Faults and Alarms

Faults

General information regarding faults

For each fault, the following information is available:

Parameter   r947   Fault number
            r949   Fault value
            r951   Fault list
            P952   Number of faults
            r782   Fault time

If a fault message is not reset before the electronic supply voltage is switched off, then the fault message will be present again when the electronic supply is switched on again. The unit cannot be operated without resetting the fault message. (Exception: Automatic restart has been selected, see P373).

Number / Fault	Cause	Counter-measure
F001 Main contactor checkback	If a main contactor checkback is configured, no checkback occurs within the time set in P600 after the power-up command. In the case of externally excited synchronous motors (P095 = 12), there is no checkback for the excitation current unit.	P591 Src Contactor Msg Parameter value must be in conformance with the connection of the main contactor checkback. Check the checkback loop of the main contactor (or the checkback of the excitation current unit in the case of synchronous motors).
F002 Pre-charging	When pre-charging, the minimum DC link voltage (P071 Line Volts x 1.34) of 80 % has not been reached. The maximum pre-charging time of 3 seconds has been exceeded.	Check the supply voltage, Compare witth P071 Line Volts (Compare P071 with the DC link voltage on DC units). Check the rectifier/regenerative unit on DC units. The rectifier/regenerative unit must be switched on before the inverter is switched on.
F006 DC link overvoltage	Shutdown has occurred due to excessive DC link voltage. Line voltageI DC voltage range I Shutdown value -- 200 V - 230 V I 270 - 310 V I appr. 410 V 380 V - 480 V I 510 V - 650 V I appr. 820 V 500 V - 600 V I 675 V - 810 V I appr. 1020 V 660 V - 690 V I 890 V - 930 V I appr. 1220 V For parallel-connected converters (BF L) r949 = 1: Overvoltage in the DC link of the master r949 = 2: Overvoltage in the DC link of the slave.	Check the supply voltage or input DC voltage. Converter is operating in regenerative mode without feedback possibility. If the converter supply voltage is at the upper tolerance limit and it is operating at full load, F006 can also be caused by a line phase failure. Possibly - Increaase P464 Decel Time, - Activate P515 DC Bus Volts Reg (check P071 beforehand) - Reduce P526 Fly Search Speed. - Reduce P259 Max Regen Power (only for P100 = 3, 4 or 5)

Number / Fault	Cause	Counter-measure
F008 DC link undervoltage	The lower limit value of 76 % of the DC link voltage (P071 Line Volts), or of 61 % when kinetic buffering has been enabled, has been fallen short of. Undervoltage in the DC link in 'normal' operation (i.e. no SIMULATION). Undervoltage in the DC link with active kinetic buffering and speed less than 10 % of the rated motor speed. It was a 'brief power failure' which was not detected until system recovery (auto restart flag).	Check - Input DC voltage - DC link
F010 DC link overvoltage	Due to excessive DC link voltage, shutdown has taken place: Line voltage DC link range Shutdown value 380 V - 480 V 510 V - 650 V 740 V Note: Only at U800 = 1 and f(Pulse) > f(derating) Lower threshold value than F006 !	Check the supply voltage Check the braking resistor Converter operates regeneratively without a feedback possibility. Braking unit must be set to the lower response threshold (673 V)
F011 Overcurrent	Overcurrent shutdown has occurred. The shutdown threshold has been exceeded.	- Check the converter output for short-circuit or earth fault - Check the load for an overload condition - Check whether motor and converter are correctly matched - Check whether the dynamic requirements are too high
F012 I too low	During excitation of the induction motor, the current did not rise above 12.5 % of the setpoint magnetizing current for no-load operation.	Only for closed loop n/f/T control (P100 = 3, 4 or 5) If no motor is connected, go into the simulation mode P372. Check current detection, check power section.
F014 I too low	During excitation of the motor, the current component is less than 25 % of the motor no-load current. Note: Only for U800 = 1 Irrespective of the type of control (Difference to F012)	Check the output contactor Check the motor cable

Number / Fault	Cause	Counter-measure
F015 Motor stall	Motor has stalled or is locked: - if the static load is too high - if the acceleration or deceleration time is too fast, or if load change is too fast and too great, - due to incorrect parameterization of the pulse encoder pulse number P151 or of the analog tachometer scaling P138 - due to disturbed speed signals (tachometer shield not connected) The fault is only generated after the time set in P805. The binector B0156 is set in the status word 2 r553 Bit 28. To detect whether the drive is blocked, see P792 (Perm Deviation) and P794. With n/f control, this fault is tripped if the torque limits have been reached (B0234). With speed control (P100 = 4) and master drive (see P587), the fault can also point to an interruption in the encoder cable. This case has the same significance as if the drive is locked. With v/f control, the I(max) controller has to be activated (P331). The monitor does not operate with v/f textile applications (P100 = 2). Motor has stalled or is locked: In the case of synchronous motors (P095 = 12, 13): by reaching the maximum frequency In the case of externally excited synchronous motors (P095 = 12): as a result of missing or excessively high excitation current (flux is too small or too great). When the maximum frequency (including control reserves) (B0254) has been reached on synchronous motors, the fault is generated immediately. If the deviations in the rotor flux are too great, first of all, the converter current is switched to zero, the excitation current is reduced and, after some time, the fault message is tripped at the level of the double damping time constant (2*r124.1). During this wait time, the status word bit B0156 (r553.28) is set already.	- Reduce load - Release brake - Increase current limits - Increase P805 PullOut/BlckTime - Increase P792 response threshold for set/actual deviation Only for f/n/T control (P100 = 3, 4, 5) - Increase torque limits or torque setpoint Only n/T control or v/f control with speed controller: (P100 = 0, 4, 5) - Check tachometer cable break - Check pulse encoder pulse number -Check analog tachometer scaling - Connect shield of tachometer cable on motor side and converter side - Reduce smoothing of speed pre-control P216 (only n/T control) only frequency control:(P100 = 3) - Slow down acceleration time (see also P467 ProtRampGen Gain). Increase current in the lower frequency range (P278, P279, P280) - Switch in speed controller pre-control (P471>0). Set EMF controller more dynamically (315) to max. approx. 2 - Increase changeover frequency for the EMF model (P313). Replace by speed control with pulse encoder in the case of overmodulated n/f controller - Track speed setpoint with the speed actual value so that the set/actual deviation is always less than that set in P792. Only for synchronous motor: (P095 = 12) - Check current limits of the excitation unit. - Check excitation current setpoint and actual value (incl. wiring) - Check voltage limits of the excitation unit during dynamic current changes. - Check drive system for resonance oscillations.
F017 SAFE STOP Compact PLUS only	SAFE STOP operating or failure of the 24 V power supply during operation (only for Compact PLUS units)	Jumper applied for SAFE STOP? SAFE STOP checkback connected? On Compact PLUS units: check 24 V supply

Number / Fault	Cause	Counter-measure
F018 F set fly	The found set frequency could not be implemented. Reasons: - Additional setpoint 2 too high - Speed actual-value at standstill negative (signal ripple) and negative direction of rotation locked.	- Check additional setpoint 2 - Release negative directions of rotation with low maximum speed.
F019 Motor not found	During flying restart without tachometer: Search in both directions of rotation not possible (one direction blocked) and motor has not been found.	Power up after coasting. Possibly increase P525 Fly Search Amps. Enable both directions of rotation (P571, P572)
F020 Motor temperature	The motor temperature limit value has been exceeded. r949 = 1 limit value of motor temperature exceeded r949 = 2 short-circuit in the cable to the motor temperature sensor or sensor defective r949 = 4 wire break in the cable to the motor temperature sensor or sensor defective r949 = 5 wire break and limit value exceeded	Check the motor (load, ventilation, etc.). The actual motor temperature can be read in r009 Motor Temperature. Check P381 Mot Tmp Fault - check the KTY84 input at connector -X103:29,30, or X104:29,30 (Compact PLUS) for short-circuit.
F021 Motor I2t	Parameterized limit value of the I2t monitoring for the motor has been exceeded.	Check: P383 Mot Tmp T1
F023 Inverter temperature	The limit value of the inverter temperature has been exceeded. Alarm: (r949): Bit0 Inverter overtemperature Bit1 Wire break of cable to temperature sensor Bit4 Number of the temperature sensor Bit5 Bit6 Bit8 Multiparallel circuit: Slave number Bit9 Bit10 Examples: r949 = 1: Limit value of inverter temperature has been exceeded. r949 = 2: Sensor 1: wire break of sensor cable or sensor defective r949 = 18: Sensor 2: wire break of sensor cable or sensor defective r949 = 34: Sensor 3: wire break of sensor cable or sensor defective r949 = 50: Sensor 4: wire break of sensor cable or sensor defective.	- Measure the air intake and ambient temperature. - Observe the derating curves at theta >50°C (Compact PLUS) or 40°C. Check: - whether the fan -E1 is connected and is rotating in the correct direction - that the air entry and discharge openings are not restricted - temperature sensor at -X30.
F025 UCE Ph. L1	UCE upper switch (Compact PLUS) / or UCE has tripped in phase L1	Check: - phase L1 for short-circuit or ground fault (-X2:U2 - including motor) - that CU is correctly inserted - that the switch for "SAFE STOP" (X9/5-6) is open (only for units with order No. ...-11, ...-21,...-31, ...-61).

Number / Fault	Cause	Counter-measure
F026 UCE Ph. L2	UCE lower switch (Compact PLUS) / or UCE has tripped in phase L2	Check: - phase L2 for short-circuit or ground fault (-X2:V2 - including motor) - that CU is correctly inserted - that the switch for 'SAFE STOP' (X9/5-6) is open (only for units with order Nos....-11, ...-21,...-31, ...-61)
F027 UCE Ph. L3	Fault pulse resistor (Compact PLUS) / or UCE has tripped in phase L3	Check: - phase L3 for short-circuit or ground fault (-X2:W2 - including motor) - that CU is correctly inserted - that the switch for 'SAFE STOP' (X9/5-6) is open (only for units with order Nos....-11, ...-21,...-31, ...-61)
F028 Supply phase	The frequency and the amplitude of the DC link ripple indicate a single-phase power failure.	Check the supply voltage.
F029 Meas. value sensing	A fault has occurred in the measured value sensing system: - (r949 = 1) Offset adjustment in phase L1 not possible - (r949 = 2) Offset adjustment in phase L3 not possible. - (r949 = 3) Offset adjustment in phases L1 and L3 not possible. - (r949=65) Autom. adjustment of the analog inputs is not possible	Fault in measured value sensing Fault in power section (valve cannot block) Fault on CU
F035 Ext. Fault 1	Parameterizable external fault input 1 has been activated	Check: - whether there is an external fault - whether the cable to the appropriate digital input has been interrupted - P575 Src No ExtFault1
F036 Ext. Fault 2	Parameterizable external fault input 2 has been activated	Check: - whether there is an external fault - whether the cable to the appropriate digital input has been interrupted - P585 Src No ExtFault2
F037 Analog input	An analog input is taking place in operating mode 4..20mA and a wire break has occurred. The number of the analog input concerned is shown in fault value (r949).	Check the connection to - Analog input 1 -X102:15, 16, or -X101:9,10 (Compact PLUS). - Analog input 2 -X102: 17, 18. Check parameters - P632 CU AnaIn Conf - P634 CU AnaIn Smooth - P631 CU AnaIn Offset
F038 Voltage OFF during parameter storage	During a parameter task, a voltage failure has occurred on the board.	Re-enter the parameter. The number of the parameter concerned can be seen in fault value r949.

Number / Fault	Cause	Counter-measure
F040 AS internal	Incorrect operating status	Replace CU (-A10), or replace the unit (Compact PLUS)
F041 EEPROM fault	A fault has occurred when storing the values in the EEPROM.	Replace CU (-A10), or replace the unit (Compact PLUS)
F042 Calculating time	Calculating time problems	Reduce the calculating time load: - Increase P357 Sampling Time - Calculate individual blocks in a slower sampling time Observe r829 CalcTimeHdroom.
F044 BICO manager fault	A fault has occurred during the softwiring of binectors and connectors.	Störwert r949: >1000 : Fault during softwiring of connectors >2000 : Fault during softwiring of binectors - Voltage OFF and ON - Factory setting and new parameterization - Replace the board
F045 Opt. Board HW	A hardware fault has occurred when accessing an optional board	- Replace CU, or replace the unit (Compact PLUS) - Check connection of the board subrack to the optional boards and replace if necessary.
F046 Par. Task	A fault has occurred during the transfer of parameters to the gating unit processor.	Power the unit down and up again. Replace CU (-A10), or replace the unit (Compact PLUS)
F047 Gating Calc Time	The calculating time in the gating unit computer is not sufficient	Replace CU (-A10), or replace the unit (Compact PLUS) In case of synchronous motors (P095 = 12): Pulse frequency set too high (P340 > 2 kHz).
F048 Gating Pulse Freq	The pulse frequency set in P340 is not permissible.	Change P340 Pulse Frequency.
F049 SW version	The firmware versions on the CU have different firmware release.	Use uniform firmware
F050 TSY Init. not Compact PLUS	Error when initializing the TSY board	Check: - Whether the TSY is correctly inserted
F051 Speed encoder	Digital tachometer or analog tachometer sensing are faulty	Check the parameters: - P130 Src SpdActV - P151 Pulse # - P138 AnalogTachScale - P109 Motor #PolePairs The product of P109 and P138 must be smaller than 19200. Check or replace tachometer. Check connection to tachometer. - Replace CU, or replace the unit (Compact PLUS)

Number / Fault	Cause	Counter-measure
F052 n-Cntr.Input	Control track input (-X103/27, or -X104/27 Compact PLUS) is not high: - Tachometer line broken - Tachometer fault The fault input on the TSY was activated.	Unselect tachometer with control track (P130 select motor encoder) Check control track connection (-X103/27, or X104/27 Compact PLUS) Exchange TSY
F053 Tachometer dn/dt	The permissible change value of the speed encoder signal P215 dn(act,perm) has been doubly exceeded.	Check tachometer cables for interruptions. Check earthing of tachometer shield. - The shield must be connected both at the motor and the converter side. - The encoder cable must not be interrupted. - The encoder cable must not be laid together with the power cables. - Only recommended encoders should be used. - In the case of a signal fault, the DT1 board may have to be used. If necessary, change P215 - With P806 (observe parameter description) it is possible during operation to switch over to encoder-free operation.
F054 Sensor board initialization fault	A fault has occurred during initialization of the encoder board.	Fault value r949 1. Board code incorrect 2. TSY not compatible 3. SBP not compatible 7. Board double 20: TSY board double 60: Internal error
F056 SIMOLINK telegram failure	Communication on the SIMOLINK ring is disturbed.	- Check the fiber-optic cable ring - Check whether an SLB in the ring is without voltage - Check whether an SLB in the ring is faulty - Check P741 (SLB TlgOFF)
F057 Brake does not open	The brake has not opened, the output current of the converter has exceeded the parameterized current threshold (U840) for longer than one second (with the rotor locked) Note: Only with U800 = 1	Check brake Check I(max) brake (U840). The set threshold must be at least 10% above the maximum possible acceleration current.
F058 Parameter fault Parameter task	A fault has occurred during the processing of a parameter task.	No remedy
F059 Parameter fault after factory setting/init.	A fault has occurred in the initialization phase during the calculation of a parameter.	The number of the inconsistent parameter is indicated in fault value r949. Correct this parameter (ALL indices) and switch voltage off and on again. Several parameters may be affected, i.e. repeat process.

Number / Fault	Cause	Counter-measure
F060 MLFB is missing	This is set if the MLFB = 0 after exiting INITIALIZATION (0.0 kW). MLFB = order number.	After acknowledgement, in INITIALIZATION enter a suitable MLFB in parameter P070 MLFB (6SE70..). (Only possible with the corresponding access stages to both access parameters).
F061 Incorrect parameterization	A parameter entered during drive setting (e.g. P107 Mot Rtd Freq, P108 Mot Rtd Speed, P340 Pulse Frequency) is not in a permissible range (depending on control type)	Acknowledge the fault and change the corresponding parameter value. The missing parameter is indicated in r949 as a fault value.
F062 Multi-parallel circuit not Compact PLUS	Fault in connection with the multi-parallel circuit or board ImP1 has been detected.	r949 = 10: Communications card does not reply. When writing the control word, BUSY is not active if CSOUT is inactive. Communications card is probably not inserted. R949 = 11,12: Timeout during BUSY during initialization. BUSY does not become active within 1 sec. R949 = 15: Timeout during BUSY during normal communication. BUSY does not become active within 1 sec. R949 = 18: Timeout when reading out the fault information from the ImPIs. Within one second after activation of FAULT no fault cause can be supplied by the IMP1. R949 = 20+i: HW conflict. This is set if bit HWCONF is set in status word of slave i. (Fault in the configuration of the multi-parallel circuit) r949 = 30+i: HW version of ImPI isnot compatible. The relevant slave number is contained in i. R949 = 40: Number of slaves does not tally with the setpoint number of slaves of the unit. R949 = 50+i Inconsistency in the number of slaves. The number of slaves notified by the ImPI is not in conformance with the number of status words or with the setpoint number of slaves of the MLFB. Counter-measure: - Check ImPI or communications card and replace, if necessary. - Check configuration of multi-parallel circuit. - Check parameterization. - Replace CU - Replace ImPI.

Number / Fault	Cause	Counter-measure
F065 Scom Telegram	No telegram was received at an Scom interface (Scom/USS protocol) within the telegram failure time.	Fault value r949: 1 = interface 1 (SCom1) 2 = interface 2 (SCom2) - Check the connection CU -X100:1 to 5 and check the connection PMU -X300. - Check the connection CU -X103, or X100/ 35,36 (Compact PLUS) - Check "SCom/SCB TLG OFF" P704.01 (SCom1) and P704.02 (SCom2) - Replace CU (-A10), or replace the unit (Compact PLUS)
F070 SCB initialization fault not Compact PLUS	A fault has occurred during initialization of the SCB board.	Fault value r949: 1: Board code incorrect 2: SCB board not compatible 5: Error in configuration data 6: Initialization timeout 7: SCB board double 10: Channel error
F072 EB initialization fault	A fault has occurred during initialization of the EB board.	Fault value r949: 2: 1st EB1 not compatible 3: 2nd EB1 not compatible 4: 1st EB2 not compatible 5: 2nd EB2 not compatible 21: Three EB1 boards 22: Three EB2 boards 110: Fault on 1st EB1 120: Fault on 2nd EB1 210: Fault on 1st EB2 220: Fault on 2nd EB2
F073 AnInp1SL1 not Compact PLUS	4 mA at analog input 1, slave 1 fallen short of	Check the connection of the signal source to the SCI1 (slave 1) -X428: 4, 5.
F074 AnInp2 SL1 not Compact PLUS	4 mA at analog input 2, slave 1 fallen short of	Check the connection of the signal source to the SCI1 (slave 1) -X428: 7, 8.
F075 AnInp3 SL1 not Compact PLUS	4 mA at analog input 3, slave 1 fallen short of	Check the connection of the signal source to the SCI1 (slave 1) -X428: 10, 11.
F076 AnInp1 SL2 not Compact PLUS	4 mA at analog input 1, slave 2 fallen short of	Check the connection of the signal source to the SCI1 (slave 2) -X428: 4, 5.
F077 AnInp2 SL2 not Compact PLUS	4 mA at analog input 2, slave 2 fallen short of	Check the connection of the signal source to the SCI1 (slave 2) -X428: 7, 8.
F078 AnInp3 SL2 not Compact PLUS	4 mA at analog input 3, slave 2 fallen short of	Check the connection of the signal source to the SCI1 (slave 2) -X428: 10, 11.

Number / Fault	Cause	Counter-measure
F079 SCB telegram failure not Compact PLUS	No telegram has been received by the SCB (USS, peer-to-peer, SCI) within the telegram failure time.	- Check the connections of the SCB1(2). - Check P704.03"SCom/SCB Tlg OFF" - Replce SCB1(2) - Replace CU (-A10)
F080 TB/CB initialization fault	Fault during initialization of the board at the DPR interface	Fault value r949: 1: Board code incorrect 2: TB/CB board not compatible 3: CB board not compatible 5: Error in configuration data 6: Initialization timeout 7: TB/CB board double 10: Channel error Check the T300/CB board for correct contacting, check the PSU power supply, check the CU / CB / T boards and check the CB initialization parameters: - P918.01 CB Bus Address, - P711.01 to P721.01 CB parameters 1 to 11
F081 OptBrdHeartbeat-Counter	Heartbeat-counter of the optional board is no longer being processed	Fault value r949: 0: TB/CB heatbeat-counter 1: SCB heartbeat-counter 2: Additional CB heartbeat-counter - Acknowledge the fault (whereby automatic reset is carried out) - If the fault re-occurs, replace the board concerned (see fault value) - Replace ADB - Check the connection between the subrack and the optional boards (LBA) and replace, if necessary
F082 TB/CB telegram failure	No new process data have been received by the TB or the CB within the telegram failure time.	Fault value r949: 1 = TB/CB 2 = additional CB - Check the connection to TB/CB - Check P722 (CB/TB TlgOFF) - Replace CB or TB
F085 Add. CB initialization fault	A fault has occurred during initialization of the CB board.	Fault value r949: 1: Board code incorrect 2: TB/CB board not compatible 3: CB board not compatible 5: Error in configuration data 6: Initialization timeout 7: TB/CB board double 10: Channel error Check the T300 / CB board for correct contacting and check the CB initialization parameters: - P918.02 CB Bus Address, - P711.02 to P721.02 CB Parameters 1 to 11
F087 SIMOLINK initialization fault	A fault has occurred during initialization of the SLB board.	- Replace CU, or replace the unit (Compact PLUS) - Replace SLB
F090 Mld Param.	An error occurred when attempting to change a parameter from the standstill measurement or the rotating measurement (Mot ID).	Power down and power up again. If it reoccurs, replace CU, or replace the unit (Compact PLUS)

Number / Fault	Cause	Counter-measure
F091 Mld Time	The rotating measurement takes longer than programmed in a measured status. Possible causes: Load torque too high Load torque not uniform Ramp-function generator disabled	Eliminate the cause and re-start the measurement (power up the converter again). If it re-occurs, replace CU, or replace the unit (Compact PLUS).
F095 Mld n(set)	Due to entries for - Permissible phase sequence - Maximum frequency, - Minimum speed, - Changeover frequency between V and I model, - Start of field-weakening frequency, - Frequency suppression bandwidth it was not possible to determine a permissible frequency range for the rotating measurement.	There must be a 10% frequency range which lies above 1.1 times the changeover frequency and below 0.9 times the start of field-weakening frequency. Possible counter-measures - Permit both phase sequences - Increase maximum frequency - Reduce minimum speed, - Reduce changeover frequency between the V and I model. - Reduce or remove the frequency suppression bandwidth.
F096 Mld abort	The rotating measurement was aborted due to the inadmissible external intervention.	The fault value in r949 defines the type of intervention: 4 Setpoint inhibit 5 Changeover, setpoint channel 8 Unexpected change in the converter status 12 Motor data set changeover (for function selection "Compl. Mot ID") 13 Changeover to slave drive 14 Motor data set changeover to data set with v/f_charac 15 Controller inhibit is set 16 Ramp-function generator is disabled 17 Selection "Tacho test" for F controller 18 Ramp-function generator stopped Eliminate cause 22 Inverter inhibit: Check inverter release (P561)
F097 Mld meausred value	The measured values for the nominal ramp-up time when optimizing the controller deviate too greatly. Cause: very unsteady load torque	If necessary, increase the torque limit values to 100 percent
F098 Mld Tachof	The rotating measurement has detected a fault in the speed actual value signal. The fault value defines the type of fault. The fault measurement may have been erroneously generated if the drive speed is externally forced (e.g. completely locked drive generates the "no signal" message)	The fault value in r949 defines the type of intervention 4 No speed signal present 5 Sign of the signal is incorrect 6 A track signal is missing 7 Incorrect gain 8 Incorrect pulse number Checking the measurement cables. Checking the parameters - P130 Src Speed ActV - P1151 Encoder Pulse #

Number / Fault	Cause	Counter-measure
F100 GRND Init	During the ground fault test, a current not equal to zero has been measured, or an UCE or overcurrent monitoring has responded, although no value has yet been triggered.	The cause of the fault can be read out from r376 "GrdFltTestResult". Check the converter output for short-circuit or ground fault (-X2:U2, V2, W2 - including motor). Check that the CU is inserted correctly. Sizes 1 and 2: - Check the transistor modules on the PEU board -A23 for short-circuit. Size 3 and 4: - Check the transistor modules -A100, -A200, -A300 for short-circuit
F101 GRND UCE	During the ground fault test, the UCE monitoring has responded in a phase in which no valve has been triggered.	Check valves in the power section for short-circuit, and on converters with fiber-optic gating, check the gating unit wiring and the UCE checkbacks for correct assignment. R376 can be interrogated to indicate which UCE monitoring has responded.

F102
 	
GRND Phase
	During the ground fault test, a current flows in a phase in which no valve has been triggered or the UCE monitoring has responded in the phase in which the valve has been triggered.	The fault value can be read out from r949. The digit of the xth position indicates the valve where the fault occurred at power-up.
		
		X O O O x = 1 = V+ x = 2 = V- x = 3 = U+
		       x = 4 = U- x = 5 = W+ x = 6 = W-
		
		The figure of the xth digit indicates the phase in which I is 0 and thus a valve must be defective (always conductive).
		
		O O O X x = 1 Phase 1 (U)
		       x = 3 = Phase 3 (W)
		       x = 4 = Phase 1 (U) or 3 (W)
		
		Examine phase for defective valves (always conductive).

F103
 	
Ground fault
	There is a ground fault or a fault in the power section.
	
	During the ground fault test, a current flows from the phase in which a valve has been triggered, the overcurrent comparator has responded, or a UCE monitoring has responded in a phase in which a valve has been triggered.
		Read out fault value from r949. The digit of the xth position indicates the valve where the fault occurred at power-up.
		
		X O O O x = 1 = V+ x = 2 = V- x = 3 =U+
		X O O O x = 4 = U- x = 5 = W+ x = 6 = W-
		
		Check the motor including the feeder cable for short-circuit. If no ground fault is present, check the power section for defective valves (always conductive).
		
		The digit of the xth position indicates the phase in which I is 0 and therefore a valve must be defective (always conductive).
		
		O O O X 1 = Current in phase 1 (U)
		       2 = UCE in phase 2 (V)
		       3 = Current in phase 3 (W)
		       4 = Only overcurrent occurred
		
		The speed of the motor shaft during the ground-fault test should be less than 10 % of the rated speed!
		
		1) In phase V there is a ground fault or a defective valve (always conductive) or the "SAFE STOP" switch (X9/5-6) is open (only for units with Order No. ...-11, ...-21, ...-31).

Number / Fault	Cause	Counter-measure

F107
 	
MLd = 0
	A fault has occurred during the test pulse measurement	Read out fault value from r949. The figures of the grey shaded areas indicate which fault has occurred.
		
		O O X X xx = 01: Both current actual values remain 0
		    xx = 02: Motor-converter cable phase U interrupted
		    xx = 03: Motor converter phase V interrupted
		    xx = 04: Motor-converter phase W interrupted
		    xx = 05: Current actual value I1 remains 0
		    xx = 06: Current actual value I3 remains 0
		    xx = 07: Valve U+ does not trigger
		    xx = 08: Valve U- does not trigger
		    xx = 09: Valve V+ does not trigger
		    xx = 10: Valve V- does not trigger
		    xx = 11: Valve W+ does not trigger
		    xx = 12: Valve W- does not trigger
		    xx = 13: Sign I1 incorrect
		    xx = 14: Sign I3 incorrect
		    xx = 15: Sign I1 and I3 incorrect
		    xx = 16: Sign I1 confused with I3
		    xx = 17: I1 confused with I3 and both currents have an incorrect sign
		
		The digit of the xth digit indicates where the fault has occurred.
		
		X O O O x = 0 = Single converter
		    x = 1 = Inverter 1
		    x = 2 = Inverter 2
		    x = 3 = Inverters 1 and 2
		Check that all 3 motor feeder cables and the motor windings do not have any interruption. Check the connection between the current converter and the electronics and check the current converter itself. Check the correct input of the rating plate data for the motor data set valid during the measurement.

F108
 	
Mld Unsym
	During the DC measurement, the measurement results for the individual phases differ significantly. The fault value indicates which quantity(ies) is (are) concerned and in which phase the greatest deviation occurred.	Read out fault value from r949. The digit of the xth position indicates;
		
		O O O X Transverse voltage too high
		    x = 1 = phase R
		    x = 2 = phase S
		    x = 3 = phase T
		
		O O X O Dev. stator resistance
		    (1, 2, 3 as above)
		
		O X O O Dev. Rotor resistance
		    (1, 2, 3 as above)
		
		X O O O Dev. Dead-time compensation
		    (1, 2, 3 as above)
		
		X O O O O Dev. Valve voltage
		    (1, 2, 3 as above)
		
		The motor, power section or actual-value sensing are significantly non-symmetrical.

Number / Fault	Cause	Counter-measure
F109 MId R(L)	The rotor resistance determined during DC measurement deviates too significantly from the value which was calculated by the automatic parameterization from the rated slip.	- Incorrect input of rated speed or rated frequency - Pole pair number incorrect
F110 MId di/dt	During test pulse measurement, the current has increased significantly faster than was expected. Thus for the 1st test pulse, an overcurrent condition occurred within the first half of the minimum switch-on time	- There may be a short-circuit between two converter outputs. - The motor rating plate data have not been correctly parameterized. - The motor leakage is too low.
F111 Fault e_Func	A fault has occurred while calculating the equalization function.	
F112 Unsym I_sigma	The individual leakage test results deviate too significantly.	
F114 MId OFF	The converter has automatically stopped the automatic measurement due to the time limit up to power-up having been exceeded or due to an OFF command during the measurement, and has reset the function selection in P115.	Re-start with P115 function selection = 2 "Motor identification at standstill".The ON command must be given within 20 sec. after the alarm message A078 = standstill measurement has appeared. Cancel the OFF command and re-start measurement.
F115 KF internal	A fault has occurred during calculations in the context of the MotID.	Power-down the converter and electronics and power-up again.
F116 Technology board fault not Compact PLUS	See TB documentation	
F117 Technology board fault not Compact PLUS	See TB documentation	
F118 Technology board fault not Compact PLUS	See TB documentation	
F119 Technology board fault not Compact PLUS	See TB documentation	
F120 Technology board fault not Compact PLUS	See TB documentation	
F121 Technology board fault not Compact PLUS	See TB documentation	
F122 Technology board fault not Compact PLUS	See TB documentation	

Number / Fault	Cause	Counter-measure
F123 Technology board fault not Compact PLUS	See TB documentation	
F124 Technology board fault not Compact PLUS	See TB documentation	
F125 Technology board fault not Compact PLUS	See TB documentation	
F126 Technology board fault not Compact PLUS	See TB documentation	
F127 Technology board fault not Compact PLUS	See TB documentation	
F128 Technology board fault not Compact PLUS	See TB documentation	
F129 Technology board fault not Compact PLUS	See TB documentation	
F130 Technology board fault not Compact PLUS	See TB documentation	
F131 Technology board fault not Compact PLUS	See TB documentation	
F132 Technology board fault not Compact PLUS	See TB documentation	
F133 Technology board fault not Compact PLUS	See TB documentation	

Number / Fault	Cause	Counter-measure
F134 Technology board fault not Compact PLUS	See TB documentation	
F135 Technology board fault not Compact PLUS	See TB documentation	
F136 Technology board fault not Compact PLUS	See TB documentation	
F137 Technology board fault not Compact PLUS	See TB documentation	
F138 Technology board fault not Compact PLUS	See TB documentation	
F139 Technology board fault not Compact PLUS	See TB documentation	
F140 Technology board fault not Compact PLUS	See TB documentation	
F141 Technology board fault not Compact PLUS	See TB documentation	
F142 Technology board fault not Compact PLUS	See TB documentation	
F143 Technology board fault not Compact PLUS	See TB documentation	
F144 Technology board fault not Compact PLUS	See TB documentation	

Number / Fault	Cause	Counter-measure
F145 Technology board fault not Compact PLUS	See TB documentation	
F146 Technology board fault not Compact PLUS	See TB documentation	
F147 Technology board fault not Compact PLUS	See TB documentation	
F148 Fault 1 Function blocks	An active signal is present at binector U061 (1).	Examine cause of fault, see function diagram 710
F149 Fault 2 Function blocks	An active signal is present at binector U062 (1).	Examine cause of fault, see function diagram 710
F150 Fault 3 Function blocks	An active signal is present at binector U063 (1).	Examine cause of fault, see function diagram 710
F151 Fault 4 Function blocks	An active signal is present at binector U064 (1).	Examine cause of fault, see function diagram 710
F152 Signs of life repeatedly invalid.	After an appropriate number of invalid signs of life, the sign of life monitoring block has gone into fault status.	Check cause of fault, see function diagram 170
F243 Link int.	Fault in internal linking. One of the two linked partners does not reply.	Replace CU (-A10), or replace the unit (Compact PLUS)
F244 ParaLink int.	Fault in the internal parameter linking	Release comparison of gating unit software and operating software regarding the transfer parameters. Replace CU (-A10), or replace the unit (Compact PLUS)
F255 Fault in EEPROM	A fault has occurred in the EEPROM.	Switch off the unit and switch it on again. If the fault re-occurs, replace CU, or replace the unit (Compact PLUS)

Table 1   Fault numbers, causes and their counter-measures

Alarms

The alarm message is periodically displayed on the PMU by A = alarm/ alarm message and a 3-digit number. An alarm cannot be acknowledged. It is automatically deleted once the cause has been eliminated. Several alarms can be present. The alarms are then displayed one after the other.

When the converter is operated with the OP1S operator control panel, the alarm is indicated in the lowest operating display line. The red LED additionally flashes (refer to the OP1S operating instructions).

Number / Alarm	Cause	Counter-measure
A001 Calculating time	The calculating time utilization of the CUVC board is too high	- Observe r829 CalcTimeHdroom - Increase P357 Sampling Time or - Reduce P340 Pulse Frequency
A002 SIMOLINK start alarm	Start of the SIMOLINK ring is not functioning.	- Check the fiber-optic cable ring for interruptions - Check whether there is an SLB without voltage in the ring - Check whether there is a faulty SLB in the ring
A014 Simulation active alarm	The DC link voltage is not equal to 0 when the simulation mode is selected (P372 = 1).	- Set P372 to 0. - Reduce DC link voltage (disconnect the converter from the supply)
A015 External alarm 1	Parameterizable external alarm input 1 has been activated.	Check - whether the cable to the corresponding digital input has been interrupted. - parameter P588 Src No Ext Warn1
A016 External alarm 2	Parameterizable external alarm input 2 has been activated.	Check - whether the cable to the corresponding digital input has been interrupted. - parameter P589 Src No Ext Warn2
A017 SAFE OFF alarm active	The switch for blocking the inverter pulses (X9 terminal 5-6) has been opened (only for units with Order No. ...-11, ...-21, ...-31, ...-61)	Close switch X9 5-6 and thus release the inverter pulses.
A020 Overcurrent	An overcurrent condition has occurred.	Check the driven load for an overload condition. - Are the motor and the converter matched? - Have the dynamic performance requirements been exceeded.
A021 Overvoltage	An overvoltage condition has occurred.	Check the supply voltage. The converter regenerates without regeneration possibility.
A022 Inverter temperature	The threshold for initiating an alarm has been exceeded.	- Measure intake air or ambient temperature. - Observe the derating curves at theta >50°C (Compact PLUS) or 40°C. Check - Whether the fan -E1 is connected and is rotating in the correct direction. -The air intake and discharge openings for blockage. - The temperature sensor at -X30. - r833 indicates the maximum converter temperature of all existing measuring points.

Number / Alarm	Cause	Counter-measure
A023 Motor temperature	The parameterizable threshold for initiating an alarm has been exceeded.	Check the motor (load, ventilation, etc.). The current temperature can be read in r009 Motor Tmp. Check the KTY84 input at connector -X103:29,30, or -X104:29,30 (Compact PLUS) for short-circuit.
A024 Motor movement	The motor has moved during motor data identification.	Lock the motor.
A025 I2t Inverter	If the instantaneous load condition is maintained, then the inverter will be thermally overloaded.	Check: - P72 Rtd Drive Amps - MLFB P70 - P128 Imax - r010 Drive Utilizat
A026 Ud too high	Ud is above the continuously permissible DC link voltage for more than 30sec in a time interval of 90sec	
A029 I2t motor	The parameterized limit value for the I2t monitoring of the motor has been exceeded.	Motor load cycle is exceeded! Check the parameters: P382 Motor Cooling P383 Mot Tmp T1 P384 Mot Load Limits
A033 Overspeed	Bit 3 in r553 status word 2 of the septoint channel. The speed actual value has exceeded the value of maximum speed plus the set hysteresis.	P804 Overspeed Hys plus P452 n/f(max, FWD Spd) or P453 n/f(max, REV Spd) has been exceeded Increase the parameter for the maximum frequencies or reduce the regenerative load.
A034 Setpoint/actual value deviation	Bit 8 in r552 status word 1 of the setpoint channel. The difference between freqeuncy setpoint/actual value is greater than the parameterized value and the control monitoring time has elapsed.	Check - whether an excessive torque requirement is present - whether the motor has been dimensioned too small. Increase values P792 Perm Deviation Frq/ set/actual DevSpeed and P794 Deviation Time
A035 Wire break	The clockwise and/or the counter-clockwise rotating field is not enabled, or a wire breakage is present in the terminal wiring (both control word bits are zero)	Check whether cable(s) to the corresponding digital input(s) P572 Src FWD Spd / P571 Src REV Spd is (are) interrupted or released
A036 Brake checkback "Brake still closed"	The brake checkback indicates the "Brake still closed" state.	Check brake checkback (see FD 470)
A037 Brake checkback "Brake still open"	The brake checkback indicates the "Brake still open" state.	Check brake checkback (see FD 470)
A041 Vdmax controller inhibit	The line voltage is too high or the drive line voltage (P071) is incorrectly parameterized. The Vdmax controller is disabled despite parameter access (P515), as otherwise the motor would accelerate immediately in operation to the maximum frequency.	Check - the line voltage - P071 Line Volts

Number / Alarm	Cause	Counter-measure
A042 Motor stall/lock	Motor is stalled or blocked. The alarm cannot be influenced by P805 "PullOut/BlckTime", but by P794 "Deviation Time"	Check - whether the drive is locked - whether the encoder cable is interruped during speed control and whether the shield is connected. - Whether the drive has stalled - For synchronous motors (P095=12): excitation current injection
A043 n-act jump	The permissible change value of the speed encoder signal (P215) has been exceeded. Additionally for synchronous motors (P095=12): The motor rotates with more than 2% of the rated speed at the time of inverter release. The inverter status "Ready for operation" is not exited.	Check the tachometer cables for interruptions. Check the earthing of the tachometer shield. - The shield must be connected both on the motor and on the converter side. - The encoder cable must not be interrupted. The encoder cable must not be laid with the power cables. - Only the recommended encoders should be used. - If there is a signal fault, use the DTI board if necessary. If required, change P215. - Additionally for synchronous motors (P095=12): Do not grant inverter release until the motor is at standstill
A044 I too low	Only for synchronous motors (P095=12) in operation: The difference smoothed with P159 between excitation current setpoint and actual value (r160 - r156) deviates from zero by more than 25% of the rated magnetizing current.	Only for synchronous motors P095=12) Check: - whether the current limitation of the excitation current control is too small, - whether the dynamic performance of the excitation current injection is too low, - whether the excitation current injection function is operating, - whether the wiring of excitation current actual-value P155 is correct, - whether the wiring of excitation current setpoint r160 is correct, - whether there is a wire break between MASTERDRIVES and the excitation device, - whether the voltage limitation is too low for dynamic excitation current control, - whether the analog output for r160 takes place without isolating amplifiers (despite cable length > 4 m)
A045 DC braking activated	The DC braking function has been activated and the motor frequency is still above the frequency at which DC braking begins (P398).	- Increase frequency at which DC braking begins
A049 No slave not Compact PLUS	At serial I/O (SCB1 with SCI1/2), no slave is connected or fiber-optic cable is interrupted or slaves are without voltage.	P690 SSCI AnaIn Conf - Check slave. - Check cable.

Number / Alarm	Cause	Counter-measure
A050 Slave incorrect not Compact PLUS	At ser. I/O the slaves required according to a parameterized configuration are not present (slave number or slave type): Analog inputs or outputs or digital inputs or outputs have been parameterized which are not physically present.	Check parameter P693 (analog outputs), P698 (digital outputs). Check connectors K4101...K4103, K4201...K4203 (analog inputs) and binectors B4100...B4115, B4120...B4135, B4200...B4215, B4220...B4235 (digital inputs) for connecting.
A051 Peer baud rate not Compact PLUS	In a peer-to-peer connection a baud rate has been selected which is too high or too different.	Adjust the baud rate in conjunction with the SCB boards P701 SCom/SCB Baud Rate
A052 Peer PcD L not Compact PLUS	In a peer-to-peer connection, a PcD length has been set which is too high (>5).	Reduce number of words P703 SCom/SCB PcD #
A053 Peer Lng f. not Compact PLUS	In a peer-to-peer connection, the pcD length of transmitter and receiver do not match.	Adjust the word length for transmitter and receiver P703 SCom/SCB PcD #
A057 TB Param not Compact PLUS	Occurs when a TB is logged on and present, but parameter tasks from the PMU, SCom1 or SCom2 have not been answered by the TB within 6 seconds.	Replace TB configuration (software)
A061 Alarm 1 Function blocks	An active signal is present at binector U065 (1).	Check cause of alarm (see FD 710)
A062 Alarm 2 Function blocks	An active signal is present at binector U066 (1).	Check cause of alarm (see FD 710)
A063 Alarm 3 Function blocks	An active signal is present at binector U067 (1).	Check cause of alarm (see FD 710)
A064 Alarm 4 Function blocks	An active signal is present at binector U068 (1).	Check cause of alarm (see FD 710)
A065 Auto restart active	The auto restart option (P373) restarts the drive. A possibly parameterized power-up delay time (P374) expires if flying restart is not selected. During pre-charging of the DC link, there is no time monitoring i.e. with an external electronics power supply, it is also switched-in again.	Caution! Personnel could be in danger when the drive automatically restarts. Check whether the auto restart function is really required!
A066 fsyn > fmax	The measured target frequency of the external converter (or supply) is greater than the parameterized maximum frequency of the synchronizing converter.	Check: - P452 n/f(max, FWD Spd)/ P453 n/f(max,REV Spd) are correct and - correct motor data set P578 Src MotDSet Bit0 are selected
A067 fsyn < fmin	The measured target frequency of the external converter (or supply) is less than the minimum frequency required for synchronizing.	Check: - r533 Sync Target Freq - Synchronizing cable.
A068 fsyn<>fsoll	The setpoint frequency of the synchronizing converter deviates too significantly from the measured target frequency of the external converter (or supply). The permissible deviation can be set in P529.	Adjust total setpoint (main and additional setpoints) to the target frequency displayed in visualization parameter r533.

Number / Alarm	Cause	Counter-measure
A069 RGen active	Synchronizing is not started as long as the ramp-function generator in the synchronizing converter setpoint channel is active. This alarm is only output if synchronizing is selected.	Wait until acceleration has been completed. Check whether - P462 Accel Time - P463 Accel Time Unit have been correctly set.
A070 Sync error	This alarm is output if the phase difference goes outside the synchronizing window (P531) after successful synchronization.	The alarm can only be deleted after synchronization has been exited.
A071 tSY missing	An attempt has been made to start synchronization with either the synchronizing board not inserted or not parameterized.	Insert the TSY board in the subrack
A075 Ls, Rr Dev.	The measured values of the leakage measurement or of rotor resistance deviate significantly.	Usually the leakage reactance P122 is the average value resulting from the measured values in r546.1...12, and the rotor resistance r126 from the values in r542.1..3. If individual measured values significantly deviate from the average values, they are automatically not taken into account for the calculation (for RI) or the value of the automatic parameterization remains (for Ls). It is only necessary to check the results for their plausibility in the case of drives with high requirements on torque or speed accuracy.
A076 t-comp lim	The determined compensation time was limited to the value range of 0.5 µs - 1.5 µs.	Converter output and motor output are too different. Check motor data input P095 to P109.
A077 r-g limit	The measured resistance has been limited to the maximum value of 49%.	Converter output and motor output are too different. Check motor data input P095 to P109.
A078 Stands. Meas	The standstill measurement is executed when the converter is powered up. The motor can align itself several times in a certain direction with this measurement.	If the standstill measurement can be executed without any danger: - Power up the converter.
A079 Mld Inv Stop	The rotating measurement has been aborted or cannot commence because an inverter stop command is present.	P561 Src InvRelese - Release the inverter If necessary, re-start the measurement by powering-up the converter.
A080 MotId:Dr.M	When the converter is powered up, the rotating measurement automatically accelerates the drive. The drive can then only be externally controlled in a restricted fashion.	If the rotating measurement can be executed without any danger: - Power up the converter.
A081 CB alarm	The following description refers to the 1st CBP. For other CBs or the TB see operating instructions for CB board. The ID byte combinations which are being sent from the DP master in the configuration telegram are not in conformance with the permissible ID byte combinations. (See also Compendium, Chapter 8, Table 8.2-12). Consequence: No connection is made with the PROFIBUS master.	New configuration necessary

Number / Alarm	Cause	Counter-measure
A082 CB alarm	The following description refers to the CBP. For other CBs or the TB see the operating instructions for the CB board. No valid PPO type can be identified from the configuration telegram of the DP master. Consequence: No connection is made with the PROFIBUS master.	New configuration necessary.
A083 CB alarm	The following description refers to the 1st CBP. For other CBs or the TB see the operating instructions for the CB board. No net data or invalid net data (e.g. complete control word STW1=0) are being received from the DP master. Consequence: The process data are not passed on to the dual port RAM. If P722 (P695) is not equal to zero, this will cause the fault message F082 to be tripped.	
A084 CB alarm	The following description refers to the 1st CBP. For other CBs or the TB see the operating instructions for the CB board. The telegram traffic between the DP master and the CBP has been interrupted (e.g. cable break, bus cable pulled out or DP master powered down). Consequence: If P722 (P695) is not equal to zero, this will cause the fault message F082 to be tripped.	
A085 CB alarm	The following description refers to the 1st CBP. For other CBs or the TB see the operating instructions for the CB board. The CBP does not generate this alarm!	
A086 CB alarm	The following description refers to the 1st CBP. For other CBs or the TB see the operating instructions for the CB board. Failure of the heartbeat counter on the basic unit. The heartbeat counter on the basic unit is no longer being incremented. The communication between the CBP and the basic board is disturbed.	
A087 CB alarm	The following description refers to the 1st CBP. For other CBs or the TB see the operating instructions for the CB board. Fault in the DPS manager software of the CBP.	
A088 CB alarm	See user manual for CB board	
A089 CB alarm	See user manual for CB board Alarm of the 2nd CB board corresponds to A81 of the 1st CB board	
A090 CB alarm	See user manual for CB board Alarm of the 2nd CB board corresponds to A82 of the 1st CB board	
A091 CB alarm	See user manual for CB board Alarm of the 2nd CB board corresponds to A83 of the 1st CB board	
A092 CB alarm	See user manual for CB board Alarm of the 2nd CB board corresponds to A84 of the 1st CB board	

Number / Alarm	Cause	Counter-measure
A093 CB alarm	See user manual for CB board Alarm of the 2nd CB board corresponds to A85 of the 1st CB board	
A094 CB alarm	See user manual for CB board Alarm of the 2nd CB board corresponds to A86 of the 1st CB board	
A095 CB alarm	Alarm of the 2nd CB board. Corresponds to A87 of the 1st CB board See user manual for CB board	
A096 CB alarm	See user manual for CB board Alarm of the 2nd CB board corresponds to A88 of the 1st CB board	
A097 TB alarm 1 not Compact PLUS	See user manual for TB board	
A098 TB alarm 1 not Compact PLUS	See user manual for TB board	
A099 TB alarm 1 not Compact PLUS	See user manual for TB board	
A100 TB alarm 1 not Compact PLUS	See user manual for TB board	
A101 TB alarm 1 not Compact PLUS	See user manual for TB board	
A102 TB alarm 1 not Compact PLUS	See user manual for TB board	
A103 TB alarm 1 not Compact PLUS	See user manual for TB board	
A104 TB alarm 1 not Compact PLUS	See user manual for TB board	
A105 TB alarm 1 not Compact PLUS	See user manual for TB board	
A106 TB alarm 1 not Compact PLUS	See user manual for TB board	
A107 TB alarm 1 not Compact PLUS	See user manual for TB board	

Number / Alarm	Cause	Counter-measure
A108 TB alarm 1 not Compact PLUS	See user manual for TB board	
A109 TB alarm 1 not Compact PLUS	See user manual for TB board	
A110 TB alarm 1 not Compact PLUS	See user manual for TB board	
A111 TB alarm 1 not Compact PLUS	See user manual for TB board	
A112 TB alarm 1 not Compact PLUS	See user manual for TB board	
A113 TB alarm 2 not Compact PLUS	See user manual for TB board	
A114 TB alarm 2 not Compact PLUS	See user manual for TB board	
A115 TB alarm 2 not Compact PLUS	See user manual for TB board	
A116 TB alarm 2 not Compact PLUS	See user manual for TB board	
A117 TB alarm 2 not Compact PLUS	See user manual for TB board	
A118 TB alarm 2 not Compact PLUS	See user manual for TB board	
A119 TB alarm 2 not Compact PLUS	See user manual for TB board	
A120 TB alarm 2 not Compact PLUS	See user manual for TB board	

Number / Alarm	Cause	Counter-measure
A121 TB alarm 2 not Compact PLUS	See user manual for TB board	
A122 TB alarm 2 not Compact PLUS	See user manual for TB board	
A123 TB alarm 2 not Compact PLUS	See user manual for TB board	
A124 TB alarm 2 not Compact PLUS	See user manual for TB board	
A125 TB alarm 2 not Compact PLUS	See user manual for TB board	
A126 TB alarm 2 not Compact PLUS	See user manual for TB board	
A127 TB alarm 2 not Compact PLUS	See user manual for TB board	
A128 TB alarm 2 not Compact PLUS	See user manual for TB board	

Table 2   Alarm numbers, causes and their counter-measures

Fatal errors (FF)   Fatal errors are serious hardware or software errors which no longer permit normal operation of the unit. They only appear on the PMU in the form "FF<No>". The software is re-booted by actuating any key on the PMU.

Number / Fault	Cause	Counter-measure
FF01 Time slot overflow	A time slot overflow which cannot be corrected has been detected in the higher-priority time slots.	- Increase sampling time (P357 or reduce pulse frequency (P340) - Replace CU, or replace the unit (Compact PLUS)
FF03 Access fault Optional board	Serious faults have occurred while making access to external optional boards (CB, TB, SCB, TSY ..).	- Replace CU, or replace the unit (Compact PLUS) - Replace the LBA - Replace the optional board
FF04 RAM	A fault has occurred during the test of the RAM.	- Replace CU, or replace the unit (Compact PLUS)
FF05 EPROM fault	A fault has occurred during the test of the EPROM.	- Replace CU, or replace the unit (Compact PLUS)
FF06 Stack overflow	Stack has overflowed	For VC: Increase sampling time (P357) For MC: Reduce pulse frequency (P340) - Replace CU, or replace the unit (Compact PLUS)
FF07	Stack underflow	* Replace CU, or replace the unit (Compact PLUS) * Replace firmware
FF08	Invalid processor command should be processed	* Replace CU, or replace the unit (Compact PLUS) * Replace firmware
FF09	Invalid format in a protected processor command	* Replace CU, or replace the unit (Compact PLUS) * Replace firmware
FF10	Word access on uneven address	* Replace CU, or replace the unit (Compact PLUS) * Replace firmware
FF11	Jump command to uneven address	* Replace CU, or replace the unit (Compact PLUS) * Replace firmware
FF13 Wrong firmware version	A version conflict between the firmware and the hardware has occurred.	- Replace firmware - Replace CU, or replace the unit (Compact PLUS)
FF14 FF processing	Unexpected fatal error (During processing of the fatal errors, a fault number has occurred which is unknown to date).	Replace the board
FF15 CSTACK_OVERFLOW	Stack overflow (C-Compiler Stack)	Replace the board

Table 3   Fatal errors