mitsubishi encoders, please check up Pn-D61. If using FeeDat, Tamagawa or Delta encoders, please resolve problem and restart driver. 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. Make sure parameter Pn-748 "Syntec Encoder internal(1) thermal sensor overheat threshold" is set correctly. 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. 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 drive's protectiv		al(1)'s Thermal Sensor detect is over				
Possible Cause	 Version com Thermal sen Motor's Ther temperature respectively With SYNTEC error 	 Cooling system failure Version compatibility Thermal sensor signal error Motor's Thermal Sensor wire unconnected to Encoder external(1)'s temperature sensing wire(the yellow and green line of the encoder, respectively) With SYNTEC encoder, 2nd encoder external(1) thermal sensor type setting error Encoder hardware malfunction 					
Possible Solution	 If recently up Pn-746(P1-3) Make sure pa Sensor overh Connect The wire. If floati 145 degrees. Check the ty If using PT10 firmware to b If all above s 	 Check and change cooling system. 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. Make sure parameter Pn-748 (P1-38)"Syntec Encoder internal(1) Thermal Sensor overheat threshold" is set correctly. 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. 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. 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	AL-326					
1st Single Axis ID	AL-46	Alarm Name	2nd Encoder External(2) Thermal Sensor Over Temperature				
Alarm Content	Encoder Externa limit	l(2) detects Thermal Sens	sor's temperature over drive's protective				

Possible Caus	e	2. 3. 4. 5.	Cooling system failure Version compatibility Thermal sensor signal error Motor's Thermal Sensor wire unconnected to Encoder external(2)'s temperature sensing wire(the yellow and green line of the encoder, respectively) With SYNTEC encoder, 2nd encoder external(2) thermal sensor type setting error Encoder hardware malfunction				
Possible Solut	tion	2. 3. 4. 5.	Check and change cooling system. 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. Make sure parameter Pn-748 (P1-38)"Syntec Encoder internal(2) Thermal Sensor overheat threshold" is set correctly. 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. 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. If all above solutions fail to solve the problem, Thermal Sensor may have malfunctioned. Please contact Suzhou or Taiwan Tech Center.				
	n one ID Igle Axis ID		AL-328				
1st Sin	gle Axis ID		AL-5A	Alarm Name	Encoder Internal Thermal Sensor Error		
Alarm Conten	t		Encoder Inter	rnal Thermal Senso	r Error		
Possible Caus	e			Internal Thermal Sensor Error NTEC encoder, encoder internal thermal sensor type setting error			
Possible Solut	Pn-74A(2. Check th a. I 2 b. I			1-70) to 1. e type of resistance using PT1000:Upda			
All in one ID 2nd Single A xis ID	AL-329						
1st Single Axis ID	AL-5B	Al	arm Name	Encoder External	(1) Thermal Sensor is Unplugged		

xis ID 1st Single Axis ID	AL-5C Alarm Name Encoder External(2) Thermal Sensor is Unplugged					
All in one ID 2nd Single A	 Ω. If the mexternal (1 3. Check if the 5V. If so, performing the output otherwise 4. Check the a. If the output to to	 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. 				
Possible Solution	(b) If enco 2. Measure t	oder External(1) Therm he resistance of enco	(1) Thermal Sensor is wired properly. nal Sensor is not needed, set parameter Pn-74B(P1-71) to 1. der external(1) Thermal Sensor at ambient temperature, and			
Possible Cause	 Encoder e Abnormal 	external(1) Thermal Se l power supply voltage				
Alarm Content	Encoder External(1) Thermal Sensor is unplugged					

Possible Solution	 (b) If end 2. Measure check if the mease external 3. Check if 5V. If so, the outp otherwis 4. Check the a. If fi 	 (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. 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. 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. 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 A xis ID	AL-32C							
1st Single Axis ID	AL-5E	Alarm Name2nd Encoder internal Thermal Sensor Error						
Alarm Content	2nd Encoder	internal Thermal	Sensor	Error				
Possible Cause		oder internal Ther TEC encoder, 2nd			al sensor type setting error			
Possible Solution	 If 2nd encoder internal Thermal Sensor is not needed, set parameter Pn-74E(P1-74) to 1. 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. If using KTY84:Please set Pn-75E into 0. Send back to dealer or Syntec Corp. for repairs. 							
All in or 2nd Single		AL-32D						
1st Single	Axis ID	AL-5F	A	larm Name	2nd Encoder External(1) Thermal Sensor is Unplugged			
Alarm Content	:	2nd Encoder Ext	ernal(1)	Thermal Sensor i	s Unplugged			

Possible Cause	 2nd Encoder External(1) Thermal Sensor is not plugged correctly 2nd Encoder external(1) Thermal Sensor is broken Abnormal power supply voltage of 2nd encoder With SYNTEC encoder, 2nd encoder external(1) thermal sensor type setting error 				
Possible Solution	 (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. 				
	 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. 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. 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	 2nd Encoder External(2) Thermal Sensor is not plugged correctly 2nd Encoder external(2) Thermal Sensor is broken Abnormal power supply voltage of 2nd encoder With SYNTEC encoder, 2nd encoder external(2) thermal sensor type setting error 				

Possible Solution	 (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 -750(P1-76) to 1. Measure the resistance of 2nd encoder external(2) Thermal Sensor at and temperature, and check if the measured value of resistance is in the oper range from 500Ω to 1500Ω. If the measured value of resistance appears to wrong, then please replace the 2nd encoder external(1) Thermal Sensor version one. 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 encoder port on the drive by probing the output pin. If the supply voltage normal, then the 2nd encoder may be broken; otherwise, check if the drive working correctly. Check the type of resistance used for 2nd encoder external(2) thermal sensor at an 1f 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. 			sor is not needed, set parameter Pn ernal(2) Thermal Sensor at ambient alue of resistance is in the operating d value of resistance appears to be er external(1) Thermal Sensor with a 7B[The 5V Detection of 2nd ck the power supply voltage of 2nd utput pin. If the supply voltage is ken; otherwise, check if the drive is encoder external(2) thermal sensing are to V3.0.0 or higher, and 2nd er. And set Pn-760 into 1.		
All in one ID 2nd Single Axis I	D		AL-330			
1st Single Axis I	D		-		Alarm Name	Encoder Port Setting Error
Alarm Content		Encoder Port (Parameter Pn-901) setting error				
Possible Cause		 Parameter Pn-900 encoder type is set but parameter Pn-901 is not. Port number setting is the same as another encoder port setting Parameter Pn-901 is greater than actual port number 				
Possible Solution		1. Set parameter Pn-901 correctly according to the actual application.			g to the actual application.	
All in one ID 2nd Single Axis ID	AL-3:	31				
1st Single Axis ID	-		Alarm Nan	ne 2nd Encoder port setting error		
Alarm Content	2nd encoder Port (Parameter Pr			ter Pi	n-921) setting error	
Possible Cause	 Parameter Pn-920 encoder type is set but parameter Pn-921 is not. Port number setting is the same as another encoder port setting Parameter Pn-921 is greater than actual port number 					
Possible Solution	1. Se	t para	ameter Pn-921	corre	ctly 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	2. Parameter sp	 The version of encoder is outdated. Parameter specifics cannot be recognized if the motor is not supplied by Syntec. Data read from encoder is unable to be interpreted. 					
Possible Solution	 Upgrade driver version. 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. 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	 The version of encoder is outdated. Parameter specifics cannot be recognized if the motor is not supplied by Syntec. Data read from encoder is unable to be interpreted. 				
Possible Solution	 Upgrade driver version. 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. 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 Paramete Fail								
Alarm Content	Encoder parameter download process is unsuccessful								
Possible Cause	 With Syntec motors after manufacturing date of 2021/05, the older driver may not support its communication. 1st encoder still not ready after drive power on for 1 second. The parameters read back from encoder is incorrect. Signal transfer error due to the poor contact of the first encoder's pin With hallow type encoder(mini encoder), check whether motor serial number is not zero 								
Possible Solution	 With Syntec motors after manufacturing date of 2021/05, it is recommended that upgrade driver version at least 3.0.13. Check status parameter "First encoder parameter read back status", single axis' parameter is D2-97, four in one's status parameter is Pn-E5F. Check if encoder is wired correctly and whether there are interferences. Check connectivity of encoder connector pins 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	 2nd encoder still not ready after drive power on for 1 second. The parameters read back from 2nd encoder is incorrect. Signal transfer error due to the poor contact of the 2nd encoder's pin 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 oc	cur after rebooting, para	meters have been read correctly.				
		If this problem rec	ccurs, please contact dea	ller or Syntec Corp. for repairs.				
		Refer to AL-58问题	处置 for alarm trouble s	hooting.				
All in one ID 2nd Single Axis		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	AL-337							
2nd Single Axis ID								
1st Single Axis ID	AL-4B	Alarm Name	2nd Syntec Encoder	Runs in Bootloader Mode				
Alarm Content	When 2n	d is Syntec Encode	er and is Running in Bootl	oader Mode, alarm occurs.				
Possible Cause	1. Pow	er failure or discon	nection during firmware	update process				
Possible Solution	1. Update firmware again and restart.							
All in one ID 2nd Single Axis		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 i	s too high while accessing	encoder register					
Possible Solution	 Preclude encoder wiring interferences, reinforce grounding Status surveillance: Pn-D73(D1-28) Serial Encoder CRC error count(hardware) Pn-D74(D1-29) Serial Encoder CRC error count(software) Pn-D76(D1-47) Serial Encoder overtime error count If this alarm occurs when saving parameters, reset alarm and permanently resave parameters again. If issue is recurring, contact dealer or Syntec Corp. for repairs. 							
All in one ID 2nd Single Axis ID	AL-339	AL-339						
1st Single Axis ID	AL-76	AL-76 Alarm Name 2nd Encoder Register Acces Error						
Alarm Content	2nd Encoder Reg	ister Access Error						
Possible Cause	1. Error count is	1. Error count is too high while accessing 2nd encoder register						
Possible Solution	a. Status surveilla i.Pn-D77(E ii.Pn-D78(iii.Pn-D7A b.If this alarm occ resave paramete	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 detecti	ion only support syntec m	otors					
Possible Cause	non-Nikon en	 Setting Pn-900 Encoder Communiation Type to 12 with non-Syntec motors or non-Nikon encoders. Pn-706 Motor Serial Number exception error. 						
Possible Solution	 Please check Please contact 	up and correct Pn-900 set ct Syntec Corp.	ting.					

All in one ID 2nd Single Axis ID		AL-33	В				
1st Single Axis ID		-	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	e check	up and correct P	n-920 set	tting.	
All in one ID 2nd Single Axis ID		AL-340					
1st Single Axis ID		-	Α	larm Name	Encode	er Status Error	
Alarm Content	En	coder statu	s has ei	rrors to operate n	ormally		
Possible Cause	1.					2.0.8 or 2.1.1, which support "over y occurs "Encoder over temperature".	
Possible Solution	1.					2.0.8 or 2.1.1, which support "over emperature feedback and settings.	
All in one ID 2nd Single Axis ID		AL-3	44				
1st Single Axis ID				Alarm Na	ame	Encoder Signal Noise Interference	
Alarm Content		Encoder	Signal N	loise Interference	9		
Possible Cause		Check Pn-D74 Encoder CRC error counter(Software). Check the encoder wiring.					
Possible Solution		 Check the encoder wiring and grounding. Send back to Syntec Corp. 					
All in one ID 2nd Single Axis ID	,	AL-350					
1st Single Axis ID		-	Α	larm Name	2nd En	ncoder Status Error	

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



4 Tuning Alarm - ALARM-4xx

All in one ID 2nd Single Axis ID	AL-4 00									
1st Single Axis ID	AL-2 9	Alarm Name		Motor Parameter Estimation Failure - Abnormal Output Command						
Alarm Content	The se	arch for th	e estimated c	urrent command fails during parameter estimation						
Possible Cause	2. Me	 Encoder malfunction Mechanical abnormality or excessive motor load inhibits motor rotation Abnormal current control 								
Possible Solution	dur 2. Che est no- mo 3. The pro	ing the "en eck whethe imation pro load. If the tor tuning" e voltage co ocess. The s	coder function r the current re ocess. Ensure th load cannot be ommand exceed etting of the int	ccurs in the "encoder function test" test. Handle the alarm test" test. aches the 120% rated current of the motor during the nat the motor parameters are estimated when the motor is e removed, it is recommended to use "static induction ds 40% of the rated motor voltage during the tuning ternal gain ratio Pn-F2D (Fn-18) of the tuning machine ually lowered by 20% steps						
All in one ID 2nd Single Axis II		L-401								
1st Single Axis II		AL-2A Alarm Motor Parameter Estimation Failure-Abnormal Motor Name Speed								
Alarm Content		The motor speed is lower than 80% of the motor rated speed during the parameter estimation.								
Possible Cause	2. 3.	 Encoder malfunction Mechanical abnormality or excessive motor load inhibits motor rotation Motor rated speed is too high Abnormal current control 								

Possible Solution	the test 2. Duri rate loac mot 3. Che "sta usin 4. Che F2D	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. 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". 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. 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-40	2					
1st Single Axis	ID	AL-50)	Alarm	Name	Current Tuning Error		
Alarm Content		Current tur	ing erro	or				
Possible Cause		1. Excess current during tuning.						
Possible Solution				rent Tuning" test Syntec or authorized representative				
All in one ID 2nd Single Axis ID		AL-403						
1st Single Axis ID			Ala	rm Name	Motor Rotor	Time Const. Estimation Failure		
Alarm Content	Frec	quency search	n failure	during the e	stimation proc	ess of motor rotor time constant.		
Possible Cause	2.	 Motor Rated Speed Pn-70C is set incorrectly Motor Pole Number Pn-701 is set incorrectly During parameter estimation, the motor is rotated by external force 						
Possible Solution	2.	 Correct Pn-70C Correct Pn-701 Avoid motor rotation during parameter estimation 						
All in one ID 2nd Single Axis ID		AL-404						
1st Single Axis ID			Ala	rm Name	PM Motor Pa	arameter Tuning Fail		

Alarm Content	 UVW cable disconnected Voltage command reaches limit during tuning 						
Possible Cause	 3 phase power cables are loose Voltage specification of driver and motor are matched 						
Possible Solution			es between motor and dri voltage specification is m	ve for damage or looseness. natche			
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 Je	rk, acceleration or t	ravel limit setup inappro	oriate.			
Possible Cause	2. Mo 3. Lov 4. Ins 5. Acc	 Initial rotor inertia setup incorrect Motor specification input error Low JOG speed Insufficient travel limit Acceleration setup too severe Low Jerk 					
Possible Solution	ma 2. Cho 3. Par rat 4. Tra ins mo 5. Acc Set 6. Jer	 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). Check motor parameter Pn-7XX (P3-XX). Parameter Pn-304(Fn-02) too low causing tuning to fail. Minimum tuning RPM is 20%of rated motor speed. 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. Acceleration time Pn-306(P6-10) is so short that motor cannot catch up. Set Pn-306(P6-10) longer. 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		AL-411					
2nd Single Axis	ID						
1st Single Axis	ID	AL-2C	Alarm Name	Initial Value of Inertia is Set Unsuitable			

			Unsuitable			
Alarm Content	Triggered when initial rotor inertia setup inappropriate.					
Possible Cause		rotor inertia and mechanical constant initial setup motor rotor time constant setup				

Possible Solution	Pn-722(P4 2. Observe if	 Refer to "Auto tuning" section of manual and reset Pn-720(P4-20) and Pn-722(P4-21). 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	AL-412							
1st Single Axis	ID AL-3E	Alarm I	lame	Inertia Tuning Startup Failure				
Alarm Content	triggered who	en motor doesn't ru	n during In	ertia tuning				
Possible Cause	 Encoder Motor sta Default to 		n't drive the load					
Possible Solution	 The mtor Only 2nd Cl Cl Increase in Test M 	 Check encoder wiring, refer to "Wiring and signal" section of manual The mtor should rotate during tuning with direction that Pn-504 allows (FOR ONLY 2nd Single Axis has this function) Check if UVW cables are wired correctly Check for mechanical locks Increase [Pn-F32] Torque Command in Test Mode([Fn-22]Torque Commanin Test Mode) progressively. When the output torque is enough, the inertia tuning is finished. 						
All in one ID 2nd Single Axis	AL-413 ID							
1st Single Axis	ID AL-74	Alarm N	ame	Inertia Tuning Loading Too Large				
Alarm Content	Displacement	Displacement exceeds half the motion limit while estimating gravity						
Possible Cause	1. Motion lir	1. Motion limit is set too small or motor power is insufficient						
Possible Solution		 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 Nan	ne	Load Inertia Value Error				
Alarm Content	Load intertia value out	of range						

Possible Cause	 Rotor inertia value error Linear motor load inertia value out of range 								
Possible Solution	durir 2. Refei	 Re-enter specifics' rotor inertia parameter, or re-execute rotor inertia estimation during idling. 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 Search	ing Failure				
Alarm Content	Drive fail	s to detect accura	ate motor	pole position					
Possible Cause	1. Enco 2. Moto	der mount loose, or stall	causing p	osition shift					
Possible Solution	2. Moto a	 Make sure encoder index and motor shaft angle are fixed Motor should rotate twice during searching process Check if UVW cables are wired correctly Check for mechanical locks 							
All in one I 2nd Single Ax		AL-430							
1st Single Axi	is ID	AL-4F	Ala	arm Name	Encoder Calibration Stall Error				
Alarm Content		No motor rota	tion even a	as current out	put reaches	limit			
Possible Cause		 Motor ove UVW wirin 							
Possible Solution		 Check motor for mechanical interferences Check Pn-441/Pn-444, Reset correct Pn-441/Pn-444 Check UVW wiring from drive to motor 							
All in one ID 2nd Single Axi									
1st Single Axis	; ID	AL-3A	A	arm Name	Encod Error	er Pitch Compensation			
Alarm Content		Adjacent compensation value varies too greatly							

Possible Cause	 Encoder's original position feedback fluctuates severely Encoder's compensation fixture error Encoder malfunction 							
Possible Solution	polarity while Check if 1st a compensatio 2. Make sure fix feedback me 3. Rotate motor	 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. Make sure fixture is correctly mounted. Rotate motor and check if 1st feedback mechanical angle changes. 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	AL-440							
2nd Single Axis ID								
1st Single Axis ID		Alarm Name Dead time calibration initial failure						
Alarm Content	Dead time calibra	Dead time calibration initial failure						
Possible Cause	1. Some axes ar	1. Some axes are servo on state						
Possible Solution	 Check all axes Servo off all a 							
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 set	tting er	ror or motor stall					
Possible Cause	 Motion limit is set too small Linear motor: Whether position limit larger than 1.5 magnetic pitch. Rotary motor: Whether position limit larger than 2.5 electrical period. Lmotor stall Encoder no feedback 							

Possible Solution	 Set motion limit: Linear motor: Reserve a travel distance larger than 1.5 magnetic pitch. Rotary motor: Reserve a travel distance larger than 2.5 electrical period. Check rotor position, Check Pn-441/Pn-444: Move motor to suitable position Reset Pn-441/Pn-444 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 magnet	Detected magnetic pitch (Pn-D85) and set value (Pn-702) are mismatched						
Possible Cause	1. Magnetic pitc	1. Magnetic pitch or encoder resolution setup error						
Possible Solution	1. Set paramete	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 digi	tal input filtering level fai	led					
Possible Cause	2. Abnormal fun	g of gear number of motor ction of proximity switch tation check window is to						
Possible Solution		rs Pn-20A, Pn-20C, Pn-522 tallation and signal of pro	2, Pn-50A and Pn-50B correctly eximity					
All in one ID 2nd Single Axis ID	AL-453							
1st Single Axis ID		Alarm Name	Global Tuning Failure					
Alarm Content	Unexpected ala	arm occurred during tunir	ng process					
Possible Cause	Certain axis reg	isters the alarm during tu	ining process					

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

5 Application Alarm - ALARM-5xx

All in one ID 2nd Single Axis ID	AL-5	500						
1st Single Axis ID	AL-2	2F	Alarm Na	me	Incorrect s curve for V	etting of operational /f control		
Alarm Content	V/f curve	e slope se	etup error					
Possible Cause	1. V/fc	urve slop	be setup error, c	neck para	meters Pn-1	12~Pn-115 (P2-31~P2-34)		
Possible Solution	grea 2. Freq 3. Volta 4. Volta (Obs	 Operation points 1 and 2 must increase in order. V and F of point 1 must be greater than those of point 2. Frequency of operation point 2 cannot be above rated frequency. Voltage of operation point 2 cannot be above rated voltage. Voltage of operation point 1 must be higher than minimum VF voltage. (Observe Pn-D3B (D1-30) for further information) 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 Ov	vercurrent		
Alarm Content	fmo	de.		-		mum current of motor in V/ 0% of maximum current		
Possible Cause	2. Inco	rrect V/f	g of acceleratior curve setting overload.	n time or j	erk time			
Possible Solution	2. Adju	 Increase jerk time(ms) and acceleration time Adjust V/f operating curve Appropriately decrease the load. 						
Remark	From v2.	12.7 , the	e second trigger	mechanis	m of alarm o	content has been removed.		
All in one ID 2nd Single Axis ID	AL-502	AL-502						
1st Single Axis ID		Ala	arm Name	Voltage	command r	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	2. G	 The belt slips Gain tuning result is improper UVW wiring is wrong or not connected 								
Possible Solution	2. Re	 Tighten or replace the belt Refer to chapter "Auto Tuning" in user manual, tune gain properly Refer to chapter "Wiring and signal" in user manual, and correct wiring 								
All in one IE 2nd Single Axi		AL-505								
1st Single Axis	s ID	-	Alar	m Name	Control mode not set properly					
Alarm Content		Control mode	should no	t be able to us	e with current setting or apparatus					
Possible Cause		 None of encoder applied in position control Disable position control with V/f mode setting Gantry control does not support all control modes except the host posit mode 								
Possible Solution	 Check if used function in position control. Make sure of corr controller or encoder configuration Check Pn-330 setting which is allowed to enter position cor mode. Correct Pn-330 or avoid position control mode switc Check the controller settings or Pn-840 				n wed to enter position control sition control mode switch by controller					
All in one ID 2nd Single Axis ID	AL-51(0								
1st Single Axis ID	AL-3C	: Alarn	n Name	Spindle Pos	sing Failure					
Alarm Content	Drive cou	ıldn't complete	e spindle or	ientation with	in time limit					
Possible Cause	comr 2. Enco 3. Filter Axis 4. Proxi 5. Proxi 6. Orier	 Spindle orientation fails to reach window set in Pn-522(P6-12) for 2 seconds after command complete Encoder communication type error Filtering level is too high or signal width is too short (Only All in one ID/2nd Single Axis support) Proximity switch orientation failure Proximity switch orientation has wrong gear ratio Orientation is abnormally aborted V/f mode or none of encoder applied do not support spindle orientation 								

Possible Solution	500 2. Mal con 3. Che D35 4. If us con Sin 6. Rec	ke sure parameter Pn-522(P6-12) is set in a reasonable range. Suggested value is 0(0.5 degrees) ke sure Pn-900(P3-20) in single feedback control or Pn-920(P6-80) in dual feedback ntrol is not 3 eck up the manual of Pn-03E and adjust it with motor running and monitoring Pn- 5 I Bits Status (Only All in one ID/2nd Single Axis support) sing proximity switch orientation Pn-243=1(P6-29=1), check Pn-D97(D1-77) is dated each turn. Assemble proximity switch correctly Pn-50A~Pn-50B(P1-40~P1-41). sing proximity switch orientation Pn-243=1(P6-29=1), check the gear ratio from ntroller is correctly set. Update controller software version to at least 10.116.24R(1st gle Axis) or 10.118.10(All in one/2nd Single Axis) and set gear ratio correctly. cord Pn-D53(D1-40), and connect Syntec for further trouble shooting eck Pn-330 and encoder setting and correct them								
All in one ID 2nd Single Axis I	D	AL-511								
1st Single Axis II	o l	AL-62		Alarm Name	Spi	ndle Posing Deviate				
Alarm Content	Pc	osition deviate	d afte	er posing complete						
Possible Cause			-	e setting error, mecha on check window is to		interference cause spindle diverge rrow				
Possible Solution				n angle and mechanic arameter Pn-522(P6-1		erference set in a reasonable range				
All in one ID 2nd Single Axis		AL-512								
1st Single Axis	ID	-		Alarm Name		Error Digital Input Signal Index Position				
Alarm Content		1. Proximit	ty sig	nal may be disturbed	l, driv	er can't mark an index position				
Possible Cause		2. Input sig	 Digital Input Sampling Factor too low Input signal too noisy Gear ratio set incorrectly 							
Possible Solution		 Please c Replace 	heck with	the installation of in	put w nateri	n-03E and retry your test ire, or proper material use ial, or change a way of installation e 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 i	n dual feedba	ck control mode.				
Possible Cause	 Enable velocity dual feedback control, while position dual feedback control is disabled. 							
Possible Solution	 When enable velocity dual feedback control(Pn-32A = 1), Must enable position dual feedback control(Pn-22A = 1). If velocity dual feedback control is unnecessary, set Pn-32A = 0. 							
Remark	Alarm has been a	added after ve	ersion v2.12.1	0				
All in one ID 2nd Single Axis ID	AL-520							
1st Single Axis ID	AL-38	Alarm Name	Excessive p feedback	oosition error between 1st and 2nd				
Alarm Content	Position error bet	ween 1st and	2nd feedbacl	exceeds allowed level				
Possible Cause	 Belt slip 2nd encoder pulse loss, no feedback or encoder polarity error Gear ratio set incorrectly Pn-51A set too strictly Uses ABZ type as 2nd encoder and the resolution value is wrong 							



		Check belt mechanism.							
			Execute "Encoder test" and observe whether any alarms are triggered. Refer to Auto tuning" section of manual.						
	4. (5.	Check Pn-51A s Manual (Analysi Scales with Ana a. For spin (Pn-51A) b. For axia scale is this para recomm	is platform) or "The P alysis Platform" dle dual feedback, it) as 0.1 times of the 2 l dual feedback, if the R pulse/mm and the p ameter setting (Pn-51 bended to set 2 to 3 ti eedback, please chec	eneration Driver Dual Feedback Tuning os Dual Feedback Control Of The Linear is recommended setting this error bound nd encode resolution. e resolution of the outer feedback linear mechanism has a backlash error of P mm, A) must be greater than P * R, and it is					
All in one ID 2nd Single Axis ID	AL-:	521							
1st Single Axis ID	AL-	1F	Alarm Name	Excessive Following Error					
Alarm Content	Error betwee	en position com	nmand and feedback	is too large					
Possible Cause	4. Rotor ine	verload peed commanc ertia set incorre	ectly						
Possible Solution		 5. Parameter Pn-22C(P6-41) too low 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. 							
	 Check if a Adjust concerning the Adjust concerning th	controller's cor ontroller's acce motor load or c ertia is set too lo r. arameter Pn-22 P6-41) has its pa quency. re Pn-904/Pn-92	ntinuously over 100% mmand changes seve leration time constar hoose a larger rated t ow, output current is C(P6-41). arameter lower boun	rely. ht, set it larger. corque of motor. too small, resulting incorrect control d,the minimum value of Pn-22C is 1/5 of					
All in one 2nd Single A	 Check if Adjust concentration Reduce r Rotor interpretation Rotor interpretation Check para Pn-22C(Flatch free Make surris correct 	controller's cor ontroller's acce motor load or c ertia is set too lo r. arameter Pn-22 P6-41) has its pa quency. re Pn-904/Pn-92	ntinuously over 100% mmand changes seve leration time constar hoose a larger rated t ow, output current is C(P6-41). arameter lower boun	rely. ht, set it larger. corque of motor. too small, resulting incorrect control d,the minimum value of Pn-22C is 1/5 of					

Alarm Content	Alarm Content		Servo on command conflict					
Possible Cause		1. Drive receives Servo On and Auxiliary function at the same time						
Possible Solution					set to enable auxiliary functions ry function at the same time			
Note					s drive version V1.6.9 and after. ve 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	Parame	ter 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 paramete	er saving command	l while Ser	vo Off			
All in one ID 2nd Single Axis ID		AL-524						
1st Single Axis ID		AL-81	Alarm N	ame	Serious Belt slip			
Alarm Content		Speed error between external encoder and estimator is too great						
Possible Cause		 Belt slip Gear ratio error 						
Possible Solution		 Change or tighten belt Set gear ratio properly 						
			atto property					
All in one ID 2nd Single Axis ID		AL-525						
1st Single Axis ID		AL-7C	Alarm Nam	e	Electrical Gear Error			
Alarm Content	Re	elative setting	error					
Possible Cause		Parameter s Encoder con	etting error nmunication type i	not suppo	rted			

Possible Solution	of 2, an 2. If 23 bit 3. Pn-210 4. Please Pn-920 if versio	he ratio of Pn-20E/Pn-210 (P6-08/P6-09) should be integral, and be power f 2, and not more than 256. 23 bit TAMAGAWA encoder is used, Pn-20E can not more than 128. n-210 (P6-09)must set to 1. lease check Pn-900(P3-20). If in DualFeedback control, then check n-920(P6-80). If version is 1.6.x, this function only supports Nikon encoder; version is v2.x, then support Nikon, Sankyo, HCFA and 23/25 bit AMAGAWA 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 be	tween 1st an	d 2nd feedback exceeds allowed level extremely			
Possible Cause	 Belt slip 2nd encoder Gear ratio set 	•	no feedback			
Possible Solution	 Check belt m Execute "Enc "Auto tuning" Measure and 	oder test" ar " section of n				
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 diffe	erence under	gantry control exceeds the limit			
Possible Cause	 Host command polarity setting error The origin setting of the gantry axis is not completed The position deviation alarm threshold is too strict Inertia setting error One of axes is stuck mechanically 					
Possible Solution	 Check the ori Confirm Pn-5 	gin setting o 72 position c tor and loade	leviation alarm threshold r inertia or adjust the inertia			

All in one ID 2nd Single Axis II)	AL-528	3					
1st Single Axis ID	,	-		Alarm Name	No origin p	No origin point for gantry control		
Alarm Content		No origin p	oint fo	or gantry co	ntrol			
Possible Cause		No origin p	oint fo	or gantry co	ntrol			
Possible Solution		Set the cor	rect or	igin for the	incremental e	encoder throu	gh Pn-F46 = 1	
All in one ID 2nd Single Axis ID	AL	AL-529						
1st Single Axis ID			Alar	rm Name	Excessive	Position Erro	r Overflow	
Alarm Content	Exce	essive overfl	ow of	pulse error	between posi	tion comman	d and feedback	
Possible Cause	1. 1	Torque limi [,]	t reach	n, then posi	tion error is to	oo large		
Possible Solution	1. (Check posit	ion tar	get, and se	et proper posit	ion target		
All in one I 2nd Single Ax			AL-5	52F				
1st Single Ax	is ID		AL-:	19	Alarm	Name	Servo On Timeout	
Alarm Content		Ser	vo on l	longer thar	n normal			
Possible Cause			 Power of driver is loss or DC bus voltage is too low. Drive configuration error. 					
Possible Solution		 Check up input voltage if lower than Pn-640(P5-00) supply voltage of specification match between driver rated supply, wirin Pn-640(P5-00) setting. 						•
			Send	back to Syi	ntec or author	ized represen	tative.	
All in one ID 2nd Single Axis ID		AL-530						
1st Single Axis ID		AL-20		Alarm	Name	Zero Speed	Check Fail	

Alarm Content	Zeros	Zero speed check time longer than normal								
Possible Cause	2. E	 Pn-502(P6-15) Zero Velocity Window is set too small External overload Tuning result abnormal 								
Possible Solution	2. P to	 Check Pn-502(P6-15) settings. Set Pn-502(P6-15) larger. Pn-306(P6-10) maximum acceleration and Pn-307(P6-11) maximum JERK time are set too small. Check and set them larger. Check auto tuning parameters. Refer to "Auto tuning" section of manual. 								
All in one ID 2nd Single Axis ID	AL-	AL-531								
1st Single Axis ID	-	-	Alarm	Name	Drive Par	ameter Loaded to Defaults				
Alarm Content	Do loa	ıd defau	ult paramet	er function,	parameter	s have been loaded to default value	е.			
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. Pl	ease re	boot the dr	ive and che	ck if this wa	rning is still exist.				
All in one ID 2nd Single Axis	ID	AI	L-542							
1st Single Axis	ID		-	Alarm	Name	Laser Cruise Mode Failure				
Alarm Content		Laser (Cruise Mode	e Failure						
Possible Cause						on altimeter or LVDT do not support laser cruise mode				
Possible Solution		 Check Pn-920 and set 2nd encoder as altimeter or LVDT Check Pn-330 and encoder setting and correct them 								
All in one ID 2nd Single Axis ID	AL-543	3								
1st Single Axis ID	-	Ala	rm Name	The Prox	imity Spind	lle Position DI setting error				
Alarm Content	More th	nan one	e DI set as th	e Proximity	/ Spindle Po	sition function				

Possible Cause	1. The	1. The Proximity Spindle Position function only can set one DI in one axis									
Possible Solution	1. Che	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 selectifunction							
Alarm Content		The switch function of high and low speed coil can't be opened.									
Possible Cause		2. CNC version	 The wrong setting of Pn-72C Motor Winding Mode CNC version not support winding selection function Only induction spindle support winding selection function 								
Possible Solution		 2. Update CNC 3. Set Pn-700 M 	 Set Pn-72C Motor Winding Mode correctly Update CNC version correctly 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 B	oder Battery Low Voltage Position Loss				
Alarm Content	Encoder battery low, position data is lost.							
Possible Cause	 Battery voltage too low or no battery. Nikon, Panasonic: battery voltage is less than 2.5 V. Mitsubishi: battery voltage is less than 2.9V. HCFA: battery voltage is less than 1.7V. Delta: battery voltage is less than 3.1V. Parameter setting error. 							
Possible Solution	 Change battery With controller: change battery and restart system. Without controller: change battery, set parameter Pn-F44(Fn-34) to 1 and restart drive. 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	Ala	rm Name	2nd Encoder Position Loss				
Alarm Content	Second encoder battery less than 2.5V, multi-turn position data loss							
Possible Cause	 Encoder voltage too low or no battery Nikon, Panasonic: battery voltage is less than 2.5 V. Mitsubishi: battery voltage is less than 2.9V. HCFA: battery voltage is less than 1.7V. Delta: battery voltage is less than 3.1V. Parameter set incorrectly 							
Possible Solution	 Change battery With controller: Change battery and reboot system. No controller: Change battery, set parameter Pn-F44(Fn-34) to 1 and reboot d river. Check parameter Pn-924(P6-83). If not using an absolute encoder, set Pn-924 to 0, save and reboot driver 							

Detailed Instruction	ed 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 Batte	der Battery Low Voltage Alarm				
Alarm Content	ABS type encoder battery voltage lower than 3V.								
Possible Cause	 Battery voltage too low or no battery. Parameter setting error. 								
Possible Solution	 Change battery and restart drive (No need to restart if equipped with Nikon encoder). 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	A	larm Name	Mechatro	olink 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	- A	larm Name	Host Con	nmunication Synchroniz					
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 en				rror			

Alarm Content	Mechatrolin	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		 Position command varies abnormally or unexpectedly 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	-	Aları	n Name	Mecha Error	trolink Interpolation Time Interval Setting				
Alarm Content	Mechatrolin	k interpo	lation time i	nterval s	etting error.				
Possible Cause	1. Mechatr	1. Mechatrolink interpolation time interval setting is outside specified range.							
Possible Solution	1. Raise co value.	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	Alarn	n Name		Host command not updated				
Alarm Content	Host commun	ication W	/DT check er	ror.					
Possible Cause	1. The controller did not update the packet correctly or the host communication chip is abnormal.								
Possible Solution	 Check if the host command sends unexpected performance. 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 com	municat	ion disturbed by noise(Checked by hardware)				

Alarm Content	Host	Host communication CRC check error(Checked by hardware).									
Possible Cause	1. H	1. Host communication is disturbed by noise, which makes the packet unusable.									
Possible Solution	1. C	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 I	D	-		Alarm Name		Host Transmission Cycle Error					
Alarm Content		The transm	issio	n cycle interval var	ied iı	n tolerance which is out of range.					
Possible Cause		1. Host co	mmı	unication varied in	toler	rance which is out of 10% of period.					
Possible Solution		1. Check s	erial	wiring, whether sh	ieldi	ng is correct and if connections are firm.					
All in one ID 2nd Single Axis ID	AL-E6	62									
1st Single Axis ID		Alarn Name		Host communication disturbed by noise(Checked by software)							
Alarm Content	Host	communicati	on C	RC check error(Ch	ecke	d by software).					
Possible Cause	1. H	lost commun	icatio	on is disturbed by r	noise	, which makes the packet unusable.					
Possible Solution	1. C	heck serial w	iring	, whether shielding	g is co	orrect and if connections are firm.					
All in one ID 2nd Single Axis ID	ļ	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. C	 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 c	ommunication disconnect				
Alarm Content	Host con	nmunication dis	connect					
Possible Cause	1. Wire	falling off or loo	se.					
Possible Solution	1. Chec	k serial wiring, v	whether	connections are firm.				
All in one ID 2nd Single Axis ID	AL-E68	3						
1st Single Axis ID		Alarm N	lame	Host communication cont	inuous error			
Alarm Content	Host con	nmunication cor	ntinuous	error.				
Possible Cause	2. The o	 Host communication is disturbed by noise. The controller did not update the packet correctly. The host communication chip is abnormal. 						
Possible Solution				shielding is correct and if conr ends unexpected performanc				
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		 Voltage low for more than 1 second for R, S or T phase with main power on. Parameter setting error. 						
Possible Solution	0	n power supply g single-phase p		oply, 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 temperate	ure of IGBT is over 85°C				
Possible Cause	 Cooling sy Drive outp Ambient t Heat source 	 Severe acceleration change Cooling system failure Drive output short-circuit Ambient temperature overheat Heat source nearby Continuous use while exceeding drive's rated load 				
Possible Solution	 Check if fa Check driv Check driv Check if an Installatio Check env capacity. 	 Increase Pn-307 Check if fan is functioning normally. Check drive's output wiring, refer to "Wiring and Sig Check if ambient temperature is below 55°C, refer t Installation" section of manual. Check environment, remove external heat source o capacity. 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	r is over 105°C			
Possible Cause	 The acceleration is too severe. Motor or driver model selection is mismatch. 					
Possible Solution	 Check if the uresistor. a. Reduction b. Use erection c. Contact 	 Check if the acceleration time setting is too short. Increase Pn-307. Check if the used motor and its load match the driver's built-in regenerative 				

All in one ID 2nd Single Axis ID		A	L-920				
1st Single Axis II)	Α	L-920	Ala	rm Name	Servo On Command Conflict	
Alarm Content		Servo	On comma	nd conflict			
Possible Cause		1. Dr	ive receive	s Servo ON	and auxiliary f	unction command at the same time	
Possible Solution			•			t to enable auxiliary functions. Action 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	Powe	r off tool	retraction	function is	not supported		
Possible Cause	2. TI 3. Po 4. V/	ne settin ower off ′f mode (g of weight detection i or none of e	direction i module dar encoder ap	s wrong. naged	ull-up function pport pull-up function on	
Possible Solution	 If needed, upgrade controller version Please set Pn-805 to 1 or -1 Set Pn-804 = 0 to disable power off pull-up function, or send back to Syntec Check Pn-330 and encoder setting and correct them If you do not need to enable gantry control, please disable Pn-830 and Pn-840 					them	
All in one ID 2nd Single Axis ID		AL	-922				
1st Single Axis ID		-		Aları	n Name	Proximity Position is not supported	
Alarm Content		Proximity Position is not supported					
Possible Cause		 Controller version doesn't support Proximity Position function Not support Proximity Position function with Dual Feedback Control 					

Possible Solution		versi 2. Set F	on if needed	switch function or upgrade CNC switch function or check A)			
All in one ID 2nd Single Axis ID							
1st Single Axis ID		A	L-923		Alarm Name	Cooling Fan Error	
Alarm Content		Trigge	red when po	wer sta	ge reports abnormali	ity	
Possible Cause		1. Co	ooling fan fail	ure			
Possible Solution		1. Se	nd back to S	yntec o	r authorized dealer fo	or repairs	
All in one ID 2nd Single Axis ID	AL	AL-925					
1st Single Axis ID		-	Alarm Na	me	ne Control mode not applicable with tuning function		
Alarm Content	Corre	espondii	ng tuning fun	ction is	not applicable to the	e control mode or other settings	
Possible Cause	2. E	•		•	s not applicable to tu e or parameter settin	ning function g is not applicable to tuning	
Possible Solution	 Check Pn-330 if the tuning function is supported with it and correct it 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	Pleas	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 Na	me	EEPROM Can't exe Data	cute the Function of Write	
Alarm Content	EEPR	OM-Wri	te Protect Pir	n Could	n't Pull-Low		

Possible Cause		Hardware - Frontstage can't execute pull-low to EEPROM-write protect pin Software - The EEPROM's data of frontstage is error							
Possible Solution	Plea	ase 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 ch	eck 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		 Battery volta Parameter se 	ge too low or no battery etting error						
Possible Solution		 Replace the battery. If using Panasonic encoder, then restart driver. If using Nikon, Mitsubish, Delta or Tamagawa encoder, then don't need to restart. If not ABS encoder, set drive parameter Pn-904(P3-23) to 0, save and restart. 							
Detailed Instructions		[Pn-D95]Enc Erro	or 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 s	ource voltage abnormal						
Possible Cause			der power source voltage Ier power source voltage i						

Possible Solution	 Check encoder wiring and grounding If this is a recurring problem, send back to Syntec or authorized dealer for repairs 						
Detailed Instructions	[Pn-D95]Enc Error S	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 am	plitude is too low.					
Possible Cause	1. FeeDat encode	1. FeeDat encoder signal amplitude is too low. D+ D- signal may be disturbed.					
Possible Solution	 Check encoder wiring and grounding 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		etween A/B phase and Z ir n of encode is error possi	ndex is different in each revolution, bly.				
Possible Cause	 Syntec encoder: Syntec encoder's firmware version is outdated Encoder is under noise interference, which causing feedback signal error. Encoder's signal is interfering by rotor's axis with magnetic Hallow magnetic ring Zindex position is differ from the setting parameter Magnetic ring's non-Zindex zone has magnetic field distribution Non-Syntec encoder: The circuit board of non-Syntec encoder is broken. Non-Syntec sensor and encoder are wrong assembly. 						

Possible Solution	Syntec encoder	:					
	 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. Check if encoder and motor are grounded. Check if joining between encoder cable and motor is double end grounded. Short term countermeasure: Magnetic axle center causing AL-54 SOP Long term countermeasure: Cross-Strait motor plants import axle center inspections starting 2016/7 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 Send the encoder to Syntec or authorized representative for repair. Non-Syntec encoder: Check the gap between sensor and encoder is correctly. Send back to Syntec Corp. 						
Detailed Explanations and SOP	AL-54 Issue Prob	AL-54 Issue Problem Shooting					
All in one ID	AL-935						
2nd Single Axis ID							
1st Single Axis ID	AL-935	Alarm Name	ABS Type 2nd Encoder Battery Low Voltage				
Alarm Content	2nd ABS encoder	battery voltage lower tha	n 3V				
Possible Cause	 Battery volta Parameter se 	ge too low or no battery etting error					
Possible Solution	 Replace the battery. If using Panasonic encoder, then restart driver. If using Nikon, Mitsubish, Delta or Tamagawa encoder, then don't need to restart. If not ABS encoder, set drive parameter Pn-924(P6-83) to 0, save and restart. 						
Detailed Instructions	[Pn-D96]2nd End	[Pn-D96]2nd Enc Error Status ALMC					
All in one ID 2nd Single Axis ID	AL-936						

1st Single Axis ID	AL-936	Al	arm Name	2nd En	coder Low Voltage				
Alarm Content	2nd encoder	2nd encoder power source voltage too low							
Possible Cause			ver source volta er source volta		nt or insufficient nt				
Possible Solution	 Check encoder wiring and grounding If this is a recurring problem, send back to Syntec or authorized dealer for repairs 								
Detailed Instructions	[Pn-D96]2nd	Enc Error S	Status ALMC						
All in one ID 2nd Single Axis ID	AL-937								
1st Single Axis ID	AL-937	Ala	rm Name	2nd Enco	der Signal Abnormal				
Alarm Content	2nd Encoder signal amplitude is too low.								
Possible Cause	1. FeeDat e	ncoder sigr	nal amplitude is	s too low. D-	+ D- signal may be disturbed.				
Possible Solution			ng and groundi problem, send	-	tec or authorized dealer for repairs				
Detailed Instructions	[Pn-D96]2nd	Enc Error S	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 revolus so feedback position of encoder is error possibly .								

Possible Cause	Synte	ec encoder:	Syntec encoder:						
	2. Er 3. Er 4. Ha 5. M 6. Ha Non-5	 Second encoder's firmware version is outdated Encoder is under noise interference, which causing feedback signal error. Encoder's signal is interfering by rotor's axis with magnetic Hallow magnetic ring Zindex position is different than from the written parameter. Magnetic ring's non-Zindex zone has magnetic field distribution Hardware malfunction Non-Syntec encoder: 							
			Syntec encoder is broken. Incoder are wrong assembly.						
Possible Solution	Synte	ec encoder:							
	2. Cl 3. Cl 3. Cl gr 4. Sl M Lc Ci 5. Sl Ra af Al Lc In 6. Se Non-S 1. Cl	 Syntec encoder: 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. Check if second encoder and motor are grounded. Check if joining between second encoder cable and motor are is double end grounded. Short term countermeasure: Magnetic axle center causing AL-54 SOP Long term countermeasure: Cross-Strait motor plants import axle center inspections starting 2016/7 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 Send the second encoder to Syntec or authorized representative for repair. Non-Syntec encoder: Check the encoder is contaminated by dust or oil. Check the gap between sensor and encoder is correctly. 							
Detailed Explanations SOP	and Refer	Refer to AL-54 Issue Problem Shooting							
4 in 1 ID	AL-93A	L-93A							
1st Single Axis ID	-	- Alarm Name Encoder Setting Wrong							
Alarm Content	Encoder para	oder parameters are illegal							

Possible Cause Possible Solution	 3. 2r 4. W 5. W 6. W 7. C 	 With SYNTEC encoder, Pn-911 is not illegal according to Pn-700 Ind Encoder: Pn-924 is not relative to Pn-920, Pn-335 With SYNTEC 2nd encoder, Pn-931 is not illegal according to Pn-335 With SYNTEC encoder, encoder ver. is not compatible with thermal resistance With SYNTEC encoder, 2nd encoder ver. is not compatible with thermal resistance With HEIDENHAIN encoder, current encoder sensing type is not supported Check Pn-904, Pn-900, Pn-700 settings. If using linear encoder, please set Pn-904 nto 2 or 0, dependent to Pn-900. If using non-incremental encoder, please set Pn-904 nto 2 or 1 instead of 0. Check Pn-911, Pn-700 settings. If Pn-911 is set to 1, Pn-700 must be 0 or 2; if Pn-911 s set to 2, Pn-700 must be 1 and check Pn-282 if legal 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, olease set Pn-924 into 2 or 1 instead of 0. 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 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 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. 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. Check Pn-900 and Pn-920 parameter manual to check whether the encoder sensi						
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		 Permanant magnet motor applied to spindle cannot support dynamic braking Using Induction motor or power stage not support 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						
		 When Pn-700 = 2, Pn-004 cannot be 1 When Pn-001 = 2, Pn-004 cannot be 1 						
All in one ID	AL-942	AL-942						
2nd Single Axis ID								
1st Single Axis ID	-	Alarm Name	Abnormal Motor Parameter Estimation - Too Large Test Current					
Alarm Content	During motor par equal to 0.707 tim		searched current command is greater or					
Possible Cause	2. Wrong moto	 Mechanical abnormality or excessive motor load inhibits motor rotation. Wrong motor nameplate parameters lead to unexpected voltage command, rotational speed, or current command. 						
Possible Solution	the load cann tuning". 2. Check the mo	 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". 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 sett	ing is not correct with s	specification					
Possible Cause			l mode, VLIM option listens to M3 packet t of IO functions are still set					
	 4. When reg regenerat 5. Pn-10A Fe internal li 6. RTD prote 7. Gantry co a. Ch b. Ch c. Ch d. Ch 	 Speed control mode wrong set When regenerator protection is turned-on, driver detects the parameter of regenerative resistor is not complete. Pn-10A Feedforward time constant is too small. Filter bandwidth exceeds internal limit. RTD protection parameters wrong set. Gantry control setting error. Check Pn-830. Check the encoder resolution of gantry control axes. Check that Pn-904 = 1 is a multi-turn absolute encoder. Check Pn-845. Check Pn-846 and Pn-848. 						

Possible Solution	 When using driver torque mode, set Pn-003 to zero and set Pn-407 or 0n-480 according to motor type Check up the corresponding IO function used by STO function are set to 1000(default). Recover those IO function settings to default value Field Orientation Control is not allowed with none of encoder applied. Please correct Pn-330 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. Set Pn-10A = 0 as default, or increase Pn-10A Using RTD protection, please check Pn-548~Pn-54A and Pn-752 setting are correct or not. 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 su	pport STO function				
Possible Cause	1. Driver does not support STO function					
Possible Solution	 Please check up driver model in STO user manual 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	 Addon card does not support RTD function. Support RTD port numbers of addon card not match parameter setting. 							
Possible Solution	 Make sure the cannot suppo Make sure the 	addon card spec. The addon card can support RTD function. If the addon card ort RTD function, turn off Pn-548~Pn-54A and set Pn-752 to 0. The addon card can support the setting of port number. Depends d 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 Na	Alarm Name		echatrolink position command error			
Alarm Content	Mechatrolin	k position com	nmand er	ror, recei	ived positio	n command too large.		
Possible Cause		Position command is too large, probably abnormal increment compared with ast command						
Possible Solution		command var p software ver				dly inform the manufacturer.		
All in one ID 2nd Single Axis	ID	AL-950						
1st Single Axis I	D	-		Alarm N	ame	Regenerative Overload		
Alarm Content	hig	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	2.	The selection to be recheck When using in	n or coolir ked. nternal re nternal re	ng condit esistor, P esistor, th	ion of exter n-647、Pn- ne frequency	648 is not set properly. nal regenerative resistor needs 648 is not set to 0. y of motor acceleration/		
Possible Solution	2. 3. 4.	correctly. When using e recheck the s When using in When using in decrease the value of Pn-3 using an exte	ing external resistor, please check if Pn-647 Pn-648 is set r. ing external resistor and parameters are set correctly, please the selection or cooling condition of resistor. ing internal resistor, please check if Pn-647 and Pn-648 are set to 0. ing internal resistor and parameters are set correctly, please the frequency of motor acceleration/deceleration or increase the Pn-306 Pn-307. If the alarm is raised consistently, please consider external resistor. rative resistor protection is not required, please set Pn-649 to 0.					
All in one ID 2nd Single Axis		\L-95F						
1st Single Axis ID - A			Alarm Na	ame	Driver Red	ceive Illegal Command		
Alarm Content	Driv	ver receive ille	gal Main (Comman	d or Sub Co	ommand		

Possible Cause		1. Mechatrolink communication error.						
Possible Solutior	ı	1. Chec	k serial port	wiring and shielding				
All in one 2nd Single A		AL-9	61					
1st Single A	xis ID	- Alarm Name I2C Communication Time						
Alarm Content	I	I2C comn	nunication ti	meout between front st	tage a	nd power stage		
Possible Cause			read from po driver, still 30		r 3000	00 times connection. (if using		
Possible Solution		 Check earthing of driver. Send back to Syntec Corp. If this alarm shows up while saving dead time compensation table or current calibration table, try saving again to reset alarm. 						
All in on 2nd Single		A	L-970					
1st Single	Axis ID		-	Alarm Name	Over Voltage			
Alarm Content		DC BUS	Svoltage is a	bove drive's warning lev	vel 10	0%		
Possible Cause		2. AC	power sourc	ows, brake resistance ca e input voltage too high are malfunction		deplete regenerated energy		
Possible Solutior	1	 Check regenerative resistor's specifics, refer to "wiring and signal" second manual. Check if AC power source matches drive specifics. Ruling out the above solutions, hardware may be damaged. Send back Syntec or authorized dealer for repairs. 						
All in one ID 2nd Single Axis ID	AL-97 <i>4</i>	A						
1st Single Axis ID	-		Α	Alarm Name H		t Command Inexecutable		
Alarm Content	A command is	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	 Check software version of host controller. Please contact Syntec corp. or retailer 							
All in one 2nd Single A		AL-97B						
1st Single A	xis ID	-	Alarm Name	Comr	mand Beyond Limit			
Alarm Content		Torque command	or VLIM beyond maximum v	alue.				
Possible Cause		 When driver is in torque control mode, torque command is larger than motor maximum torque. When driver is in torque control mode , VLIM is larger than motor maximum speed. When driver is in laser cruise mode, VLIM is larger than motor maximum speed. 						
Possible Solution		 When driver in torque control mode, let the value of torque command smaller than maximum torque of motor. 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. 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 2nd Single A		AL-980						
1st Single A	xis ID	AL-980	Alarm Name	Spee	d estimator error			
Alarm Content		Speed error is grea	ter than 5% of the speed co	ommano	d 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 or 2nd Single		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 ra					
Possible Solution		-	e or tighten belt nr ratio correctly				
All in one ID 2nd Single Axis ID		AL-982					
1st Single Axis ID		AL-982	Alarm Name		ry control position feedback ation is too large		
Alarm Content		der gantry cor eck value	ntrol, the position deviati	on of th	ne two axes exceeds the warning		
Possible Cause	2. 3. 4.	 Host command polarity setting error The origin setting of the gantry axis is not completed The position deviation warning threshold is too strict Inertia setting error One of axes is stuck mechanically 					
Possible Solution	2. 3. 4.	Reset the end Confirm the p Set the corre	I-020 host command pola coder origin of the gantry position deviation thresh ct rotor and loader inerti axis is mechanically stuc	v axis or old Pn- a, or ad	set Pn-F44 = 1 570 and Pn-572		
All in one ID 2nd Single Axis ID		AL-983					
1st Single Axis ID		AL-983	Alarm Name	9	Gear ratio incorrect		
Alarm Content	-	The error of es	stimated gear ratio and s	etup ge	ear ratio is too big.		
Possible Cause		1. Gear ratio	setup error.				
Possible Solution		 Check gear ratio parameter Pn-20A, Pn-20C and Pn-D5C Gear Ratio Error. Set gear ratio correctly. 					
All in one ID 2nd Single Axis ID	AL-	990					
1st Single Axis ID		-	Alarm Name	Ir	nitialization fail when tuning		

Alarm Content	Initializat	Initialization fail when tuning							
Possible Cause	1. Parai	meter settings err	or						
	2. Wron	g setting of Gear I	Ratio Es	stimation					
	3. The s	ettings of Moving	ttings of Moving Direction Limit and Motion Limit are conflict						
	4. Wron	ig setting of Coggi	ing Torc	que Compensation	Tuning				
			not support without encoder Incoder-Rotor Offset Detection setting						
Possible Solution	1. Set p	arameters correct	tly, set o	drive parameter Pn	-F10 to 0 a	nd redo tuning.			
	2. Gear Ratio Estimation only supports induction motor. Please check Pn-700=2.								
		Ratio Estimation se check.	doesn't	support the setting	g without 2	2nd encoder feedback,			
		ettings of Moving ng of Pn-504, Pn-F			n Limit are	conflict. Please check the			
				que Compensation r Pn-F14 and Pn-F1		ease check the range of Pn- ame sign.			
			unicatio	n type and port nu	mber of Pr	ו-900, Pn-901, Pn-920 and			
					2. When us	se Encoder-Rotor Offset			
All in one ID 2nd Single Axis ID		AL-991							
1st Single Axis	; ID	-	J	Alarm Name	Unable t Calculat	to enable High Cycle ion			
Alarm Conte	nt	High Cycle Calcul	ation u	nsupported					
Possible Caus	se	1. PWM frequen	icy set a	bove 8000Hz, High	Cycle Calo	culation unsupported			
Possible Solut	ion	 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 A	kis ID	-		Alarm Name		Over Travel			
Alarm Cont	tent	laser cruise n	node, lo	ocation is about to e	exceed tra	vel limit			

Possible Cause	 Cutting Head Exceeds Workpiece Range Capacitive feedback abnormality Improper setting of travel limit
Possible Solution	 Raise the Z axis after not ready to cut, restart after replacing the workpiece Strengthening anti-jamming 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	Drive	r Internal Operation Error			
Alarm Content	An internal progra	am error occurred in the di	river.				
Possible Cause	An internal progra	am error occurred in the di	river.				
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	Underflo	DW .			
Possible Cause	Either overflow o	r underflow occurs by hard	lware co	omputation			
Possible Solution	Please contact di	stributor or Syntec represe	entative.				
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	 Cooling system failure Drive output short-circuit Ambient temperature overheat Heat source nearby Continuous use while exceeding drive's rated load 						

Possible Solution	 Check if fan is functioning normally. Check drive's output wiring, refer to "Wiring and Signal" section of manual. Check if ambient temperature is below 55°C, refer to "Transportation and Installation" section of manual. Check environment, remove external heat source or enhance cooling capacity. 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 powe	er module overload				
Possible Cause Possible Solution	 Overload Encoder or mod Encoder failure Current gain m correction or i Eliminate med Check if I_{dq} cur parameter Pn- Refer to "Wiring 	e nismatch while running enc nduction motor parameter hanical factors. rrent feedback Pn-D30(D1-1 -651(P5-02), if so we sugges ng and Signal" section of ma	oder test, magnetic encoder estimation .6) has been greater than the			
	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		voltage caused by braking r exceeds drive's rated input failure				

Possible Solution	 Check regenerative resistor's specs, refer to "Wiring and Signals" section of manual. Check if AC power supply is compatable with drive. 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 ve	oltage	e is lower than driver'	s rated	input voltage		
Possible Cause	 AC power su Drive hardw 						
Possible Solution	2. If the above	scen	r supply matches driv ario is ruled out, cont o check hardware.				
All in one ID 2nd Single Axis ID	AL-112						
1st Single Axis ID	AL-2D		Alarm Name	Powe	er Cable Disconnected		
Alarm Content			nection detected at m age saturates for over		on-zero speed econds (0.5 seconds in 1st		
Possible Cause	 Abnormal incr Acceleration ti Drive is under 	 3 phase power cables are loose Abnormal incremental encoder feedback Acceleration time is set too short Drive is under voltage when doing Encoder-rotor Offset Calibration. Drive hardware failure 					
Possible Solution	 Redo "Encode manual), if this Increase Pn-30 a. Please check voltage(220V-> b. Lower the ra Calibration. Th under voltage, If the above sc 						

All in one ID 2nd Single Axis ID	AL-113				
1st Single Axis ID		Alarm Name	Power Failure		
Alarm Content	Power supply phas	se failure			
Possible Cause	 Drive cables ar Power supply Drive hardward 	failure			
Possible Solution	 Check power s If the above sc 	oles for damage or looseness ource. enarios are ruled out, contac to check hardware.			
Remark		arm is triggered only when F 1.0, disable to detect this ala			
All in one ID 2nd Single Axis ID	AL-114				
1st Single Axis ID		Alarm Name	Severely Low Voltage		
Alarm Content	Power supply voltag	ge is far lower than the prote	ctive level.		
Possible Cause	 Power supply vo Drive hardware 	oltage is lower than the 40% failure.	normal level.		
Possible Solution	 Ensure the DC bus voltage is stable when the driver is working. 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 ex	ceeds 150% of the drive's pe	ak current		

1st Single Axis ID	AL-1A	Alarm Name	Power Module Over Current				
Alarm Content	Drive detects exces	Drive detects excessive current on power module.					
Possible Cause	 Wire UVW shor Drive connector Motor is mecha Power module Unbalanced m 	 Internal motor UVW short or UVW to ground short Wire UVW short or UVW to ground short Drive connector UVW short or UVW to ground short Motor is mechanically stuck which leads to abnormally heavy load to drive Power module failure Unbalanced motor 3 phase resistance Current module becomes aged 					
Possible Solution	 Wire short, rep Drive failure, ref Eliminate mech decrease load Turn off drive p W are shorted. Once certain of check hardwar Check if motor motor coil dam Measure if UV, resistance to g Or do the enco If rotation is be module may be 	 Bad insulation in motor, replace motor Wire short, replace wire Drive failure, replace drive Eliminate mechanical reason, increase acceleration time and jerk time, decrease load 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. 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. If rotation is below 100rpm, the drive still sends alarm. It means current module may become aged and is related to hardware life. 					
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 Senso	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 Axi	SID AL-1E		Alarm Nam	e	Hall sensor error 2		
Alarm Content		Hall Current Sensor(IB) failure					
Possible Cause		1. V phase	curren	t senses loop failur	е		
Possible Solution		1. Contact	distrib	outor or Syntec rep	esentat	ive to check hardware.	
All in one ID 2nd Single Axis ID	A	L-124					
1st Single Axis ID				Alarm Name	Ρο	wer Module Over Current 2	
Alarm Content	Drive dete	ects excessive	curren	t on power module			
Possible Cause	3. Encoc 4. Unbal	oad ler and/or mo ler malfunctio anced motor r module failu	on 3 phas	-			
Possible Solution	 Check manu Redo Check dama Measu groun Turn o indica 	Check if I _{dq} current feedback exceeds drive's peak current. Check encoder and motor U,V, W cables. Refer to "Wiring and signals" section of nanual. Redo "Encoder test" and check for alarms, refer to "Auto tuning" section of manual. Check if motor 3 phase's resistances are equal. If not, this may indicate motor coil lamage, which activates this alarm. Measure if UV, UW, VW resistances are equal (Not recommended when resistance to ground is infinite). Turn off drive power and measure if P/N(+/-) and U/V/W are shorted. Short circuits indicate a broken transistor.					
All in one ID 2nd Single Axis ID	AL-1	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 II 2nd Single Axi		AL-130				
1st Single Axis	s ID	AL-21	Alarm Name	Regenerative resistance error		
Alarm Content		Triggered when po	ower stage reports abnorm	ality.		
Possible Cause		1. Switching tran	sistor of regenerator is fail	ure.		
Possible Solution			stor of regenerator is short entative for hardware repai	ed, if so, send back to distributor or r.		
All in one ID 2nd Single Axis ID	AL-131					
1st Single Axis ID		AL-22	Alarm Name	Cooling Fan error		
Alarm Content	Triggerec	red when power stage reports abnormality.				
Possible Cause	1. Cooli	ng fan is malfunctic	on or failure.			
Possible Solution		k If cooling fan is da ardware repair.	mage, if so, send back to d	istributor or Syntec representative		
All in one I 2nd Single Ax		AL-132				
1st Single Axi	ingle 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 repre	esentative for hardware repair.		

All in one ID	AL-133	
2nd Single Axi s ID		

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. 							
Possible Solution	3. The inverter inf	 Triggered when the number of detected current sensors is abnormal. The inverter informations of current sensor is wrong Send back to distributor or Syntec representative for hardware repair. 1st Single Axis: 						
	a. Change consiste	nt)7) to Power Stage ID read(D1-70) if not 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 c	lrive operate FRAM.			
Possible Cause	 Save parameters while power is off. Communication between drive and FRAM is disturbed. FRAM reached it's maximum write limit. 				
Possible Solution		.	tributor or Syntec representative		
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	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 Nam	e	FRAM CRC Error	
Alarm Content	FRAM data is e	error.				
Possible Cause	1. The mem	ory of	parameters is dama	aged.		
Possible Solution	save. 2. If this is a	recuri	eters have been tam ring event, send bac for hardware repair.	k to dist	ith. Correct parameters and ributor or Syntec	
All in one ID 2nd Single Axis ID	AL-137					
1st Single Axis ID	-		Alarm Name	Cal	culation sequencal error	
Alarm Content	Insufficient calc	ulatio	n time.			
Possible Cause	1. Insufficient	1. Insufficient calculation time				
Possible Solution	 Disable unn Decrease Pr 		ary functions. High Cyclc Calculati	on Level.		
All in one ID 2nd Single Axis ID	AL-138					
1st Single Axis ID			Alarm Name		eters saving failed in nent 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 co alarm.	rrect p	parameters or using	earlier s	ettings. Do alarm reset to clear	

All in one ID 2nd Single Axis ID	AL-139					
1st Single Axis ID	-		Alarm Name		PowerStage Error	
Alarm Content	PowerStage D	etect	s Error			
Possible Cause	1. Drive dete	cts e	xcessive current or ov	ver hea	t on power module	
Possible Solution	1. Follow the	inst	ruction if any alarm sl	nows u	р	
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 modul	e ID (data error			
Possible Cause	interfered.	2. Any of module number, extend card number, add-on card number is over				
Possible Solution	reboot the 2. Check the c	 Check wiring, especially if shielding is connected to ground correctly. Then reboot the drive. Check the drive, IO extend card, and add-on card are official version. Send back to Syntec. 				
All in one ID	AL-13B					
2nd Single Axis ID						
1st Single Axis ID	- Alarm Name RTD Add-on Card SSI Communication Error					
Alarm Content	RTD add-on card SSI communication error					
Possible Cause	2. FPGA version	 RTD add-on card loose or not connected. FPGA version not support RTD function. SPI communication error causing by memory ageing or communication interfered. 				

Possible Solution	 Check RTD add-on card connected correctly. Make sure the FPGA version is v2.14.3 or up. If not, update Drive version to v2.14.105 or up. If don't need to use RTD function, please set Pn-548~Pn-54A and Pn-752 to 0. Then reboot the drive. Check wiring, especially if shielding is connected to ground correctly. Then reboot the drive. 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 info	rmations				
Possible Cause	The front stage in	formations can not be read	l correctly				
Possible Solution	Send back to Synt	ec					
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	 When using external resistor, Pn-647、Pn-648 is not set properly. The selection or cooling condition of external regenerative resistor needs to be rechecked. When using internal resistor, Pn-647、Pn-648 is not set to 0. When using internal resistor, the frequency of motor acceleration/ deceleration is too high or too intense. Regenerative resistor protection is not turned-off. 						
Possible Solution	 Regenerative resistor protection is not turned-off. When using external resistor, please check if Pn-647、Pn-648 is set correctly. When using external resistor and parameters are set correctly, please recheck the selection or cooling condition of resistor. When using internal resistor, please check if Pn-647 and Pn-648 are set to 0. 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. 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	 Check if there is an external negative load applied on motor. The resistance of internal resistor is too large. 					
Possible Solution	 Remove the external negative load. 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	 Turning Gain is too high Drive's PM module error 				
Possible Solution	 Check if output current oscillates, lower Tuning Gain parameter Fn-18 to 20, if problem persists, lower gradually to 5. 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°C IGBT temperature stays above 100°C		
Possible Cause	 Cooling system failure Drive output short-circuit Ambient temperature overheat Heat source nearby Continuous use while exceeding drive's rated load 		
Possible Solution	 Check if fan is functioning normally. Check drive's output wiring, refer to "Wiring and Signal" section of manual. Check if ambient temperature is below 55°C, refer to "Transportation and Installation" section of manual. Check environment, remove external heat source or enhance cooling capacity. 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	 Overload during operation due to mechanical factors Overload Encoder or motor wiring error Encoder failure 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	 Excess DC BUS voltage caused by braking resistor when motor slows AC power input exceeds drive's rated input voltage Drive hardware failure 		
Possible Solution	 Check regenerative resistor's specs, refer to "Wiring and Signals" section of manual. Check if AC power supply is compatable with drive. 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	 AC power supply is too low Drive hardware failure 		
Possible Solution	 check if AC power supply matches drive specs. 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	 Power cable disconnection detected at motor non-zero speed Drive's 3 phase voltage saturates for over 0.15 seconds (0.5 seconds in 1st Single Axis) 		
Possible Cause	 3 phase power cables are loose Abnormal incremental encoder feedback Acceleration time is set too short Drive is under voltage when doing Encoder-rotor Offset Calibration. Drive hardware failure 		
Possible Solution	 Check UVW cables between motor and drive for damage or looseness. Redo "Encoder test" and check for alarms (refer to "Auto tuning" section of manual), if this alarm goes off the cause may differ. Increase Pn-307(P6-11) Maximum Jerk Time. 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. 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	 Drive cables are loose Power supply failure Drive hardware failure 		
Possible Solution	 Check RST cables for damage or looseness. Check power source. 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 volta	age is far lower than the pro	tective level.
Possible Cause	 Power supply voltage is lower than the 40% normal level. Drive hardware failure. 		
Possible Solution		bus voltage is stable when t enario is ruled out, please s	0

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 e	exceeds 150% of the drive's	s peak current
Possible Cause	 Encoder error Current loop g Tuning or Moto 	or Parameter Estimation otor 3 phase resistance	ror er test, Magnetic Pole Offset

Possible Solution	 Check if I_{dq} current feedback is greater than 150% drive's peak current. Check encoder and motor U,V, W cables. Refer to "Wiring and signals" section of manual. Redo "Encoder test" and check for alarms, refer to "Auto tuning" section of manual. 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. 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). 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	 Internal motor UVW short or UVW to ground short Wire UVW short or UVW to ground short Drive connector UVW short or UVW to ground short Motor is mechanically stuck which leads to abnormally heavy load to drive Power module failure Unbalanced motor 3 phase resistance Current module becomes aged 		

	 Bad insulation in motor, replace motor Wire short, replace wire Drive failure, replace drive Eliminate mechanical reason, increase acceleration time and jerk time, decrease load 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. 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. 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.
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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 Senso	or(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 of	urrent on power module.	
Possible Cause	 Overload Encoder and/or motor Encoder malfunction Unbalanced motor 3 Power module failur 	phase resistance	
Possible Solution	 Check encoder and r manual. Redo "Encoder test" Check if motor 3 pha damage, which activ Measure if UV, UW, V ground is infinite). Turn off drive power indicate a broken tra 	and check for alarms, refer se's resistances are equal. ates this alarm. W resistances are equal (No and measure if P/N(+/-) and msistor.	ak current. o "Wiring and signals" section of to "Auto tuning" section of manual. If not, this may indicate motor coil of recommended when resistance to d U/V/W are shorted. Short circuits Syntec representative to check

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 sup wrong.	ported, and the axis card port n	umber in controller setting interface is

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 Axi s ID	AL-133		
1st Single Axis ID	AL-53	Alarm Name	Inverter Type Error
Alarm Content	detected from pow	ggered when power stage param er stage, is mismatch. ; le Axis: Triggered while accessi	neters and the parameter, which is ng power stage information.
Possible Cause	 1st Single Axis: Control board is incompatible with Power Stage ID(P5-07) Parameter Power Stage ID(P5-07) setting error All in one/2nd Single Axis: Triggered when power stage information stored on power stage cannot be read. Triggered when the number of detected current sensors is abnormal. The inverter informations of current sensor is wrong 		
Possible Solution	 Send back to distributor or Syntec representative for hardware repair. Ist Single Axis: Change the value of Power Stage ID(P5-07) to Power Stage ID read(D1-70) if not consistent 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	 Save parameters while power is off. Communication between drive and FRAM is disturbed. FRAM reached it's maximum write limit. 		

Possible Solution	 Please save parameters while power is on. 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	 Check if parameters have been tampered with. Correct parameters and save. 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	 Disable unnecessary functions. 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	 Module ID data error causing by memory ageing or communication interfered. Any of module number, extend card number, add-on card number is over range.
Possible Solution	 Check wiring, especially if shielding is connected to ground correctly. Then reboot the drive. Check the drive, IO extend card, and add-on card are official version. 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	 RTD add-on card loose or not connected. FPGA version not support RTD function. SPI communication error causing by memory ageing or communication interfered. 		
Possible Solution	 Check RTD add-on card connected correctly. Make sure the FPGA version is v2.14.3 or up. If not, update Drive version to v2.14.105 or up. If don't need to use RTD function, please set Pn-548~Pn-54A and Pn-752 to 0. Then reboot the drive. Check wiring, especially if shielding is connected to ground correctly. Then reboot the drive. 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	 When using external resistor, Pn-647 Pn-648 is not set properly. The selection or cooling condition of external regenerative resistor needs to be rechecked. When using internal resistor, Pn-647 Pn-648 is not set to 0. When using internal resistor, the frequency of motor acceleration/ deceleration is too high or too intense. Regenerative resistor protection is not turned-off. 				
Possible Solution					

8.30 AL-151 Regenerative Instant Overload

All in one ID 2nd Single Axis ID	AL-151				
1st Single Axis ID	-	Alarm Name	Re	egenerative Ins	tant Overload
Alarm Content	When using internal resistor, the regenerator is turned-on for too long.				
Possible Cause	 Check if there is an external negative load applied on motor. 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 moto	Drive detects motor overheat.				
Possible Cause	 Motor cooling system malfunction Digital temperature sensor setting error KTY84 thermal sensor setting error Motor rated current setting error Insufficient acceleration time Overload 					
Possible Solution	 Check motor cooling system. Correct parameter Pn-50A(P1-40) to Pn-50F(P1-61) according to digital temperature feedback(A or B). 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. Check rated current parameter Pn-710(P3-14). Check acceleration parameter Pn-306(P6-10) , add acceleration/ deceleration time. 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 abo	ve 120% of it's maximum spe	eed.			
Possible Cause	 Motor power cable U,V,W phase order incorrect Encoder malfunction Motor parameter loading error Sever system severe overshoot Severe speed command change Drive software outdated Encoder misses packets causing acceleration to be too great 					

Possible Cause	 Motor is stuck due to mechanical factors, leading to overload during operation Continuous operation while exceeding drive's rated current Encoder or motor wiring error Encoder malfunction 				
Alarm Content	Motor exceeds S2(short time duty) time limit.				
1st Single Axis ID	AL-16		Alarm Name	Overload	
All in one ID 2nd Single Axi s ID	AL-20	2			
Detailed Ins	tructions	AL-14 Iss	ue Trouble Shooting		
		4.12) 6. Capt conti make wire.	ave corrected drive alarm specs, pleas ure JOG speed wave form and observe inuous.Check inside the junction box w e sure the shielding wire is connected t Observe whether there is value Pn-D73 28,D1-29,D1-46,D1-47).	if speed change is not where the encoder is attached, o the motor's ground	
		to Pr 4. Chec	ration of the machine can be observed h-102(P2-01 to P2-03). k if controller's commands shift too fre leration and deceleration time constar	equently, increase controller's	
		there pleas Cent	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.		
		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.			
Possible Solutio	Possible Solution		xecute "Encoder test ", check if alarm AL-302(AL-24) appears. Refer to Auto tuning" section of manual. xecute "Encoder test ", check if any alarms appear. Refer to "Auto uning" section of manual. a. Correct power cord phase order or change parameter		

Possible Solution	2.1 Check if loa acceleration/ o 2.2. Refer to m	Check if difference between command and motor speed feedback is too great. L Check if load rate is over 100%, enhance motor capacity, lower motor load or increase celeration/ deceleration time constant. 2. Refer to motor specification to correctly set Pn-72A(P4-50) values. Increase allowed				
	high.Refer to r	load time limit so the alarm doesn't frequently go off when limit standards are too NRefer to motor specification to correctly set Pn-72A(P4-50) values. Increase allowed load time limit so the alarm doesn't frequently go off when limit standards are too high.				
	manual.	-	and U,V,W cables, refer to "Wir eck for alarms, refer to "Auto tu			
All in one ID 2nd Single Axis II		AL-203				
1st Single Axis ID	ŀ	\L-31	Alarm Name	Over Torque 1		
Alarm Content	Motor torq	Motor torque exceeds torque level 1 countinuously for over torque check time 1.				
Possible Cause	2. Encode	is stuck due to machanical factors, leading to overload during operation er or motor wiring error er malfunction				
Possible Solution	2. Check v of man	 Check if difference between command and motor speed feedback is too great. Check wiring between encoder and U,V,W cables, refer to "Wiring and Signal" section of manual. 				
	3. Execute	e "Encoder test" ar	nd check for alarms, refer to "Au	to tuning" section of manual.		
All in on	e ID	AL-204				
2nd Single	Axis ID					
1st Single Axis ID		AL-32	Alarm Name	Over Torque 2		
Alarm Content Motor torque exercice 2			ceeds torque level 2 countinuou	ısly for over torque check time		
Possible Cause		 Motor is stuck due to machanical factors, leading to overload during operation Encoder or motor wiring error Encoder malfunction 				

Possible Solution	 Check if difference between command and motor speed feedback is too great. Check wiring between encoder and U,V,W cables, refer to "Wiring and Signal" section of manual. Execute "Encoder test" and check for alarms, refer to "Auto tuning" section of manual. 					
All in one ID 2nd Single Axis ID						
1st Single Axis ID	A	L-26		Alarm Name	Мо	tor Pole Number Error
Alarm Content	Triggered are misma		ole nu	umber or encoder pole	pair	number and parameter settings
Possible Cause		Aotor pole number setup error Encoder pole pair number setup error				
Possible Solution	Possible Solution1. 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 I 2nd Single Ax		AL-230				
1st Single Axi	s ID	AL-77		Alarm Name		Rotor Position Error
Alarm Content		Torque integral direction and acceleration direction are inconsistent				
Possible Cause		 Encoder polarity error Encoder-rotor pole offset error Pn-502 is set too low Motor vibration while servo on, speed feedback is above Pn-502 				
			rotor offset tuning be set between 5~25RPM(mm/sec) set lower speed loop gain Pn-100(P2-02) and position loop			
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	 Executed moving direction is not allowable Pn-242 Posing Type configuration is not corresponding to Pn-504 Moving Direction Limit Selection Host command polarity wrong set 				
Possible Solution	 Check if Pn-504 setting conflicts with moving direction. Please look up specification of Pn-504 Reset Pn-504 or check moving direction while running Check if Pn-242 setting conflicts with Pn-504 Modify Pn-242 according to Pn-504. Please look up specification of Pn-242 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	 Amount of estimated speed change larger than 30% rated speed Estimated speed is over 120% maximum speed When the direction of speed command changed, speed error over 30% rated speed in 1 second 				
Possible Solution	 Check if the n Increase acce Lower speed 		ect		
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	 The temperature is over the setting of Over Temp Level. RTD sensor loose or not connected.
Possible Solution	 Check Pn-548~Pn-54A and Pn-752~Pn-753 setting are correct or not. 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 moto	Drive detects motor overheat.				
Possible Cause	 Digital tempera KTY84 thermal Motor rated cur 	 Motor cooling system malfunction Digital temperature sensor setting error KTY84 thermal sensor setting error Motor rated current setting error Insufficient acceleration time Overload 				
Possible Solution	 Correct parameter temperature feature Check if KTY84 	 Check motor cooling system. Correct parameter Pn-50A(P1-40) to Pn-50F(P1-61) according to digital temperature feedback(A or B). 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. 				
	 Check rated current parameter Pn-710(P3-14). Check acceleration parameter Pn-306(P6-10), add acceleration/ deceleration time. 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	 Motor power cable U,V,W phase order incorrect Encoder malfunction Motor parameter loading error Sever system severe overshoot Severe speed command change Drive software outdated Encoder misses packets causing acceleration to be too great
Possible Solution	 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. Correct power cord phase order or change parameter Pn-021(P3-22)(0 to 1 and 1 to 0). Once certain polarity is correct, please cosider the following causes of this alarm. 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. If vibration of the machine can be observed, tune gain parameters Pn-100 to Pn-102(P2-01 to P2-03). Check if controller's commands shift too frequently, increase controller's acceleration and deceleration time constant. We have corrected drive alarm specs, please upgrade to versions 2.0.25(1. 4.12). 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	AL-202	
2nd Single Axi		
s ID		

1st Single Axis ID	AL-16	Alarm Name	Overload			
Alarm Content	Motor exceeds S2(short time duty) time limit.					
Possible Cause	 Motor is stuck due to mechanical factors, leading to overload during operation Continuous operation while exceeding drive's rated current Encoder or motor wiring error Encoder malfunction 					
Possible	1. Check if difference bet	ween command and motor speed feed	back is too great.			
Solution	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	 Motor is stuck due to machanical factors, leading to overload during operation Encoder or motor wiring error Encoder malfunction 				
Possible Solution	 Check if difference between command and motor speed feedback is too great. 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	 Motor is stuck due to machanical factors, leading to overload during operation Encoder or motor wiring error Encoder malfunction 				
Possible Solution	 Check if difference between command and motor speed feedback is too great. 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					

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	 Motor pole number setup error Encoder pole pair number setup error 			
Possible Solution	 Check if value of parameter Pn-701(P3-01) equals pole number on lable. 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 dir	rection and acceleration dire	ection are inconsistent
Possible Cause	 Encoder polarity error Encoder-rotor pole offset error Pn-502 is set too low Motor vibration while servo on, speed feedback is above Pn-502 		
Possible Solution	 Redo "Encoder test" Redo encoder-rotor offset tuning Pn-502 should be set between 5~25RPM(mm/sec) 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	 Executed moving direction is not allowable Pn-242 Posing Type configuration is not corresponding to Pn-504 Moving Direction Limit Selection Host command polarity wrong set 			

Possible Solution	 Check if Pn-504 setting conflicts with moving direction. Please look up specification of Pn-504
	 Reset Pn-504 or check moving direction while running Check if Pn-242 setting conflicts with Pn-504 Modify Pn-242 according to Pn-504. Please look up specification of Pn-242 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	 Amount of estimated speed change larger than 30% rated speed Estimated speed is over 120% maximum speed When the direction of speed command changed, speed error over 30% rated speed in 1 second 		
Possible Solution	 Check if the motor parameters are correct Increase acceleration time 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	 The temperature is over the setting of Over Temp Level. RTD sensor loose or not connected. 		
Possible Solution	 Check Pn-548~Pn-54A and Pn-752~Pn-753 setting are correct or not. Check RTD sensor connected correctly. 		

AL-300 All in one ID **2nd Single Axis ID 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 AL-301 2nd Single Axis ID **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

10 AL-3xx Encoder Alarm Description

Possible Solution	 Check encoder wiring, refer to "Wiring and Signal" section of manual. Execute "Encoder test" and check for alarms . If any alarm goes off, refer to "Syntec auto tuning" section of manual. Set encoder pole number correctly and reboot driver. Refer to "Syntec motor encoder grounding program" section of manual 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 Troub	le 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	 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	 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. 			

AL-303		
AL-25	Alarm Name	Encoder Resolution Error
Encoder resolution	n error.	
 Encoder resolution Pn-902(P3-21) setting error Encoder pole number Pn-90A(P3-30) setting error Hardware malfunction 		
 Check if parameter Pn-902(P3-21) is equal to resolution or not. If not, set encoder resolution to correct value and reboot driver Check parameter Pn-90A(P3-30), set encoder pole pair number correctly and reboot driver Send back to distributor or Syntec representative to check hardware 		
AL-304		
AL-27	Alarm Name	Encoder No Feedback
Drive fails to recei	ve signals from the encode	r.
 With Syntec motors after manufacturing date of 2021/05, the older driver may not support its communication. Encoder wire is untied or unconnected Encoder communication interface setting error Encoder port number setting error Wire failure (shor circuit, wire breakage) Encoder malfunction Driver's pre-circuit board malfunction Noise generated in QEP encoder Encoder 's baud rate is unsupported Encoder firmware update failed 		
	AL-25 Encoder resolution 1. Encoder resolution 2. Encoder poler 3. Hardware male 1. Check if parame encoder resolut 2. Check parame and reboot dri 3. Send back to compose the solution 3. Send back to compose the solution 1. Check if parame and reboot dri 3. Send back to compose the solution 1. Check parame and reboot dri 3. Send back to compose the solution 1. With Syntec me and network the solution 1. With Syntec me and not suppose the solution of the solution o	AL-25 Alarm Name Encoder resolution error. 1. Encoder resolution Pn-902(P3-21) setting 2. Encoder pole number Pn-90A(P3-30) setti 3. Hardware malfunction 1. Check if parameter Pn-902(P3-21) is equal encoder resolution to correct value and resolution and reboot driver 3. Send back to distributor or Syntec repression AL-304 AL-304 Image: Alarm Name Drive fails to receive signals from the encode Image: Alarm Name 1. With Syntec motors after manufacturing may not support its communication. Image: Alarm Name 2. Encoder wire is untied or unconnected Image: Alarm Name 3. Encoder communication interface setting Image: Alarm Name 4. Encoder port number setti

Possible Solution	 With Syntec motors after manufacturing date of 2021/05, it is recommended that upgrade driver version at least 3.0.13. Check if encoder wiring and pin definitions are correct or not. Refer to "Wiring and signal" section of manual. Refer to "Driver Parameter Manual", set parameters correctly and restart drive. Replace encoder cable (encoder's green wire between the drive and motor), and send broken one to Suzhou Syntec. Replace motor Replace driver Set Pn-52E(P6-65) to change the speed in startup. Currently supported encoder baud rates are as follows: TAMAGAWA, SYNTEC, SANKYO, BiSSC : 2.5MHz Nikon: 2.5MHz, 4MHz HIWIN : 2.35MHz If the alarm happend after encoder firmware update, please contact syntec or authorized representative 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 dete	ected is different in each revo	olution
Possible Cause	 Encoder cable malfunction Encoder's signal is interfering by rotor's axis with magnetic Encoder malfunction 		
Possible Solution	 Replace cable. Check if joining between encoder cable and motor is double end grounded. Check if encoder and motor are grounded. 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: Syntec encoder's firmware version is outdated Encoder is under noise interference, which causing feedback signal error. Encoder's signal is interfering by rotor's axis with magnetic Hallow magnetic ring Zindex position is differ from the setting parameter Magnetic ring's non-Zindex zone has magnetic field distribution Non-Syntec encoder: The circuit board of non-Syntec encoder is broken. Non-Syntec sensor and encoder are wrong assembly. 			
Possible Solution	Syntec encoder:			
	 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. Check if encoder and motor are grounded. Check if joining between encoder cable and motor is double end grounded. Short term countermeasure: Magnetic axle center causing AL-54 SOP Long term countermeasure: Cross-Strait motor plants import axle center inspections starting 2016/7 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 Send the encoder to Syntec or authorized representative for repair. Non-Syntec encoder: Check the gap between sensor and encoder is correctly. 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	
	Encoder status has extreme errors to operate normally			

Possible Cause	 Serial encoder communication interference Serial encoder wire is untied or unconnected Connector between drive and encoder has solder empty or code solder Encoder's cable grounding failure Encoder communication type setting error Automatic search for BiSSC data length is failure 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. 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". Encoder's firmware malfunction
Possible Solution	 Check if drive's status parameter Pn-D73~Pn-D76(D1-28,D1-29,D1-46,D1-47) is zero or not. Check if encoder and motor are grounded. Check if joining between encoder cable and motor is double end grounded. Check welding wire at the interface between encoder and drive. Check welding wire at the interface between encoder and motor. 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. If it did't work by the above solutions: Attach magnetic ring to both sides of the encoder cable try to separate the encoder cable from the motor power cable or other
	 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	308
1st Single Axis ID	L-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	 Nikon encoder's speed exceeds 250RPM when power is on If alarm occurs when motor isn't running, there is possibly encoder malfunction. If the first encoder is Panasonic Encoder, the motor's speed must run below 100RPM when power is on. If the first encoder is Mitutoyo Encoder, the motor's speed must run below 100RPM when power is on. 			
Check	Check if motor is rur	nning before drive is plugg	ged in	
Possible Solution	 Once the motor Contact motor c 			
Detailed Instructions	[Pn-D95]Enc Error S	tatus ALMC		
All in one ID 2nd Single Axis ID				
1st Single Axis ID	AL-4C	Alarm Name	Serial Encoder Communication Type is Wrong	
Alarm Content	 Encoder communication interface setting is incorrect while using serial encoder If Pn-900(P3-20) is set to 12 and connected with a Nikon encoder, then it is communication issue. If the Pn-900 is set to 23 and connected to the HCFA encoder, then perhaps the encoder does not support high-cycle communication. This alarm occurs when power-up with HCFA/ Sankyo encoders. Please check Pn-642, Pn-643 settings if correct. Setting of Pn-900 can not be used at the setting of Pn-901 FPGA version doesn't support this encoder type 			
Possible Cause	 The parameter of encoder communcation interface (Pn-900(P3-20)) and encoder's serial communcation are mismatched. Check if encoder cables are indeed grounded and the wire has breakage or not. Check if the specifications of HCFA motor support high-cycle communication. With HCFA/ Sankyo encoders, frequency of communication is not legal. Check if Pn-901 is set correctly FPGA version doesn't support the encoder type Pn-900(P3-20) setting. 			

Possible Solution	2 3 2 5	 Set Pn-900(P3-20) correctly and reboot drive. Reassemble cables, make sure there is no interference and then restart Set Pn-900 to 22, and then reboot the drive Please look up manual of Pn-900(P3-20). Refresh setting with correct ones. Setup correct Pn-901 and restart Drive. Refer to "Syntec Parameter Manual" for setup detail Upgrade drive installation package according to encoder type 				
All in one 2nd Single Ax		AL-30A				
1st Single Ax	cis ID	AL-850	Alarm Name	Encoder Over Speed		
Alarm Content		 Nikon encoder speed exceeds 6000RPM FeeDat encoder over speed Motor with Panasonic encoder probably revolved over 6500RPM 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 Instru	uctions	[Pn-D95]Enc Error Status ALMC				
All in one ID 2nd Single Axis ID	AL-30B					
1st Single Axis ID	-	Alarm Name	Alarm Name Encoder position feedback error			
Alarm Content	Encoder m data	ncoder module error, causing encoder unable to read absolute position ata				
Possible Cause	 BiSSC Nikon' al moc EnDat The pc The pc The pc The pc 	 FeeDat encoder circuit board breakage BiSSC encoder sensor and magnetic ring are assembled incorrectly. Nikon's absolute position of absolute module is differ from increment al module. EnDat encoder position information error. The position information of Panasonic encoder is error. The position information of Mitutoyo encoder is error. The position information of Mitsubsihi encoder is error. The position information of Delta encoder is error. 				
Possible Solution	 Check If this i 	 Make sure encoder sensor and optical ruler are assembled correctly Check encoder for dust or oil contamination If this is a recurring issue, send back to authorized dealer or Syntec Corp. for repairs 				

Detailed Instructions	【Pn-D95	[Pn-D95]Enc Error Status ALMC			
All in one ID 2nd Single Axis ID	AL-3	30C			
1st Single Axis ID	AL-	66 Ala	rm Name	Encoder multi-turn data error	
Alarm Content	Encode	er module err	or, causing	encoder unable to read multi-turn data	
Possible Cause	2. Par 3. Mit 4. Tar 5. HIV 6. Sar	kon encoder's multi-turn data is incompatible to single-turn data nasonic encoder's multi-turn data is incompatible to single-turn data. tsubishi encoder's multi-turn data is incompatible to single-turn data. magawa encoder's multi-turn data is incompatible to single-turn data. WIN encoder's multi-turn data is incompatible to single-turn data. nkyo encoder's multi-turn data is incompatible to single-turn data.			
Possible Solution		 Check encoder for dust or oil contamination If this is a recurring issue, send back to authorized dealer or Syntec Corp. for repairs 			
Detailed Instructions	【Pn-D9	[Pn-D95]Enc Error Status ALMC			
All in one ID 2nd Single Axis ID	AL-30E)E			
1st Single Axis ID	-	Alarm N	ame En	coder Battery Over Voltage	
Alarm Content	Encoder b	Encoder battery supply is over voltage, which may lead to encoder damage.			
Possible Cause	1. Encoc	1. Encoder battery voltage is over the certain threshold of specification			
Possible Solution	 Check the wiring of encoder Delta: Check the voltage of the battery if over 3.8V 				
All in one ID 2nd Single Axis ID	AL-31 1				
1st Single Axis ID	AL-33	Alarm Nam	e 2nd En	coder Index Error	

Alarm Content	 Encoder didn't detect reference signal during encoder test. Encoder-rotor offset calibration takes too long. 				
Possible Cause	 Connector wiring is poor contact, or connection is wrong. Second encoder setting error. Second encoder pole number(Pn-92A/P6-90) setting error. Communication interference Second encoder hardware malfunction 				
Possible Solution	 Check wiring of second encoder, refer to "Wiring and Signal" section of manual. Execute "Encoder test". If any alarms goes off, refer to "Syntec auto tuning" section of manual. Set encoder pole number correctly and reboot driver. Refer to "Syntec motor encoder grounding program" section of manual 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 Directio	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	 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 ContentSecond encoder resolution error.					
Possible Cause		 2nd encoder resolution Pn-922(P6-81) setting error 2nd Encoder pole number Pn-92A(P6-90) setting error. Second encoder hardware malfunction 			

Possible Solution	 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. Check parameter Pn-92A(P6-90), set encoder pole pair number correctly and reboot driver Send back to authorized dealer or Syntec Corp. for repairs. 			
All in one ID 2nd Single Axis ID	AL-314	AL-314		
1st Single Axis ID	AL-36	Alarm Name	2nd Encoder no feedback	
Alarm Content	Drive fails to receive	ve signals from the second	encoder.	
Possible Cause	 Second encoder wire is untied or unconnected. Encoder communication interface setting error. Encoder port number setting error. Wire failure (shor circuit, wire breakage) Encoder malfunction Driver's pre-circuit board malfunction In dual feedback control and 2nd encoder type is QEP, mechanical problem and machining condition may cause alarm Encoder's baud rate is unsupported Encoder firmware update failed 			
Possible Solution	 Check if serial encoder wiring and pin definitions for errors are correct or not. Refer to "Wiring and signal" section of manual. Refer to "Drive Parameter Manual", set parameters correctly and reboot driver. Replace encoder cable (encoder's green wire between the drive and motor), and send broken one to Suzhou Syntec. Replace motor 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 A	xis ID	AL-39	Alarm Name	2nd Encoder Pulse Loss		
Alarm Content		Pulse number detected is different in each revolution				
Possible Cause		 Second encoder's cable problem Second encoder's signal is interfering by rotor's axis with magnetic Second encoder malfunction 				
Possible Solution		 Replace cable. Check if joining between encoder cable and motor is double end grounded. Check if encoder and motor are grounded. 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: Second encoder's firmware version is outdated Encoder is under noise interference, which causing feedback signal error. Encoder's signal is interfering by rotor's axis with magnetic Hallow magnetic ring Zindex position is different than from the written parameter. Magnetic ring's non-Zindex zone has magnetic field distribution Hardware malfunction Non-Syntec encoder: The circuit board of non-Syntec encoder is broken. 					
	 Non-Syntec sensor and encoder are wrong assembly. 					

Possible	Syntec encoder:					
Solution	 V2.2.5) 2. Check 3. Check 4. Short to Magne Long to Cross-5 5. Short to Raise 2 execute Long to Import 6. Send to Non-Synte 1. Check 2. Check 	 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. Check if second encoder and motor are grounded. Check if joining between second encoder cable and motor are is double end grounded. Short term countermeasure: Magnetic axle center causing AL-54 SOP Long term countermeasure: Cross-Strait motor plants import axle center inspections starting 2016/7 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 Send the second encoder to Syntec or authorized representative for repair. Non-Syntec encoder: Check the gap between sensor and encoder is correctly. Send back to Syntec Corp. 				
Detailed Instructions	AL-54 Issue Trouble Shooting					
	All in one ID 2nd Single Axis ID					
1st Single A	1st Single Axis ID		Alarm Name	2nd Encoder Status Extreme Error		
Alarm Content	Alarm Content		2nd Encoder status has extreme errors to operate normally			
Possible Cause		 Second encoder communication interference. Second Serial encoder wire is untied or unconnected Connector between drive and encoder has solder empty or code solder Second encoder's cable grounding failure Second encoder communication type setting error. Automatic search for BiSSC data length is failure 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. 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". Second encoder's firmware malfunction Second encoder's hardware malfunction 				

Possible Solution	 is zero o 2. Check if 3. Check if 4. Check w 5. Check w 6. Check construction 6. Check construction 7. If it did't 7. If it did't 7. If it did't 8. Refer to right value 9. Check Bioonly. 10. If the dring paramete 11. If using Statempera 12. Backup nu Update e 	r not. encoder and motor joining between en- elding wire at the ir elding wire at the ir onduction between conduction , the du fechnical Center for work by the above magnetic ring to b separate the encode l cables. chapter "Drive Para ue, and reboot SSC Encoder data l ve is v2.x servo driv er Pn-D96 and othe Syntec encoder and ture self-diagnosis" motor's parameters encoder firmware's	coder cable and motor double end grounded. Iterface between encoder and drive. Iterface between encoder and motor. metal part of first encoder port and drive case. rive has defects. Please contact Suzhou or changing procedure.	
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	 Nikon encoder speed exceeds 250RPM right after power on. If alarm occurs when motor isn't running, encoder malfunction is possible If the second encoder is Panasonic Encoder, the motor's speed must run below 100RPM when power is on. 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	 Once the motor stops, reset alarm. Contact motor company for repairs. 			
Detailed Instructions	[Pn-D96]2nd	Enc Error Status AL	MC	

All in one ID 2nd Single Axis ID	AL-319					
1st Single Axis ID	AL-4D	Alarm Name	2nd Serial Encoder C	Communication Type is Wrong		
Alarm Content	encoder 2. If Pn-920 with cor 3. If the Pn encoder 4. This alar Pn-643 s 5. Setting	oder communication interface setting is incorrect while using second serial oder. n-920(P6-80) is set to 12 and connected with a Nikon encoder, then the problem is a communication there is a communication problem e Pn-920 is set to 23 and connected to the HCFA encoder, then perhaps the oder does not support high-cycle communication. a alarm occurs when power-up with HCFA/ Sankyo encoders. Please check Pn-642, 643 settings if correct. ing of Pn-920 can not be used at the setting of Pn-921 A version doesn't support this encoder type.				
Possible Cause	serial cc 2. Check if 3. Check if 4. With HC 5. Check if	The parameter of encoder communcation interface Pn-920(P6-80) and encoder's serial communcation are mismatched. Check if encoder cables are indeed grounded and the wire has breakage or not. Check if the specifications of HCFA motor support high-cycle communication. With HCFA/ Sankyo encoders, frequency of communication is not legal. Check if Pn-921 is set correctly FPGA version doesn't support the encoder type Pn-920(P6-80) setting encoder type.				
Possible Solution	 Reassen Set Pn-9 Please le Setup co detail 	nble cables, make 920 to 22, and then ook up manual of F orrect Pn-921 and I	Pn-920(P6-80). Refresh set	ting with correct ones. tec Parameter Manual" for setup		
All in one II 2nd Single Axi		AL-31A				
1st Single Axi	s ID	AL-8A5	Alarm Name	2nd Encoder Over Speed		
Alarm Content		 Nikon second encoder speed exceeds 6000RPM FeeDat second encoder over speed Motor with Panasonic second encoder probably revolved over 6500RPM 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 er	ncoder run at maximum sp	eed		
Detailed Instruc	tions [Pn-D96]2nd Enc Ei	rror Status ALMC			

All in one I 2nd Single Ax		AL-31B				
1st Single Axi	is ID	-	Ala	rm Name	2nd Encoder position feedback error	
Alarm Content	2nd Encoder module error, causing encoder unable to read absolute positidata					
Possible Cause		 FeeDat second encoder circuit board breakage BiSSC second encoder sensor and magnetic ring are assembled incorrectly Nikon encoder's multi-turn data is incompatible to single-turn data EnDat second encoder position information error The position information of Panasonic encoder is error. The position information of Mitutoyo encoder is error. The position information of Mitsubsihi encoder is error. The position information of Delta encoder is error. 				
Possible Solution		 Make sure encoder sensor and optical ruler are assembled correctly Check encoder for dust or oil contamination If this is a recurring issue, send back to authorized dealer or Syntec Corp. for repairs 				
Detailed Instru	ctions	[Pn-D96]2nd Enc Error Status ALMC				
All in one ID 2nd Single Axis ID	AL-31(c				
1st Single Axis ID	AL-67	Y Alarm N	ame	2nd Encoder m	ulti-turn data error	
Alarm Content	Encoder	module error, caus	ing encode	er unable to read	l multi-turn data.	
Possible Cause	 Nikon 2nd encoder's multi-turn data is incompatible to single-turn data Panasonic 2nd encoder's multi-turn data is incompatible to single-turn data. Mitsubishi 2nd encoder's multi-turn data is incompatible to single-turn data. Tamagawa 2nd encoder's multi-turn data is incompatible to single-turn data. HIWIN 2nd encoder's multi-turn data is incompatible to single-turn data. Sankyo 2nd encoder's multi-turn data is incompatible to single-turn data. HCFA 2nd encoder's multi-turn data is incompatible to single-turn data. 					
Possible Solution		k encoder for dust s is a recurring issue			dealer or Syntec Corp. for repairs	

Detailed Instructions	[Pn-D96]2nd Enc Error Status ALMC					
	All in one ID 2nd Single Axis ID					
1st Single Ax	is ID	-	Alarm Name	2nd Encoder Unable to Finish Operation Configuration		
Alarm Content	Failed to set operation configuration					
Possible Cause		 While setting operation configuration, unable to write the corresponding memory or meet access failure Fail to access 2nd encoder memory 				
Possible Solution	I	 Check Pn-D9C and encoder software version, and update to the right version 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 Enco	oder battery supply	is over voltage, which m	ay lead to encoder damage.		
Possible Cause	1. Enco	der battery voltage	e is over the certain thres	hold of specification		
Possible Solution		k the wiring of enc a: Check the voltage	oder e of the battery if over 3.8	W		
All in one I 2nd Single Ax		AL-321				
1st Single Ax	is ID	AL-41	Alarm Name	Encoder external(1) Thermal Sensor Over Temperature		
Alarm Content		The temperature protective limit.	that encoder external(1)	's Thermal Sensor detect is over drive's		

Possible Cause	 Version com Thermal sen Motor's Ther temperature respectively With SYNTEC 	 Motor cooling system failure Version compatability Thermal sensor signal error Motor's Thermal Sensor wire unconnected to Encoder external(1)'s temperature sensing wire(the yellow and green line of the encoder, respectively) With SYNTEC encoder, encoder external(1) thermal sensor type setting error Encoder hardware malfunction 					
Possible Solution	 If recently up Pn-743(P1-33) Make sure pa overheat thr Connect The wire. If floati 145 degrees. Check the ty using PT1000 firmware to V If all above s 	 Check and change motor cooling system. 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. Make sure parameter Pn-743 "Syntec Encoder internal(1) Thermal Sensor overheat threshold" is set correctly. 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. 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. 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-	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 protective limit.	The temperature that encoder external(2)'s Thermal Sensor detect is over drive's					
Possible Cause	 Cooling system failure Version compatibility Parameter error With SYNTEC encoder, encoder external(2) thermal sensor type setting error 						
Possible Solution	 Check and change cooling system. 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. 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. 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-4	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	 Nikon encode FeeDat encode Panasonic en or protection Mitutoyo enc Mitsubishi en or protection Delta encode degree. Tamagawa 23 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 				
Possible Cause	 Cooling system failure Version compatibility Thermal sensor signal error With SYNTEC encoder, 2nd encoder internal thermal sensor type setting error Encoder hardware malfunction 					
Possible Solution	 Encoder hardware malfunction Check and change cooling system. If using SYNTEC, Nikon, Panasonic, Mitsubishi encoders, please check up Pn-D61. If using FeeDat, Tamagawa or Delta encoders, please resolve problem and restart driver. 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. Make sure parameter Pn-748 "Syntec Encoder internal(1) thermal sensor overheat threshold" is set correctly. 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. 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 drive's protectiv		al(1)'s Thermal Sensor detect is over			
Possible Cause	 Version com Thermal sen Motor's Ther temperature respectively With SYNTEC error 	 Cooling system failure Version compatibility Thermal sensor signal error Motor's Thermal Sensor wire unconnected to Encoder external(1)'s temperature sensing wire(the yellow and green line of the encoder, respectively) With SYNTEC encoder, 2nd encoder external(1) thermal sensor type setting error Encoder hardware malfunction 				
Possible Solution	 If recently up Pn-746(P1-3) Make sure pa Sensor overh Connect The wire. If floati 145 degrees. Check the ty If using PT10 firmware to v If all above s 	 Check and change cooling system. 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. Make sure parameter Pn-748 (P1-38)"Syntec Encoder internal(1) Thermal Sensor overheat threshold" is set correctly. 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. 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. 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	AL-326				
1st Single Axis ID	AL-46	AL-46 Alarm Name 2nd Encoder External(2) Therm Sensor Over Temperature				
Alarm Content	Encoder Externa limit	l(2) detects Thermal Sens	sor's temperature over drive's protective			

Possible Caus		2. 3. 4. 5.	Cooling system failure Version compatibility Thermal sensor signal error Motor's Thermal Sensor wire unconnected to Encoder external(2)'s temperature sensing wire(the yellow and green line of the encoder, respectively) With SYNTEC encoder, 2nd encoder external(2) thermal sensor type setting error Encoder hardware malfunction				
Possible Solut	tion	2. 3. 4. 5.	Check and change cooling system. 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. Make sure parameter Pn-748 (P1-38)"Syntec Encoder internal(2) Thermal Sensor overheat threshold" is set correctly. 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. 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. 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 AL-32 2nd Single Axis ID						
1st Sin	gle Axis ID		AL-5A	Alarm Name	Encoder Internal Thermal Sensor Error		
Alarm Conten	t		Encoder Inter	ernal Thermal Sensor Error			
Possible Caus	e			r Internal Thermal Sensor Error NTEC encoder, encoder internal thermal sensor type setting error			
Possible Solut	tion		Pn-74A(P 2. Check the a. If 2r b. If	1-70) to 1. e type of resistance using PT1000:Upda			
All in one ID 2nd Single A xis ID	AL-329						
1st Single Axis ID	AL-5B	Al	arm Name	Encoder External	(1) Thermal Sensor is Unplugged		

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

Possible Solution	 (b) If end 2. Measure check if the measexternal 3. Check if 5V. If so, the outp otherwis 4. Check that if a. If a fill 	 (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. 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. 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. 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 A xis ID	AL-32C	2C					
1st Single Axis ID	AL-5E	Alarm Name2nd Encoder internal Thermal Sensor Error					
Alarm Content	2nd Encoder	internal Thermal	l Sensor E	rror			
Possible Cause		oder internal Ther ITEC encoder, 2nd			al sensor type setting error		
Possible Solution	 If 2nd encoder internal Thermal Sensor is not needed, set parameter Pn-74E(P1-74) to 1. 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. Send back to dealer or Syntec Corp. for repairs. 						
	All in one ID AL-32D 2nd Single Axis ID						
1st Single	Axis ID	AL-5F	Ala	arm Name	2nd Encoder External(1) Thermal Sensor is Unplugged		
Alarm Content		2nd Encoder Ext	ernal(1) T	hermal Sensor i	s Unplugged		

Possible Cause	 2nd Encoder External(1) Thermal Sensor is not plugged correctly 2nd Encoder external(1) Thermal Sensor is broken Abnormal power supply voltage of 2nd encoder With SYNTEC encoder, 2nd encoder external(1) thermal sensor type setting error 				
Possible Solution	 (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. 				
	 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. 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. 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	 2nd Encoder External(2) Thermal Sensor is not plugged correctly 2nd Encoder external(2) Thermal Sensor is broken Abnormal power supply voltage of 2nd encoder With SYNTEC encoder, 2nd encoder external(2) thermal sensor type setting error 				

Possible Solution		 (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. 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. 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. 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 I	D		AL-330			
1st Single Axis I	D		-		Alarm Name	Encoder Port Setting Error
Alarm Content		Encoder Port (Parameter Pn-901) setting error				
Possible Cause		 Parameter Pn-900 encoder type is set but parameter Pn-901 is not. Port number setting is the same as another encoder port setting Parameter Pn-901 is greater than actual port number 				
Possible Solution		1.	1. Set parameter Pn-901 correctly according to the actual application.			g to the actual application.
All in one ID 2nd Single Axis ID	AL-3:	31				
1st Single Axis ID	-		Alarm Nan	ne 2nd Encoder port setting error		
Alarm Content	2nd encoder Port (Parameter Pn-921) setting error					
Possible Cause	 Parameter Pn-920 encoder type is set but parameter Pn-921 is not. Port number setting is the same as another encoder port setting Parameter Pn-921 is greater than actual port number 					
Possible Solution	1. Se	t para	ameter Pn-921	corre	ctly 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	 The version of encoder is outdated. Parameter specifics cannot be recognized if the motor is not supplied by Syntec. Data read from encoder is unable to be interpreted. 					
Possible Solution	 Upgrade driver version. 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. 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	 The version of encoder is outdated. Parameter specifics cannot be recognized if the motor is not supplied by Syntec. Data read from encoder is unable to be interpreted. 				
Possible Solution	 Upgrade driver version. 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. 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 parame	ter download process is ur	nsuccessful			
Possible Cause	 With Syntec motors after manufacturing date of 2021/05, the older driver may not support its communication. 1st encoder still not ready after drive power on for 1 second. The parameters read back from encoder is incorrect. Signal transfer error due to the poor contact of the first encoder's pin With hallow type encoder(mini encoder), check whether motor serial number is not zero 					
Possible Solution	 With Syntec motors after manufacturing date of 2021/05, it is recommended that upgrade driver version at least 3.0.13. Check status parameter "First encoder parameter read back status", single axis' parameter is D2-97, four in one's status parameter is Pn-E5F. Check if encoder is wired correctly and whether there are interferences. Check connectivity of encoder connector pins 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	 2nd encoder still not ready after drive power on for 1 second. The parameters read back from 2nd encoder is incorrect. Signal transfer error due to the poor contact of the 2nd encoder's pin With hallow type encoder(mini encoder), check whether motor serial number is not zero 					

Possible Solution		 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 encod	ler is wired correctly and	whether there are interferences.	
		3. Check connec	tivity of encoder connect	or pins	
		*With this alarm o permanently.	ccurring, we would not re	commend saving parameters	
		If alarm doesn't o	cur after rebooting, para	meters have been read correctly.	
		If this problem rec	occurs, please contact dea	aler or Syntec Corp. for repairs.	
		Refer to AL-58问题	顿置 for alarm trouble s	hooting.	
All in one ID 2nd Single Axis		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	AL-337				
2nd Single Axis ID					
1st Single Axis ID	AL-4B	Alarm Name	2nd Syntec Encoder	Runs in Bootloader Mode	
Alarm Content	When 2n	nd is Syntec Encode	er and is Running in Bootl	oader Mode, alarm occurs.	
Possible Cause	1. Pow	er failure or discon	nection during firmware	update process	
Possible Solution	1. Update firmware again and restart.				
All in one ID 2nd Single Axis		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 i	1. Error count is too high while accessing encoder register				
Possible Solution	 Preclude encoder wiring interferences, reinforce grounding Status surveillance: Pn-D73(D1-28) Serial Encoder CRC error count(hardware) Pn-D74(D1-29) Serial Encoder CRC error count(software) Pn-D76(D1-47) Serial Encoder overtime error count If this alarm occurs when saving parameters, reset alarm and permanently resave parameters again. 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 Reg	ister Access Error				
Possible Cause	1. Error count is	1. Error count is too high while accessing 2nd encoder register				
Possible Solution	a. Status surveilla i.Pn-D77(E ii.Pn-D78(iii.Pn-D7A b.If this alarm occ resave paramete	 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 detecti	Type auto detection only support syntec motors				
Possible Cause	non-Nikon en	 Setting Pn-900 Encoder Communiation Type to 12 with non-Syntec motors or non-Nikon encoders. Pn-706 Motor Serial Number exception error. 				
Possible Solution		 Please check up and correct Pn-900 setting. Please contact Syntec Corp. 				

All in one ID 2nd Single Axis ID		AL-33	В			
1st Single Axis ID		-		Alarm Nan	ne	2nd Encoder not support type auto detection
Alarm Content		Type auto	detect	ion not support 2	nd enco	ders
Possible Cause		1. Settin encod	•	0 2nd Encoder Co	ommunio	cation Type to 12 with non-Nikon
Possible Solution		1. Please	e check	up and correct P	n-920 set	tting.
All in one ID 2nd Single Axis ID		AL-340				
1st Single Axis ID		-	Α	larm Name	Encode	er Status Error
Alarm Content	En	coder statu	s has ei	rrors to operate n	ormally	
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 Na	ame	Encoder Signal Noise Interference
Alarm Content		Encoder	Signal N	loise Interference	9	
Possible Cause		Check Pn-D74 Encoder CRC error counter(Software). Check the encoder			(Software). Check the encoder wiring.	
Possible Solution		 Check the encoder wiring and grounding. Send back to Syntec Corp. 				
All in one ID 2nd Single Axis ID	,	AL-350				
1st Single Axis ID		-	Α	larm Name	2nd En	ncoder Status Error

Alarm Content	End	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.			0.8 or 2.1.1, which support "over nperature 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		 Check the 2nd encoder wiring and grounding. Send back to Syntec Corp. 			
10.1 AL-30A Enco	ode	er Over Spee	d		

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	 Nikon encoder speed exceeds 6000RPM FeeDat encoder over speed Motor with Panasonic encoder probably revolved over 6500RPM 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 Er	rror 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 m data	odule error, causing	encoder unable to read absolute position		
Possible Cause	 BiSSC e Nikon's al mod EnDat e The pos The pos The pos The pos 	s absolute position o ule. encoder position inf sition information o sition information o sition information o	magnetic ring are assembled incorrectly. of absolute module is differ from increment		
Possible Solution	 Make sure encoder sensor and optical ruler are assembled correctly Check encoder for dust or oil contamination If this is a recurring issue, send back to authorized dealer or Syntec Corp. for repairs 				
Detailed Instructions	[Pn-D95]Enc Error Status ALMC				

10.2 AL-30B Encoder position feedback error

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	 Nikon encoder's multi-turn data is incompatible to single-turn data Panasonic encoder's multi-turn data is incompatible to single-turn data. Mitsubishi encoder's multi-turn data is incompatible to single-turn data. Tamagawa encoder's multi-turn data is incompatible to single-turn data. HIWIN encoder's multi-turn data is incompatible to single-turn data. Sankyo encoder's multi-turn data is incompatible to single-turn data. HCFA encoder's multi-turn data is incompatible to single-turn data. 				

Possible Solution	 Check encoder for dust or oil contamination 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	 While setting operation configuration, unable to write the corresponding memory or meet access failure Fail to access encoder memory 				
Possible Solution	 Check Pn-D9B and encoder software version, and update to the right version 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	 Check the wiring of encoder Delta: Check the voltage of the battery if over 3.8V 				

10.6	AL-31A	2nd	Encoder	Over	Speed
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All in one ID 2nd Single Axis ID	AL-31A		
1st Single Axis ID	AL-8A5	Alarm Name	2nd Encoder Over Speed
Alarm Content	 Nikon second encoder speed exceeds 6000RPM FeeDat second encoder over speed Motor with Panasonic second encoder probably revolved over 6500RPM 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	 FeeDat second encoder circuit board breakage BiSSC second encoder sensor and magnetic ring are assembled incorrectly Nikon encoder's multi-turn data is incompatible to single-turn data EnDat second encoder position information error The position information of Panasonic encoder is error. The position information of Mitutoyo encoder is error. The position information of Mitsubsihi encoder is error. The position information of Delta encoder is error. 		
Possible Solution	 Make sure encoder sensor and optical ruler are assembled correctly Check encoder for dust or oil contamination 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 modu	lle error, causing encoo	der unable to read multi-turn data.
Possible Cause	 Nikon 2nd encoder's multi-turn data is incompatible to single-turn data Panasonic 2nd encoder's multi-turn data is incompatible to single-turn data. Mitsubishi 2nd encoder's multi-turn data is incompatible to single-turn data. Tamagawa 2nd encoder's multi-turn data is incompatible to single-turn data. HIWIN 2nd encoder's multi-turn data is incompatible to single-turn data. Sankyo 2nd encoder's multi-turn data is incompatible to single-turn data. HCFA 2nd encoder's multi-turn data is incompatible to single-turn data. 		
Possible Solution	 Check encoder for dust or oil contamination 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

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	 While setting operation configuration, unable to write the corresponding memory or meet access failure Fail to access 2nd encoder memory 		
Possible Solution	 Check Pn-D9C and encoder software version, and update to the right version 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	 Check the wiring of encoder 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 A xis 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	 Encoder External(2) Thermal Sensor is not plugged correctly Encoder external(2) Thermal Sensor is broken Abnormal power supply voltage of 1st encoder With SYNTEC encoder, encoder external(2) thermal sensor type setting error 		

Possible Solution	 (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.
	 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. 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. 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 A xis 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	 2nd Encoder internal Thermal Sensor Error With SYNTEC encoder, 2nd encoder internal thermal sensor type setting error 			
Possible Solution	 If 2nd encoder internal Thermal Sensor is not needed, set parameter Pn-74E(P1-74) to 1. 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. 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	 2nd Encoder External(1) Thermal Sensor is not plugged correctly 2nd Encoder external(1) Thermal Sensor is broken Abnormal power supply voltage of 2nd encoder With SYNTEC encoder, 2nd encoder external(1) thermal sensor type setting error
Possible Solution	 (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.
	 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	 2nd Encoder External(2) Thermal Sensor is not plugged correctly 2nd Encoder external(2) Thermal Sensor is broken Abnormal power supply voltage of 2nd encoder With SYNTEC encoder, 2nd encoder external(2) thermal sensor type setting error 		

Possible Solution	 (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.
	 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. 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 detect	ion only support syntec m	otors
Possible Cause	 Setting Pn-900 Encoder Communiation Type to 12 with non-Syntec motors or non-Nikon encoders. Pn-706 Motor Serial Number exception error. 		
Possible Solution	 Please check Please contact 	up and correct Pn-900 set ct Syntec Corp.	ting.

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 Encod	er 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 轴向轴向 ID				
1st Single 轴向轴向 ID	AL-65	Alarm Name	2nd Encoder Memory Error	
Alarm Content	2nd Enco	der internal memo	ry error	
Possible Cause	Nikon en	coder read and wri	te function error	
Check	Reboot tl	Reboot the driver, oberve if problem is fixed		
Possible Solution	Send bac	k to dealer or Synt	ec 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 a	nd can't correctly send back	position data.
Possible Cause	 Syntec encoder crash and watchdog restart encoder. Non-Syntec encoder internal error. Motor overheating Noise interference Hardware malfunction 		
Possible Solution	 Reboot driver and observe encoder for abnormality Check Pn-90E(P3-34) Encoder Reset Counter. If encoder abnormal, check whether the motor is overheated or not. Make sure the shielding wire attached to encoder inside the junction box is connected to the motor's ground wire. Replace encoder. 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		detect reference signal dur offset calibration takes too	•
Possible Cause	 Connector wiring is poor contact, or connection is wrong Incorrect encoder setting Encoder pole number (Pn-90A/P3-30) setting error Communication interference Encoder Hardware malfunction 		

Possible Solution	 Check encoder wiring, refer to "Wiring and Signal" section of manual. Execute "Encoder test" and check for alarms . If any alarm goes off, refer to "Syntec auto tuning" section of manual. Set encoder pole number correctly and reboot driver. Refer to "Syntec motor encoder grounding program" section of manual 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	 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	 Encoder resolution Pn-902(P3-21) setting error Encoder pole number Pn-90A(P3-30) setting error Hardware malfunction 		

Possible Solution	 Check if parameter Pn-902(P3-21) is equal to resolution or not. If not, set encoder resolution to correct value and reboot driver Check parameter Pn-90A(P3-30), set encoder pole pair number correctly and reboot driver Send back to distributor or Syntec representative to check hardware
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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	 With Syntec motors after manufacturing date of 2021/05, the older driver may not support its communication. Encoder wire is untied or unconnected Encoder communication interface setting error Encoder port number setting error Wire failure (shor circuit, wire breakage) Encoder malfunction Driver's pre-circuit board malfunction Noise generated in QEP encoder Encoder's baud rate is unsupported Encoder firmware update failed 		



Possible Solution	 With Syntec motors after manufacturing date of 2021/05, it is recommended that upgrade driver version at least 3.0.13. Check if encoder wiring and pin definitions are correct or not. Refer to "Wiring and signal" section of manual. Refer to "Driver Parameter Manual", set parameters correctly and restart drive. Replace encoder cable (encoder's green wire between the drive and motor), and send broken one to Suzhou Syntec. Replace motor Replace driver
	 Set Pn-52E(P6-65) to change the speed in startup. Currently supported encoder baud rates are as follows: TAMAGAWA、SYNTEC、SANKYO、BISSC: 2.5MHz Nikon: 2.5MHz、4MHz HIWIN: 2.35MHz If the alarm happend after encoder firmware update, please contact syntec or authorized representative 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	 Encoder cable malfunction Encoder's signal is interfering by rotor's axis with magnetic Encoder malfunction 		
Possible Solution	 Replace cable. Check if joining between encoder cable and motor is double end grounded. Check if encoder and motor are grounded. 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	 Encoder is und Encoder's sign Hallow magnet Magnetic ring's Non-Syntec encod The circuit boa 	 Syntec encoder: Syntec encoder's firmware version is outdated Encoder is under noise interference, which causing feedback signal error. Encoder's signal is interfering by rotor's axis with magnetic Hallow magnetic ring Zindex position is differ from the setting parameter Magnetic ring's non-Zindex zone has magnetic field distribution Non-Syntec encoder: The circuit board of non-Syntec encoder is broken. Non-Syntec sensor and encoder are wrong assembly. 		
Possible Solution	 Update drive's to V2.2.5 or above to V2.5.5 or above to V	 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. 		
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 ha	Encoder status has extreme errors to operate normally			
Possible Cause	 Serial encoder communication interference Serial encoder wire is untied or unconnected Connector between drive and encoder has solder empty or code solder Encoder's cable grounding failure Encoder communication type setting error Automatic search for BiSSC data length is failure 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. 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". Encoder's firmware malfunction Encoder's hardware malfunction 				
Possible Solution	 Check if drive's status parameter Pn-D73~Pn-D76(D1-28,D1-29,D1-46,D1- is zero or not. Check if encoder and motor are grounded. Check if joining between encoder cable and motor is double end grounded. Check welding wire at the interface between encoder and drive. Check welding wire at the interface between encoder and motor. Check conduction between metal part of first encoder port and drive cas If it's not conduction , the drive is defected has defects. Please contact Suzhou or Taiwan Technical Center for changing procedure. If it did't work by the above solutions: 		ded. e and motor is double end grounded. tween encoder and drive. tween encoder and motor. of first encoder port and drive case. cted has defects. Please contact		
	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 chapt right value, an		user manual, set Pn-900(P3-20) to		
	only. 10. If the drive is v parameter Pn- 11. if using Syntec temperature s 12. Backup motor Update encod	2.x servo drive with a Nil D95 and other encode's encoder and version fro elf-diagnosis", then cheo	om 2.0.8 or 2.1.1, which support "over ck temperature feedback and settings d drive's and encoder's versions. V1.8.14 or above.		

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	 Nikon encoder's speed exceeds 250RPM when power is on If alarm occurs when motor isn't running, there is possibly encoder malfunction. If the first encoder is Panasonic Encoder, the motor's speed must run below 100RPM when power is on. 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	 Once the motor stops, reset alarm. 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	 Encoder communication interface setting is incorrect while using serial encoder If Pn-900(P3-20) is set to 12 and connected with a Nikon encoder, then it is communication issue. If the Pn-900 is set to 23 and connected to the HCFA encoder, then perhaps the encoder does not support high-cycle communication. This alarm occurs when power-up with HCFA/ Sankyo encoders. Please check Pn-642, Pn-643 settings if correct. Setting of Pn-900 can not be used at the setting of Pn-901 FPGA version doesn't support this encoder type
Possible Cause	 The parameter of encoder communcation interface (Pn-900(P3-20)) and encoder's serial communcation are mismatched. Check if encoder cables are indeed grounded and the wire has breakage or not. Check if the specifications of HCFA motor support high-cycle communication. With HCFA/ Sankyo encoders, frequency of communication is not legal. Check if Pn-901 is set correctly FPGA version doesn't support the encoder type Pn-900(P3-20) setting.
Possible Solution	 Set Pn-900(P3-20) correctly and reboot drive. Reassemble cables, make sure there is no interference and then restart Set Pn-900 to 22, and then reboot the drive Please look up manual of Pn-900(P3-20). Refresh setting with correct ones. Setup correct Pn-901 and restart Drive. Refer to "Syntec Parameter Manual" for setup detail 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	 Syntec encoder crash and watchdog restart encoder. Non-Syntec encoder internal error. Motor overheating Noise interference Hardware malfunction 		

Possible Solution	 Restart and observe second encoder for abnormality Check Pn-92E(P6-94) 2nd Encoder Reset Counter. If encoder abnormal, check whether the motor is overheated or not Check whether the motor is overheated or not, if the parameter Pn-92E(P6-94) is 5 Make sure the shielding wire attached to encoder inside the junction box is connected to the motor's ground wire. Replace encoder. 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-31 1		
1st Single Axis ID	AL-33	Alarm Name	2nd Encoder Index Error
Alarm Content	Alarm Content1. Encoder didn't detect reference signal during encoder test.2. Encoder-rotor offset calibration takes too long.		
Possible Cause	 Connector wiring is poor contact, or connection is wrong. Second encoder setting error. Second encoder pole number(Pn-92A/P6-90) setting error. Communication interference Second encoder hardware malfunction 		
Possible Solution	 Check wiring of second encoder, refer to "Wiring and Signal" section of manual. Execute "Encoder test". If any alarms goes off, refer to "Syntec auto tuning" section of manual. Set encoder pole number correctly and reboot driver. Refer to "Syntec motor encoder grounding program" section of manual 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	 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	 2nd encoder resolution Pn-922(P6-81) setting error 2nd Encoder pole number Pn-92A(P6-90) setting error. Second encoder hardware malfunction 			
Possible Solution	 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. Check parameter Pn-92A(P6-90), set encoder pole pair number correctly and reboot driver 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	 Second encoder wire is untied or unconnected. Encoder communication interface setting error. Encoder port number setting error. Wire failure (shor circuit, wire breakage) Encoder malfunction Driver's pre-circuit board malfunction In dual feedback control and 2nd encoder type is QEP, mechanical problem and machining condition may cause alarm Encoder's baud rate is unsupported Encoder firmware update failed
Possible Solution	 Check if serial encoder wiring and pin definitions for errors are correct or not. Refer to "Wiring and signal" section of manual. Refer to "Drive Parameter Manual", set parameters correctly and reboot driver. Replace encoder cable (encoder's green wire between the drive and motor), and send broken one to Suzhou Syntec. Replace motor 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	 Second encoder's cable problem Second encoder's signal is interfering by rotor's axis with magnetic Second encoder malfunction 			

Possible Solution	 Replace cable. Check if joining between encoder cable and motor is double end grounded. Check if encoder and motor are grounded. Send back to Syntec or authorized representative.
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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			B phase and Z index is different in each revolution, der is error possibly .		
Possible Cause	 Syntec encoder: Second encoder's firmware version is outdated Encoder is under noise interference, which causing feedback signal error. Encoder's signal is interfering by rotor's axis with magnetic Hallow magnetic ring Zindex position is different than from the written parameter. Magnetic ring's non-Zindex zone has magnetic field distribution Hardware malfunction Non-Syntec encoder: The circuit board of non-Syntec encoder is broken. Non-Syntec sensor and encoder are wrong assembly. 				
Possible Solution	 Update V2.2.5) Check i Check i Short t Magnet Long te Cross-S Short t Raise Z executi Long te Import Send th Non-Synte 	ntec encoder: 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. Check if second encoder and motor are grounded. Check if joining between second encoder cable and motor are is double end grounded. Short term countermeasure: Magnetic axle center causing AL-54 SOP Long term countermeasure: Cross-Strait motor plants import axle center inspections starting 2016/7 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 Send the second encoder to Syntec or authorized representative for repair. n-Syntec encoder: Check the encoder is contaminated by dust or oil.			

Detailed Instructions	AL-54 Issue Trouble Shooting
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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	 2nd Encoder status has extreme errors to operate normally Second encoder communication interference. Second Serial encoder wire is untied or unconnected Connector between drive and encoder has solder empty or code solder Second encoder's cable grounding failure Second encoder communication type setting error. Automatic search for BiSSC data length is failure 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. 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". Second encoder's firmware malfunction Second encoder's hardware malfunction 			



Possible Solution	 Check if drive's status parameter Pn-D77~Pn-D7A(D1-42,D1-43,D1-59,D1-60) is zero or not. Check if encoder and motor are grounded. Check if joining between encoder cable and motor double end grounded. Check welding wire at the interface between encoder and drive. Check welding wire at the interface between encoder and motor. 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. 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	 Nikon encoder speed exceeds 250RPM right after power on. If alarm occurs when motor isn't running, encoder malfunction is possible If the second encoder is Panasonic Encoder, the motor's speed must run below 100RPM when power is on. 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	 Once the motor stops, reset alarm. Contact motor company for repairs. 			

[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	 Encoder communication interface setting is incorrect while using second serial encoder. 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 If the Pn-920 is set to 23 and connected to the HCFA encoder, then perhaps the encoder does not support high-cycle communication. This alarm occurs when power-up with HCFA/ Sankyo encoders. Please check Pn-642, Pn-643 settings if correct. Setting of Pn-920 can not be used at the setting of Pn-921 FPGA version doesn't support this encoder type. 				
Possible Cause	 The parameter of encoder communcation interface Pn-920(P6-80) and encoder's serial communcation are mismatched. Check if encoder cables are indeed grounded and the wire has breakage or not. Check if the specifications of HCFA motor support high-cycle communication. With HCFA/ Sankyo encoders, frequency of communication is not legal. Check if Pn-921 is set correctly FPGA version doesn't support the encoder type Pn-920(P6-80) setting encoder type. 				
Possible Solution	 Reassem Set Pn-9 Please lo Setup co detail 	920(P6-80) correctly and reboot driver mble cables, make sure there is no interference and then reboot driver 920 to 22, and then reboot the drive look up manual of Pn-920(P6-80). Refresh setting with correct ones. correct Pn-921 and restart Drive. Refer to "Syntec Parameter Manual" for setup le 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	 Syntec encoder: Encoder temperature over protective limit setting by drive Nikon encoder: Encoder internal temperature over protection level Pn-742. FeeDat encoder: Encoder internal is overheating Panasonic encoder: Encoder internal temperature over 100 degrees Celsius or protection level Pn-742. Mitutoyo encoder: Encoder internal temperature over 65 degrees Celsius. Mitsubishi encoder: Encoder internal temperature over 115 degrees Celsius or protection level Pn-742. Delta encoder: Encoder internal temperature is higher than 105 Celsius degree. Tamagawa 23 bit encoder: Encoder internal temperature is higher than 85 Celsius degree or protection level Pn-742. Tamagawa 25 bit encoder: Encoder internal temperature is higher than 105 Celsius degree or protection level Pn-742.
Possible Cause	 Motor cooling system failure Version compatibility Thermal sensor signal error With SYNTEC encoder, encoder internal thermal sensor type setting error Encoder hardware malfunction
Possible Solution	 Check and change motor cooling system. If using SYNTEC, Nikon, Panasonic, Mitsubishi encoders, please check up Pn-D61. If using FeeDat, Tamagawa or Delta encoders, please resolve problem and restart driver. 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. Make sure parameter Pn-742 "Syntec Encoder internal(1) KTY84 overheat threshold" is set correctly. 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. 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 driv protective limit.			
Possible Cause	 Motor cooling system failure Version compatability Thermal sensor signal error Motor's Thermal Sensor wire unconnected to Encoder external(1)'s temperature sensing wire(the yellow and green line of the encoder, respectively) With SYNTEC encoder, encoder external(1) thermal sensor type setting error Encoder hardware malfunction 			
Possible Solution	 Check and change motor cooling system. 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. Make sure parameter Pn-743 "Syntec Encoder internal(1) Thermal Sensor overheat threshold" is set correctly. 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. 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. 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	 Cooling system failure Version compatibility Parameter error With SYNTEC encoder, encoder external(2) thermal sensor type setting error 				

Possible Solution	 Check and change cooling system. 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. 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. 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	 Syntec encoder: Encoder temperature over protective limit setting by drive Nikon encoder: Encoder internal temperature over protection level Pn-746. FeeDat encoder: Encoder internal is overheating Panasonic encoder: Encoder internal temperature over 100 degrees Celsius or protection level Pn-746. Mitutoyo encoder: Encoder internal temperature over 65 degrees Celsius. Mitsubishi encoder: Encoder internal temperature over 115 degrees Celsius or protection level Pn-746. Delta encoder: Encoder internal temperature is higher than 105 Celsius degree. Tamagawa 23 bit encoder: Encoder internal temperature is higher than 85 Celsius degree or protection level Pn-746. Tamagawa 25 bit encoder: Encoder internal temperature is higher than 105 Celsius degree or protection level Pn-746. 		
Possible Cause	 Cooling system failure Version compatibility Thermal sensor signal error With SYNTEC encoder, 2nd encoder internal thermal sensor type setting error Encoder hardware malfunction 		

Possible Solution	 Check and change cooling system. If using SYNTEC, Nikon, Panasonic, Mitsubishi encoders, please check up Pn-D61. If using FeeDat, Tamagawa or Delta encoders, please resolve problem and restart driver. 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. Make sure parameter Pn-748 "Syntec Encoder internal(1) thermal sensor overheat threshold" is set correctly. 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.
	 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

drive's protective	e limit.	2nd Encoder External(1) Thermal Sensor Over Temperatureernal(1)'s Thermal Sensor detect is over
drive's protective	e limit.	rnal(1)'s Thermal Sensor detect is over
1. Cooling syste	om failuro	
 Cooling system failure Version compatibility Thermal sensor signal error Motor's Thermal Sensor wire unconnected to Encoder external(1)'s temperature sensing wire(the yellow and green line of the encoder, respectively) With SYNTEC encoder, 2nd encoder external(1) thermal sensor type setting error Encoder hardware malfunction 		
 Thermal sensor signal error Motor's Thermal Sensor wire unconnected to Encoder external(1)'s temperature sensing wire(the yellow and green line of the encoder, respectively) With SYNTEC encoder, 2nd encoder external(1) thermal sensor type setting error 		

Possible Solution	 Check and change cooling system. 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. Make sure parameter Pn-748 (P1-38)"Syntec Encoder internal(1) Thermal Sensor overheat threshold" is set correctly. 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.
	 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. 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	 Cooling system failure Version compatibility Thermal sensor signal error Motor's Thermal Sensor wire unconnected to Encoder external(2)'s temperature sensing wire(the yellow and green line of the encoder, respectively) With SYNTEC encoder, 2nd encoder external(2) thermal sensor type setting error Encoder hardware malfunction 			
Possible Solution	 Check and change cooling system. 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. Make sure parameter Pn-748 (P1-38)"Syntec Encoder internal(2) Thermal Sensor overheat threshold" is set correctly. 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. 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. 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	 Encoder Internal Thermal Sensor Error With SYNTEC encoder, encoder internal thermal sensor type setting error 			
Possible Solution	 If encoder Internal Thermal Sensor is not needed, set parameter Pn-74A(P1-70) to 1. 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. Send back to dealer or Syntec Corp. 			

10.45 AL-328 Encoder Internal Thermal Sensor Error

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

All in one ID 2nd Single A xis 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	 Encoder External(1) Thermal Sensor is not plugged correctly Encoder external(1) Thermal Sensor is broken Abnormal power supply voltage of 1st encoder With SYNTEC encoder, encoder external(1) thermal sensor type setting error 						
Cuuse	3. Abnormal power supply voltage of 1st encoder						

Possible Solution	 (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. 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	 Parameter Pn-900 encoder type is set but parameter Pn-901 is not. Port number setting is the same as another encoder port setting 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 encode	2nd encoder Port (Parameter Pn-921) setting error		
Possible Cause	 Parameter Pn-920 encoder type is set but parameter Pn-921 is not. Port number setting is the same as another encoder port setting 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	 The version of encoder is outdated. Parameter specifics cannot be recognized if the motor is not supplied by Syntec. Data read from encoder is unable to be interpreted. 			
Possible Solution	 Upgrade driver version. 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. Inquire the retailer or manufacturer for trouble shooting. 			

10.49 AL-332 Encoder not recognized

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	 The version of encoder is outdated. Parameter specifics cannot be recognized if the motor is not supplied by Syntec. Data read from encoder is unable to be interpreted. 			
Possible Solution	 Upgrade driver version. 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. 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 paramet	Encoder parameter download process is unsuccessful		
Possible Cause	 With Syntec motors after manufacturing date of 2021/05, the older driver may not support its communication. 1st encoder still not ready after drive power on for 1 second. The parameters read back from encoder is incorrect. Signal transfer error due to the poor contact of the first encoder's pin With hallow type encoder(mini encoder), check whether motor serial number is not zero 			
Possible Solution	 With Syntec motors after manufacturing date of 2021/05, it is recommended that upgrade driver version at least 3.0.13. Check status parameter "First encoder parameter read back status", single axis' parameter is D2-97, four in one's status parameter is Pn-E5F. Check if encoder is wired correctly and whether there are interferences. Check connectivity of encoder connector pins 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. 			
			commend saving parameters meters have been read correctly.	

10.51 AL-334 Encoder Download Parameters Fail

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	 2nd encoder still not ready after drive power on for 1 second. The parameters read back from 2nd encoder is incorrect. Signal transfer error due to the poor contact of the 2nd encoder's pin With hallow type encoder(mini encoder), check whether motor serial number is not zero
Possible Solution	 Check status parameter "2nd encoder parameter read back status", single axis' parameter is D2-98, four in one's status parameter is Pn-E60. Check if encoder is wired correctly and whether there are interferences. 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	 Preclude encoder wiring interferences, reinforce grounding Status surveillance: Pn-D73(D1-28) Serial Encoder CRC error count(hardware) Pn-D74(D1-29) Serial Encoder CRC error count(software) Pn-D76(D1-47) Serial Encoder overtime error count If this alarm occurs when saving parameters, reset alarm and permanently resave parameters again. 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	 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	 Syntec encoder: Encoder temperature over 100 Celsius degrees Nikon encoder: Encoder internal temperature out of operation temperature range 		
Possible Cause	 Motor cooling system failure Version compatibility Thermal sensor signal error With SYNTEC encoder, encoder internal thermal sensor type setting error Encoder hardware malfunction 		

Possible Solution	 Check and change motor cooling system. Please check up Pn-D61. Check the time of variationes used for encoder internal thermal cooring. If
	 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.
	 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	 Motor cooling system failure Thermal sensor signal error Motor's Thermal Sensor wire unconnected to Encoder external(1)'s temperature sensing wire(the yellow and green line of the encoder, respectively) With SYNTEC encoder, encoder external(1) thermal sensor type setting error Encoder hardware malfunction 			
Possible Solution	 Check and change motor cooling system. Make sure parameter Pn-743 is set correctly. 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. 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	 Motor cooling system failure Thermal sensor signal error Motor's Thermal Sensor wire unconnected to Encoder external(2)'s temperature sensing wire(the pink and gray line of the encoder, respectively) With SYNTEC encoder, encoder external(2) thermal sensor type setting error Encoder hardware malfunction
Possible Solution	 Check and change motor cooling system. Make sure parameter Pn-744 is set correctly. 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. 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	 Check the encoder wiring and grounding. 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	 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	 Syntec encoder: Encoder temperature over 100 Celsius degrees Nikon encoder: Encoder internal temperature out of operation temperature range 		
Possible Cause	 Motor cooling system failure Version compatibility Thermal sensor signal error With SYNTEC encoder, 2nd encoder internal thermal sensor type setting error Encoder hardware malfunction 		
Possible Solution	 Check and change motor cooling system. Please check up Pn-D65. 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. 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	 Motor cooling system failure Thermal sensor signal error Motor's Thermal Sensor wire unconnected to Encoder external(1)'s temperature sensing wire(the yellow and green line of the encoder, respectively) With SYNTEC encoder, 2nd encoder external(1) thermal sensor type setting error Encoder hardware malfunction
Possible Solution	 Check and change motor cooling system. Make sure parameter Pn-747 is set correctly. 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. 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	 Thermal sen Motor's Ther temperature With SYNTEG error 	 Motor cooling system failure Thermal sensor signal error Motor's Thermal Sensor wire unconnected to Encoder external(2)'s temperature sensing wire(the pink and gray line of the encoder, respectively) With SYNTEC encoder, 2nd encoder external(2) thermal sensor type setting error Encoder hardware malfunction 				
Possible Solution	 Check and change motor cooling system. Make sure parameter Pn-748 is set correctly. 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. 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-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	 Check the 2nd encoder wiring and grounding. Send back to Syntec Corp. 					

10.66 AL-354 2nd Encoder Signal Noise Interference



AL-3xx Encoder Alarm Description – 202

All in one ID 2nd Single Axis ID	AL-4 00					
1st Single Axis ID	AL-2 9	Alarm Name	Motor Par Command	rameter Estimation Failure - Abnormal Output		
Alarm Content	The se	arch for th	e estimated c	urrent command fails during parameter estimation		
Possible Cause	2. Me			ccessive motor load inhibits motor rotation		
Possible Solution	dur 2. Che est no- mo 3. The pro	ing the "en eck whethe imation pro load. If the tor tuning" e voltage co cess. The s	coder function r the current re ocess. Ensure th load cannot be ommand exceed etting of the int	ccurs in the "encoder function test" test. Handle the alarm test" test. aches the 120% rated current of the motor during the nat the motor parameters are estimated when the motor is removed, it is recommended to use "static induction ds 40% of the rated motor voltage during the tuning ternal gain ratio Pn-F2D (Fn-18) of the tuning machine ually lowered by 20% steps		
All in one ID 2nd Single Axis II		L-401				
1st Single Axis II		AL-2A Alarm Motor Parameter Estimation Failure-Abnormal Motor Name Speed				
Alarm Content		The motor speed is lower than 80% of the motor rated speed during the parameter estimation.				
Possible Cause	2. 3.	 Encoder malfunction Mechanical abnormality or excessive motor load inhibits motor rotation Motor rated speed is too high Abnormal current control 				

11 AL-4xx Tuning Alarm Description

Possible Solution	the test 2. Duri rate loac mot 3. Che "sta usin 4. Che F2D	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. 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". 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. 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-40	2				
1st Single Axis	ID	AL-50)	Alarn	n Name	Current Tuning Error	
Alarm Content		Current tur	ing erro	or			
Possible Cause		1. Excess	current	t during tuning.			
Possible Solution				rent Tuning" test Syntec or authorized representative			
All in one ID 2nd Single Axis ID		AL-403					
1st Single Axis ID			Ala	rm Name	Motor Rotor	Time Const. Estimation Failure	
Alarm Content	Frec	quency search	n failure	during the e	stimation proc	ess of motor rotor time constant.	
Possible Cause	2.	 Motor Rated Speed Pn-70C is set incorrectly Motor Pole Number Pn-701 is set incorrectly During parameter estimation, the motor is rotated by external force 					
Possible Solution	2.	 Correct Pn-70C Correct Pn-701 Avoid motor rotation during parameter estimation 					
All in one ID 2nd Single Axis ID		AL-404					
1st Single Axis ID			Ala	rm Name	PM Motor Pa	arameter Tuning Fail	

Alarm Content	 UVW cable disconnected Voltage command reaches limit during tuning 							
Possible Cause		 3 phase power cables are loose Voltage specification of driver and motor are matched 						
Possible Solution			es between motor and dri voltage specification is m	ve for damage or looseness. natche				
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 Je	rk, acceleration or t	ravel limit setup inappro	oriate.				
Possible Cause	 2. Mo 3. Lov 4. Ins 	ial rotor inertia set tor specification inp v JOG speed ufficient travel limit celeration setup toc v Jerk	put error					
Possible Solution	ma 2. Che 3. Par rate 4. Tra ins mo 5. Acc Set 6. Jer	 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). Check motor parameter Pn-7XX (P3-XX). Parameter Pn-304(Fn-02) too low causing tuning to fail. Minimum tuning RPM is 20% of rated motor speed. 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. Acceleration time Pn-306(P6-10) is so short that motor cannot catch up. Set Pn-306(P6-10) longer. 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	All in one ID AL-411							
2nd Single Axis	ID							
1st Single Axis	s ID AL-2C Alarm Name Initial Value of Inertia is Set Unsuitable							

	Unsuitable
Alarm Content	Triggered when initial rotor inertia setup inappropriate.
Possible Cause	 Incorrect rotor inertia and mechanical constant initial setup Incorrect motor rotor time constant setup

Possible Solution	Pn 2. Ob	 Refer to "Auto tuning" section of manual and reset Pn-720(P4-20) and Pn-722(P4-21). 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		AL-412				
1st Single Axis	ID	AL-3E	Alarm Name	Inertia Tuning Startup Failure		
Alarm Content	trigge	ered when m	otor doesn't run during I	nertia tuning		
Possible Cause	2. M	ncoder wirin Iotor stall Default torque	ng error e is too small(50%) that c	an't drive the load		
Possible Solution	2. T C 3. Ir ir	 Check encoder wiring, refer to "Wiring and signal" section of manual The mtor should rotate during tuning with direction that Pn-504 allows (PS: Only 2nd Single Axis has this function) Check if UVW cables are wired correctly Check for mechanical locks 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		L-413				
1st Single Axis	ID /	AL-74	Alarm Name	Inertia Tuning Loading Too Large		
Alarm Content	Displa	acement exce	xceeds half the motion limit while estimating gravity			
Possible Cause	1. M	1. Motion limit is set too small or motor power is insufficient				
Possible Solution		 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 va	ertia value out of range				

Possible Cause	1. Roto	1. Rotor inertia value error						
	2. Linea	2. Linear motor load inertia value out of range						
Possible Solution	durir 2. Refei	ng idling. r to "linear motor	tor inertia parameter, o r SOP Q and A", restart		otor inertia estimation Ining instead of load inertia			
	tunir	ıg.						
All in one ID 2nd Single Axis ID	AL-420							
1st Single Axis ID	AL-3D	Alarm Name	Encoder Offset Searc	hing Failure				
Alarm Content	Drive fail	s to detect accura	ate motor pole position	า				
Possible Cause	1. Enco 2. Moto		, causing position shift					
Possible Solution	2. Moto a	Make sure encoder index and motor shaft angle are fixed Motor should rotate twice during searching process a. Check if UVW cables are wired correctly b. Check for mechanical locks						
All in one I 2nd Single Ax		AL-430						
1st Single Axi	is ID	AL-4F	Alarm Name	Encoder Ca	alibration Stall Error			
Alarm Content		No motor rota	ation even as current ou	utput reaches l	imit			
Possible Cause		 Motor overload UVW wiring error 						
Possible Solution		 Check motor for mechanical interferences Check Pn-441/Pn-444, Reset correct Pn-441/Pn-444 Check UVW wiring from drive to motor 						
All in one ID 2nd Single Axi								
1st Single Axis	; ID	AL-3A	Alarm Name	Encode Error	er Pitch Compensation			
Alarm Content		Adjacent compensation value varies too greatly						

Possible Cause	 Encoder's original position feedback fluctuates severely Encoder's compensation fixture error Encoder malfunction 						
Possible Solution	polarity while Check if 1st a compensatio 2. Make sure fix feedback me 3. Rotate motor	 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. Make sure fixture is correctly mounted. Rotate motor and check if 1st feedback mechanical angle changes. 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	AL-440						
2nd Single Axis ID							
1st Single Axis ID			Alarm Name	Dead failur	time calibration initial e		
Alarm Content	Dead time calibra	ition in	itial failure				
Possible Cause	1. Some axes ar	1. Some axes are servo on state					
Possible Solution	 Check all axes Servo off all a 						
All in one ID 2nd Single Axis ID	AL-450	AL-450					
1st Single Axis ID	AL-7A		Alarm Name		Sensor Test Fail		
Alarm Content	Sensor test setting error or motor stall						
Possible Cause	 Motion limit is set too small Linear motor: Whether position limit larger than 1.5 magnetic pitch. Rotary motor: Whether position limit larger than 2.5 electrical period. Lmotor stall Encoder no feedback 						

Possible Solution	a. Lin pit b. Ro per 2. Check roto a. Mo b. Res	 Set motion limit: Linear motor: Reserve a travel distance larger than 1.5 magnetic pitch. Rotary motor: Reserve a travel distance larger than 2.5 electrical period. Check rotor position, Check Pn-441/Pn-444: Move motor to suitable position Reset Pn-441/Pn-444 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 magnet	ic pitch (Pn-D85) and set	value (Pn-702) are mismatched			
Possible Cause	1. Magnetic pitc	1. Magnetic pitch or encoder resolution setup error				
Possible Solution	1. Set paramete	ers 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 digi	tal input filtering level fai	led			
Possible Cause	2. Abnormal fun	 Wrong setting of gear number of motor side or screw side Abnormal function of proximity switch Spindle orientation check window is too narrow 				
Possible Solution		 Set parameters Pn-20A, Pn-20C, Pn-522, Pn-50A and Pn-50B correctly 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 ala	Unexpected alarm occurred during tuning process				
Possible Cause	Certain axis reg	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 t	ravel limit setup inappropria	te.			
Possible Cause	 Initial rotor inertia setup incorrect Motor specification input error Low JOG speed Insufficient travel limit Acceleration setup too severe Low Jerk 					
Possible Solution	 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). Check motor parameter Pn-7XX (P3-XX). Parameter Pn-304(Fn-02) too low causing tuning to fail. Minimum tuning RPM is 20% of rated motor speed. 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. Acceleration time Pn-306(P6-10) is so short that motor cannot catch up. Set Pn-306(P6-10) longer. 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	 Incorrect rotor inertia and mechanical constant initial setup Incorrect motor rotor time constant setup 		

Possible Solution	 Refer to "Auto tuning" section of manual and reset Pn-720(P4-20) and Pn-722(P4-21). Observe if rotor viscosity drops until alarm is triggered. Refer to "Rotor time constant tuning" part of "Auto tuning" section of manual.
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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	 Encoder didn't detect reference signal during encoder test. Encoder-rotor offset calibration takes too long 			
Possible Cause	 Connector wiring is poor Encoder malfunction Syntec encoder pole nut Communication interfe Hardware malfunction 	mber (Pn-90A/P3-30) settii	0	

Possible Solution	 Check encoder wiring, refer to "Wiring and Signal" section of manual. Execute "Encoder test" and check for alarms . If any alarm goes off, refer to "Syntec auto tuning" section of manual. 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. Set encoder pole number correctly and reboot driver. Refer to "Syntec motor encoder grounding program" section of manual 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	 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	 The parameter "Encoder Resolution" setting error Hardware malfunction Encoder pole number(Pn-90A/P3-30) setting error 			
Possible Solution	 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 Send back to distributor or Syntec representative to check hardware 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	 Encoder cable malfunction Encoder malfunction 		
Possible Solution	 Replace cable. 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-4 00			
1st Single Axis ID	AL-2 9	Alarm Name	Motor Parameter Estimation Failure - Abnormal Output Command	
Alarm Content	The se	arch for the e	estimated current command fails during parameter estimation	
Possible Cause	 Encoder malfunction Mechanical abnormality or excessive motor load inhibits motor rotation Abnormal current control 			
Possible Solution	dur 2. Chi est no- mc 3. Thi pro-	 Abnormat current control Confirm whether any alarm occurs in the "encoder function test" test. Handle the alarm during the "encoder function test" test. 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". 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 spe estimation.	ed is lower thar	a 80% of the motor rated speed during the parameter	
Possible Cause	 Encoder malfunction Mechanical abnormality or excessive motor load inhibits motor rotation Motor rated speed is too high Abnormal current control 			
Possible Solution	 the "encod test. During the rated spee load. If the motor tuni Check whe "static indu using the e Check whe 	k whether the motor rated speed exceeds 10000 RPM. It is recommended to use ic induction motor tuning", or manually enter the motor parameters to avoid g the existing Motor tuning function. k whether the current error is too high. The setting of the internal gain ratio Pn- (Fn-18) of the tuning machine starts from 100% and is gradually lowered by 20%		

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

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	 Redo the "Current Tuning" test 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	Frequency search failure during the estimation process of motor rotor time constant.			
Possible Cause	 Motor Rated Speed Pn-70C is set incorrectly Motor Pole Number Pn-701 is set incorrectly During parameter estimation, the motor is rotated by external force 				
Possible Solution	 Correct Pn-70 Correct Pn-70 Avoid motor 	01	arameter 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	 UVW cable disconnected Voltage command reaches limit during tuning 		
Possible Cause	 3 phase power cables are loose Voltage specification of driver and motor are matched 		
Possible Solution	 Check UVW cables between motor and drive for damage or looseness. 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	 Encoder wiring error Motor stall Default torque is too small(50%) that can't drive the load
Possible Solution	 Check encoder wiring, refer to "Wiring and signal" section of manual The mtor should rotate during tuning with direction that Pn-504 allows (PS: Only 2nd Single Axis has this function) Check if UVW cables are wired correctly Check for mechanical locks 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	 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	 Rotor inertia value error Linear motor load inertia value out of range 		
Possible Solution	 Re-enter specifics' rotor inertia parameter, or re-execute rotor inertia estimation during idling. Refer to "linear motor SOP Q and A", restart rotor inertia tuning instead of load inertia tuning. 		

11.16 AL-420 Encode	r Offset Searching Failure
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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	 Encoder mount loose, causing position shift Motor stall 			
Possible Solution	 Make sure encoder index and motor shaft angle are fixed Motor should rotate twice during searching process Check if UVW cables are wired correctly 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	 Unexpected rotation during detection Motor does not rotate during polarity detect Wrong initial angle detect method of linear motor 		
Possible Solution	 Check whether disturbance cause rotation during detection. Eliminate any mechanical disturbance causing rotation. Motor is locked during detection. Eliminate any mechanical brake of the motor. Motor's Inductance parameter is wrong. Correct the inductance parameter. Set Pn-72D manually, and set it opposite sign. 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	AL-430
2nd Single Axis ID	

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	 Motor overload UVW wiring error 			
Possible Solution	 Check motor for mechanical interferences Check Pn-441/Pn-444, Reset correct Pn-441/Pn-444 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 compen	sation value varies too gre	eatly
Possible Cause	 Encoder's original position feedback fluctuates severely Encoder's compensation fixture error Encoder malfunction 		
Possible Solution	 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. Make sure fixture is correctly mounted. Rotate motor and check if 1st feedback mechanical angle changes. 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	 Motion limit is set too small Linear motor: Whether position limit larger than 1.5 magnetic pitch. Rotary motor: Whether position limit larger than 2.5 electrical period. Lmotor stall Encoder no feedback 		
Possible Solution	 Set motion limit: Linear motor: Reserve a travel distance larger than 1.5 magnetic pitch. Rotary motor: Reserve a travel distance larger than 2.5 electrical period. Check rotor position, Check Pn-441/Pn-444: Move motor to suitable position Reset Pn-441/Pn-444 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	 Wrong setting of gear number of motor side or screw side Abnormal function of proximity switch Spindle orientation check window is too narrow 		
Possible Solution	 Set parameters Pn-20A, Pn-20C, Pn-522, Pn-50A and Pn-50B correctly 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 pro	ocess			
Possible Cause	Certain axis registe	ers 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-5	00						
1st Single Axis ID	AL-2	2F	Alarm Na	me		setting of operational V/f control		
Alarm Content	V/f curve	V/f curve slope setup error						
Possible Cause	1. V/f cu	urve slop	pe setup error, c	heck para	imeters Pn-	112~Pn-115 (P2-31~P2-34)		
Possible Solution	great 2. Freq 3. Volta 4. Volta (Obs	 Operation points 1 and 2 must increase in order. V and F of point 1 must be greater than those of point 2. Frequency of operation point 2 cannot be above rated frequency. Voltage of operation point 2 cannot be above rated voltage. Voltage of operation point 1 must be higher than minimum VF voltage. (Observe Pn-D3B (D1-30) for further information) V and f of both points cannot be 0. 						
All in one ID 2nd Single Axis ID	AL-5	01						
1st Single Axis ID	AL-:	30	Alarm	Name	V/f C	Overcurrent		
Alarm Content	f moo	de.		-		ximum current of motor in V .20% of maximum current		
Possible Cause	2. Incor	rect V/f	g of acceleratior curve setting overload.	n time or j	erk time			
Possible Solution	2. Adjus	st V/f ope	time(ms) and ac erating curve y decrease the lo		n time			
Remark	From v2.	12.7 , the	e second trigger	mechanis	sm of alarm	content has been removed		
All in one ID 2nd Single Axis ID	AL-502							
1st Single Axis ID		Ala	arm 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	2. Ga	 The belt slips Gain tuning result is improper UVW wiring is wrong or not connected 							
Possible Solution	2. Re	 Tighten or replace the belt Refer to chapter "Auto Tuning" in user manual, tune gain properly Refer to chapter "Wiring and signal" in user manual, and correct wiring 							
All in one IE 2nd Single Axi		AL-505							
1st Single Axis	s ID	-	Alar	m Name	Control mode not set properly				
Alarm Content		Control mode	should no	t be able to us	se with current setting or apparatus				
Possible Cause		 None of encoder applied in position control Disable position control with V/f mode setting Gantry control does not support all control modes except the host position mode 							
Possible Solution		controller 2. Check Pn- mode. Co	or encode 330 setting rrect Pn-33	r configuration g which is allow	wed to enter position control sition control mode switch by controller				
All in one ID 2nd Single Axis ID	AL-51()							
1st Single Axis ID	AL-3C	Alarm	n Name	Spindle Pos	sing Failure				
Alarm Content	Drive cou	ldn't complete	e spindle or	ientation with	nin time limit				
Possible Cause	comr 2. Enco 3. Filter Axis s 4. Proxi 5. Proxi 6. Orien	 Spindle orientation fails to reach window set in Pn-522(P6-12) for 2 seconds after command complete Encoder communication type error Filtering level is too high or signal width is too short (Only All in one ID/2nd Single Axis support) Proximity switch orientation failure Proximity switch orientation has wrong gear ratio Orientation is abnormally aborted V/f mode or none of encoder applied do not support spindle orientation 							

Possible Solution	500 2. Mal con 3. Che D35 4. If us con Sing 6. Rec	ke sure parameter Pn-522(P6-12) is set in a reasonable range. Suggested value is 0(0.5 degrees) ke sure Pn-900(P3-20) in single feedback control or Pn-920(P6-80) in dual feedback notrol is not 3 eck up the manual of Pn-03E and adjust it with motor running and monitoring Pn- 5 I Bits Status (Only All in one ID/2nd Single Axis support) sing proximity switch orientation Pn-243=1(P6-29=1), check Pn-D97(D1-77) is dated each turn. Assemble proximity switch correctly Pn-50A~Pn-50B(P1-40~P1-41). sing proximity switch orientation Pn-243=1(P6-29=1), check the gear ratio from notroller is correctly set. Update controller software version to at least 10.116.24R(1st gle Axis) or 10.118.10(All in one/2nd Single Axis) and set gear ratio correctly. cord Pn-D53(D1-40), and connect Syntec for further trouble shooting eck Pn-330 and encoder setting and correct them							
All in one ID 2nd Single Axis II	D	AL-511							
1st Single Axis II)	AL-62		Alarm Name	Spi	ndle Posing Deviate			
Alarm Content	Pc	sition deviate	d afte	er posing complete					
Possible Cause			-	e setting error, mecha on check window is to		interference cause spindle diverge rrow			
Possible Solution				n angle and mechanic arameter Pn-522(P6-:		erference set in a reasonable range			
All in one ID 2nd Single Axis		AL-512							
1st Single Axis	ID	-		Alarm Name		Error Digital Input Signal Index Position			
Alarm Content		1. Proximi	ty sig	nal may be disturbed	, driv	er can't mark an index position			
Possible Cause		 Digital Input Sampling Factor too low Input signal too noisy Gear ratio set incorrectly 							
Possible Solution		 Gear ratio set incorrectly Check Pn-03E. Please tune up level of Pn-03E and retry your test Please check the installation of input wire, or proper material use Replace with an more anti-noise material, or change a way of installation 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 se error						
Alarm Content	1. Parameters setting error in dual feedback control mode.							
Possible Cause	 Enable velocity dual feedback control, while position dual feedback control is disabled. 							
Possible Solution	 When enable velocity dual feedback control(Pn-32A = 1), Must enable position dual feedback control(Pn-22A = 1). If velocity dual feedback control is unnecessary, set Pn-32A = 0. 							
Remark	Alarm has been a	dded after ve	ersion v2.12.1	0				
All in one ID 2nd Single Axis ID	AL-520							
1st Single Axis ID	AL-38	Alarm Name	Excessive p feedback	oosition error between 1st and 2nd				
Alarm Content	Position error bet	ween 1st and	2nd feedbacl	exceeds allowed level				
Possible Cause	 Belt slip 2nd encoder pulse loss, no feedback or encoder polarity error Gear ratio set incorrectly Pn-51A set too strictly Uses ABZ type as 2nd encoder and the resolution value is wrong 							



	1. Check belt mechanism.							
			ler test" and observe ection of manual.	whether any alarms are triggered. Refer to				
	4. (1 5. F	 Measure and examine gear ratio again. Check Pn-51A setting. Refer to 2nd Generation Driver Dual Feedback Tuning Manual(Analysis platform) or "The Pos Dual Feedback Control Of The Linea Scales with Analysis Platform" For spindle dual feedback, it is recommended setting this error boun (Pn-51A) as 0.1 times of the 2nd encode resolution. For axial dual feedback, if the resolution of the outer feedback linea scale is R pulse/mm and the mechanism has a backlash error of P m 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. For axial dual feedback, please check whether[Pn-922]2nd Encoder Resolution is set correctly. 						
All in one ID 2nd Single Axis ID	AL-5	521						
1st Single Axis ID	AL-	1F	Alarm Name	Excessive Following Error				
Alarm Content	Error betwee	n position com	mand and feedback	is too large				
Possible Cause	4. Rotor ine	erload peed command ertia set incorre	ectly					
Possible Solution	 5. Parameter Pn-22C(P6-41) too low 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 							
	 Check if a Adjust co Reduce r Rotor ine behavior Check pa Pn-22C(F latch free 	oad ratio is cor controller's accel notor load or cl ertia is set too lo irameter Pn-22 P6-41) has its pa quency. e Pn-904/Pn-92	ntinuously over 100% mmand changes seve leration time constar hoose a larger rated t ow, output current is C(P6-41). arameter lower bound	rely. nt, set it larger. corque of motor. too small, resulting incorrect control d,the minimum value of Pn-22C is 1/5 of				
All in one 2nd Single A	 Check if e Adjust co Reduce r Rotor ine behavior Check pa Pn-22C(F latch free Make sur is correct 	oad ratio is cor controller's accel notor load or cl ertia is set too lo rameter Pn-22 P6-41) has its pa quency. e Pn-904/Pn-92	ntinuously over 100% mmand changes seve leration time constar hoose a larger rated t ow, output current is C(P6-41). arameter lower bound	rely. nt, set it larger. corque of motor. too small, resulting incorrect control d,the minimum value of Pn-22C is 1/5 of				

Alarm Content		Servo on co	Servo on command conflict				
Possible Cause		1. Drive receives Servo On and Auxiliary function at the same time					
Possible Solution	Possible Solution				set to enable auxiliary functions y function at the same time		
Note					drive version V1.6.9 and after. e 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	Paramet	er Saving Command is Illegal		
Alarm Content	Para	ameter saving o	command is given	while Serv	o On		
Possible Cause	1.	Parameter sav	ing command is gi	ven while S	Servo On		
Possible Solution	1.	Give paramete	r saving command	l while Serv	vo Off		
All in one ID 2nd Single Axis ID		AL-524					
1st Single Axis ID		AL-81	Alarm N	ame	Serious Belt slip		
Alarm Content		Speed error b	etween external e	ncoder and	l estimator is too great		
Possible Cause		 Belt slip Gear ratio error 					
Possible Solution		 Change o Set gear r 	2				
All in one ID 2nd Single Axis ID		AL-525					
1st Single Axis ID		AL-7C	Alarm Nam	e E	lectrical Gear Error		
Alarm Content	Re	elative setting e	error				
Possible Cause		. Parameter so . Encoder com	etting error nmunication type i	not suppor	ted		

Possible Solution	of 2, an 2. If 23 bit 3. Pn-210 4. Please Pn-920 if versio	d not more t TAMAGAWA (P6-09)must check Pn-900 (P6-80). If ver	encoder is used, Pn-20E can not more than 128. set to 1. D(P3-20). If in DualFeedback control, then check rsion is 1.6.x, this function only supports Nikon encoder; n support Nikon, Sankyo, HCFA and 23/25 bit				
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 be	tween 1st an	d 2nd feedback exceeds allowed level extremely				
Possible Cause	 Belt slip 2nd encoder Gear ratio set 	•	no feedback				
Possible Solution	 Check belt m Execute "Enc "Auto tuning Measure and 	oder test" an " section of n					
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 diffe	erence under	gantry control exceeds the limit				
Possible Cause	 The origin set The position Inertia settin 	 Host command polarity setting error The origin setting of the gantry axis is not completed The position deviation alarm threshold is too strict Inertia setting error One of axes is stuck mechanically 					
Possible Solution	 One of axes is stuck mechanically Check the Pn-020 host command polarity of the two axes Check the origin setting of the gantry axis Confirm Pn-572 position deviation alarm threshold Check the rotor and loader inertia or adjust the inertia Check if any axis is mechanically stuck 						

All in one ID 2nd Single Axis II)	AL-528							
1st Single Axis ID	,	-		Alarm Name	No origin p	No origin point for gantry control			
Alarm Content		No origin po	oint for	gantry cor	ntrol				
Possible Cause		No origin po	oint for	gantry cor	ntrol				
Possible Solution		Set the corr	ect orig	in for the i	incremental e	encoder throu	gh Pn-F46 = 1		
All in one ID 2nd Single Axis ID	AI	L-529							
1st Single Axis ID			Alarn	n Name	Excessive	Position Erro	r Overflow		
Alarm Content	Exce	essive overflo	ow of pu	ulse error I	between posi	tion comman	d and feedback		
Possible Cause	1. 1	Torque limit	reach,	then posit	ion error is to	o large			
Possible Solution	1. (Check positi	on targ	et, and set	proper posit	ion target			
All in one I 2nd Single Ax			AL-52	F					
1st Single Ax	is ID		AL-19	Э	Alarm I	Name	Servo On Time	out	
Alarm Content		Serv	vo on lo	nger than	normal				
Possible Cause				of driver is onfiguratio		ıs voltage is to	bo low.		
Possible Solution			 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. Send back to Syntec or authorized representative. 						
All in one ID 2nd Single Axis ID		AL-530							
1st Single Axis ID		AL-20		Alarm I	Name	Zero Speed	Check Fail		

Alarm Content	Zero	Zero speed check time longer than normal							
Possible Cause	2. E	 Pn-502(P6-15) Zero Velocity Window is set too small External overload Tuning result abnormal 							
Possible Solution	2. P	 Check Pn-502(P6-15) settings. Set Pn-502(P6-15) larger. Pn-306(P6-10) maximum acceleration and Pn-307(P6-11) maximum JERK time are set too small. Check and set them larger. 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 Par	ameter Loaded to Defaults			
Alarm Content	Do loa	ad defau	ult paramet	er function,	, parameter:	s have been loaded to default value	2.		
Possible Cause			load defaul neter is suc			modified, this warning will be show	wn after		
Possible Solution	1. P	lease re	boot the dri	ive and che	ck if this wa	rning is still exist.			
All in one ID 2nd Single Axis	ID	AI	L-542						
1st Single Axis	ID		-	Alarm Name		Laser Cruise Mode Failure			
Alarm Content		Laser (Cruise Mode	e Failure					
Possible Cause					21	on altimeter or LVDT do not support laser cruise mode			
Possible Solution						s altimeter or LVDT nd correct them			
All in one ID 2nd Single Axis ID	AL-543	3							
1st Single Axis ID	-	Ala	rm Name	The Prox	imity Spind	lle Position DI setting error			
Alarm Content	More t	han one	DI set as th	e Proximity	/ Spindle Po	sition function			

Possible Cause	1. The Proximity Spindle Position function only can set one DI in one axis									
Possible Solution	1. Che	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		-	Not support winding selecti function	ion						
Alarm Content		The switch functi	on of high and low speed	coil can't be opened.						
Possible Cause		2. CNC version r	etting of Pn-72C Motor Win not support winding select on spindle support winding	tion function						
Possible Solution		 2. Update CNC 3. Set Pn-700 M 	otor Winding Mode correc version correctly otor Type and Pn-803 Mot ing selection function	tly or Application correctly, or disa	ıble					

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	 Power of driver Drive configura 	r is loss or DC bus voltage is tion error.	too low.				
Possible Solution	sure of specific Pn-640(P5-00) s	ation match between driver					

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 s	etup error			
Possible Cause	1. V/f curve slope setup error, check parameters Pn-112~Pn-115 (P2-31~P2-34)				
Possible Solution	 Operation points 1 and 2 must increase in order. V and F of point 1 must be greater than those of point 2. Frequency of operation point 2 cannot be above rated frequency. Voltage of operation point 2 cannot be above rated voltage. 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.				

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

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	 The current feedback is continuously over the maximum current of motor in V/ f mode. Triggered when current feedback is greater than 120% of maximum current 				
Possible Cause	 Severe setting of acceleration time or jerk time Incorrect V/f curve setting The motor is overload. 				
Possible Solution	 Increase jerk time(ms) and acceleration time Adjust V/f operating curve 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	 The belt slips Gain tuning result is improper UVW wiring is wrong or not connected 				
Possible Solution	 Tighten or replace the belt Refer to chapter "Auto Tuning" in user manual, tune gain properly 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 us	e with current setting or apparatus		
Possible Cause	 None of encoder applied in position control Disable position control with V/f mode setting Gantry control does not support all control modes except the host position mode 				
Possible Solution	 Check if used function in position control. Make sure of correct setting on controller or encoder configuration Check Pn-330 setting which is allowed to enter position control mode. Correct Pn-330 or avoid position control mode switch by controller Check the controller settings or Pn-840 				

12.6 AL-510 Spindle Posing Failure

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

1st Single Axis ID	AL-3C	Alarm Name	Spindle Posing Failure		
Alarm Content	Drive couldn't	complete spindle or	ientation within time limit		
Possible Cause	 Spindle orientation fails to reach window set in Pn-522(P6-12) for 2 seconds after command complete Encoder communication type error Filtering level is too high or signal width is too short (Only All in one ID/2nd Single Axis support) Proximity switch orientation failure Proximity switch orientation has wrong gear ratio Orientation is abnormally aborted V/f mode or none of encoder applied do not support spindle orientation 				
Possible Solution	 V/f mode or none of encoder applied do not support spindle orientation Make sure parameter Pn-522(P6-12) is set in a reasonable range. Suggested value is 500(0.5 degrees) Make sure Pn-900(P3-20) in single feedback control or Pn-920(P6-80) in dual feedback control is not 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) 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). 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. Record Pn-D53(D1-40), and connect Syntec for further trouble shooting 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	 Orientation angle setting error, mechanical interference cause spindle diverge Spindle orientation check window is too narrow 				
Possible Solution		ntation angle and mechanio her parameter Pn-522(P6-	cal interference 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	 Digital Input Sampling Factor too low Input signal too noisy Gear ratio set incorrectly 				
Possible Solution	 Check Pn-03E. Please tune up level of Pn-03E and retry your test Please check the installation of input wire, or proper material use Replace with an more anti-noise material, or change a way of installation Check gear ratio, measure and examine gear ratio again 				

12.8 AL-512 Error Digital Input Signal Index Position

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	 When enable velocity dual feedback control(Pn-32A = 1), Must enable position dual feedback control(Pn-22A = 1). 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	AL-520		
2nd Single Axis ID			

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

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	 Torque limit too low Motor overload Severe speed commar Rotor inertia set incorn Parameter Pn-22C(P6- 	rectly			

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.
	 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	 Check if parameter Pn-F10(Fn-00) is set to enable auxiliary functions 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	 Belt slip Gear ratio error 			
Possible Solution	 Change or tighten belt 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	 Parameter setting error Encoder communication type not supported 				
Possible Solution	of 2, and no 2. If 23 bit TAM 3. Pn-210 (P6- 4. Please chec Pn-920(P6-8 if version is	atio of Pn-20E/Pn-210 (P6-08/P6-09) should be integral, and be power and not more than 256. hit TAMAGAWA encoder is used, Pn-20E can not more than 128. 0 (P6-09)must set to 1. e check Pn-900(P3-20). If in DualFeedback control, then check 0 (P6-80). If version is 1.6.x, this function only supports Nikon encoder; ion is v2.x, then support Nikon, Sankyo, HCFA and 23/25 bit GAWA encoders.			

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

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	 Belt slip 2nd encoder pulse loss or no feedback Gear ratio set incorrectly 			
Possible Solution	 Check belt mechanism. Execute "Encoder test" and observe whether any alarms are triggered. Refer to "Auto tuning" section of manual. 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	 Host command polarity setting error The origin setting of the gantry axis is not completed The position deviation alarm threshold is too strict Inertia setting error One of axes is stuck mechanically 			
Possible Solution	 Check the Pn-020 host command polarity of the two axes Check the origin setting of the gantry axis Confirm Pn-572 position deviation alarm threshold Check the rotor and loader inertia or adjust the inertia 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	 Pn-502(P6-15) Zero Velocity Window is set too small External overload Tuning result abnormal 				
Possible Solution	2. Pn-306(P6-10 too small. Ch	leck and set them larger.	(P6-15) larger. d Pn-307(P6-11) maximum JERK time are set 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 defai	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 re	1. Please reboot the drive and check if this warning is still exist.							

12.21 AL-531 Drive Parameter Loaded to Defaults

12.22 AL-532 STO Function Execution



1s t Si n gl e 轴向轴向 ID	-	A Ia r M a m e	S T O F u n c ti o n E x e c u ti o n			
Al ar C o nt e nt	on. stop	iction Moto	or			
P os bl e C a u se	STC circ	D_A c D_B uit is gere	;			
P os si bl e S ol ut io n	STC STC sigr con or	eck u)_A,)_B nals a inect gere	are ed			

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		communication type no	on altimeter or LVDT do not support laser cruise mode					
Possible Solution	 Check Pn-920 and set 2nd encoder as altimeter or LVDT 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 tha	More than one DI set as the Proximity Spindle Position function							
Possible Cause	1. The F	1. The Proximity Spindle Position function only can set one DI in one axis							
Possible Solution	1. Chec	k Pn-50A ~ Pn-50	D, 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 functi	on of high and low speed (coil can't be opened.

Possible Cause	 The wrong setting of Pn-72C Motor Winding Mode CNC version not support winding selection function Only induction spindle support winding selection function
Possible Solution	 Set Pn-72C Motor Winding Mode correctly Update CNC version correctly 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 Nam	e Encoder I	Encoder Battery Low Voltage Position Loss					
Alarm Content	Encoder battery l	Encoder battery low, position data is lost.							
Possible Cause	a. Nikon b. Mitsuk c. HCFA: d. Delta:	 Battery voltage too low or no battery. Nikon, Panasonic: battery voltage is less than 2.5 V. Mitsubishi: battery voltage is less than 2.9V. HCFA: battery voltage is less than 1.7V. Delta: battery voltage is less than 3.1V. Parameter setting error. 							
Possible Solution	 Change battery With controller: change battery and restart system. Without controller: change battery, set parameter Pn-F44(Fn-34) to 1 and restart drive. If not absolute encoder, set parameter Pn-904(P3-23) to 0 and restart drive. 								
Detailed Instructions	[Pn-D95]Enc Erro	r Status ALMC							
All in one ID 2nd Single Axis ID	AL-812								
1st Single Axis ID	AL-56	А	arm Name	2nd Encoder Position Loss					
Alarm Content	Second encoder l	pattery less that	n 2.5V, multi-turn	position data loss					
Possible Cause	 Encoder voltage too low or no battery Nikon, Panasonic: battery voltage is less than 2.5 V. Mitsubishi: battery voltage is less than 2.9V. HCFA: battery voltage is less than 1.7V. Delta: battery voltage is less than 3.1V. Parameter set incorrectly 								
Possible Solution	 Change battery With controller: Change battery and reboot system. No controller: Change battery, set parameter Pn-F44(Fn-34) to 1 and reboot river. Check parameter Pn-924(P6-83). If not using an absolute encoder, set Pn-924 to 0, save and reboot driver 								

Detailed Instruction	ns (Pn-D96)	[Pn-D96]2nd Enc Error Status ALMC										
All in one ID 2nd Single Axis ID	AL-830											
1st Single Axis ID	AL-830	Alarm	age Alarm									
Alarm Content	ABS type en	coder batter	y voltage lo	wer than 3V.								
Possible Cause	-	voltage too le er setting er		ttery.								
Possible Solution		-		e (No need to restart if eq ameter Pn-904(P3-23) to (
All in one ID 2nd Single Axis ID	AL-B6B											
1st Single Axis ID	A	Alarm Name Mechatrolink ASIC Malfunction										
Alarm Content	Mechatrolin	k ASIC Malfu	nction									
Possible Cause	1. Mechatr	olink ASIC M	alfunction									
Possible Solution	1. Please c	ontact distri	butor or Syı	ntec representative.								
All in one ID 2nd Single Axis ID	AL-E02											
1st Single Axis ID	- AI	arm Name	Host Con	nmunication Synchroniz	ation Error							
Alarm Content	Host Comm	unication pa	cket abnorr	nal.								
Possible Cause	1. Host Data exchange time out.											
Possible Solution	1. Check th	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	n Name	Mechatrolink position	n command e	rror						

Alarm Content	Mechatrolin	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		 Position command varies abnormally or unexpectedly 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	-	Alarr	n Name	Mecha Error	trolink Interpolation Time Interval Setting					
Alarm Content	Mechatrolin	k interpo	lation time i	nterval s	etting error.					
Possible Cause	1. Mechatr	1. Mechatrolink interpolation time interval setting is outside specified range.								
Possible Solution	1. Raise co value.	ntroller p	oarameter Pi	r3203 int	erpolation time interval setting to appropriate					
All in one ID 2nd Single Axis ID	AL-E50									
1st Single Axis ID	AL-E50	Alarn	n Name		Host command not updated					
Alarm Content	Host commun	ication W	'DT check er	ror.						
Possible Cause		1. The controller did not update the packet correctly or the host communication chip is abnormal.								
Possible Solution		 Check if the host command sends unexpected performance. 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 com	municat	ion disturbed by noise(Checked by hardware)					

Alarm Content	Host	Host communication CRC check error(Checked by hardware).								
Possible Cause	1. H	1. Host communication is disturbed by noise, which makes the packet unusable.								
Possible Solution	1. C	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 I	D	-		Alarm Name		Host Transmission Cycle Error				
Alarm Content		The transmi	ssio	n cycle interval var	ied i	n tolerance which is out of range.				
Possible Cause		1. Host co	mmı	unication varied in	toler	rance 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		Alarn Name		Host communication disturbed by noise(Checked by software)						
Alarm Content	Host	communicati	on C	RC check error(Ch	ecke	d by software).				
Possible Cause	1. H	lost communi	catio	on is disturbed by r	noise	e, which makes the packet unusable.				
Possible Solution	1. C	heck serial w	iring	, whether shielding	g is c	orrect and if connections are firm.				
All in one ID 2nd Single Axis ID	J	AL-E63								
1st Single Axis ID	Alarm Name Host communication sequence error					st 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. C	heck serial w	iring	, whether shielding	g is c	orrect and if connections are firm.				

All in one ID 2nd Single Axis ID	AL-E65									
1st Single Axis ID		Alarm Name	rm Name Host communication disconnect							
Alarm Content	Host con	nmunication dis	connect							
Possible Cause	1. Wire	falling off or loo	se.							
Possible Solution	1. Chec	k serial wiring, v	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 con	nmunication cor	ntinuous	error.						
Possible Cause	2. The	 Host communication is disturbed by noise. The controller did not update the packet correctly. The host communication chip is abnormal. 								
Possible Solution				shielding is correct and if conr ends unexpected performanc						
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	One phase of the power supply has low voltage.								
Possible Cause	-	. Voltage low for more than 1 second for R, S or T phase with main power on.								
Possible Solution	0	n power supply g single-phase p		oply, set parameter Pn-036 to	1 and restart drive.					

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 l	ow, position data is l	ost.	
Possible Cause	 Battery voltage too low or no battery. Nikon, Panasonic: battery voltage is less than 2.5 V. Mitsubishi: battery voltage is less than 2.9V. HCFA: battery voltage is less than 1.7V. Delta: battery voltage is less than 3.1V. Parameter setting error. 			
Possible Solution	 Change battery With controller: change battery and restart system. Without controller: change battery, set parameter Pn-F44(Fn-34) to 1 and restart drive. 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	 Encoder voltage too low or no battery Nikon, Panasonic: battery voltage is less than 2.5 V. Mitsubishi: battery voltage is less than 2.9V. HCFA: battery voltage is less than 1.7V. Delta: battery voltage is less than 3.1V. 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	 Battery voltage too low or no battery. Parameter setting error. 		
Possible Solution	 Change battery and restart drive (No need to restart if equipped with Nikon encoder). 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	Mechatro	Mechatrolink ASIC Malfunction		
Possible Cause	1. Mech	1. Mechatrolink ASIC Malfunction		
Possible Solution	1. Pleas	1. Please contact distributor or Syntec representative.		

13.5 AL-E02 Host Communication Sy	nchronization Error
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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	Mechatrolin	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	 Position command varies abnormally or unexpectedly 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

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	 Check if the host command sends unexpected performance. 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 com	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. Chec	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	AL-E61		
2nd Single Axis ID			

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 com	Host communication CRC check error(Checked by software).						
Possible Cause	1. Host	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	 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 con	nmunication dis	connect.			
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	 Host communication is disturbed by noise. The controller did not update the packet correctly. The host communication chip is abnormal. 						
Possible Solution	 Check serial wiring, whether shielding is correct and if connections are firm. 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	 Voltage low for more than 1 second for R, S or T phase with main power on. Parameter setting error.
Possible Solution	 Tighten power supply wires. 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 Temperatur	e			
Alarm Content	The temperate	ure of IGBT is over 85℃					
Possible Cause	 Cooling sy Drive outp Ambient t Heat source 	 Severe acceleration change Cooling system failure Drive output short-circuit Ambient temperature overheat Heat source nearby Continuous use while exceeding drive's rated load 					
Possible Solution	 Check if fa Check driv Check if an Installatio Check env capacity. 	 Increase Pn-307 Check if fan is functioning normally. Check drive's output wiring, refer to "Wiring and Signal" section of manual. Check if ambient temperature is below 55°C, refer to "Transportation and Installation" section of manual. Check environment, remove external heat source or enhance cooling capacity. 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 Re High Temperature	esistor			
Alarm Content	The temperature	of regenerative resistor	r is over 105℃				
Possible Cause		 The acceleration is too severe. Motor or driver model selection is mismatch. 					
Possible Solution	 Check if the uresistor. a. Reduction b. Use erection c. Contact 	 Check if the acceleration time setting is too short. Increase Pn-307. Check if the used motor and its load match the driver's built-in regenerative 					

All in one ID 2nd Single Axis ID		A	L-920					
1st Single Axis II)	Α	L-920	Ala	rm Name	Servo On Command Conflict		
Alarm Content		Servo On command conflict						
Possible Cause		1. Dr	ive receive	s Servo ON	and auxiliary f	unction command at the same time		
Possible Solution			•			t to enable auxiliary functions. Action command at the same time.		
All in one ID 2nd Single Axis ID	AL	AL-921						
1st Single Axis ID		-	Alarm	Name	Power off pull-up function is not supported			
Alarm Content	Powe	r off tool	retraction	function is	not supported			
Possible Cause	2. TI 3. Po 4. V/	 Controller version doesn't support power off pull-up function The setting of weight direction is wrong. Power off detection module damaged V/f mode or none of encoder applied do not support pull-up function Gantry control does not support pull-up function 						
Possible Solution	2. Pl 3. Se 4. Cl	 If needed, upgrade controller version Please set Pn-805 to 1 or -1 Set Pn-804 = 0 to disable power off pull-up function, or send back to Syntec Check Pn-330 and encoder setting and correct them 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		-	Aları	n Name	Proximity Position is not supported			
Alarm Content	arm Content P			Proximity Position is not supported				
Possible Cause		 Controller version doesn't support Proximity Position function Not support Proximity Position function with Dual Feedback Control 						

Possible Solution	 Set Pn-243 = 0 to disable Posing by proximity switch function or upgrade CNC version if needed 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	D						
1st Single Axis ID		A	L-923		Alarm Name	Cooling Fan Error	
Alarm Content		Trigge	red when po	wer sta	ge reports abnormali	ity	
Possible Cause		1. Co	ooling fan fail	ure			
Possible Solution		1. S€	end back to S	yntec o	r authorized dealer fo	or repairs	
All in one ID 2nd Single Axis ID	AL-925						
1st Single Axis ID		-	Alarm Na	Alarm Name Control mode not applicable with tuning function			
Alarm Content	Corre	espondi	ng tuning fun	ction is	not applicable to the	e control mode or other settings	
Possible Cause	2. E	•		•	s not applicable to tu e or parameter settin	ining function ig is not applicable to tuning	
Possible Solution	2. C c	 Check Pn-330 if the tuning function is supported with it and correct it 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	Pleas	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	EEPR	OM-Wri	te Protect Pir	n Could	n't Pull-Low		

Possible Cause		lardware - Frontstage can't execute pull-low to EEPROM-write protect pin Software - The EEPROM's data of frontstage is error						
Possible Solution	Plea	ase 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 ch	eck error					
Possible Cause		1. User doesn	't have permission to use	this fe	ature			
Possible Solution		1. Check if per	rmission parameter Pn-FC	0 is se	t 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		 Battery voltage too low or no battery Parameter setting error 						
Possible Solution		 Replace the battery. If using Panasonic encoder, then restart driver. If using Nikon, Mitsubish, Delta or Tamagawa encoder, then don't need to restart. If not ABS encoder, set drive parameter Pn-904(P3-23) to 0, save and restart. 						
Detailed Instructions		[Pn-D95]Enc Erro	or Status ALMC					
All in one ID 2nd Single Axis ID		AL-931						
1st Single Axis ID		AL-931	Alarm Name	Enco	der Low Voltage			
Alarm Content		Encoder power source voltage abnormal						
Possible Cause		 FeeDat encoder power source voltage too great or insufficient EnDat encoder power source voltage insufficient 						

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

Possible Solution	Syntec encode	r:			
	 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. Check if encoder and motor are grounded. Check if joining between encoder cable and motor is double end grounded. Short term countermeasure: Magnetic axle center causing AL-54 SOP Long term countermeasure: Cross-Strait motor plants import axle center inspections starting 2016/7 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 Send the encoder to Syntec or authorized representative for repair. Non-Syntec encoder: Check the gap between sensor and encoder is correctly. Send back to Syntec Corp. 				
Detailed Explanations and SOP					
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 encode	er battery voltage lower th	an 3V		
Possible Cause	 Battery volt Parameter s 	age too low or no battery setting error			
Possible Solution	Nikon, Mitsı	 Replace the battery. If using Panasonic encoder, then restart driver. If using Nikon, Mitsubish, Delta or Tamagawa encoder, then don't need to restart. If not ABS encoder, set drive parameter Pn-924(P6-83) to 0, save and restart. 			
Detailed Instructions	[Pn-D96]2nd En	c Error Status ALMC			
All in one ID 2nd Single Axis ID	AL-936				

1st Single Axis ID	AL-936	Al	arm Name	2nd End	coder Low Voltage			
Alarm Content	2nd encoder	2nd encoder power source voltage too low						
Possible Cause		 FeeDat encoder power source voltage too great or insufficient EnDat encoder power source voltage insufficient 						
Possible Solution	 Check encoder wiring and grounding If this is a recurring problem, send back to Syntec or authorized dealer for repairs 							
Detailed Instructions	[Pn-D96]2nd	[Pn-D96]2nd Enc Error Status ALMC						
All in one ID 2nd Single Axis ID	AL-937							
1st Single Axis ID	AL-937	Ala	rm Name	2nd Enco	der Signal Abnormal			
Alarm Content	2nd Encoder	signal amp	olitude is too lov	v.				
Possible Cause	1. FeeDat e	ncoder sigr	nal amplitude is	too low. D+	+ D- signal may be disturbed.			
Possible Solution			ng and groundii problem, send l	-	tec or authorized dealer for repairs			
Detailed Instructions	[Pn-D96]2nd	Enc Error S	Status ALMC					
All in one ID 2nd Single Axis ID	AL	-938						
Single Axis ID	AL	AL-938 Alarm		ame	2nd Encoder Z Index Abnormal			
Alarm Content		Relative position between A/B phase and Z index is different in each revoluti so feedback position of encoder is error possibly .						

Possible Cause	Synte	ec encoder:						
	2. Er 3. Er 4. H 5. M 6. H Non-	 Second encoder's firmware version is outdated Encoder is under noise interference, which causing feedback signal error. Encoder's signal is interfering by rotor's axis with magnetic Hallow magnetic ring Zindex position is different than from the written parameter. Magnetic ring's non-Zindex zone has magnetic field distribution Hardware malfunction Non-Syntec encoder: 						
		 The circuit board of non-Syntec encoder is broken. Non-Syntec sensor and encoder are wrong assembly. 						
 Non-Syntec sensor and encoder are wrong assembly. Possible Solution Syntec encoder: Update drive's version to 1.6.14 or more recent(Multi-Axis Se updated to V2.2.5), and update encoder's version to 2.0.7 or Check if second encoder and motor are grounded. Check if joining between second encoder cable and motor a grounded. Short term countermeasure: 								
Detailed Explanations SOP	and Refer	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 para	oder parameters are illegal						

Possible Cause Possible Solution	3. 2r 4. W 5. W 6. W 7. W 1. Cl in Pr 2. Cl is 3. Cl Pr pl 4. Cl is 5. Cl is 6. Cl ve 7. Cl	 With SYNTEC encoder, Pn-911 is not illegal according to Pn-700 2nd Encoder: Pn-924 is not relative to Pn-920, Pn-335 With SYNTEC 2nd encoder, Pn-931 is not illegal according to Pn-335 With SYNTEC encoder, encoder ver. is not compatible with thermal resistance With SYNTEC encoder, 2nd encoder ver. is not compatible with thermal resistance With SYNTEC encoder, 2nd encoder ver. is not compatible with thermal resistance With SYNTEC encoder, 2nd encoder ver. is not compatible with thermal resistance With SYNTEC encoder, 2nd encoder ver. is not compatible with thermal resistance With SYNTEC encoder, 2nd encoder ver. is not compatible with thermal resistance With SYNTEC encoder, 2nd encoder ver. is not compatible with thermal resistance With SYNTEC encoder, 2nd encoder ver. is not compatible with thermal resistance With SYNTEC encoder, 2nd encoder ver. is not compatible with thermal resistance With SYNTEC encoder, 2nd encoder ver. is not compatible with thermal resistance With SYNTEC encoder, 2nd encoder ver. is not compatible with thermal resistance With SYNTEC encoder, 2nd encoder ver. is not compatible with thermal resistance With SYNTEC encoder, 2nd encoder ver. is not compatible with thermal resistance With SYNTEC encoder, 2nd encoder firmware to V2.1.1 or higher. And set Pn-75 into 1. b. If using PT1000:Update 2nd Encoder firmware to V2.1.1 or higher. And set corresponding thermal type parameters into 1. b. 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 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 0. Check Pn-900 and Pn-920 parameter manual to check whether the encod					
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 Permanant magnet motor applied to spindle cannot support dynam braking Using Induction motor or power stage not support Motor Stop Method is ShortBrake when Critical Alarm Stop Method is Run 				ot support			

Possible Solution		1. When Pn-700 = 0 and Pn-803 = 1, Pn-001 cannot be 0					
		00 = 2, Pn-004 cannot b 01 = 2, Pn-004 cannot b					
	S. When Fil-00	01 – 2, FII-004 Califiot D	e I				
All in one ID	AL-942						
2nd Single Axis ID							
1st Single Axis ID	-	Alarm Name	Abnormal Motor Parameter Estimation - Too Large Test Current				
Alarm Content	u .	During motor parameter estimation, the searched current command is greater or equal to 0.707 times rated current.					
Possible Cause	2. Wrong moto	 Mechanical abnormality or excessive motor load inhibits motor rotation. Wrong motor nameplate parameters lead to unexpected voltage command, rotational speed, or current command. 					
Possible Solution	the load cann tuning". 2. Check the mo	 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". 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 sett	ing is not correct with s	specification				
Possible Cause			l mode, VLIM option listens to M3 packet t of IO functions are still set				
	 Speed control mode wrong set When regenerator protection is turned-on, driver detects the parameter regenerative resistor is not complete. Pn-10A Feedforward time constant is too small. Filter bandwidth exceeds internal limit. RTD protection parameters wrong set. Gantry control setting error. Check Pn-830. Check the encoder resolution of gantry control axes. Check that Pn-904 = 1 is a multi-turn absolute encoder. Check Pn-845. Check Pn-846 and Pn-848. 						

Possible Solution	 When using driver torque mode, set Pn-003 to zero and set Pn-407 or 0n-480 according to motor type Check up the corresponding IO function used by STO function are set to 1000(default). Recover those IO function settings to default value Field Orientation Control is not allowed with none of encoder applied. Please correct Pn-330 When regenerator protection is turned-on and driver don't have an internal resistor, please attach an external resistor and set Pn-647, Pn-6 properly. Set Pn-10A = 0 as default, or increase Pn-10A Using RTD protection, please check Pn-548~Pn-54A and Pn-752 setting an correct or not. Check Gantry control setting Set the correct Pn-830. The encoder resolution of the gantry control axies should be the same. Use multi-turn absolute encoder and set Pn-904=1. Pn-845 link axis select cannot conflict to Pn-830. 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 su	pport STO function			
Possible Cause	1. Driver does not support STO function				
Possible Solution	 Please check up driver model in STO user manual 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	 Addon card does not support RTD function. Support RTD port numbers of addon card not match parameter setting. 							
Possible Solution	 Make sure the cannot suppo Make sure the 	eck addon card spec. e the addon card can support RTD function. If the addon card pport RTD function, turn off Pn-548~Pn-54A and set Pn-752 to 0. e the addon card can support the setting of port number. Depends rted 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 Na	ame	Mechat	trolink posi	ition command error
Alarm Content	Mechatrolin	k position com	nmand er	ror, recei	ived positio	n command too large.
Possible Cause	1. Position last com		oo large,	probabl	y abnormal	increment compared with the
Possible Solution		Position command varies abnormally or unexpectedly Check up software version of the controller. Please inform the manufacturer.				
All in one ID 2nd Single Axis ID		AL-950				
1st Single Axis I	D	-		Alarm N	ame	Regenerative Overload
Alarm Content	hig	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	 When using external resistor, Pn-647 Pn-648 is not set properly. The selection or cooling condition of external regenerative resistor need to be rechecked. When using internal resistor, Pn-647 Pn-648 is not set to 0. When using internal resistor, the frequency of motor acceleration/ deceleration is too high or too intense. 				nal regenerative resistor needs 648 is not set to 0.	
Possible Solution	2. 3. 4.	 When using external resistor, please check if Pn-647 Pn-648 is set correctly. When using external resistor and parameters are set correctly, please recheck the selection or cooling condition of resistor. When using internal resistor, please check if Pn-647 and Pn-648 are set. When using internal resistor and parameters are set correctly, please decrease the frequency of motor acceleration/deceleration or increativalue of Pn-306 Pn-307. If the alarm is raised consistently, please cousing an external resistor. If regenerative resistor protection is not required, please set Pn-649 to the set of the set				ers are set correctly, please of resistor. if Pn-647 and Pn-648 are set to 0. ers are set correctly, please tion/deceleration or increase the ised consistently, please consider
All in one ID 2nd Single Axis		\L-95F				
1st Single Axis I	D	-	Alarm Na	ame	Driver Red	ceive Illegal Command
Alarm Content	Driv	ver receive ille	gal Main (Comman	d or Sub Co	ommand

Possible Cause		1. Mechatrolink communication error.					
Possible Solution	ı	1. Check serial port wiring and shielding					
All in one 2nd Single A		AL-9	61				
1st Single A	xis ID	-		Alarm Name	12C	Communication Timeout	
Alarm Content	I	I2C comn	nunication ti	meout between front st	age a	nd power stage	
Possible Cause		 Data read from power stage was failed for 30000 times connection. (if using M6S driver, still 30 seconds) 					
Possible Solution		 Check earthing of driver. Send back to Syntec Corp. 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		L-970				
1st Single	Axis ID		-	Alarm Name	Over Voltage		
Alarm Content		DC BUS	S voltage is a	bove drive's warning lev	vel 10	0%	
Possible Cause		2. AC	power sourc	ows, brake resistance ca e input voltage too high are malfunction		deplete regenerated energy	
Possible Solution	1	 Check regenerative resistor's specifics, refer to "wiring and signal" see of manual. Check if AC power source matches drive specifics. Ruling out the above solutions, hardware may be damaged. Send bac Syntec or authorized dealer for repairs. 					
All in one ID 2nd Single Axis ID	AL-97 <i>F</i>	A					
1st Single Axis ID	-		А	Alarm Name		t Command Inexecutable	
Alarm Content	A command is illegal in the current communication phase						

Possible Cause	1. A comman	. A command that cannot be executed in the current phase was sent by controller					
Possible Solution	 Check software version of host controller. Please contact Syntec corp. or retailer 						
All in one ID 2nd Single Axis ID		AL-97B					
1st Single A	xis ID	-	Alarm Name	Com	nand Beyond Limit		
Alarm Content	ſ	Forque command	or VLIM beyond maximum v	/alue.			
Possible Cause		 When driver is in torque control mode, torque command is larger than motor maximum torque. When driver is in torque control mode , VLIM is larger than motor maximum speed. When driver is in laser cruise mode, VLIM is larger than motor maximum speed. 					
Possible Solution		 When driver in torque control mode, let the value of torque command smaller than maximum torque of motor. 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. 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 2nd Single A		AL-980					
1st Single A	xis ID	AL-980	Alarm Name	Spee	d estimator error		
Alarm Content	S	Speed error is grea	ter than 5% of the speed co	ommano	d 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 on 2nd Single		AL-981	1				
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 ra				
Possible Solution		-	e or tighten belt nr ratio correctly			
All in one ID 2nd Single Axis ID		AL-982				
1st Single Axis ID		AL-982	Alarm Name		ry control position feedback ation is too large	
Alarm Content		Jnder gantry control, the position deviation of the two axes exceeds the warning check value				
Possible Cause	2. 3. 4.	 Host command polarity setting error The origin setting of the gantry axis is not completed The position deviation warning threshold is too strict Inertia setting error One of axes is stuck mechanically 				
Possible Solution	2. 3. 4.	 Check the Pn-020 host command polarity of the two axes Reset the encoder origin of the gantry axis or set Pn-F44 = 1 Confirm the position deviation threshold Pn-570 and Pn-572 Set the correct rotor and loader inertia, or adjust the inertia 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	9	Gear ratio incorrect	
Alarm Content	-	The error of es	stimated gear ratio and s	etup ge	ear ratio is too big.	
Possible Cause		1. Gear ratio	setup error.			
Possible Solution		 Check gear ratio parameter Pn-20A, Pn-20C and Pn-D5C Gear Ratio Error. Set gear ratio correctly. 				
All in one ID 2nd Single Axis ID	AL-	990				
1st Single Axis ID		-	Alarm Name	Ir	nitialization fail when tuning	

Alarm Content	Initializa	tion fail when tun	ing			
Possible Cause	1. Parameter settings error					
	2. Wror	ng setting of Gear	setting of Gear Ratio Estimation			
	3. The settings of Moving Direction Limit and Motion Limit are conflict					
	4. Wror	 Wrong setting of Cogging Torque Compensation Tuning 				
		Tuning not support without encoder Wrong Encoder-Rotor Offset Detection setting				
Possible Solution	1. Set parameters correctly, set drive parameter Pn-F10 to 0 and redo tuning.			nd redo tuning.		
	2. Gear	Ratio Estimation	only su	pports induction m	otor. Pleas	se check Pn-700=2.
		Ratio Estimation se check.	doesn't	support the setting	g without 2	2nd encoder feedback,
		settings of Moving ng of Pn-504, Pn-F			n Limit are	conflict. Please check the
	 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. Check encoder communication type and port number of Pn-900, Pn-901, Pn-920 and 					
	6. Chec	921. eck whether the parameter Pn-642 is equal to 2. When use Encoder-Rotor Offset ection Method, set Pn-011 = 0 or 1				
All in one ID 2nd Single Axis ID		AL-991				
1st Single Axis	s ID	-		Alarm Name	Unable t Calculat	to enable High Cycle ion
Alarm Conte	nt	ligh Cycle Calculation unsupported				
Possible Cause 1.		1. PWM frequency set above 8000Hz, High Cycle Calculation unsupported				
Possible Solut	ion 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 Nan	ne	Over Travel
Alarm Cont	tent	laser cruise n	laser cruise mode, location is about to exceed travel limit			

Possible Cause	 Cutting Head Exceeds Workpiece Range Capacitive feedback abnormality Improper setting of travel limit
Possible Solution	 Raise the Z axis after not ready to cut, restart after replacing the workpiece Strengthening anti-jamming 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 o	of IGBT is over 85℃	
Possible Cause	 Severe acceleration change Cooling system failure Drive output short-circuit Ambient temperature overheat Heat source nearby Continuous use while exceeding drive's rated load 		
Possible Solution	 Increase Pn-307 Check if fan is functioning normally. Check drive's output wiring, refer to "Wiring and Signal" section of manual. Check if ambient temperature is below 55°C, refer to "Transportation and Installation" section of manual. Check environment, remove external heat source or enhance cooling capacity. 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	 The acceleration is too severe. Motor or driver model selection is mismatch.
Possible Solution	 Check if the acceleration time setting is too short. Increase Pn-307. 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	 Check if parameter Pn-F10(Fn-00) is set to enable auxiliary functions. 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	 Controller version doesn't support power off pull-up function The setting of weight direction is wrong. Power off detection module damaged V/f mode or none of encoder applied do not support pull-up function Gantry control does not support pull-up function 			

Possible Solution	 If needed, upgrade controller version Please set Pn-805 to 1 or -1
	 Please set Pn-805 to 1 or -1 Set Pn-804 = 0 to disable power off pull-up function, or send back to Syntec 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	 Controller version doesn't support Proximity Position function Not support Proximity Position function with Dual Feedback Control 			
Possible Solution	 Set Pn-243 = 0 to disable Posing by proximity switch function or upgrade CNC version if needed Set Pn 243 = 0 to disable Posing by provimity switch function or check 			
	 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

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	 Speed control mode setting is not applicable to tuning function Encoder interface, motor type or parameter setting is not applicable to tuning function 				
Possible Solution	 Check Pn-330 if the tuning function is supported with it and correct it 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	 Hardware - Frontstage can't execute pull-low to EEPROM-write protect pin 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-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	 Battery voltage too low or no battery Parameter setting error 				
Possible Solution	 Replace the battery. If using Panasonic encoder, then restart driver. If using Nikon, Mitsubish, Delta or Tamagawa encoder, then don't need to restart. If not ABS encoder, set drive parameter Pn-904(P3-23) to 0, save and restart. 				
Detailed Instructions	[Pn-D95]Enc Error Status ALMC				

14.10 AL-930 Abs Type Encoder Battery Low Voltage

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	 FeeDat encoder power source voltage too great or insufficient EnDat encoder power source voltage insufficient 			
Possible Solution	 Check encoder wiring and grounding 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 AL-932
2nd Single Axis ID

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	 Check encoder wiring and grounding 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 sign 3. Encoder's signal is interfering by rotor's axis with magnetic 4. Hallow magnetic ring Zindex position is differ from the setting pa 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:
	 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. Check if encoder and motor are grounded. Check if joining between encoder cable and motor is double end grounded. Short term countermeasure: Magnetic axle center causing AL-54 SOP Long term countermeasure: Cross-Strait motor plants import axle center inspections starting 2016/7 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	 Battery voltage too low or no battery Parameter setting error 			
Possible Solution	 Replace the battery. If using Panasonic encoder, then restart driver. If using Nikon, Mitsubish, Delta or Tamagawa encoder, then don't need to restart. 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	 FeeDat encoder power source voltage too great or insufficient EnDat encoder power source voltage insufficient 			
Possible Solution	 Check encoder wiring and grounding 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	 Check encoder wiring and grounding 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: Second encoder's firmware version is outdated Encoder is under noise interference, which causing feedback signal error. Encoder's signal is interfering by rotor's axis with magnetic Hallow magnetic ring Zindex position is different than from the written parameter. Magnetic ring's non-Zindex zone has magnetic field distribution Hardware malfunction Non-Syntec encoder: The circuit board of non-Syntec encoder is broken. Non-Syntec sensor and encoder are wrong assembly. 		
Possible Solution	 Syntec encoder: 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. Check if second encoder and motor are grounded. Check if joining between second encoder cable and motor are is double end grounded. Short term countermeasure: Magnetic axle center causing AL-54 SOP Long term countermeasure: Cross-Strait motor plants import axle center inspections starting 2016/7 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 Send the second encoder to Syntec or authorized representative for repair. Non-Syntec encoder: Check the encoder is contaminated by dust or oil. Check the gap between sensor and encoder is correctly. 		
Detailed Explanations and SOP	3. Send back to Syntec Corp. 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	 Pn-904 is not relative to Pn-900, Pn-700 With SYNTEC encoder, Pn-911 is not illegal according to Pn-700 2nd Encoder: Pn-924 is not relative to Pn-920, Pn-335 With SYNTEC 2nd encoder, Pn-931 is not illegal according to Pn-335 With SYNTEC encoder, encoder ver. is not compatible with thermal resistance With SYNTEC encoder, 2nd encoder ver. is not compatible with thermal resistance With HEIDENHAIN encoder, current encoder sensing type is not supported
Possible Solution	 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. 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 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. 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 Check if the type of resistance used for thermal sensing is PT1000 and encoder ver. is V2.1.0 or lower. If using PT1000:Update Encoder firmware to V2.1.1 or higher. And set Pn-75A into 1. If using KTY84:Please set Pn-75A into 0. Check if the type of resistance used for thermal sensing is PT1000 and 2nd encoder ver. is V2.1.0 or lower. If using PT1000:Update 2nd Encoder firmware to V2.1.1 or higher. And set Pn-75A into 1. If using KTY84:Please set Pn-75A into 0. Check if the type of resistance used for thermal sensing is PT1000 and 2nd encoder ver. is V2.1.0 or lower. If using KTY84:Please set corresponding thermal type parameters into 1. If using KTY84:Please set corresponding thermal type parameters into 0. Check Pn-900 and Pn-920 parameter manual to check whether the encoder sensing type is supported by the driver version Update to a compatible driver version for the encoder 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)
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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	 Permanant magnet motor applied to spindle cannot support dynamic braking Using Induction motor or power stage not support Motor Stop Method is ShortBrake when Critical Alarm Stop Method is Free Run 			
Possible Solution	 When Pn-700 = 0 and Pn-803 = 1, Pn-001 cannot be 0 When Pn-700 = 2, Pn-004 cannot be 1 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	 When using driver torque control mode, VLIM option listens to M3 packet When STO function is active, part of IO functions are still set Speed control mode wrong set When regenerator protection is turned-on, driver detects the parameter of regenerative resistor is not complete. Pn-10A Feedforward time constant is too small. Filter bandwidth exceeds internal limit. RTD protection parameters wrong set. Gantry control setting error. Check Pn-830. Check the encoder resolution of gantry control axes. Check that Pn-904 = 1 is a multi-turn absolute encoder. Check Pn-846 and Pn-848.
Possible Solution	 When using driver torque mode, set Pn-003 to zero and set Pn-407 or On-480 according to motor type Check up the corresponding IO function used by STO function are set to 1000(default). Recover those IO function settings to default value Field Orientation Control is not allowed with none of encoder applied. Please correct Pn-330 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. Set Pn-10A = 0 as default, or increase Pn-10A Using RTD protection, please check Pn-548~Pn-54A and Pn-752 setting are correct or not. Check Gantry control setting a. Set the correct Pn-830. The encoder resolution of the gantry control axies should be the same. Use multi-turn absolute encoder and set Pn-904=1. Pn-845 link axis select cannot conflict to Pn-830. 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	 Please check up driver model in STO user manual 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	 Addon card does not support RTD function. Support RTD port numbers of addon card not match parameter setting. 			
Possible Solution	 Please check addon card spec. 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. 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	 Position command varies abnormally or unexpectedly Check up software version of the controller. Please inform the manufacturer. 			

14.25 AL-95A Unsatisfied Command Condition

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

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	 Before entering torque command mode, the speed of motor is not zero. Before leaving torque command mode, the speed of motor is not zero. 			
Possible Solution	 Make sure the speed of motor is zero before entering torque command mode. 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	 Data read from power stage was failed for 30000 times connection. (if using M6S driver, still 30 seconds) 		
Possible Solution	 Check earthing of driver. Send back to Syntec Corp. 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	 When motor slows, brake resistance cannot deplete regenerated energy AC power source input voltage too high Encoder hardware malfunction 		
Possible Solution	 Check regenerative resistor's specifics, refer to "wiring and signal" section of manual. Check if AC power source matches drive specifics. 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	 Check software version of host controller. 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	 When driver is in torque control mode, torque command is larger than motor maximum torque. When driver is in torque control mode , VLIM is larger than motor maximum speed. When driver is in laser cruise mode, VLIM is larger than motor maximum speed.
Possible Solution	 When driver in torque control mode, let the value of torque command smaller than maximum torque of motor. 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. 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	 Belt slip Gear ratio error 			
Possible Solution	 Change or tighten belt 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 con check value	Under gantry control, the position deviation of the two axes exceeds the warning check value		
Possible Cause	 The origin se The position Inertia settin 	 Host command polarity setting error The origin setting of the gantry axis is not completed The position deviation warning threshold is too strict Inertia setting error One of axes is stuck mechanically 		
Possible Solution	 Check the Pn-020 host command polarity of the two axes Reset the encoder origin of the gantry axis or set Pn-F44 = 1 Confirm the position deviation threshold Pn-570 and Pn-572 Set the correct rotor and loader inertia, or adjust the inertia Check if any axis is mechanically stuck 			

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

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	 Check gear ratio parameter Pn-20A, Pn-20C and Pn-D5C Gear Ratio Error. 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	 Parameter settings error Wrong setting of Gear Ratio Estimation The settings of Moving Direction Limit and Motion Limit are conflict Wrong setting of Cogging Torque Compensation Tuning Tuning not support without encoder Wrong Encoder-Rotor Offset Detection setting
Possible Solution	 Set parameters correctly, set drive parameter Pn-F10 to 0 and redo tuning. 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. The settings of Moving Direction Limit and Motion Limit are conflict. Please check the setting of Pn-504, Pn-F14 and Pn-F16. 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. Check encoder communication type and port number of Pn-900, Pn-901, Pn-920 and Pn-921. 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	 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

1st Single Axis ID	-	Alarm Name	Over Travel
Alarm Content	laser cruise mode, location is about to exceed travel limit		
Possible Cause	 Cutting Head Exceeds Workpiece Range Capacitive feedback abnormality Improper setting of travel limit 		
Possible Solution	 Raise the Z axis after not ready to cut, restart after replacing the workpiece Strengthening anti-jamming 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	 When using external resistor, Pn-647 Pn-648 is not set properly. The selection or cooling condition of external regenerative resistor needs to be rechecked. When using internal resistor, Pn-647 Pn-648 is not set to 0. When using internal resistor, the frequency of motor acceleration/ deceleration is too high or too intense. 			
Possible Solution	 correctly. When using exrecheck the se When using int When using int decrease the fraction of Pn-300 using an external 	e 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	 Mechanical abnormality or excessive motor load inhibits motor rotation. Wrong motor nameplate parameters lead to unexpected voltage command, rotational speed, or current command. 		
Possible Solution	 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". Check the motor nameplate parameters (rated voltage, rated current, rated speed, and so on) are correct. 		

