

SINAMICS V70 alarms

5.1 Overview of alarms

Differences between faults and alarms

The differences between faults and alarms are as follows:

Type	Description
Faults	<p>What happens when a fault occurs?</p> <ul style="list-style-type: none"> • If the servo motor is running, it stops running. • If the servo motor is not running, it cannot run. <p>How to eliminate a fault?</p> <ul style="list-style-type: none"> • Remove the cause of the fault. • Acknowledge the fault.
Alarms	<p>What happens when an alarm occurs?</p> <ul style="list-style-type: none"> • The servo motor can run normally. <p>How to eliminate an alarm?</p> <ul style="list-style-type: none"> • The alarm acknowledges itself. If the cause of the alarm is no longer present, it automatically resets itself.

Fault reactions

The following fault reactions are defined:

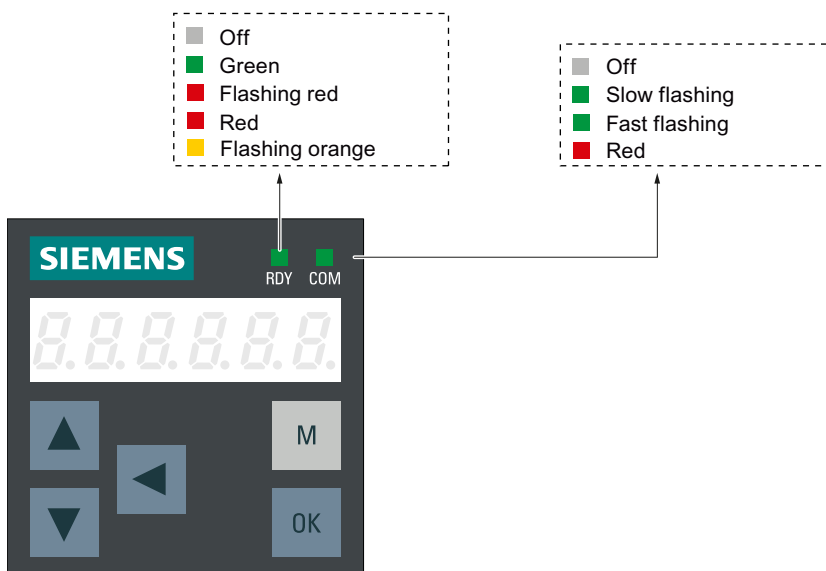
Reaction	Description
NONE	No reaction when a fault occurs.
OFF1	Servo motor ramps down to stop.
OFF2	Servo motor coasts down to stop.
OFF3	Servo motor stops quickly (emergency stop).
ENCODER	Encoder fault causes OFF2.

Fault acknowledgements

The acknowledgement methods for faults are specified as follows:

Acknowledgement	Description
POWER ON	The fault is acknowledged by a POWER ON (switch servo drive off and on again). NOTE: If this action has not eliminated the fault cause, the fault is displayed again immediately after power-on.
IMMEDIATELY	Faults disappear immediately after the fault causes have been eliminated. NOTE: <ul style="list-style-type: none"> These faults can also be acknowledged by a POWER ON operation. If this action has not eliminated the fault cause, the fault will continue to be displayed after acknowledgment.
PULSE INHIBIT	The fault can only be acknowledged with a pulse inhibit. The same options are available for acknowledging as described under acknowledgment with IMMEDIATELY.

Two LED status indicators (RDY and COM) are available to indicate drive readiness status and communication status respectively.



You can find detailed information about the status indications in the table below:

Status indicator	Color	Status	Description
RDY	-	Off	24 V control board power supply is missing
	Green	Continuously lit	The enable signal is available
	Red	Continuously lit	The enable signal is missing or the drive is in the startup state
		Flash at 1 Hz	Alarms or faults occur
Red and Orange	Flash alternately at an interval of 0.5 s	The servo drive is located	

Status indicator	Color	Status	Description
COM	-	Off	Communication with CNC is not active
	Green	Flash at 0.5 Hz	Communication with CNC is active
		Flash at 2 Hz	SD card operating (read or write)
	Red	Continuously lit	Communication with CNC is in error

5.2 Common faults and alarms

This section lists common faults and alarms that may occur on the SINAMICS V70.

Fault list

Fault	Cause	Remedy
F1000: Internal software error Reaction: OFF2 Acknowledgement: POWER ON	An internal software error has occurred.	<ul style="list-style-type: none"> Evaluate fault buffer. Carry out a POWER ON (power off/on) for all components. Upgrade firmware to later version. Contact the Hotline. Replace the Control Unit.
F1001: FloatingPoint exception Reaction: OFF2 Acknowledgement: POWER ON	An exception occurred during an operation with the FloatingPoint data type.	<ul style="list-style-type: none"> Carry out a POWER ON (power off/on) for all components. Upgrade firmware to later version. Contact the Hotline.
F1002: Internal software error Reaction: OFF2 Acknowledgement: IMMEDIATELY	An internal software error has occurred.	<ul style="list-style-type: none"> Carry out a POWER ON (power off/on) for all components. Upgrade firmware to the latest version. Contact the Hotline.
F1003: Acknowledgement delay when accessing the memory Reaction: OFF2 Acknowledgement: IMMEDIATELY	A memory area was accessed that does not return a "READY".	<ul style="list-style-type: none"> Carry out a POWER ON (power off/on) for all components. Contact the Hotline.
F1015: Internal software error Reaction: OFF2 Acknowledgement: POWER ON	An internal software error has occurred.	<ul style="list-style-type: none"> Carry out a POWER ON (power off/on) for all components. Upgrade firmware to the latest version. Contact the Hotline.

5.2 Common faults and alarms

Fault	Cause	Remedy
<p>F1018: Booting has been interrupted several times Reaction: NONE Acknowledgement: POWER ON</p>	<p>Module booting was interrupted several times. As a consequence, the module boots with the factory setting.</p> <p>Possible reasons for booting being interrupted:</p> <ul style="list-style-type: none"> • Power supply interrupted. • CPU crashed. • Parameterization invalid. <p>After this fault is output, then the module is booted with the factory settings.</p>	<ul style="list-style-type: none"> • Carry out a POWER ON (power off/on). After switching on, the module reboots from the valid parameterization (if available). • Restore the valid parameterization <p>Examples:</p> <ul style="list-style-type: none"> • Carry out a first commissioning, save, carry out a POWER ON (switchoff/switch-on). • Load another valid parameter backup (e.g. from the memory card), save, carry out a POWER ON (switch-off/switch-on). <p>Note: If the fault situation is repeated, then this fault is again output after several interrupted boots.</p>
<p>F1030: Sign-of-life failure for master control Reaction: OFF3 Acknowledgement: IMMEDIATELY</p>	<p>For active PC master control, no sign-of-life was received within the monitoring time.</p>	<p>Contact the Hotline.</p>
<p>F1611: SI CU: Defect detected Reaction: OFF2 Acknowledgement: IMMEDIATELY</p>	<p>The drive-integrated "Safety Integrated" (SI) function on the Control Unit (CU) has detected an error and initiated an STO</p>	<ul style="list-style-type: none"> • Carry out a POWER ON (power off/on) for all components. • Upgrade software. • Replace the Control Unit.
<p>F1910: Drive Bus: setpoint timeout Reaction: OFF3 Acknowledgement: IMMEDIATELY</p>	<p>The reception of setpoints from the Drive Bus interface has been interrupted.</p> <ul style="list-style-type: none"> • Bus connection interrupted. • Controller switched off. • Controller set into the STOP state. 	<p>Restore the bus connection and set the controller to RUN.</p>
<p>F1911: Drive Bus clock cycle synchronous operation clock cycle failure Reaction: OFF1 Acknowledgement: IMMEDIATELY</p>	<p>The global control telegram to synchronize the clock cycles has failed - in cyclic operation - for several Drive Bus clock cycles or has violated the time grid specified in the parameterizing telegram over several consecutive Drive Bus clock cycles.</p>	<ul style="list-style-type: none"> • Check the physical bus configuration (cable,connector, terminator, shielding, etc.). • Check whether communication was briefly or permanently interrupted. • Check the bus and controller for utilization level (e.g. bus cycle time was set too short).
<p>F1912: Clock cycle synchronous operation sign-of-life failure Reaction: OFF1 Acknowledgement: IMMEDIATELY</p>	<p>The maximum permissible number of errors in the controller sign-of-life (clock synchronous operation) has been exceeded in cyclic operation.</p>	<ul style="list-style-type: none"> • Physically check the bus (cables, connectors, terminating resistor, shielding, etc.). • Correct the interconnection of the controller sign-of-life. • Check whether the controller correctly sends the sign-of-life. • Check the permissible telegram failure rate. • Check the bus and controller for utilization level (e.g. bus cycle time was set too short).

Fault	Cause	Remedy
F7011: Motor overtemperature Reaction: OFF2 Acknowledgement: IMMEDIATELY	<ul style="list-style-type: none"> • Motor overloaded • Motor ambient temperature too high • Wire breakage or sensor not connected • Motor temperature model incorrectly parameterized 	<ul style="list-style-type: none"> • Reduce the motor load. • Check the ambient temperature and the motor ventilation. • Check the wiring and the connection. • Check the motor temperature model parameters.
F7085: Open-loop/closed-loop control parameters changed Reaction: NONE Acknowledgement: IMMEDIATELY	Open-loop/closed-loop control parameters have had to be changed for the following reasons: <ul style="list-style-type: none"> • As a result of other parameters, they have exceeded the dynamic limits. • They cannot be used due to the fact that the hardware detected not having certain features. 	It is not necessary to change the parameters as they have already been correctly limited.
F7403: Lower DC link voltage threshold reached Reaction: OFF1 Acknowledgement: IMMEDIATELY	The DC link voltage monitoring is active and the lower DC link voltage threshold was reached in the "Operation" state.	<ul style="list-style-type: none"> • Check the line supply voltage. • Check the infeed. • Reduce the lower DC link threshold. • Switch out (disable) the DC link voltage monitoring.
F7404: Upper DC link voltage threshold reached Reaction: OFF2 Acknowledgement: IMMEDIATELY	The DC link voltage monitoring is active and the upper DC link voltage threshold was reached in the "Operation" state.	<ul style="list-style-type: none"> • Check the line supply voltage. • Check the infeed module or the brake module. • Increase the upper DC link voltage threshold. • Switch out (disable) the DC link voltage monitoring.
F7410: Current controller output limited Reaction: OFF2 Acknowledgement: IMMEDIATELY	The condition " $I_{act} = 0$ and $U_q_set_1$ longer than 16 ms at its limit" is present and can be caused by the following: <ul style="list-style-type: none"> • Motor not connected or motor contactor open. • No DC link voltage present. • Motor Module defective. 	<ul style="list-style-type: none"> • Connect the motor or check the motor contactor. • Check the DC link voltage. • Check the Motor Module.

5.2 Common faults and alarms

Fault	Cause	Remedy
<p>F7412: Commutation angle incorrect (motor model) Reaction: ENCODER Acknowledgement: IMMEDIATELY</p>	<p>An incorrect commutation angle was detected that can result in a positive coupling in the speed controller.</p> <p>Possible causes:</p> <ul style="list-style-type: none"> • The motor encoder is incorrectly adjusted with respect to the magnet position. • The motor encoder is damaged. • Data to calculate the motor model has been incorrectly set. • Pole position identification might have calculated an incorrect value when activated. • The motor encoder speed signal is faulted. • The control loop is instable due to incorrect parameterization. 	<ul style="list-style-type: none"> • If the encoder mounting was changed, re-adjust the encoder. • Replace the defective motor encoder. • Correctly set the motor stator resistance, cable resistance and motor-stator leakage inductance. Calculate the cable resistance from the cross-section and length, check the inductance and stator resistance using the motor data sheet, measure the stator resistance, e.g. using a multimeter - and if required, again identify the values using the stationary motor data identification. • With pole position identification activated, check the procedure for pole position identification and force a new pole position identification procedure by means of de-selection followed by selection.
<p>F7414: Encoder serial number changed Reaction: ENCODER Acknowledgement: IMMEDIATELY</p>	<ol style="list-style-type: none"> 1. The encoder was replaced. 2. A third-party, build-in or linear motor was re-commissioned. 3. The motor with integrated and adjusted encoder was replaced. 4. The firmware was updated to a version that checks the encoder serial number. 	<p>Re causes 1, 2: Carry out an automatic adjustment using the pole position identification routine. Acknowledge the fault. Initiate the pole position identification routine. Then check that the pole position identification routine is correctly executed.</p> <p>SERVO: If a pole position identification technique is selected, and if p0301 does not contain a motor type with an encoder adjusted in the factory, then p1990 is automatically activated. Mechanically adjust the encoder. Accept the new serial number.</p> <p>Re causes 3, 4: Accept the new serial number with p0440 = 1.</p>
<p>F7450: Standstill monitoring has responded Reaction: OFF1 Acknowledgement: IMMEDIATELY</p>	<p>After the standstill monitoring time expired, the drive left the standstill window.</p> <ul style="list-style-type: none"> • Position loop gain too low. • Position loop gain too high (instability/oscillation). • Mechanical overload. • Connecting cable, motor/drive converter incorrect (phase missing, interchange). 	<p>Check the causes and resolve.</p>

Fault	Cause	Remedy
F7452: Following error too high Reaction: OFF1 Acknowledgement: IMMEDIATELY	The difference between the position setpoint position actual value (following error dynamic model) is greater than the tolerance. <ul style="list-style-type: none"> • The drive torque or accelerating capacity exceeded. • Position measuring system fault. • Position control sense incorrect. • Mechanical system locked. • Excessively high traversing velocity or excessively high position reference value (setpoint) differences. 	Check the causes and resolve.
F7801: Motor overcurrent Reaction: OFF2 Acknowledgement: IMMEDIATELY	The permissible motor limit current was exceeded. <ul style="list-style-type: none"> • Effective current limit set too low. • Current controller not correctly set. • Motor was braked with an excessively high stall torque correction factor. • Up ramp was set too short or the load is too high. • Short-circuit in the motor cable or ground fault. • Motor current does not match the current of Motor Module. 	<ul style="list-style-type: none"> • Reduce the stall torque correction factor. • Increase the up ramp or reduce the load. • Check the motor and motor cables for short-circuit and ground fault. • Check the Motor Module and motor combination.
F7802: Infeed or power unit not ready Reaction: OFF2 Acknowledgement: IMMEDIATELY	After an internal power-on command, the infeed or drive does not signal ready because of one of the following reasons: <ul style="list-style-type: none"> • Monitoring time is too short. • DC link voltage is not present. • Associated infeed or drive of the signaling component is defective. 	<ul style="list-style-type: none"> • Ensure that there is a DC link voltage. Check the DC link busbar. Enable the infeed. • Replace the associated infeed or drive of the signaling component.
F7815: Power unit has been changed Reaction: NONE Acknowledgement: IMMEDIATELY	The code number of the actual power unit does not match the saved number.	Connect the original power unit and power up the Control Unit again (POWER ON).
F7900: Motor blocked/speed controller at its limit Reaction: OFF2 Acknowledgement: IMMEDIATELY	The servo motor has been operating at the torque limit longer than 1s and below the speed threshold of 120 rpm . This signal can also be initiated if the speed actual value is oscillating and the speed controller output repeatedly goes to its limit.	<ul style="list-style-type: none"> • Check whether the servo motor can rotate freely or not. • Check the torque limit. • Check the inversion of the actual value. • Check the motor encoder connection. • Check the encoder pulse number.
F7901: Motor overspeed Reaction: OFF2 Acknowledgement: IMMEDIATELY	The maximumly permissible speed has been exceeded.	Check and correct the maximum speed (p1082).

5.2 Common faults and alarms

Fault	Cause	Remedy
<p>F7995: Pole position identification not successful Reaction: OFF2 Acknowledgement: IMMEDIATELY</p>	<p>The pole position identification routine was unsuccessful.</p>	<p>Contact the Hotline.</p>
<p>F30001: Power unit: Overcurrent Reaction: OFF2 Acknowledgement: IMMEDIATELY</p>	<p>The power unit has detected an overcurrent condition.</p> <ul style="list-style-type: none"> • Closed-loop control is incorrectly parameterized. • Motor has a short-circuit or fault to ground (frame). • Power cables are not correctly connected. • Power cables exceed the maximum permissible length. • Power unit defective. • Line phase interrupted. 	<ul style="list-style-type: none"> • Check the motor data - if required, carry out commissioning. • Check the motor circuit configuration (star-delta) • Check the power cable connections. • Check the power cables for short-circuit or ground fault. • Check the length of the power cables. • Replace power unit. • Check the line supply phases. • Check the external braking resistor connection.
<p>F30002: DC link voltage, overvoltage Reaction: OFF2 Acknowledgement: IMMEDIATELY</p>	<p>The power unit has detected overvoltage in the DC link.</p> <ul style="list-style-type: none"> • Motor regenerates too much energy. • Device connection voltage too high. • Line phase interrupted. 	<ul style="list-style-type: none"> • Increase the ramp-down time • Activate the DC link voltage controller • Use a braking resistor • Increase the current limit of the infeed or use a larger module • Check the device supply voltage • Check the line supply phases.
<p>F30003: DC link voltage, undervoltage Reaction: OFF2 Acknowledgement: IMMEDIATELY</p>	<p>The power unit has detected an undervoltage condition in the DC link.</p> <ul style="list-style-type: none"> • Line supply failure • Line supply voltage below the permissible value. • Line supply infeed failed or interrupted. • Line phase interrupted. 	<ul style="list-style-type: none"> • Check the line supply voltage • Check the line supply infeed and observe the fault messages relating to it (if there are any) • Check the line supply phases. • Check the line supply voltage setting.
<p>F30004: Drive heat sink overtemperature Reaction: OFF2 Acknowledgement: IMMEDIATELY</p>	<p>The temperature of the power unit heat sink has exceeded the permissible limit value.</p> <ul style="list-style-type: none"> • Insufficient cooling, fan failure. • Overload. • Ambient temperature too high. • Pulse frequency too high. 	<ul style="list-style-type: none"> • Check whether the fan is running. • Check the fan elements. • Check whether the ambient temperature is in the permissible range. • Check the motor load. • Reduce the pulse frequency if this is higher than the rated pulse frequency.
<p>F30005: Power unit: Overload I²t Reaction: OFF2 Acknowledgement: IMMEDIATELY</p>	<p>The power unit was overloaded.</p> <ul style="list-style-type: none"> • The permissible rated power unit current was exceeded for an inadmissibly long time. • The permissible load duty cycle was not maintained. 	<ul style="list-style-type: none"> • Reduce the continuous load. • Adapt the load duty cycle. • Check the motor and power unit rated currents.

Fault	Cause	Remedy
F30011: Line phase failure in main circuit Reaction: OFF2 Acknowledgement: IMMEDIATELY	At the power unit, the DC link voltage ripple has exceeded the permissible limit value. Possible causes: <ul style="list-style-type: none"> • A line phase has failed. • The 3 line phases are inadmissibly unsymmetrical. • The fuse of a phase of a main circuit has ruptured. • A motor phase has failed. 	<ul style="list-style-type: none"> • Check the main circuit fuses. • Check whether a single-phase load is distorting the line voltages. • Check the motor feeder cables.
F30015: Phase failure motor cable Reaction: OFF2 Acknowledgement: IMMEDIATELY	A phase failure in the motor feeder cable was detected. The signal can also be output in the following case: The motor is correctly connected, however the closed-speed control is instable and therefore an oscillating torque is generated.	<ul style="list-style-type: none"> • Check the motor feeder cables. • Check the speed controller settings.
F30021: Ground fault Reaction: OFF2 Acknowledgement: IMMEDIATELY	Power unit has detected a ground fault. <ul style="list-style-type: none"> • Ground fault in the power cables. • Winding fault or ground fault at the motor. 	<ul style="list-style-type: none"> • Check the power cable connections. • Check the motor.
F30027: Precharging DC link time monitoring Reaction: OFF2 Acknowledgement: IMMEDIATELY	<ul style="list-style-type: none"> • The power unit DC link was not able to be pre-charged within the expected time. There is no line supply voltage connected. • The line contactor/line side switch has not been closed. • The line supply voltage is too low. • The pre-charging resistors are overheated as there were too many pre-charging operations per time unit • The pre-charging resistors are overheated as the DC link capacitance is too high. • The pre-charging resistors are overheated. • The pre-charging resistors are overheated as the line contactor was closed during the DC link fast discharge through the Braking Module. • The DC link has either a ground fault or a short-circuit. • The pre-charging circuit is possibly defective. 	Check the line supply voltage at the input terminals.

5.2 Common faults and alarms

Fault	Cause	Remedy
<p>F30036: Internal overtemperature Reaction: OFF2 Acknowledgement: IMMEDIATELY</p>	<p>The temperature inside the drive converter has exceeded the permissible temperature limit.</p> <ul style="list-style-type: none"> • Insufficient cooling, fan failure. • Overload. • Ambient temperature too high. 	<ul style="list-style-type: none"> • Check whether the fan is running. • Check the fan elements. • Check whether the ambient temperature is in the permissible range. <p>Notice: This fault can only be acknowledged once the permissible temperature limit minus 5 K has been fallen below.</p>
<p>F30050: 24 V supply overvoltage Reaction: OFF2 Acknowledgement: POWER ON</p>	<p>The voltage monitor signals an overvoltage fault on the module.</p>	<ul style="list-style-type: none"> • Check the 24 V power supply. • Replace the module if necessary.
<p>F31100: Zero mark distance error Reaction: ENCODER Acknowledgement: PULSE INHIBIT</p>	<p>The measured zero mark distance does not correspond to the parameterized zero mark distance. For distance-coded encoders, the zero mark distance is determined from zero marks detected pairs. This means that if a zero mark is missing, depending on the pair generation, this cannot result in a fault and also has no effect in the system.</p>	<ul style="list-style-type: none"> • Check that the encoder cables are routed in compliance with EMC. • Check the plug connections • Check the encoder type (encoder with equidistant zero marks). • Replace the encoder or encoder cable
<p>F31110: Serial communications error Reaction: ENCODER Acknowledgement: PULSE INHIBIT</p>	<p>Serial communication protocol transfer error between the encoder and evaluation module.</p>	<p>Contact the Hotline.</p>
<p>F31112: Error bit set in the serial protocol Reaction: ENCODER Acknowledgement: PULSE INHIBIT</p>	<p>The encoder sends a set error bit via the serial protocol.</p>	<p>Contact the Hotline.</p>
<p>F31117: Inversion error signals A/B/R Reaction: ENCODER Acknowledgement: PULSE INHIBIT</p>	<p>For a square-wave encoder (bipolar, double ended) signals A*, B* and R* are not inverted with respect to signals A, B and R.</p>	<ul style="list-style-type: none"> • Check the encoder/cable. • Does the encoder supply signals and the associated inverted signals?
<p>F31130: Zero mark and position error from the coarse synchronization Reaction: ENCODER Acknowledgement: PULSE INHIBIT</p>	<p>After initializing the pole position using track C/D, Hall signals or pole position identification routine, the zero mark was detected outside the permissible range. For distance-coded encoders, the test is carried out after passing 2 zero marks. Fine synchronization was not carried out.</p>	<ul style="list-style-type: none"> • Check that the encoder cables are routed in compliance with EMC. • Check the plug connections • If the Hall sensor is used as an equivalent for track C/D, check the connection. • Check the connection of track C or D. • Replace the encoder or encoder cable.
<p>F31150: Initialization error Reaction: ENCODER Acknowledgement: PULSE INHIBIT</p>	<p>Encoder functionality is not operating correctly.</p>	<ul style="list-style-type: none"> • Check the encoder type used (incremental/ absolute) and the encoder cable. • If relevant, note additional fault messages that describe the fault in detail.

Fault	Cause	Remedy
F52980: Absolute encoder motor changed Reaction: OFF1 Acknowledgement: IMMEDIATELY	The servo motor with absolute encoder is changed. Actual motor ID is different from commissioned motor ID.	The servo motor will be automatically configured after the acknowledgement of this fault.
F52981: Absolute encoder motor mismatched Reaction: OFF1 Acknowledgement: IMMEDIATELY	Connected absolute encoder motor cannot be operated. The servo drive in use does not support the Motor ID.	Use a suitable absolute encoder motor.
F52983: No encoder detected Reaction: OFF1 Acknowledgement: IMMEDIATELY	The servo drive in use does not support encoderless operation.	<ul style="list-style-type: none"> Check the encoder cable connection between the servo drive and the servo motor. Use a servo motor with encoder.
F52984: Incremental encoder motor not configured Reaction: OFF1 Acknowledgement: IMMEDIATELY	<ul style="list-style-type: none"> Commissioning of the servo motor has failed. The incremental encoder motor is connected but fails to commission. 	Configure the motor ID by setting the parameter p29000.
F52985: Absolute encoder motor wrong Reaction: OFF1 Acknowledgement: IMMEDIATELY	<ul style="list-style-type: none"> Motor ID is downloaded wrong during manufacture. The software of the servo drive does not support the Motor ID. 	<ul style="list-style-type: none"> Update the software. Use a correct absolute encoder motor.
F52987: Absolute encoder replaced Reaction: OFF1 Acknowledgement: IMMEDIATELY	Incorrect absolute encoder data.	Contact the Hotline.

Alarm list

A1009: Control module overtemperature	The temperature of the control module (Control Unit) has exceeded the specified limit value.	<ul style="list-style-type: none"> Check the air intake for the Control Unit. Check the Control Unit fan. <p>Note: The alarm automatically disappears after the limit value has been undershot.</p>
A1019: Writing to the removable data medium unsuccessful	The write access to the removable data medium was unsuccessful.	Remove and check the removable data medium. Then run the data backup again.

5.2 Common faults and alarms

<p>A1032: All parameters must be saved</p>	<p>The parameters of an individual drive object were saved, although there is still no backup of all drive system parameters. The saved object-specific parameters are not loaded the next time that the system powers up. For the system to successfully power up, all of the parameters must have been completely backed up.</p>	<p>Save all parameters.</p>
<p>A1045: Configuring data invalid</p>	<p>An error was detected when evaluating the parameter files saved in the non-volatile memory. Because of this, under certain circumstances, several of the saved parameter values were not able to be accepted.</p>	<p>Save the parameterization using the "SAVE" function on the BOP. This overwrites the incorrect parameter files in the non-volatile memory – and the alarm is withdrawn.</p>
<p>A1920: Drive Bus: Receive setpoints after To</p>	<p>Output data of Drive Bus master (setpoints) received at the incorrect instant in time within the Drive Bus clock cycle.</p>	<ul style="list-style-type: none"> • Check bus configuration. • Check parameters for clock cycle synchronization (ensure To > Tdx). <p>Note: To: Time of setpoint acceptance Tdx: Data exchange time</p>
<p>A1932: Drive Bus clock cycle synchronization missing for DSC</p>	<p>There is no clock synchronization or clock synchronous sign of life and DSC is selected. Note: DSC: Dynamic Servo Control</p>	<p>Set clock synchronization across the bus configuration and transfer clock synchronous sign-of-life.</p>
<p>A5000: Drive heat sink overtemperature</p>	<p>Cause: The alarm threshold for overtemperature at the inverter heat sink has been reached. If the temperature of the heat sink increases by an additional 5 K, then fault F30004 is initiated.</p>	<p>Check the following:</p> <ul style="list-style-type: none"> • Is the ambient temperature within the defined limit values? • Have the load conditions and the load duty cycle been appropriately dimensioned? • Has the cooling failed?
<p>A7012: Motor temperature model 1/3 overtemperature</p>	<p>The motor temperature model 1/3 identified that the alarm threshold was exceeded.</p>	<ul style="list-style-type: none"> • Check the motor load and reduce it if required. • Check the motor ambient temperature.
<p>A7565: Encoder error in encoder interface</p>	<p>An encoder error was signaled for encoder via the encoder interface (G1_ZSW.15).</p>	<p>Acknowledge the encoder error using the encoder control word (G1_STW.15 = 1).</p>
<p>A7576: Encoderless operation due to a fault active</p>	<p>Encoderless operation is active due to a fault.</p>	<ul style="list-style-type: none"> • Remove the cause of a possible encoder fault. • Carry out a POWER ON (power off/on) for all components.
<p>A7965: Save required</p>	<p>The angular commutation offset was re-defined and has still not been saved. In order to permanently accept the new value, it must be saved in a non-volatile fashion.</p>	<p>This alarm automatically disappears after the data has been saved.</p>
<p>A7971: Angular commutation offset determination activated</p>	<p>The automatic determination of the angular commutation offset (encoder adjustment) is activated. The automatic determination is carried out at the next power-on command.</p>	<p>The alarm automatically disappears after determination.</p>

A7991: Motor data identification activated	The motor data ident. routine is activated. The motor data identification routine is carried out at the next power-on command.	The alarm automatically disappears after the motor data identification routine has been successfully completed. If a POWER ON or a warm restart is performed with motor data identification selected, the motor data identification request will be lost. If motor data identification is required, it will need to be selected again manually following ramp-up.
A30016: Load supply switched off	The DC link voltage is too low.	<ul style="list-style-type: none"> • Switch on the load supply. • Check the line supply if necessary.
A30031: Hardware current limiting in phase U	Hardware current limit for phase U responded. The pulsing in this phase is inhibited for one pulse period. <ul style="list-style-type: none"> • Closed-loop control is incorrectly parameterized. • Fault in the motor or in the power cables. • The power cables exceed the maximum permissible length. • Motor load too high. • Power unit defective. <p>Note: Alarm A30031 is always output if, for a Power Module, the hardware current limiting of phase U, V or W responds.</p>	Check the motor data. As an alternative, run a motor data identification. <ul style="list-style-type: none"> • Check the motor circuit configuration (star-delta) • Check the motor load. • Check the power cable connections. • Check the power cables for short-circuit or ground fault. • Check the length of the power cables.
A31411: Absolute encoder signals internal alarms	The absolute encoder fault word includes alarm bits that have been set.	Replace the encoder.
A31412: Error bit set in the serial protocol	The encoder sends a set error bit via the serial protocol.	<ul style="list-style-type: none"> • Carry out a POWER ON (power off/on) for all components. • Check that the encoder cables are routed in compliance with EMC. • Check the plug connections. • Replace the encoder.
A52900: Failure during data copying	<ul style="list-style-type: none"> • Copying is halted. • The SD card was plugged out. • The drive is not in the stop state. 	<ul style="list-style-type: none"> • Re-plug in the SD card. • Make sure the drive is in the stop state.