



5 Troubleshooting and Diagnostics

5.1 Status/Warning Messages

Status/Warning	Cause	Remedy
br DC Injection brake active	DC Injection brake activated <ul style="list-style-type: none"> activation of digital input P121...P124 = 10 automatically P110 = 2, 4, 5 automatically P111 = 1, 2 	Deactivate DC Injection brake <ul style="list-style-type: none"> deactivate digital input
br Drive II warning	The drive II (P102) closed or the I/O bus connection to drive II is broken	Verify motor cable P102...P120 and perform cable test <ul style="list-style-type: none"> Set drive mode P102 to 0 or 1 Reset the drive P101 to 0 and start again
CR Motor Auto calibration active	Refer to P101, P100	Motor Auto-calibration is being performed
cr An EPW that contains several data items a previous software version has been installed	An attempt was made to change parameter settings	Parameter settings can only be changed after the I/O data is connected to the correct version (P101 = 3)
cl Current Limit (P117) reached	Motor overloaded	<ul style="list-style-type: none"> Increase P117 Verify that motor and power cable are application
oEC Dead Encoder	The drive has stopped due to a failure to send signals via the fault due to a power or motor cable error	Free type code "F" fault <ul style="list-style-type: none"> Increase P103, P105 Reset Dynamic braking system
Err Error	Invalid data was entered, or an invalid command was changed	
FCL Field Current Limit	Overload	Verify parameters are appropriate for application
FBL Field Current Adaptor Fault	P110 = 5, 6	
GC GEN Settings Operator warning	An attempt was made to change parameter settings while the drive is operating in GEN settings mode	In GEN Settings mode P114 = 10, making changes to parameters is not permitted
GF GEN Defaults data warning	An attempt was made to use the reset of the GEN default settings (P101 = 1 or 2) using an EPW without valid GEN data	Reset of EPW containing valid GEN data is not possible
LL Load Loss	The drive attempted to switch after a fault but all channels were successful (P110 = 1, 2)	<ul style="list-style-type: none"> Drive requires manual reset Check Fault II memory (P102) and parameter fault condition
PAEC PID Deceleration Status	PID output has finished its ramp for the drive to stop decelerating to a stop	
PI d PID Mode Active	Drive has been put into PID Mode	Refer to P100
SLP Sleep Mode enabled	Refer to P105, P104	
SP Start Pending	The drive has stopped into a fault and will automatically restart if P10 = 5, 2	Do Start Auto-Reset, set P110 = 0, 2
SPW PID Mode disabled	Drive has been taken out of PID Mode Refer to P100	
SwEP Output frequency = 0 Hz (zero speed W. feedback)	Drive has been commanded from the keypad, terminal strip, or network	Apply Start command Start Control source depends on P101

(1) The drive can only be restarted if the error message has been reset.



Fault	Cause	Remedy
F_001 Dynamic braking fault	Dynamic braking resistors are overloading	<ul style="list-style-type: none"> Increase active feed time (P106, P121, P122) Check main voltage and P107
F_002 External fault	<ul style="list-style-type: none"> P121...P124 = 21 and that digital input has been opened P121...P124 = 22 and that digital input has been closed 	<ul style="list-style-type: none"> Reset the external fault condition Make sure digital input is set properly for NO or NC circuit
F_003 EPW fault	EPW missing or defective	Power down and replace EPW
F_004 Internal fault		Contact factory technical support
F_005 Control Configuration Fault	The drive is setup for REMOTE REMOVED control (P120 = 2 or 3) but is not setup to communicate with a remote keypad The drive is setup for LOCAL ONLY control (P100 = 0) but is not setup for network communication	Set P100 or P102 to a valid remote communication protocol or option
F_006 TRZ of 20 not signed Thermal fault	4-20 mA signal (in TRZ) steps below the setpoint (P106)	<ul style="list-style-type: none"> Check signal wiring Check parameters P105 and P104
F_007 GEN Defaults data fault	Drive is connected up with P100 set and GEN settings in the EPW are not valid	Reset on EPW containing valid GEN data. P101 data or address P101 to 0
F_008 High DC Bus Voltage fault	DC bus voltage is too high Local time is too short, or too much regenerative energy	<ul style="list-style-type: none"> Check motor cables and P107 Increase active feed time (P106, P121, P122) or reset Dynamic Braking system
F_009 Signal Input Configuration fault (P121...P124)	More than one digital input set for the same location Only one digital input designated for STOP (and/or RUN) control P10 mode is entered with valid P11 reference and hardware outputs not to the same analog input One of the digital inputs (P121...P124) is set to 10 and another is set to 11...13 One of the digital inputs (P121...P124) is set to 11 or 12 and another is set to 10 or 14 P10 mode is active. Parameter P100 = 1 or 2 and P101 = 3	<ul style="list-style-type: none"> Each setting can only be used once (except address 0 and 3) This input must be set to 0 or 10...14 and must be set to NO or NC Change P10 address of reference P11...P124 or feedback source P101
F_010 Reverse output fault	Reverse output short-circuited	Check motor cable connected
F_011 Low DC Bus Voltage fault	Make sure the EPW	Check main voltage
F_012 No Motor II fault	An attempt was made to start the drive in motor or feedback mode while it is performing the Motor Auto-calibration	Refer to parameter P100...P105 or Motor Mode setting and P101 to 0
F_013 Module communication fault	Communication failure between drive and I/O module	Check module connections
F_014 Network fault	Refer to the module documentation, I/O Drivers and Remotes	



Fault	Cause	Remedy ⁽¹⁾
F_0bF Dynamic braking fault	Dynamic braking resistors are overloading	• Increase active deceleration (P106, P121, P125) • Check mains voltage and F107
F_0FF Encoder fault	<ul style="list-style-type: none"> P121... P124 = 01 and that digital input has been opened P121... P124 = 00 and that digital input has been closed 	• Check the external fault condition • Make sure digital input is not wrongly set to NO or NC contact
F_0F1 IPIV fault	IPIV missing or defective	Replace IPIV and replace IPIV
F_0F2 Internal fault		Contact factory technical support
F_0F3		
F_0F4 Control Delegation Fault	The drive is setup for REMOTE REMOVAL control (P101=2 or 3) but is not setup to communicate with a remote keypad	Set P101=1, or P100=1
F_0F5	The drive is setup for REMOTE ONLY control (P100=0) but is not setup to network communication	Set P101 or P102 to a valid network control address pre-defined in section 6.1.1
F_0F6 TRZS (4-20 mA) signal threshold fault	4-20 mA signal not 10-20 mA pulse below the setpoint in P166	• Check signal P167/168 • Refer to parameters P165 and P164
F_0FC OEM Controls data fault	Drive is connected up with P169 set and OEM settings in the drive are not valid	Refer to OEM manual for P169 (4-20 mA) data or refer to section 6.1.1
F_0FE Digital Input Voltage fault	Logic Input voltage too high	Check mains voltage and P107
F_0F7	Logic Input voltage too low	Increase active deceleration (P106, P121, P125) or reset Control Blocking (P107)
F_0F8 Digital Input Configuration fault (P121-P124)	More than one digital input set for the same function	Each setting can only be used once (except analogue I and O)
F_0F9	Only one digital input configured for STOP (and/or ON/OFF)	One input must be set to STOP and the other must be set to ON/OFF
F_0FA	FD mode is entered with no FDFF reference and feedback currents set to the same analog signal	Change (NO) analog reference (P131... P134) or feedback source (P201)
F_0FB	One of the digital inputs (P121... P124) set to 10 and another is set to 11... 14	Reset digital input
F_0FC	One of the digital inputs (P121... P124) is set to 11 or 12 and another is set to 13 or 14	
F_0FD	FD enabled in Motor Torque mode (P220 = 1 or 2 and P100 = 0)	FD cannot be used in Motor Torque mode
F_0FE Reverse sequence fault	Reverse sequence detected	Check motor electrical connection
F_0FF Low DC Bus Voltage fault	Mains voltage too low	Check mains voltage
F_100 No Motor ID fault	An attempt was made to start the drive in vector or Direct Torque mode when performing the Motor Auto-tuning	Refer to parameters P500... P555 for more Motor auto-tuning details
F_101	Communication failure between drive and KUKA In Motion	Check motor connection
F_102	None of the available communication (I/O) channels are functioning	
F_103		
F_104		
F_105		
F_106		
F_107		
F_108		
F_109		
F_110		
F_111		
F_112		
F_113		
F_114		
F_115		
F_116		
F_117		
F_118		
F_119		
F_120		
F_121		
F_122		
F_123		
F_124		
F_125		
F_126		
F_127		
F_128		
F_129		
F_130		
F_131		
F_132		
F_133		
F_134		
F_135		
F_136		
F_137		
F_138		
F_139		
F_140		
F_141		
F_142		
F_143		
F_144		
F_145		
F_146		
F_147		
F_148		
F_149		
F_150		



Fault	Cause	Remedy ⁽¹⁾
F_0DF Output fault	Circuit short circuit	Check motor/wire cable
F_0DF Torque fault	Acceleration time exceeded	Increase P104, P125
	Excessive motor overload due to: <ul style="list-style-type: none"> Mechanical problem Disturbance torque in application 	<ul style="list-style-type: none"> Check machine load Verify disturbance torque parameter specification
	Boost voltage too high	Decrease P100, P106
	Excessive regenerative charging (reverse of the motor cable)	<ul style="list-style-type: none"> Use diode motor cables with lower charging current Use low impedance motor cables Install reactor between motor and drive
	Excessive regenerative braking	Contact factory technical support
F_0DF1 Output fault: Error fault	Reversed motor phase	Check motor and cable wiring
	Excessive regenerative charging current of the motor cable	Use diode motor cables with lower charging current
F_0FF Motor Overload fault	Overload motor has been reached	<ul style="list-style-type: none"> Verify proper setting of P120 Verify drive and motor data parameters for application
F_0FF Flying Brake fault	Overload was reached in synchronous AFB (the motor during braking attempt of P110 = 1 or 0)	Check motor cable
F_0FF Single-Phase fault	A motor phase has been lost	Check mains voltage
F_0FF Start fault	Start command was present when power was applied (P110 = 1 or 0)	<ul style="list-style-type: none"> Reset wait at least 2 seconds after power up to apply Start command Consider alternative starting method (P106)
F_0FR0 0-to-10V signal threshold fault	0-10V signal (A120) not below the value set in P125	<ul style="list-style-type: none"> Check signal signal wire Refer to parameters P137 and P154

(1) The drive can only be restarted if the error message has been reset.