5.2.2 Fault message list

Table 5-11 Fault message list

Fault message	Fault	Cause	Removing the fault
F–04	Incorrect setpoint value conversion	• A/D converter faulted (setpoint channel)	• If this is repeated, replace the control board
F–07	Data save on the FEPROM was unsuccessful	• If the fault message is repeated, while a data save is being made, then the FEPROM is defective. • If the fault message occurs immediately after powering–up the drive converter, then the drive converter was previously powered–down during a data save operation. This means that the last parameter changes are not saved. A new data save operation must be initiated.	1. Re–start data save via P52=1 2. If fault F–07 occurs again, replace the control board
F–08	Irretrievable data loss	• Defetive FEPROM	• Replace the control board
F–09	Fault, encoder system 1 (motor encoder)	• Motor encoder not connected or defective • Motor encoder cable defective • Measuring circuit 1 (speed actual value sensing) defective, not correctly inserted or incorrectly equipped (P–150). The fault message can be suppressed via P–090 bit 1 from FW 2.00 onwards.	• Check the encoder cable/shielding, or • Replace the motor encoder, or • Replace the control board
F–10	Fault equipping parameterization encoder system 2	• Positioning with spindle encoder selected (P141=1, P143=1), incorrect module version FW 1/2 • Positioning with spindle encoder selected (P141=1, P143=1), there is no spindle encoder at X432 FW 3.00 • Positioning with spindle encoder (P141=1, P143=1) and output of squarewave–converted motor encoder signals X432 selected (P033<>0) FW 3.00 • Output of squarewave–converted motor encoder signals at X432 selected (P033<>0), there is a spindle encoder at X432 FW 3.00	• Correctly adapt P33 (refer to the Start–up Guide, Section 3.3.4) • Replace with the correct control board version • Connect the spindle encoder

Table 5-11 Fault message list

Fault message	Fault	Cause	Removing the fault
F–11	Speed controller is at its limit, speed actual value missing	• Motor overloaded • DC link busbars not connected • DC link fuse defective • Defective transistor in the power module • Motor encoder not connected • Defective motor encoder cable • Defective motor encoder • Motor ground not connected • Motor encoder cable shield not connected • Motor not connected or phase missing • Motor stalled • Measuring circuit 1 (speed actual value sensing) defective or not correctly connected (The delay time can be set via P–248.)	• Avoid motor overload (P004<100%) • Tighten the DC link busbars • Replace the power module • Connect the motor encoder • Replace the motor encoder • Check the PE/motor connection • Ground the shield or replace the encoder cable • Correctly connect the motor phases • Release the motor (mech. blockage) • Contactor between the motor and drive converter must be closed • Replace the control board
F–14	Motor overtemperature	• Motor overloaded • Motor current to high, e. g. due to incorrect motor data (P–096) • Defective temperature sensor (motor) • Defective motor fan • Measuring circuit 1 (speed actual value – motor) defective • Winding short, motor	• Reduce the motor load • Correct the motor data • Changeover to the 2nd temperature sensor • Connect the fan • Replace the control board or motor encoder • Replace the motor
F–15	Drive converter overtemperature	• Drive converter overloaded (incorrect motor/drive converter assignment, incorrect load duty cycle) • Ambient temperature too high • Fan failed • Inverter clock cycle frequency greater than 3.2 kHz • Temperature sensor defective Acknowledgement: Only after cooling–down below 50°C ± 15K, by powering–down and powering–up again.	• Correct the motor/drive converter assignment (P95/96). Reduce the M_d limit (P39) • Power module too small • Replace power module • Reduce clock cycle frequency
F–16	Illegal power module code	• Incorrect code number 3 selected in P–095 (for power modules without automatic recognition) • Incorrect code number selected in P–095 (for power modules with automatic recognition) from FW 3.00	• Load the correct code number
F–17	I_0 motor > I_{rated} power module	• Incorrect motor/drive converter assignment	• Correctly set I_o motor, or • Use a larger power module

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Table 5-11 Fault message list

Fault message	Fault	Cause	Removing the fault
F–18	Fault, encoder system 2 (spindle encoder)	• Spindle encoder not connected or defective FW 3.00 • Defective spindle encoder cable FW 3.00 • Measuring circuit 2 defective FW 3.00 The fault message can be suppressed via P–090 bit 5.	• Connect or replace the spindle encoder • Check the connecting cable, encoder/drive converter • Replace the control board
F–19	Temperature sensor • Interrupted • Short–circuit	• Temperature sensor defective (PTC thermistor at 20°C ≈ 600 Ω, if required, use the 2nd PTC thermistor of the motor) • Sensor connection interrupted • Measuring circuit 1 defective Acknowledgement: Only by powering–down and powering–up.	• Replace the temperature sensor • Re–establish the connection between the temperature sensor and motor/ drive converter • Replace the control board
F–61	Max. motor frequency exceeded	• Incorrectly entered encoder pulse number (P–098) FW 2.00 • Master/slave have no force–locked connection	• Correctly enter the encoder pulse number (P98) • Re–establish the mechanical force–locked connection (slave drive)
F–79	Division interrupt (message can be suppressed by setting P–053, bit 11)	• Incorrect motor data in P–159 to P–176 or P–219 to P–236 • Field weakening > 1:16	• Correctly set the motor data • Field weakening < 1:16
FP–01	Setpoint > encoder pulse number	• Setpoint input too high (P–121 to P–125, P–131). External position reference value	• Setpoint input must be set lower (max P131)
FP–02	Zero mark monitoring has responded	• Zero mark signal from the encoder or BERO interrupted • Incorrect parameterization (P–131)	• Set the Bero clearance lower or replace the BERO • Replace the cabling • Replace the encoder • Parameter setting in P131 greater than the pulse number per revolution
FP–03	Zero mark shift > encoder pulse number	• Value in P–130 > than the pulse number in P–131	• The entry in P–130 must be set lower than the value in P–131

Table 5-11 Fault message list

Fault message	Fault	Cause	Removing the fault
FP–04	No valid zero mark	There is no valid zero mark when setting P–129 to 1, e. g.: • After power–up • After the gearbox stage change	• Rotate the spindle at least through one revolution (rotate through 360^0 and again set P129 to 1). Check the zero mark if the fault is still present. • If a BERO is being used, adjust the clearance, check the cabling or replace the Bero. • For spindle/motor encoder, check the cabling or replace the encoder.
F–60	Power offset adjustment	• Pulse and/or controller enable missing	• Enable the pulses and controller. Only then can the adjustment be started (to FW 2.40)

Faults

After

- **Power ON**

  Operating display inactive

  – minimum two phases missing (NE/monitoring module)

  – at least two input fuses have failed (NE/monitoring module)

  – electronics power supply in the NE/monitoring module defective

  – equipment bus connection (ribbon cable), MSD module ↔ NE/ monitoring module not inserted or defective

  – defective control board

  – defective EPROM/FEPROM

  – no valid firmware loaded, display: "– – – – – –" or ERROR

- **Controller enable (without fault message)**

  Motor rotates, max. 30 RPM at n_{set} > 30 RPM or the motor oscillates (oscillation not selected) at n_{set} < 30 RPM

  – incorrect motor rotating field, as feeder cables interchanged (interchange 2 phase connections).

  – excessively high motor encoder pulse number entered

  Motor remains stationary for a speed setpoint which is not equal to zero

  – oscillation function is selected (P–154, P–155=0)

  – terminal 81 not selected

  – function number 16 (setpoint enable) programmed but not selected

  Motor briefly moves

  – defective power module

  Motor accelerates to a high speed

  – pulse number too low

- **Positioning on**

  The drive rotates with the search speed but does not position

  – pulse number between two zero marks too high

■