PSD Export error list 15.02.2021 14:42:56

Errors: 133

0x0001, 1 Q U I T

Error:	Error Quit executed Error history shows which errors occurred since the last error quit
Cause of Error:	
Measure:	

FORCE default error reaction !

Error is quittable !

Default error reaction: Throw warning

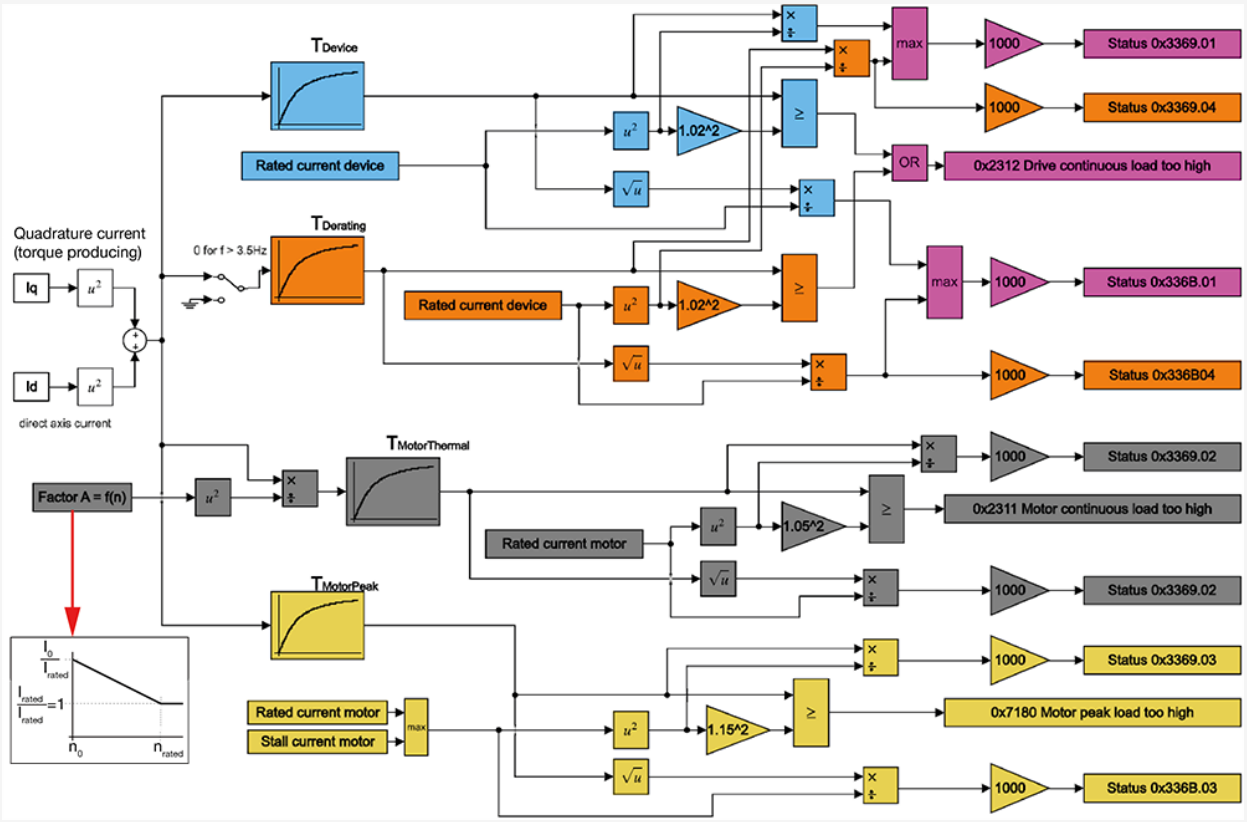
EventID: 0 Warning Word Number (0x3c35 .. / PNU953 ..): 1 Bit: 0

0x2311, 8977 Motor continuous load too high

Error:	Effective Motor current monitor (i2t supervision)
Cause of Error:	Motor current exceeded motor current limit
Measure:	Reduce motor load (less current, more standstill phases of the drive, lower machine throughput, lower acceleration and deceleration), check thermal time constant and nominal or reference current of the motor. Check motor dimensioning and replace motor by an adequately dimensioned model if necessary; use cooling option (water, air) if available, optimize mechanic components.

The current load value can be read with object 0x3369.02 =Axis\Load\'Motor load i²t' status value. Error is given for value >=1103 permille (=1.05²*1000).

PSD load monitoring structure:



Error reaction is configurable!

Error is quittable !

Default error reaction: Ramp down with quick down ramp - Disable control loops

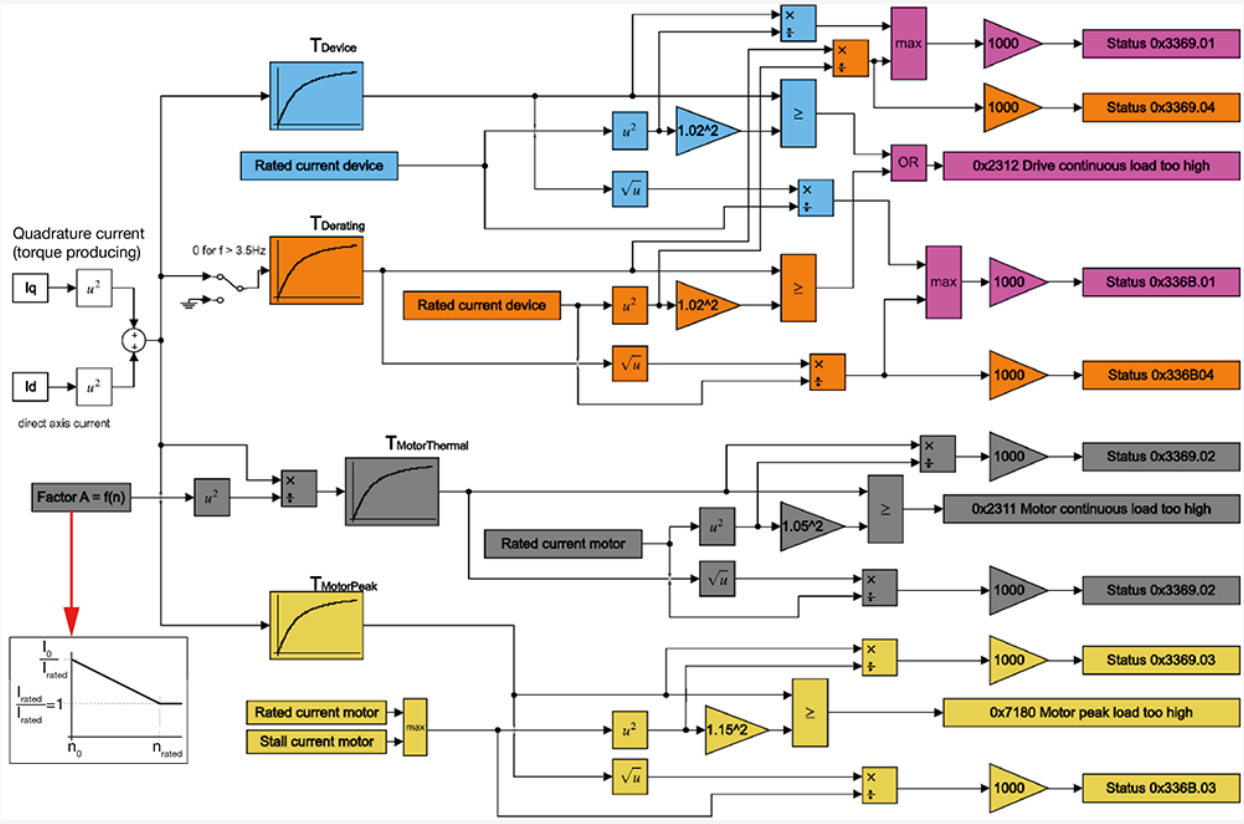
EventID: 40 Warning Word Number (0x3c35 .. / PNU953 ..): 2 Bit: 8

0x2312, 8978 Drive continuous load too high

Error:	Effective Drive current monitor (i2t supervision)
Cause of Error:	Effective motor current exceeded drive current limit. **PSDM:** In standard operation two times rated current is allowed for2.3 seconds (time constant = 8s). For low speed or standstill (electrical rotating field frequency < 3Hz) the drive is in derating operation. This means that two times rated current is allowed for only 100ms (time constant = 350ms). **PSDS:** Three times the rated current is allowed for2 seconds (time constant = 17s).
Measure:	Reduce device load (less current, more standstill phases of the drive, lower machine throughput, lower acceleration and deceleration), check device dimensioning and replace drive with a matching model if necessary, reset switching frequency of the power stage to default value, optimize mechanic components (friction, …).

The current load value can be read with object 0x3369.01 =Axis\Load\'Powerstage load i²t' status value.
Error is given for value >=1040 permille (=1.02²*1000).

PSD load monitoring structure:



Error reaction is configurable!

Error is quittable !

Default error reaction: Ramp down with quick down ramp - Disable control loops

EventID: 41 Warning Word Number (0x3c35 .. / PNU953 ..): 2 Bit: 9

0x2320, 8992 Short circuit/earth leakage (motor-side)

Error:	Overcurrent in Power Board
Cause of Error:	The drive hardware detected a too high motor phase current. The thresholds for triggering the error is fixed and defined by the electronics circuit of the power stage. Causes could be a shortage or closed loop control (CLC) effects.
Measure:	• Check cable and connectors for the motor (insulation damage, is there an interruption within the cable (it might be worn fast if e.g. the min bending radius is not considered), are the clamping screws on motor plug fastened tightly, is the motor connection plug fully plugged in on drive side, is the motor plug fully inserted (enough screwed in) on the motor side, are the screws tightened and cables correctly placed and are there no loose strands in the motor terminal clamp box) • Check motor (if insulation class of the motor is sufficient, look out for defective windings (e.g. due to overheat), check motor phase to phase (u->v, v->w, w->u) resistance) • Check controller settings for instabilities Current control: Current controller bandwidth too large (>100%)-> current controller may be instable, saturation characteristic required, are the el. motor data correct? Speed control: Stiffness and/or damping set too high, too high signal delay in the control loop (current bandwidth too small (<100%), actual speed filter set too high (>100%), control loop parameterized correctly (moment of inertia approx. correctly configured, for oscillating systems (e.g. toothed belt axes) a D-component (values >1000%) might be required. • Check current shape With stable control loops look for lower frequency harmonics (e.g. first and second mechanical frequency caused by resolver errors or load resp. moment of inertia variations). If such lower frequency harmonics are considerably higher than the nominal device current, reduce stiffness and/or current control bandwidth. If available activate feedback error compensation feature. If all above mentioned points are eliminated, the device may be defective and should be verified by the manufacturer.

FORCE default error reaction !

Error is quittable !

Default error reaction: Disable Control Loops - Motor Is Free To Rotate

EventID: 47 Warning Word Number (0x3c35 .. / PNU953 ..): 2 Bit: 15

0x2381, 9089 Current continuously limited

Error:	Speed controller output is in saturation
Cause of Error:	The current controller setpoint (velocity controller control signal) is limited for a longer period than the motor pulse current time (during motion). More current is required than a) the user allows to flow, b) the device can deliver (voltage or current limit) or c) the motor can absorb. It can also be that the motor provides to low torque (e.g. because of wrong commutation alignment ('phasing') or wrong motor dimensioning) or that the motor (or the position feedback) was not wired correctly. Maybe the motor or position feedback parameters are not set correctly. It could also be the case that the motor brake control is not working. Maybe the motor cannot follow the demanded speed profile (with the given load). Beside current limit this could be the case if the motion profile leads to voltage limitation. One reason e.g. could be that the motor was designed for higher voltage operation (e.g. 400V AC) but now the drive is running with lower voltage (e.g. 230V AC).
Measure:	• Check setpoint profile: - Acceleration or deceleration too high? - Motion profile speed too high? - Maybe operation at voltage limit (high velocity and high current)? • **Check current limits:** Case a) Increase configured current limit (object 0x3210.0 'PosCurrentConfigAxis' / object 0x3211.0 'NegCurrentConfigAxis'). Case b) Increase user current limit (object 0x3212.1 'PosCurrentAxis' / object 0x3212.2 'NegCurrentAxis'). Case c) Reduce switching frequency (drive current derating at increased frequency was maybe not respected by the user). Hints: - The currently active current limits can be monitored on status objects 0x3321.7 'Current positive limit' and 0x3321.8 'Current negative limit'. - If drive operation in permanent current limit is part of the application this error (and probably also error 0x7121 'Motor blocked' and if position controller is active also 0x8611 'Tracking error') must be deactivated in the drive configuration. • Check motor commutation, feedback resolution (per rev or pitch). • Check motor wiring (phases (u,v,w) connected correctly, connected to correct drive output, motor phases are connected at all, motor connector plug is fully inserted (motor and drive side), there are no loose cable strands, there is no cable internal cable damage (sporadic interruption,…)?) Please note: Cable/wiring related error that would normally cause short circuit

	error 0x2320 might instead cause this error if the motor has a high resistance/inductance or the dc-bus voltage is low(er). • Remove mechanical blockage / check motor brake and wiring (24V for brake supplied, correct polarity?). • Check device / motor dimensioning (too weak?).

Error reaction is configurable!

Error is quittable !

Default error reaction: Ramp down with quick down ramp - Disable control loops

EventID: 5 Warning Word Number (0x3c35 .. / PNU953 ..): 1 Bit: 5

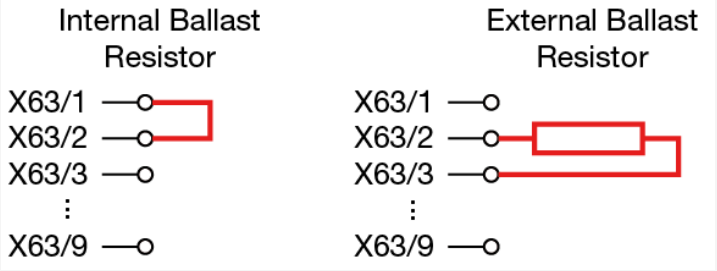
0x3210, 12816 DC link over-voltage

Error:	DC link voltage is too high
Cause of Error:	Regenerated energy into the DC link is too high and thus DC link voltage exceeded its maximum value (error threshold is given on status object 0x3328.03).
Measure:	• Reduce deceleration or application speed • Check (external) braking resistor value (too high resistance? -> use drive min allowed brake resister value) • Check motor max voltage configuration object (0x308D.00) value: -> 0: drive voltage limit is used -> else: limit is MIN('drive voltage limit', 0x308D.00 value) • PSDS: Connect the DC link of several drives (if allowed/possible!) • PSDM: Connect a braking resistor to the power supply • PSDM: Check power supply module DC link settings (maybe it has to be set to a lower max value because of reduced motor max voltage 0x308D.00)

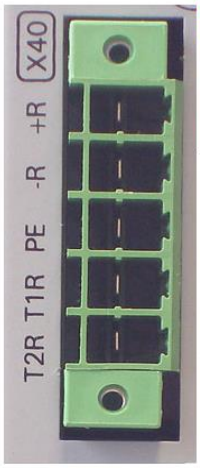
How to connect an external braking resistor to X63 of PSD1-S:

Pin	Designation	Description	
1	Rin	Internal Brake Resistor *	
2	-R	Output for brake resistor connection -	
3	+R	Output for brake resistor connection +	
4	DC+	Power direct current +	
5	DC-	Power direct current -	
6	L3	Phase 3 (mains supply)	factory use
7	L2	Phase 2 (Mains Supply)	N (Single Phase)
8	L1	Phase 1 (Mains Supply)	L (Single Phase)
9	PE	Earth conductor	

* The internal brake resistance is connected via bridge X63/1 and X63/2:



How to connect a braking resistor to the X40 PSD1-M_P supply:



Pin	Description	
+R	+ Braking resistor	short-circuit proof!
-R	- Braking resistor	
PE	PE	
T1R	Temperature Switch	
T2R	Temperature Switch	

FORCE default error reaction !

Error is quittable !

Default error reaction: Disable Control Loops - Motor Is Free To Rotate

EventID: 21 Warning Word Number (0x3c35 .. / PNU953 ..): 1 Bit: 21

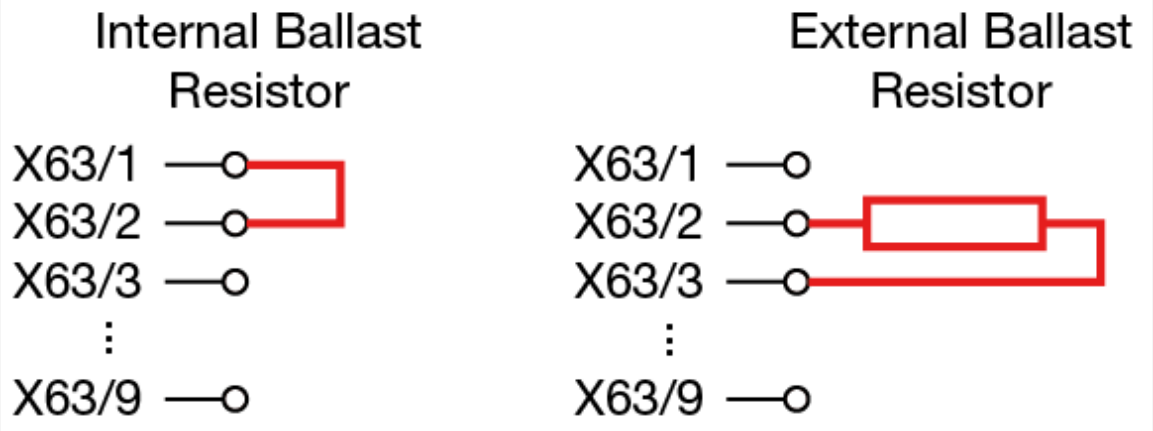
0x3220, 12832 DC link under-voltage

Error:	DC link voltage is too low
Cause of Error:	DC link voltage is too low. Nominal AC voltage might be configured incorrect. PSD1-S: The Braking Resistor is here also is used to limit the inrush current. Thus it is possible that a problem with the breaking resistor causes the too low DC link voltage. So additional causes are - Defect braking resistor - Wrong or missing connection (bridge on X63) between PSD and internal braking resistor
Measure:	Check DC link voltage (object 0x6079.00), check AC voltage configuration (error threshold is given on status object 0x3328.04). For PSD1-S: Check (external) braking resistor and bridge on X63 If internal braking resistor should be used.

How to connect a braking resistor to the PSD1-S:

Pin	Designation	Description	
1	Rin	Internal Brake Resistor *	
2	-R	Output for brake resistor connection -	
3	+R	Output for brake resistor connection +	
4	DC+	Power direct current +	
5	DC-	Power direct current -	
6	L3	Phase 3 (mains supply)	factory use
7	L2	Phase 2 (Mains Supply)	N (Single Phase)
8	L1	Phase 1 (Mains Supply)	L (Single Phase)
9	PE	Earth conductor	

* The internal brake resistance is connected via bridge X63/1 and X63/2:



Error reaction is configurable!

Error is quittable !

Default error reaction: Ramp down with quick down ramp - Disable control loops

EventID: 26 Warning Word Number (0x3c35 .. / PNU953 ..): 1 Bit: 26

0x3280, 12928 DC bus charging error

Error:	The DC bus voltage does not reach the expected voltage level.
Cause of Error:	DC bus is not fully charged (the DC bus voltage is still below 0.9*mains_AC_input_voltage*sqrt(2)).
Measure:	Check, if mains input voltage is configured correctly and if the mains is connected correctly with the drive.

Error reaction is configurable!

Error is quittable !

Default error reaction: Disable Control Loops - Motor Is Free To Rotate

EventID: 29 Warning Word Number (0x3c35 .. / PNU953 ..): 1 Bit: 29

0x4210, 16912 Device temperature too high

Error:	The temperature inside the drive is too high
Cause of Error:	Device current too high, ambient temperature too high, wrong device type chosen for the application. Note: The measured temperature value can be read out via object 0x2320.0x01 'StatusTemperature.CtrlBoard'. The error threshold is device specific – for most devices it is 70°C.
Measure:	Reduce device load (less current, longer standstill or power off phases, higher machine cycle time, less acceleration/deceleration), reduce ambient temperature, check if device type is matching the application and maybe replace the device with larger one, set switching frequency to the default value. Optimize mechanics (friction, …).

Error reaction is configurable!

Error is quittable !

Default error reaction: Ramp down with quick down ramp - Disable control loops

EventID: 16 Warning Word Number (0x3c35 .. / PNU953 ..): 1 Bit: 16

0x4310, 17168 Power stage temperature too high

Error:	Power stage temperature is too high
Cause of Error:	Temperature measured on heat sink is too high. Note: The measured temperature value can be read out via object 0x2320.0x02 'StatusTemperature.HeatSink'. The error threshold is device specific – for PSD1S the threshold is 75°C and for PSD1M it is 90°C.
Measure:	Reduce motor load (effective cycle), current ripples of low inductive motors could lead to high power stage temperature for low switching frequencies (-> reduce PWM switching frequency). Note: Increased power stage semiconductor switching losses at higher PWM frequency are covered by the drive nominal data derating.

Error reaction is configurable!

Error is quittable !

Default error reaction: Ramp down with quick down ramp - Disable control loops

EventID: 37 Warning Word Number (0x3c35 .. / PNU953 ..): 2 Bit: 5

0x5112, 20754 Restart after 24V voltage drop

Error:	The 24V supply voltage had a voltage drop below 16V so that system has to be restarted.
Cause of Error:	Cable break, defective contact or overload of the 24V power supply
Measure:	Check the cabling and the nominal output power of the power supply

Error reaction is configurable!

Error is quittable !

Default error reaction: Throw warning

EventID: 34 Warning Word Number (0x3c35 .. / PNU953 ..): 2 Bit: 2

0x5116, 20758 Supply voltage 24V too low

Error:	24V supply voltage is too low (below 19.35V for at least 40ms)
Cause of Error:	Device 24V is not OK (too low). The error is only generated with newer controller card hardware revisions (PSD1-S PAC-0003>=R50, PSD1-M PAC-0001 >=R40)
Measure:	Check 24V supply. Maybe the power supply is overloaded (-> increase 24V power) or there are AC line dropouts.

Error reaction is configurable!

Error is quittable !

Default error reaction: Ramp down with quick down ramp - Disable control loops

EventID: 34 Warning Word Number (0x3c35 .. / PNU953 ..): 2 Bit: 2

0x5281, 21121 Wrong firmware variant loaded

Error:	The firmware variant does not match the drive hardware
Cause of Error:	Having to consider different factors like hardware variant and axis number there are different special firmware variants available for PSD servo drives. That results into the following possible error scenarios: a.) The correct firmware variant cannot be load. (The existing firmware does not fit to the configured functionality (e.g. field bus) or to the drive hardware) b.) The used firmware package does not (yet) support the used hardware. c.) The drive hardware was detected incorrectly from the firmware.
Measure:	For error a.) Download the fit firmware via firmware package download in the PSD servo manager. For error b.) Download the newest firmware via firmware package download in the PSD servo manager. For error c.) try to use the newest Fimware, if this fail, reprogramming of the hardware components (EEProms is required)

Error reaction is configurable!

Error NOT quittable !

Default error reaction: Ramp down with slow down ramp - Disable control loops

EventID: 51 Warning Word Number (0x3c35 .. / PNU953 ..): 2 Bit: 19

0x5282, 21122, Wrong closed loop control (CLC) firmware loaded

Error:	The CLC firmware does not fit to the running main firmware.
Cause of Error:	As caused by different factors like hardware variants and axis count the usage of different firmware variants is required the following error causes are possible: a.) The wrong CLC Firmware was downloaded (or copied to SD card). b.) Wrong/no CLC Firmware was downloaded and correct one is no available in the flash (or SD card).
Measure:	A new download of a firmware package (*psd1fwp) via the PSD-Servomanager will fix the problem. If starting from SD card copy a complete firmware file set onto the SD card.

Error reaction is configurable!

Error NOT quittable !

Default error reaction: Ramp down with slow down ramp - Disable control loops

EventID: 52 Warning Word Number (0x3c35 .. / PNU953 ..): 2 Bit: 20

0x5380, 21376 Short circuit of digital output

Error:	The output current of the digital outputs is too high.
Cause of Error:	The output current of the digital outputs is too high.
Measure:	Check the digital outputs regarding a short circuit or too high current demand. Maximally allowed current per output for PSD1-S is 200mA (for short time (temperature dependent) it could be up to 900mA) and 350mA for PSD1-M. For both drives there is also some output chip thermal protection that is triggered at overload. For PSD1-S the thermal protection is individual for each output, for PSD1-M all outputs are thermally monitored and protected together.

Error reaction is configurable!

Error is quittable !

Default error reaction: Ramp down with quick down ramp - Disable control loops

EventID: 38 Warning Word Number (0x3c35 .. / PNU953 ..): 2 Bit: 6

0x5480, 21632 Short Circuit - Motor Brake

Error:	A short circuit was detected on the motor brake output
Cause of Error:	This error occurs, if the motor brake output shall be powered (output 24V) but the actual voltage on the brake output is too low (for more than 1000ms). Possible causes: • The 24V supply for the motor brake is not connected • There is a short circuit between Br+ and Br- or GND • The connected motor brake requires too much current • The motor is configured with a holding brake, but the brake is not controlled by the PSD (24V brake supply not connected as not required)
Measure:	• Ensure that the 24V supply voltage for the motor brake is connected correctly (motor brake connector) PSD1M…: X46 (Pin7=24V and Pin8= GND) PSD1S…: X51 (Pin1=24V and Pin2=GND) • Check the cabling and the motor brake for a short circuit between Br+ and Br- or GND • Check the power consumption of the used motor brake. Does it exceed the allowed current of 1A? • Remove the motor brake from configuration (or anyway connect the 24V brake supply voltage) if the brake is not controlled by the PSD

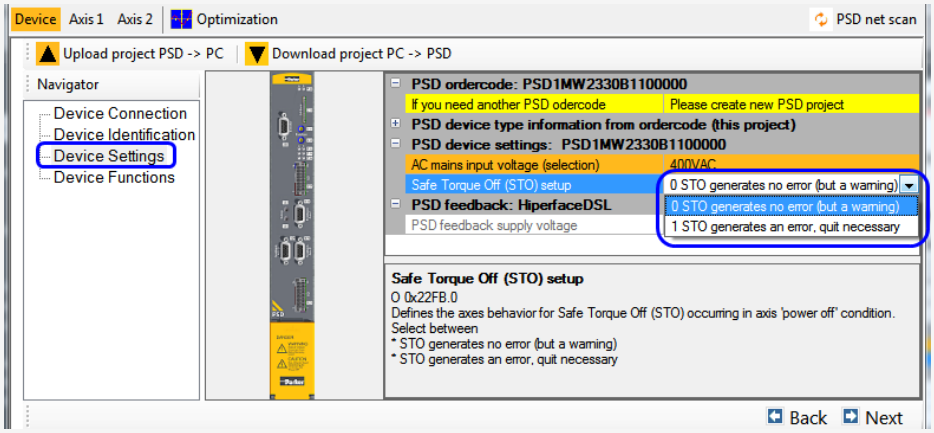
Error reaction is configurable!

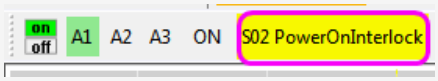
Error is quittable !

Default error reaction: Ramp down with slow down ramp - Disable control loops

EventID: 43 Warning Word Number (0x3c35 .. / PNU953 ..): 2 Bit: 11

0x5491, 21649 STO activated in power off state (warning)

Error:	Safe Torque Off (STO) was triggered in power off [1] state (-> warning).
Cause of Error:	**Standard drive:** STO inputs are active (A and/or B are low (0V)), drive reaction is delayed 100ms[2] **FSoE drive:** Safety option board (SoB) commanded STO
Measure:	To remove the Event: Close the safety circuit, the drive (if no other error is present) will automatically leave the STO state. If the STO event is not desired: • Check 24V on STO inputs. If the safety option board (SoB) is used/desired: • Is it mounted (correctly) and correctly configured? • Is there any error message given by the SoB? <u>Notes:</u> ➢ The drive STO inputs can be monitored on Axis level via object 0x60FD 'DigitalInputs' and 0x31C1.02 'STOx'. On device level object 0x2070 'DigitalDrive_IO_States' could be monitored. The SoB status can be monitored on object 0x2511.0x18 (all axis) or 0x2511.0x15…0x17 (axis1…3). The STO event after about 100ms [2] is also visible in fieldbus profile status word (ZSW1) 0x6041 bit 15 (for both DS402 and PROFIdrive). ➢ PSD1MW3: Axis 3 is linked to Axis 2 STO input signals. ➢ This warning is only reported if in the device settings of the configuration 'STO setup' is set to option '0 STO generates no error (but a warning)'  This STO reaction type can also be defined on object level via 0x22FB.0 'STO_Setup'. For value '1 STO generates error, quit necessary' instead of this warning the error 0x5492 'STO activated in power off state (error)' is generated.

	➢ If the Axis is tried to be powered while being in STO state (S60) (=> STO A and/or B inputs is/are still or again 0V or SoB still reports STO) the error 0x5495 'STO activated' will be generated. 1) The 'Power Off' state for DS402 drive profile means state 'Switch On Disabled' and for PROFIdrive drive profile the state 'S1: Switching On Inhibited'. In PSD Servomanager online axis status 0x3408.2 equals 'S02 PowerOnInterlock'  Note: If the STO is given during an ongoing PowerOn command (directly out of the "PowerOff" state which might not be visible in the Axis State machine) this is also considered as "Powered State". 2) Only the drive error (or warning) reaction (without SoB) will be delayed 100ms. The STO from hardware side will react in <=5ms. Additionally the PSD firmware (>=V1.7.2) will deactivate the power stage from software side and close the motor brake within <3ms after STO A and/or B goes to low or SOB STO is reported. The 100ms delay between STO STO A and/or B going low or SOB STO and drive error reaction gives enough time to Power Off the drive from a plc to avoid the 0x5495 'STO activated' error.

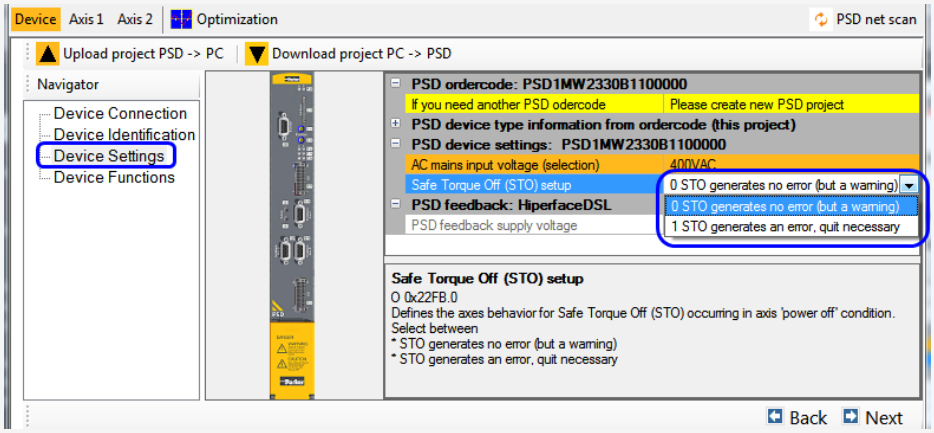
FORCE default error reaction !

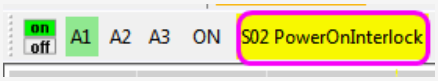
Error is quittable !

Default error reaction: Throw warning

EventID: 224 Warning Word Number (0x3c35 .. / PNU953 ..): 8 Bit: 0

5492, 21650 STO activated in power off state (error)

Error:	Safe Torque Off (STO) was triggered in power off [1] state (-> error).
Cause of Error:	**Standard drive:** STO inputs are active (A and/or B are low (0V)), drive reaction is delayed 100ms[2] **FSoE drive:** Safety option board (SoB) commanded STO
Measure:	To remove the Event: Close the safety circuit and acknowledge the drive error. If the STO event is not desired: • Check 24V on STO inputs. If the safety option board (SoB) is used/desired: • Is it mounted (correctly) and correctly configured? • Is there any error message given by the SoB? <u>Notes:</u> ➢ The drive STO inputs can be monitored on Axis level via object 0x60FD 'DigitalInputs' and 0x31C1.02 'STOx'. On device level object 0x2070 'DigitalDrive_IO_States' could be monitored. The SoB status can be monitored on object 0x2511.0x18 (all axis) or 0x2511.0x15…0x17 (axis1…3). The STO event after about 100ms [2] is also visible in fieldbus profile status word (ZSW1) 0x6041 bit 15 (for both DS402 and PROFIdrive). ➢ PSD1MW3: Axis 3 is linked to Axis 2 STO input signals. ➢ This error is only reported if in the device settings of the configuration 'STO setup' is set to option '1 STO generates error, quit necessary'  This STO reaction type can also be defined on object level via 0x22FB.0 'STO_Setup'. For value '0 STO generates no error (but a warning)' instead of this error the warning 0x5491 'STO activated in power off state (warning)' is generated.

	➢ If the Axis is tried to be powered while being in error state with still present STO (=> STO A and/or B inputs is/are still or again 0V or SoB still reports STO) the error 0x5495 'STO activated' will be generated. 3) The 'Power Off' state for DS402 drive profile means state 'Switch On Disabled' and for PROFIdrive drive profile the state 'S1: Switching On Inhibited'. In PSD Servomanager online axis status 0x3408.2 equals 'S02 PowerOnInterlock'  Note: If the STO is given during an ongoing PowerOn command directly from the "PowerOff" state (which might not be visible in the Axis State machine) this state is also considered as "Powered State". 4) Only the drive error (or warning) reaction (without SoB) will be delayed 100ms. The STO from hardware side will react in <=5ms. Additionally the PSD firmware (>=V1.7.2) will deactivate the power stage from software side and close the motor brake within <3ms after STO A and/or B goes to low or SOB STO is reported. The 100ms delay between STO STO A and/or B going low or SOB STO and drive error reaction gives enough time to Power Off the drive from a plc to avoid the 0x5495 'STO activated' error (This mainly make sense if STO setup is configured to '0 STO generates no error (but a warning)'.

FORCE default error reaction !

Error is quittable !

Default error reaction: Disable Control Loops - Motor Is Free To Rotate

EventID: 225 Warning Word Number (0x3c35 .. / PNU953 ..): 8 Bit: 1

5493, 21651 STO hardware defective

Error:	The hardware detected a Safe Torque Off (STO) error.
Cause of Error:	Error of STO hardware or the input values of channel A and B differ for >= 2.3s. This error is hardware based and cannot be acknowledged! Note: On Firmware side the STO healthy signal is monitored. If it is low for >=100ms the error is given.
Measure:	Check STO inputs (low active), the error can not be acknowledged -> power cycle of 24V is required. Notes: ➢ The drive STO inputs can be monitored on Axis level via object 0x60FD 'DigitalInputs' and 0x31C1.02 'STOx'. On device level object 0x2070 'DigitalDrive_IO_States' could be monitored. ➢ PSD1MW3: Axis 3 is linked to Axis 2 STO input signals.

FORCE default error reaction !

Error NOT quittable !

Default error reaction: Disable Control Loops - Motor Is Free To Rotate

EventID: 226 Warning Word Number (0x3c35 .. / PNU953 ..): 8 Bit: 2

0x5494, 21652 SafetyOptionBoard (SoB) reports error

Error:	Error on Safety Option Board (SoB).
Cause of Error:	I/O signal error or internal failure state of the SoB.
Measure:	Check I/O data or levels and internal operation state of the SoB.

Additional information of the **Cause of Error** you'll get in
Device object **0x2511.05 SmC_ErrorCode** and
Device object **0x2511.14 SmC_SysState**

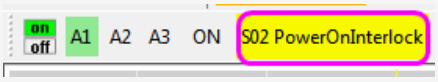
FORCE default error reaction !

Error is quittable !

Default error reaction: Disable Control Loops - Motor Is Free To Rotate

EventID: 227 Warning Word Number (0x3c35 .. / PNU953 ..): 8 Bit: 3

5495, 21653 STO activated

Error:	Safe Torque Off (STO) was triggered in drive powered state or during power on [1] sequence.
Cause of Error:	**Standard drive:** STO inputs are active (A and/or B are low (0V)), drive reaction is delayed 100ms[2] **FSoE drive:** Safety option board (SoB) commanded STO
Measure:	To remove the event: Close the safety circuit and acknowledge the drive error. If the STO event is not desired: • Check 24V on STO inputs. If the STO should not generate an error: • Make sure the STO is not given in powered state [1] If the safety option board (SoB) is used/desired: • Is it mounted (correctly) and correctly configured? • Is there any error message given by the SoB? <u>Notes:</u> ➢ The drive STO inputs can be monitored on Axis level via object 0x60FD 'DigitalInputs' and 0x31C1.02 'STOx'. On device level object 0x2070 'DigitalDrive_IO_States' could be monitored. The SoB status can be monitored on object 0x2511.0x18 (all axis) or 0x2511.0x15…0x17 (axis1…3). The STO event after about 100ms [2] is also visible in fieldbus profile status word (ZSW1) 0x6041 bit 15 (for both DS402 and PROFIdrive). ➢ PSD1MW3: Axis 3 is linked to Axis 2 STO input signals. 5) In 'Powered state' means for DS402 drive profile the drive is not in state 'Switch On Disabled' and for PROFIDrive drive profile the drive is not in state 'S1: Switching On Inhibited'. In PSD Servomanager online axis status 0x3408.2 it means the drive is not in state 'S02 PowerOnInterlock'.  Note: If the STO is given during an ongoing PowerOn command (directly out of the "PowerOff" state which might not be visible in the Axis State machine) this is also considered as "Powered State". 6) Only the drive error (or warning) reaction (without SoB) will be delayed 100ms. The STO from hardware side will react in <=5ms. Additionally the PSD firmware (>=V1.7.2) will deactivate the power stage from software side and close the motor brake within <3ms after STO A and/or B goes to low or SOB STO is reported. The 100ms delay between STO STO A and/or B going low or SOB STO and drive error reaction gives enough time to Power Off the drive from a plc to avoid the 0x5495 'STO activated' error (This mainly make sense if STO setup is configured to '0 STO generates no error (but a warning)'.

FORCE default error reaction !

Error is quittable !

Default error reaction: Disable Control Loops - Motor Is Free To Rotate

EventID: 228 Warning Word Number (0x3c35 .. / PNU953 ..): 8 Bit: 4

0x5496, 21654 Brake test failed

Error:	The safety option board (SoB) detected a failure during the motor brake test.
Cause of Error:	The configured motor brake test torque is too high or the motor holding brake is defective.
Measure:	Check the configuration for the maximal motor brake test torque on the SoB. Check motor brake wiring. Replace brake (or motor) if required.

FORCE default error reaction !

Error is quittable !

Default error reaction: Ramp down with quick down ramp - Stay controlled

EventID: 13 Warning Word Number (0x3c35 .. / PNU953 ..): 1 Bit: 13

0x5497, 21655 Error during brake test

Error:	An error occurred during motor holding brake test.
Cause of Error:	Timeout in the communication between safety option board (SoB) and servo drive. Movement detected during brake test (motor brake defective?).
Measure:	Check connection between SoB and servo drive. Check configured brake test maximal torque value. Check motor brake wiring.

FORCE default error reaction !

Error is quittable !

Default error reaction: Ramp down with quick down ramp - Stay controlled

EventID: 14 Warning Word Number (0x3c35 .. / PNU953 ..): 1 Bit: 14

0x5498, 21656 STO error

Error:	Error in safe torque off (STO) circuit.
Cause of Error:	Error of the safety circuit hardware (drive, cables, safety controller), the input values of drive STO channel A and B differ for >= 1s.
Measure:	Check STO inputs (low active). Notes: ➢ The drive STO inputs can be monitored on Axis level via object 0x60FD 'DigitalInputs' and 0x31C1.02 'STOx'. On device level object 0x2070 'DigitalDrive_IO_States' could be monitored. ➢ PSD1MW3: Axis 3 is linked to Axis 2 STO input signals. ➢ Subsequent error might be error 0x5493 'STO hardware defective'

FORCE default error reaction !

Error is quittable !

Default error reaction: Disable Control Loops - Motor Is Free To Rotate

EventID: 15 Warning Word Number (0x3c35 .. / PNU953 ..): 1 Bit: 15

0x5499 Safe Stop 1 activated

No description found !

FORCE default error reaction !

Error is quittable !

Default error reaction: Ramp down with quick down ramp - Disable control loops

EventID: 229 Warning Word Number (0x3c35 .. / PNU953 ..): 8 Bit: 5

0x549A Safe Stop 2 activated

No description found !

FORCE default error reaction !

Error is quittable !

Default error reaction: Ramp down with quick down ramp - Stay controlled

EventID: 230 Warning Word Number (0x3c35 .. / PNU953 ..): 8 Bit: 6

0x549B, 21659 Motor Brake not configured

Error:	Motor brake has to be used, but is not configured
Cause of Error:	A requested Command requires a Motor Brake, but no brake is configured. (E.g. by the Motor Brake start command)
Measure:	If a motor brake exist on this axis: the Motor configuration has to be corrected. Else: The triggering command (e.g. from the PLC) has to be avoided.

Error reaction is configurable!

Error is quittable !

Default error reaction: Ramp down with slow down ramp - Disable control loops

EventID: 44 Warning Word Number (0x3c35 .. / PNU953 ..): 2 Bit: 12

0x549C Start Brake test invalid, at least one axis not in valid state

No description found !

Error reaction is configurable!

Error is quittable !

Default error reaction: Throw warning

EventID: 231 Warning Word Number (0x3c35 .. / PNU953 ..): 8 Bit: 7

0x54A0, 21664 Positive limit switch activated

Error:	Positive limit switch activated
Cause of Error:	The positive limit switch input was activated. Error is triggered by rising edge.
Measure:	Move axis into the travel range, check machine zero and motion profile commanded to the drive. Check positive limit switch wiring and polarity. If any input is not to be used as positive limit switch input, the error reaction for positive limit switch should be explicitly set to no reaction or the any digital input usage should not be set to positive limit switch (select free usage instead) in the configuration or by the field-bus master.

Error reaction is configurable!

Error is quittable !

Default error reaction: Ramp down with quick down ramp - Disable control loops

EventID: 1 Warning Word Number (0x3c35 .. / PNU953 ..): 1 Bit: 1

0x54A1, 21665 Negative limit switch activated

Error:	Negative limit switch activated
Cause of Error:	The negative limit switch input was activated. Error is triggered by rising edge.
Measure:	Move axis into the allowed travel range, check machine zero and motion profile commanded to the drive. Check negative limit switch wiring and polarity. If any input is not to be used as negative limit switch input, the error reaction for negative limit switch should be explicitly set to no reaction or the any digital input usage should not be set to negative limit switch (select free usage instead) in the configuration or by the field-bus master.

Error reaction is configurable!

Error is quittable !

Default error reaction: Ramp down with quick down ramp - Disable control loops

EventID: 2 Warning Word Number (0x3c35 .. / PNU953 ..): 1 Bit: 2

0x5530, 21808 EEPROM data error

Error:	Problems in EEPROM data
Cause of Error:	The device related Parameter are stored in an EEPROM assembled to it. This error occurs if • the EEPROM data is wrong (checksum) • does not exist (empty EEPROM) or • the EEPROM cannot be read out during Power on
Measure:	Check if device type is identified correctly. Check if to used firmware version is compatible to the device.

Error reaction is configurable!

Error NOT quittable !

Default error reaction: Ramp down with quick down ramp - Disable control loops

EventID: 84 Warning Word Number (0x3c35 .. / PNU953 ..): 3 Bit: 20

0x6080, 24704 Closed loop control (CLC) subsystem overload

Error:	The subsystem used for closed loop control is overloaded
Cause of Error:	The system load is too high to completely process the cyclically executed control loop function in time.
Measure:	Use another firmware that fixes this bug. Reduce the active closed loop functionality (switch off additional filters or observers). Reduce the number of axis.

Error reaction is configurable!

Error is quittable !

Default error reaction: Ramp down with quick down ramp - Disable control loops

EventID: 48 Warning Word Number (0x3c35 .. / PNU953 ..): 2 Bit: 16

0x6082, 24706 System overload 31.25µs

Error:	Calculation time overload within 31.25µs task
Cause of Error:	The 31.25µs Task cannot be finished in its allowed timeslot.
Measure:	• Reduce the configured closed loop functionality (switch off additional filter or observer, …) or check usage of other fast executed functionality (touch-probe,…). • Reduce number of selected scope channels, use some alternative (faster) status values or change time base to higher values. • Use option 'preset to default' at configuration download to reset drive task lists (controller optimization settings or user defined IP address settings are lost in that case). • Use another firmware that may fix a bug causing the issue or includes required optimizations.

Error reaction is configurable!

Error NOT quittable !

Default error reaction: Ramp down with quick down ramp - Disable control loops

EventID: 53 Warning Word Number (0x3c35 .. / PNU953 ..): 2 Bit: 21

0x6083, 24707 System overload 500µs

Error:	Calculation time overload within 500us Task
Cause of Error:	The 500us task can't be finished within its time slice. This could be caused by an overload inside the 500us task itself (too much functions added to the tasklist of Task500/1 or Task500/2) or high calculation load in the more often called 31.25us routines having higher priority.
Measure:	• Reduce number of cyclic exchanged field bus objects, use some alternative (fasters) status values. • Reduce the configured closed loop functionality (switch off additional filter or observer, …) or check usage of other fast executed functionality (touch-probe,…). • Use option 'preset to default' at configuration download to reset drive task lists (controller optimization settings or user defined IP address settings are lost in that case). • Use another firmware that may fix a bug causing the issue or includes required optimizations.

Error reaction is configurable!

Error is quittable !

Default error reaction: Ramp down with quick down ramp - Disable control loops

EventID: 54 Warning Word Number (0x3c35 .. / PNU953 ..): 2 Bit: 22

0x6084, 24708 System Restart

Error:	System restart was executed (Only insert into the Event and Error History as information (to keep the chronological context between errors and system restarts)).
Cause of Error:	Either caused by • "normal" power off / power on (24V supply voltage power cycle) • Forced software reset after 24V drive supply undervoltage "glitch" • a soft restart (e.g. during reconfiguration)
Measure:	Make sure the 24V is stable and nominal voltage of about 24V reaches the drive. Please note: Engaging (opening) the motor brakes (and using the same supply for drive and brake) could add significant additional current load and cause additional 24V voltage drop. If the 24V are not "OK" it might be required to • (better) split current load between different supplies (e.g. use a separate supply for the motor brakes). • use a 24V DC supply with more power / better buffer • check/increase supply wire cross section In case of often/repetitive Ac (and subsequent 24V) supply issues: • Maybe consider using a UPS (uninterruptable power supply) unit.

Error reaction is configurable!

Error is quittable !

Default error reaction: Throw warning

EventID: 4 Warning Word Number (0x3c35 .. / PNU953 ..): 1 Bit: 4

0x6087 Field bus interface (FBI) life guard

No description found !

Error reaction is configurable!

Error is quittable !

Default error reaction: Ramp down with quick down ramp - Disable control loops

EventID: 0 Warning Word Number (0x3c35 .. / PNU953 ..): 1 Bit: 0

0x6090, 24720 Firmware exception

Error:	An unhandled exception occurred within the servo drive firmware.
Cause of Error:	A problem within the firmware or the micro-electronics of the servo drive.
Measure:	Test if it helps to use a different firmware version and/or a different servo drive (hardware). Contact Parker technical support.

Error reaction is configurable!

Error is quittable !

Default error reaction: Disable Control Loops - Motor Is Free To Rotate

EventID: 49 Warning Word Number (0x3c35 .. / PNU953 ..): 2 Bit: 17

0x6280, 25216 PLC Cycle Time exceeded

Error:	Configured Maximal PLC cycle time is exceeded
Cause of Error:	PLC load too high for the configured maximal PLC cycle time
Measure:	The PLC cycle time might be increased, adaption of the PLC functionality Increase maximal cycle time (object 0x2812.0) Switch off cycle time supervision (0x2812.0 = 0)

Error reaction is configurable!

Error is quittable !

Default error reaction: Ramp down with slow down ramp - Disable control loops

EventID: 104 Warning Word Number (0x3c35 .. / PNU953 ..): 4 Bit: 8

0x6281, 25217 PLC Runtime Error

Error:	Error of the internal CODESYS runtime
Cause of Error:	Internal runtime error is signaled in object 0x2811.07
Measure:	Adaption of the PLC application

Error reaction is configurable!

Error is quittable !

Default error reaction: Ramp down with slow down ramp - Disable control loops

EventID: 105 Warning Word Number (0x3c35 .. / PNU953 ..): 4 Bit: 9

0x6282, 25218 PLC Project: 500us Task Overflow

Error:	500us PLC task: cycle time is exceeded
Cause of Error:	PLC load too high
Measure:	The PLC functionality might be implemented in a cyclic task. adaption of the PLC functionality

Error reaction is configurable!

Error is quittable !

Default error reaction: Throw warning

EventID: 106 Warning Word Number (0x3c35 .. / PNU953 ..): 4 Bit: 10

0x7112, 28946 Overcurrent braking resister output

Error:	Short circuit on brake resistor output
Cause of Error:	Too high current flow at braking resistor output.
Measure:	Check for short circuit on braking resistor connector, check braking resistor.

Error reaction is configurable!

Error is quittable !

Default error reaction: Ramp down with quick down ramp - Disable control loops

EventID: 28 Warning Word Number (0x3c35 .. / PNU953 ..): 1 Bit: 28

0x7121, 28961 Motor blocked

Error:	Motor Stall occurred
Cause of Error:	The current controller setpoint (velocity controller control signal) is limited for a longer period than the motor pulse current time (in standstill). More current is required than a) the user allows to flow, b) the device can deliver or c) the motor can absorb. It can also be that the motor provides to low torque (e.g. because of wrong commutation alignment ('phasing') or wrong motor dimensioning) or that the motor (or the position feedback) was not wired correctly. Maybe the motor or position feedback parameters are not set correctly. It could also be the case that the motor brake control is not working.
Measure:	• Check setpoint profile: - Acceleration or deceleration too high? - Motion profile speed too high? - Maybe operation at voltage limit (high velocity and high current)? • **Check current limits:** Case a) Increase configured current limit (object 0x3210.0 'PosCurrentConfigAxis' / object 0x3211.0 'NegCurrentConfigAxis'). Case b) Increase user current limit (object 0x3212.1 'PosCurrentAxis' / object 0x3212.2 'NegCurrentAxis'). Case c) Reduce switching frequency (drive current derating at increased frequency was maybe not respected by the user). Hints: - The currently active current limits can be monitored on status objects 0x3321.7 'Current positive limit' and 0x3321.8 'Current negative limit'. - If drive operation in permanent current limit is part of the application this error (and probably also error 0x2381 'current continuously limited' and if position controller is active also 0x8611 'Tracking error') must be deactivated in the drive configuration. • Check motor commutation, feedback resolution (per rev or pitch) • Check motor wiring (phases (u,v,w) connected correctly, connected to correct drive output, motor phases are connected at all, motor connector plug is fully inserted (motor and drive side), there are no loose cable strands, there is no cable internal cable damage (sporadic interruption,…)?) Please note: Cable/wiring related error that would normally cause short circuit error 0x2320 might instead cause this error if the motor has a high resistance/inductance or the dc-bus voltage is low(er). • Remove mechanical blockage / check motor brake (24V for brake supplied, correct polarity?).

	• Check device / motor dimensioning (too weak?). • Check setpoint profile (especially at Homing with “reversal via current" as well as “moving to block") (maybe acceleration/jerk too low).

Error reaction is configurable!

Error is quittable !

Default error reaction: Ramp down with quick down ramp - Disable control loops

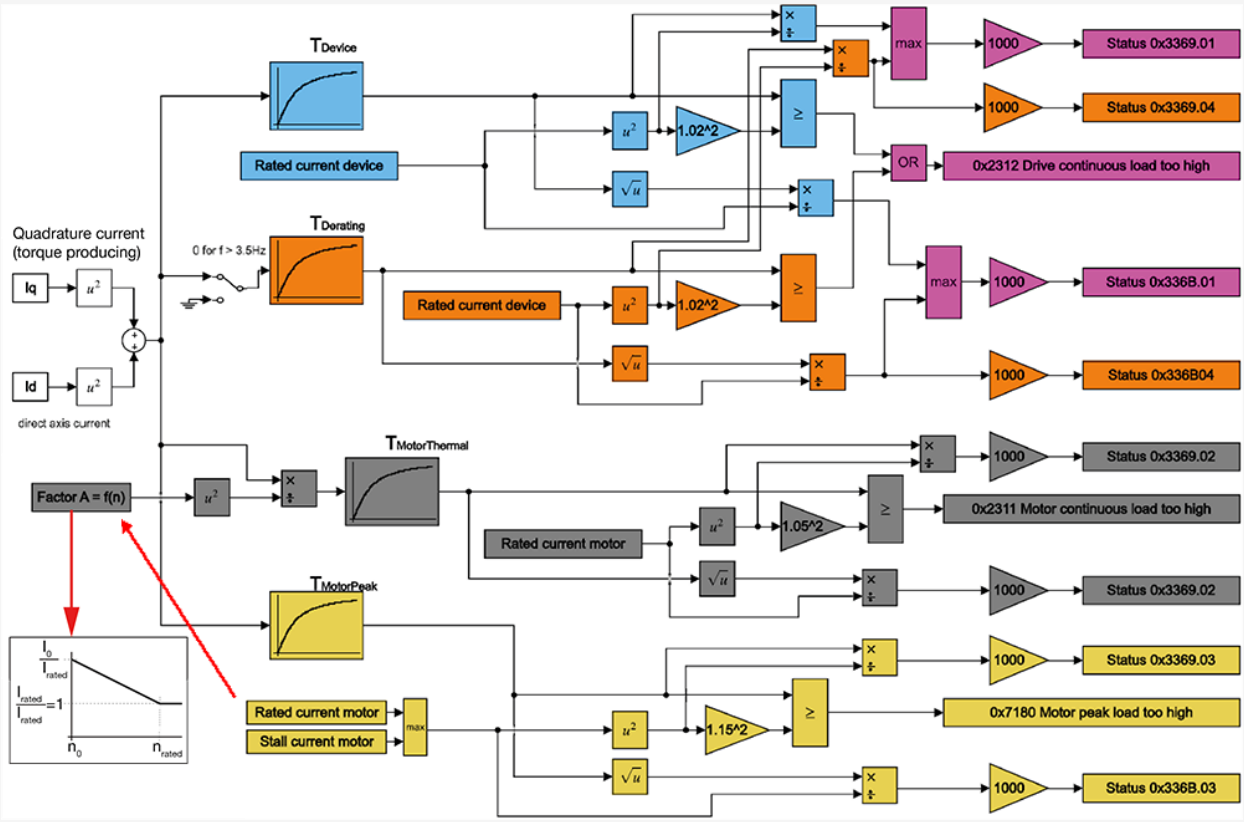
EventID: 45 Warning Word Number (0x3c35 .. / PNU953 ..): 2 Bit: 13

0x7180, 29056 Motor peak load too high

Error:	Effective peak motor current monitor load too high (i2t supervision).
Cause of Error:	Motor peak current exceeded motor current limit.
Measure:	• Check peak current time and peak current of the motor • Reduce motor load (less peak current, more standstill phases of the drive, lower machine throughput, lower acceleration and deceleration) • Check motor dimensioning and replace motor by an adequately dimensioned model if necessary; use alternative motor cooling option (fan, water, air) if available, optimize mechanic components (reduce weight). • Check motor wiring (phases (u,v,w) connected correctly, connected to correct drive output, motor phases are connected at all, motor connector plug is fully inserted (motor and drive side), there are no loose cable strands, there is no cable internal cable damage (sporadic interruption,…)?) Please note: Cable/wiring related errors that would normally cause short circuit error 0x2320 might instead cause this error if the motor has a high resistance/inductance or the dc-bus voltage is low(er).

The current load value can be read with object 0x3369.03 =Axis\Load\'Motor load peak i²t' status value.
Error is given for value >=1323 permille (=1.15²*1000).

PSD load monitoring structure:



Error reaction is configurable!

Error is quittable !

Default error reaction: Ramp down with quick down ramp - Disable control loops

EventID: 30 Warning Word Number (0x3c35 .. / PNU953 ..): 1 Bit: 30

0x7181, 29057 Motor Temperature Warning

Error:	Motor Temperature Warning level temperature threshold was exceeded (according to motor internal sensor).
Cause of Error:	The motor load is too high or the temperature sensor is defective. There could also be configured or used a wrong sensor type of the threshold value is set wrongly (too low). There could also be a sensor cable issue.
Measure:	Reduce motor load (effective cycle load) e.g. by reducing acceleration. PWM current ripples can lead to high motor temperature for low switching frequencies (-> increase switching frequency). Check if motor temperature sensor is configured correctly (sensor type and threshold value). Remove possible line break and check for shortcut to GND using a PTC or a shortcut to 5V using a NTC sensor.

Error reaction is configurable!

Error is quittable !

Default error reaction: Throw warning

EventID: 46 Warning Word Number (0x3c35 .. / PNU953 ..): 2 Bit: 14

0x7182, 29058 Motor temperature too high

Error:	The Motor temperature is too high (according to motor internal sensor).
Cause of Error:	The motor load is too high or the temperature sensor is defective. There could also be configured or used a wrong sensor type of the threshold value is set wrongly (too low). There could also be a sensor cable issue.
Measure:	Reduce motor load (effective cycle load) e.g. by reducing acceleration. PWM current ripples can lead to high motor temperature for low switching frequencies (-> increase switching frequency). Check if motor temperature sensor is configured correctly (sensor type and threshold value). Remove possible line break and check for shortcut to GND using a PTC or a shortcut to 5V using a NTC sensor.

Error reaction is configurable!

Error is quittable !

Default error reaction: Ramp down with quick down ramp - Disable control loops

EventID: 42 Warning Word Number (0x3c35 .. / PNU953 ..): 2 Bit: 10

0x7183, 29059 Dynamic brake resistor peak load too high

Error:	Dynamic brake resistor peak load too high
Cause of Error:	The maximal peak power (defined in % of the rated power) is exceeded for more than 1s
Measure:	Use another braking resistor with higher power rating (or combine lower power resistors). Attention: Consider minimal resistance value given in drive specification. Reduce effective dynamic brake resistor load by • lowering maximal speed and reducing deceleration of the application • reducing moved mass/inertia

Error reaction is configurable!

Error is quittable !

Default error reaction: Ramp down with quick down ramp - Disable control loops

EventID: 27 Warning Word Number (0x3c35 .. / PNU953 ..): 1 Bit: 27

0x7184, 29060 Dynamic brake resistor continuous load too high

Error:	The dynamic brake resistor exceeded its power limit. The error is pending as long the Dynamic Brake Resistor load (object 0x237C.01) is > 800‰, this means it cannot be quit, before the load has fallen below 800‰.
Cause of Error:	The dynamic brake resistor effective switch on time is too long.
Measure:	Use another dynamic brake resistor with higher power rating (or combine lower power resistors). Attention: Consider minimal resistance value given in drive specification. Reduce effective dynamic brake resistor load by • lowering maximal speed and reducing deceleration of the application • reducing moved mass/inertia • increase of the machine acceleration time and/or standstill time.

Error reaction is configurable!

Error is quittable !

Default error reaction: Ramp down with quick down ramp - Disable control loops

EventID: 31 Warning Word Number (0x3c35 .. / PNU953 ..): 1 Bit: 31

0x7188, 29064 Cable break Motor Temperature Sensor

Error:	Line breakage motor temperature sensor
Cause of Error:	Line breakage or short circuit to GND of the temperature acquisition of the motor (Pin 13 'Tmot' on the signal interface X18). Only relevant for NTC temperature switches. Threshold value for the error is a resistance value greater than approx. 255KOhm (status Obj. 0x3360.2).
Measure:	Check cable (repair line breakage/short circuit).

Error reaction is configurable!

Error is quittable !

Default error reaction: Ramp down with quick down ramp - Disable control loops

EventID: 46 Warning Word Number (0x3c35 .. / PNU953 ..): 2 Bit: 14

0x7310, 29456 Speed too high

Error:	Actual speed higher than configured max speed
Cause of Error:	The error occurs if the actual velocity is greater than 1.21 time the configured velocity limits. PosSpeedLimit(0x3309.0x15) = +MIN(MaxProfileVelocity(0x3200.0)[incr/s] , **motor_speed_limit**) NegSpeedLimit(0x3309.0x16)= -MIN(MinProfileVelocity(0x3201.0)[incr/s] , **motor_speed_limit**) With **motor_speed_limit**= rotatory motor: MotorMaxSpeed[rpm](0x6080.0)_converted_to_incr/s (limited to 590Hz electrical=70800rpm/0x308E (=number_of_motor_poles)) linear motor: MotorMaxSpeed[mm/s](0x3083.5)_converted_to_incr/s (limited to 590Hz electrical=590000/0x3083.1 (=motor_pitch_in_um) mm/s) Drive internal profile generator target velocity is limited to the range NegSpeedLimit…PosSpeedLimit. If the value is exceeded error 0x8181 “Invalid velocity” is given. Closed loop control setpoint velocity limit is 1.1 times the limit values (1.1*NegSpeedLimit…1.1*PosSpeedLimit).
Measure:	• Adapt speed thresholds according to the requirements in the configuration or via objects 0x3200.0 ‘MaxProfileVelocity’ and 0x3201.0 ‘MinProfileVelocity’, unit is incr/s. Hint: The currently active velocity limits can be monitored on status objects 0x3309.0x15 ‘VelocityPositiveLimit’ and 0x3309.0x16 ‘VelocityNegativeLimit’. Error threshold are object values * 1.21 • Maybe the motor is not fast enough for this application. Verify the motor data (0x6080.0 ‘MaxMotorSpeed’ or MotorMaxSpeed[mm/s] (0x3083.5)). • If need be check the position feedback: - EMC immunity/shielding sufficient (especially, if the error occurs during automatic commutation)? - resolution/line count correctly configured? • Maybe control loop is badly damped and that results in some actual speed overshoot. Check - controller tuning (controller very slow, especially check Km factor 0x3822.6) - check feed-forward setting (should be enabled) - load inertia / load mass parameter value (verify with PSD load identification feature)

FORCE default error reaction !

Error is quittable !

Default error reaction: Disable Control Loops - Motor Is Free To Rotate

EventID: 3 Warning Word Number (0x3c35 .. / PNU953 ..): 1 Bit: 3

0x7380, 29568 Feedback error

Error:	Common feedback error (position isn't reliable)
Cause of Error:	Common feedback error, the actual position from this feedback is no longer reliable.
Measure:	Check if there was another feedback error thrown after this one which gives additional information on the error cause. Check feedback cable and connector. The error can also be caused by EMC effects. Thus check if motor cable outer shield is connected properly to PE on both - drive and motor- sides (see drive installation instuctions in help file). Also check if shields are not interrupted. The Hiperface DSL® signal lines internal shield must be connected (braided or soldered) to the outer motor cable shield (and thus PE) on the drive side. From that connection point onwards the inner shield should continue to cover the Hiperface DSL® lines up to the PSD servo drive Hiperface DSL® connection clamp.

Error reaction is configurable!

Error is quittable !

Default error reaction: Ramp down with quick down ramp - Disable control loops

EventID: 136 Warning Word Number (0x3c35 .. / PNU953 ..): 5 Bit: 8

0x7381, 29569 Resolver level too high

Error:	Resolver level too high.
Cause of Error:	Resolver level limit exceeded (modulated sine or cosine voltage greater than 5.0Vpp).
Measure:	Check feedback cable or feedback. EMC problems/very long motor cable? Is the resolver type used suitable for operation with PSD (transformation ratio)? Check feedback configuration.

Error reaction is configurable!

Error is quittable !

Default error reaction: Ramp down with quick down ramp - Disable control loops

EventID: 66 Warning Word Number (0x3c35 .. / PNU953 ..): 3 Bit: 2

0x7382, 29570 Resolver level too low

Error:	Resolver level too low.
Cause of Error:	Resolver level limit exceeded (demodulated sine or cosine voltage is less than 0.1Vpp). Possible causes: Open circuit, faulty feedback wiring, resolver with bad transformation ratio, resolver or PSD defective, no feedback connected or a motor without resolver is connected (SinCos, encoder or EnDat).
Measure:	Check feedback cable or feedback. Is the resolver type used suitable for operation with PSD (transformation ratio)? Check feedback configuration and connected feedback type.

Error reaction is configurable!

Error is quittable !

Default error reaction: Disable Control Loops - Motor Is Free To Rotate

EventID: 67 Warning Word Number (0x3c35 .. / PNU953 ..): 3 Bit: 3

0x7386, 29574 Direction change during motion

Error:	Direction change during motion.
Cause of Error:	During registration related positioning (RegSearch/RegMove) an attempt was made to reach a position target which can only be reached via direction reversal during positioning.
Measure:	The subsequent movement (RegMove) positioning target must be farther away (in ongoing motion direction) than the distance the motor would need to brake down to speed zero (braking position). To achieve this the option are: • Decreasing braking distance by running former movement (RegSearch) with a smaller speed or with a greater position offset to the registration mark position (shift sensor closer to product source direction) or increase the subsequent movement (RegMove) deceleration parameter value. • Checking the subsequent movement target position (RegMove PositionOffset) and/or the registration mark sensor signal and the registration mark window parameters (StartIgnore and StopIgnore). Note: Backward motion can be allowed for RegMove by setting object 0x34CD.0 'FB_RegMove.NoTurnAroudAxis' to FALSE (default is TRUE). Backward motion can be forbidden for other positioning commands by setting object 0x341D.0 'FB_Position_1.NoTurnAroudAxis' to TRUE (default is FALSE).

Error reaction is configurable!

Error is quittable !

Default error reaction: Ramp down with quick down ramp - Disable control loops

EventID: 32 Warning Word Number (0x3c35 .. / PNU953 ..): 2 Bit: 0

0x7388, 29576 Invalid Hall Bit Combination (during FineHall Commutation)

Error:	Detection of an invalid Hall Combination during FineHall Commutation
Cause of Error:	wrong motor wiring or Hall sensor defect. Disturbances on HALL signals.
Measure:	Check Motor Wiring (Hall Sensors). Check functionality of Hall sensors. Eliminate possible EMC disturbances on HALL signal (therefore it should be checked, if this error still occurs, if drive is repowered (24V supply) and the motor is moved manually without power on motor)

Error reaction is configurable!

Error is quittable !

Default error reaction: Ramp down with slow down ramp - Disable control loops

EventID: 0 Warning Word Number (0x3c35 .. / PNU953 ..): 1 Bit: 0

0x7389, 29577 Invalid fine hall angle correction value

Error:	Commutation Offset Difference between Coarse Hall and Fine Hall commutation is more than 30° el.
Cause of Error:	Wrong Configuration (Hall Sensor Direction, Motor Pitch / PoleNo). Error in Hall Sensors (wiring, functionality, mechanical distance, EMC disturbance)
Measure:	Check Motor configuration. Check Hall Sensors (wiring, functionality and mechanical distance tolerance of the sensors) Check Actual Position Status

Error reaction is configurable!

Error is quittable !

Default error reaction: Ramp down with slow down ramp - Disable control loops

EventID: 0 Warning Word Number (0x3c35 .. / PNU953 ..): 1 Bit: 0

0x738A, 29578 Invalid Hall Signal Sequence

Error:	Detection of an invalid Hall Combination or invalid Hall Bit Sequence during operation
Cause of Error:	wrong motor wiring or Hall sensor defect. EMC Disturbances on HALL signals.
Measure:	Check wiring and functionality of Hall Sensors Eliminate possible EMC disturbances on HALL signal (therefore it should be checked, if this error still occurs, if drive is repowered (24V supply) and the motor is moved manually without power on motor), optimize motor cable shield

Error reaction is configurable!

Error is quittable !

Default error reaction: Disable Control Loops - Motor Is Free To Rotate

EventID: 0 Warning Word Number (0x3c35 .. / PNU953 ..): 1 Bit: 0

0x738B, 29579 Invalid Commutation

Error:	Detected deviation of actual feedback position and Hall Sensor Position during operation too high.
Cause of Error:	wrong motor wiring or Hall sensor defect. EMC Disturbances on HALL signals. Also there might be a problem in position acquistion of the feedback system caused by lost or wrong detection of the impulses. Wrong configuration of the feedback resolution Speed too high
Measure:	Check configured feedback resolution, Hall direction and motor pitch / motor pole number. Check wiring and functionality of Hall Sensors, check pollution / mechanical inaccuracy of line and read head Eliminate possible EMC disturbances on HALL signal (therefore it should be checked, if this error still occurs, if drive is repowered (24V supply) and the motor is moved manually without power on motor), optimize motor cable shield

Error reaction is configurable!

Error is quittable !

Default error reaction: Disable Control Loops - Motor Is Free To Rotate

EventID: 0 Warning Word Number (0x3c35 .. / PNU953 ..): 1 Bit: 0

0x738C, 29580 Error in Coarse Hall Commutation during PowerOn

Error:	Invalid Hall Bit Combination (000 or 111) detected or no Standstill during Coarse Hall.
Cause of Error:	wrong motor wiring or Hall sensor defect. EMC Disturbances on HALL signals. Ensure that axis doesn't move during coarse hall. No Hall Sensors existing?
Measure:	Check wiring and functionality of Hall Sensors Eliminate possible EMC disturbances on HALL signal, optimize motor cable shield Reconfiguration of the Commutation Source

Error reaction is configurable!

Error is quittable !

Default error reaction: Ramp down with slow down ramp - Disable control loops

EventID: 0 Warning Word Number (0x3c35 .. / PNU953 ..): 1 Bit: 0

0x7390, 29584 SinCos Hiperface DSL: Too hot or other feedback internal error

Error:	The encoder signals an internal error (via group bits)
Cause of Error:	The Hiperface DSL® encoder signals an internal error. The encoder registers ENC_ST7 to ENC_ST0 (combined on object 0x31D4.09 'Encoder Status7to0') show the detailed error cause. Besides several critical errors one error cause could be **a too high DSL encoder internal temperature**. Other common error cause is **too high feedback internal acceleration** which might be caused by instable drive control loop or machinal load/transmission shock feedback towards the DSL encoder.
Measure:	In case of **too high internal temperature fault** read the description of error 0x7182 'Motor temperature too high' for mitigation possibilities. In case of **too high acceleration** check closed loop control stability an also if there could be some distortion within the process/mechanics which could affect the feedback. The encoder (or motor) should be replaced for all other errors.

Error reaction is configurable!

Error is quittable !

Default error reaction: Ramp down with quick down ramp - Disable control loops

EventID: 152 Warning Word Number (0x3c35 .. / PNU953 ..): 5 Bit: 24

0x7391, 29585 Feedback level too high

Error:	Feedback level too high
Cause of Error:	The signal level is higher than the allowed max. signal level. { signal level = SQRT(sin²+cos²) } Resolver: max. signal level=4.75Vpp 1Vpp: max. signal level=5.00Vpp Possible causes: • A/B (TTL/RS422) feedback connected instead of sine cosine encoder • EMC disturbances • feedback output is voltage much too high
Measure:	• Check feedback cable (shield, wire breakage, short-circuit, pin assignment) • Check feedback (e.g. read head alignment) • ensure EMC compliant wiring • configure the correct feedback (e.g. RS422 instead of sine cosine)

Error reaction is configurable!

Error is quittable !

Default error reaction: Ramp down with quick down ramp - Disable control loops

EventID: 70 Warning Word Number (0x3c35 .. / PNU953 ..): 3 Bit: 6

0x7392, 29586 Feedback level too low

Error:	Feedback level too low
Cause of Error:	Resolver feedback: The signal level is lower than **1.0375Vpp** (25% of setpoint) { signal level = SQRT(sin^2+cos^2) } 1Vpp sine/cosine feedback: The signal level is lower than **0.4Vpp** A/B (RS422) feedback: One or both tracks (A, B, A and B) are missing. Possible causes: • Open circuit • faulty feedback wiring • feedback or PSD defective • no feedback connected • wrong encoder configured (sine cosine encoder connected but A/B (TTL) encoder configured) • wrong encoder connected (instead of sine cosine, A/B encoder or EnDat a motor with resolver is connected) • a fully digital EnDat encoder is used with outdated firmware
Measure:	• Check feedback cable (shield, breakage, short-circuit, pin assignment) • Check feedback feedback (e.g. read head alignment) and also encoder communication. • PowerOFF/On of the device. • Configure the device (motor selection) according to the connected encoder. • Make sure that the configuration wizard is completely run through upon a change of the motor (e.g. a change of the feedback type from sine cosine encoder to A/B (TTL) encoder) and that a configuration download is executed after completion

Error reaction is configurable!

Error is quittable !

Default error reaction: Disable Control Loops - Motor Is Free To Rotate

EventID: 71 Warning Word Number (0x3c35 .. / PNU953 ..): 3 Bit: 7

0x7393, 29587 SinCos Hiperface DSL communication error

Error:	Digital communication to the encoder is faulty.
Cause of Error:	The Hiperface DSL ® state machine entered error state because of a lost link, not reachable encoder or severe communication issues.
Measure:	Check the feedback cable and the encoder.

FORCE default error reaction !

Error is quittable !

Default error reaction: Disable Control Loops - Motor Is Free To Rotate

EventID: 153 Warning Word Number (0x3c35 .. / PNU953 ..): 5 Bit: 25

0x7394, 29588 Invalid data in feedback EEPROM

Error:	The Data stored on the EEPROM corrupted
Cause of Error:	The checksum or version of the 'commutation offset' data in the EEPROM of the Feedback system is wrong.
Measure:	Check if the problem still exists after next Power off/on. In case of a Parker EME motor contact our technical support to check/ reprogram the EEPROM-data.

Error reaction is configurable!

Error is quittable !

Default error reaction: Throw warning

EventID: 139 Warning Word Number (0x3c35 .. / PNU953 ..): 5 Bit: 11

0x7396, 29590 Feedback not initialized

Error:	The servo drive can't initialize the configured feedback system.
Cause of Error:	A problem has occurred during the initialization of the feedback system. Possible Reasons: • The configured feedback doesn't match the connected one • Wiring fault, encoder model or type is not (yet) supported • Hardware fault of encoder or servo drive • To old hardware revision
Measure:	Check the following points: • Does the configured feedback type match the connected encoder type? • Is the connected encoder supported by the servo drive (see drive specification)? • Is the cabling between servo drive and feedback system correct? • Does the upgrade to latest firmware and/or drive hardware fix the issue? (This might add meanwhile introduced extended feedback system support -> see latest drive catalogue). • The error could also happen if an older hardware PSD1M (PAC revision <R020) with multi fieldbus order code is configured to run with EthernetIP fieldbus -> hardware update is required, the drive will only work with EtherCAT or Profinet.

Error reaction is configurable!

Error NOT quittable !

Default error reaction: Ramp down with quick down ramp - Disable control loops

EventID: 151 Warning Word Number (0x3c35 .. / PNU953 ..): 5 Bit: 23

0x7397, 29591 Write feedback file failed

Error:	Error during write operation of a feedback file
Cause of Error:	This error might be caused either by • missing file or read error of the temporary motor file on the NAND Flash • error when writing this file to the feedback filesystem This affects the **encoder absolute position** file “abspos.bin” (used if ‘store absolute position in encoder’ option is set), the commutation offset file “alpha.bin” or the motor nameplate file “motor.bin”.
Measure:	For fault correction please read at first the status object of the file access, which might have triggered the error: **For absolute position data ‘abspos’:** **0x3122.01** (0x4122.01, 0x5122.01) For motor nameplate ‘motor’: 0x3080.01 (0x4080.01, 0x5080.01) For commutation offset file ‘alpha’: 0x30FC.00 (0x40FC.00, 0x50FC.00) **Status:** **Bit 4-7:** Error during drive startup with pending “write to feedback” operation 1: Checksum error in the temporary NAND flash file: • Motor file must be written again 2: **Wrong feedback serial number. The feedback has changed between last power off (write operation triggered) and power on** (write operation is performed). The file from NAND Flash was not stored in the matching feedback) • Motor file must be written again 3: Error in NAND File: Temporary NAND file is corrupted or could not be read / removed • Motor file must be written again 4: Error during writing of the motor file • restart the drive If this doesn’t help • Motor file must be written again If NAND Filesystem is corrupted, it must be formatted, but please consider that in this case the whole data is lost (a complete drive copy can prevent this problem) **Bit 8-11:** Error during normal drive startup feedback file access 1: Checksum error in the feedback file system file • Motor file must be written again

	3: The file doesn't exist in the feedback. There is no error if "motor" or "alpha" file are missing, because these files are not required for correct drive functionality. For absolute position the separate error 0x7398 'Read of encoder position file failed' is generated. • Motor file must be written as it is missing 4: Error during reading of the motor file in the feedback • restart the drive If this doesn't help • Motor file must be written again **To (re)write the motor file** g) Trigger rewrite via **For absolute position data 'abspos': Start homing again** or set position directly by 0x3122.01 = 2 (write encoder position) For motor nameplate 'motor': 3080.01 = 0x11 or 0x2011 (e.g. write motor nameplate V1 or V2 from objects to NAND flash) For commutation offset file 'alpha': 0x30FC.00 = 2 (write commutation offset) h) Power cycle the 24V (**without** removing the encoder) After the new 24V power on the temporary file on the NAND flash is stored to the motor filesystem.

Error reaction is configurable!

Error is quittable !

Default error reaction: Ramp down with slow down ramp - Disable control loops

EventID: 154 Warning Word Number (0x3c35 .. / PNU953 ..): 5 Bit: 26

0x7398, 29592 Read of encoder position file failed

Error:	Error during reading the encoder position file
Cause of Error:	This error only occurs with DSL encoders where the 'storage of the absolute in the feedback" is configured. Either the encoder position file "abspos.bin" is missing (or was never written) or there was an error during file access. This error might be subsequent on error 0x7397 'Write feedback file failed'.
Measure:	• Restart the drive. If this doesn't help • retrigger a Homing (or write directly the drive absolute position to encoder by writing 0x3122.01 = 2) • After: Power cycle the 24V (**without** removing the encoder as after the new 24V power on the temporary file on the NAND flash is stored to the motor filesystem).

Error reaction is configurable!

Error is quittable !

Default error reaction: Ramp down with slow down ramp - Disable control loops

EventID: 155 Warning Word Number (0x3c35 .. / PNU953 ..): 5 Bit: 27

0x7399, 29593 Invalid combination of Feedback Type and Commutation Source

Error:	Feedbacksystem is not supported by configured drive.
Cause of Error:	Configured Feedback system is not supported by Firmware or Hardware Version of the configured drive.
Measure:	Check Commutation / Feedback combination. Check if connected feedback system fits to connected PDS type.

Error reaction is configurable!

Error NOT quittable !

Default error reaction: Ramp down with quick down ramp - Disable control loops

EventID: 0 Warning Word Number (0x3c35 .. / PNU953 ..): 1 Bit: 0

0x73A3, 29603 Target position beyond positive end limit

Error:	Target position is beyond positive software end limit
Cause of Error:	Target position or actual position is behind positive software end limit. (Note: If the position controller is switched off (also the case if drive is not powered) the target position corresponds to the actual position.) Error is only given if the drive is already referenced.
Measure:	Check • position setpoint (and drive actual position) • positive software limit setting (configuration value or object 0x607D.0x02 'SoftwarePositionLimitMax') and • axis reference system - axis direction is correct - homing offset is set correctly - correct homing mode used - machine zero or limit switches are correctly wired and placed (with homing mode considering also motor zero position the configuration parameter ‚Homing zero switch adjustment [°]' in the configuration can be used to move the machine zero switch event away from the motor zero position to make it unambiguous) - machine zero or limit switches and polarity is OK For absolute linear or multi-turn encoders (or active multi-turn emulation) please check the following: • Could it be there was no reference move (homing) performed yet? • Has there been some mechanical change (e.g. timing belt replacement)? • Was the motor maybe defective and was replaced? • Was the drive maybe defective and was replaced? If so the axis has to be referenced anew at least once. Check for direction inversion in motion controller (must be off, direction inversion should be done in the drive if needed). Deactivate the error in the configuration if software limit monitoring is not required.

Error reaction is configurable!

Error is quittable !

Default error reaction: Ramp down with quick down ramp - Disable control loops

EventID: 8 Warning Word Number (0x3c35 .. / PNU953 ..): 1 Bit: 8

0x73A4, 29604 Target position beyond negative end limit

Error:	Target position is beyond negative software end limit
Cause of Error:	Target position or actual position is behind negative software end limit. (Note: If the position controller is switched off (also the case if drive is not powered) the target position corresponds to the actual position.) Error is only given if the drive is already referenced.
Measure:	Check • position setpoint (and drive actual position) • negative software limit setting (configuration value or object 0x607D.0x01 'SoftwarePositionLimitMin') and • axis reference system - axis direction is correct - homing offset is set correctly - correct homing mode used - machine zero or limit switches are correctly wired and placed (with homing mode considering also motor zero position the configuration parameter ‚Homing zero switch adjustment [°]' in the configuration can be used to move the machine zero switch event away from the motor zero position to make it unambiguous) - machine zero or limit switches and polarity is OK For absolute linear or multi-turn encoders (or active multi-turn emulation) please check the following: • Could it be there was no reference move (homing) performed yet? • Has there been some mechanical change (e.g. timing belt replacement)? • Was the motor maybe defective and was replaced? • Was the drive maybe defective and was replaced? If so the axis has to be referenced anew at least once. Check for direction inversion in motion controller (must be off, direction inversion should be done in the drive if needed). Deactivate the error in the configuration if software limit monitoring is not required.

FORCE default error reaction !

Error is quittable !

Default error reaction: Ramp down with quick down ramp - Disable control loops

EventID: 9 Warning Word Number (0x3c35 .. / PNU953 ..): 1 Bit: 9

0x73A5,29605 Autocommutation: Motor not in standstill (at start)

Error:	Motor not in standstill when starting the autocommutation.
Cause of Error:	Even after 10s the (filtered) motor velocity is not zero after starting the autocommutation.
Measure:	Check signal quality of the position feedback (noise), accomplish motor to standstill. If needed (e.g. for Analog Hall sensor feedback) increase 0x34D8.7 'AutoCommutation_StandstillThreshold' parameter.

FORCE default error reaction !

Error is quittable !

Default error reaction: Ramp down with quick down ramp - Disable control loops

EventID: 112 Warning Word Number (0x3c35 .. / PNU953 ..): 4 Bit: 16

0x73A6, 29606 Autocommutation: More than 60° electrical movement

Error:	More than 60° electrical movement during Autocommutation.
Cause of Error:	The motor has moved more than permitted during Autocommutation.
Measure:	• Malfunction (motion caused by external source) of the motor during Autocommutation. • Starting current (object 0x34D8.2 'AutoCommuntation_InitialCurrent') too great). • Incorrect (parameter for) commutation direction -> change parameter on object 0x30F9.00 'Invert commutation direction' or swap two motor phases. • Check feedback line count or resolution and/or number of feedback poles or motor poles. • A motor phase has been (temporarily) interrupted. • Post-pulse oscillation of the drive due to a too high excitation in a feebly attenuated system -> increase object 0x34D8.1 'AutoCommuntation_Ramptime' and/or vary 0x34D8.4 'AutoCommutation_MotionReduction'.

FORCE default error reaction !

Error is quittable !

Default error reaction: Ramp down with quick down ramp - Disable control loops

EventID: 113 Warning Word Number (0x3c35 .. / PNU953 ..): 4 Bit: 17

0x73A7, 29607 Autocommutation: More than 5° electrical movement during Phase2

Error:	More than 5° el. movement during phase2 of autocommutation.
Cause of Error:	Motor is not following controlled movement. In this case, the motor should stand still.
Measure:	• Eliminate external influence on the motor or device current is too small resp. friction is too high. • Post-pulse oscillation of the drive due to a too high excitation in a feebly attenuated system -> increase object 0x34D8.1 'AutoCommuntation_Ramptime' and/or vary 0x34D8.4 'AutoCommutation_MotionReduction'. • The commutation direction may be badly parameterized.

FORCE default error reaction !

Error is quittable !

Default error reaction: Ramp down with quick down ramp - Disable control loops

EventID: 114 Warning Word Number (0x3c35 .. / PNU953 ..): 4 Bit: 18

0x73A8, 29608 Autocommutation: Motor not in standstill (Phase3)

Error:	No standstill during phase 3 of autocommutation.
Cause of Error:	The motor is not following controlled movement (here: Motor does not stop fast enough or the standstill is not detected.)
Measure:	• Avoid external influences on the motor, check feedback (sufficient EMC immunity/shielding, resolution not correctly configured). • In very easy running systems, it may be necessary to increase object 0x34D8.1 'AutoCommutation_Ramptime'. • If needed increase 0x34D8.7 'AutoCommutation_StandstillThreshold' as well.

FORCE default error reaction !

Error is quittable !

Default error reaction: Ramp down with quick down ramp - Disable control loops

EventID: 115 Warning Word Number (0x3c35 .. / PNU953 ..): 4 Bit: 19

0x73A9}, 29609 Autocommutation: Timeout during Phase3

Error:	Timeout during phase 3 of autocommutation.
Cause of Error:	The maximum time for automatic commutation has been exceeded.
Measure:	• Increase starting current object 0x34D8.2 ‘AutoCommuntation_InitialCurrent’. • Eliminate very high direction dependency in ‘torque or force demand for motion’ or friction (if present). • Check feedback line count or resolution and/or number of feedback poles or motor poles. • With a high inertia (or mass)/torque constant KT ratio, it might in addition be necessary to reduce the motion threshold object 0x34D8.3 ‘AutoCommuntation_PositionThreshold’.

FORCE default error reaction !

Error is quittable !

Default error reaction: Ramp down with quick down ramp - Disable control loops

EventID: 116 Warning Word Number (0x3c35 .. / PNU953 ..): 4 Bit: 20

0x73AA, 29610 Autocommutation: Too much trials in Phase3

Error:	Too many trials during phase3 of autocommutation.
Cause of Error:	The motor is not following assigned controlled movement.
Measure:	• Increase the starting current (object 0x34D8.2 'AutoCommuntation_InitialCurrent') or eliminate external influence on the motor. • Check feedback resolution and/or number of feedback or motor poles.

FORCE default error reaction !

Error is quittable !

Default error reaction: Ramp down with quick down ramp - Disable control loops

EventID: 117 Warning Word Number (0x3c35 .. / PNU953 ..): 4 Bit: 21

0x73AB, 29611 Autocommutation: Maximal duration overrun

Error:	Timeout of autocommutation.
Cause of Error:	It was not possible to successfully complete the autocommutation within 45s (e.g. because the motor did not move (enough)
Measure:	• Increase automatic commutation starting current (object 0x34D8.2 'AutoCommuntation_InitialCurrent'), eliminate motor a blockage, check parameters for motor current (too small, device extremely under-dimensioned), current controller might be unstable. • With a high inertia (or mass)/torque constant KT ratio, it might in addition be necessary to reduce the motion threshold object 0x34D8.3 'AutoCommuntation_PositionThreshold'. • Please check if with a motor which has a brake also a motor with brake is configured and that the brake 24V supply voltage is connected to the drive.

FORCE default error reaction !

Error is quittable !

Default error reaction: Ramp down with quick down ramp - Disable control loops

EventID: 118 Warning Word Number (0x3c35 .. / PNU953 ..): 4 Bit: 22

0x{@ErrIDHex}, {@ErrIDDez} {@ErrTxt}

Error:	Autocommutation: No motor connected
Cause of Error:	Current controller is within the voltage modulation limit of the power output stage during automatic commutation.
Measure:	Connect motor resp. check wiring. In the case of high winding resistance reduce peak current so that Rkk*Imax is inferior to Umains*0.8. The power stage may be defective.

FORCE default error reaction !

Error is quittable !

Default error reaction: Ramp down with quick down ramp - Disable control loops

EventID: 119 Warning Word Number (0x3c35 .. / PNU953 ..): 4 Bit: 23

0x73AD, 29613 Autocommutation: Current too high (current limit reached)

Error:	Current in Phase1 of autocommutation is too high.
Cause of Error:	The maximal current limit (drive or motor) was reached but not enough motor motion during phase1 was detected.
Measure:	Check • current limit related motor parameters • feedback line count or resolution and/or number of feedback or motor poles • if it is possible to increase motor peak current • if motor is blocked • if it helps to reduce the motion threshold object 0x34D8.3 'AutoCommuntation_PositionThreshold'

FORCE default error reaction !

Error is quittable !

Default error reaction: Ramp down with quick down ramp - Disable control loops

EventID: 102 Warning Word Number (0x3c35 .. / PNU953 ..): 4 Bit: 6

0x73AE, 29614 Autocommutation: Too few iterations during Phase1

Error:	Too few iterations during Phase1 of autocommutation.
Cause of Error:	Too few iterations in current ramp (see status object 0x336A.6 ‘Iterations’, minimal value is 1).
Measure:	Reduce the initial current via object 0x34D8.2 ‘AutoCommuntation_InitialCurrent’ and/or increase the position threshold via object 0x34D8.3 ‘‘AutoCommuntation_PositionThreshold’.

FORCE default error reaction !

Error is quittable !

Default error reaction: Ramp down with quick down ramp - Disable control loops

EventID: 103 Warning Word Number (0x3c35 .. / PNU953 ..): 4 Bit: 7

0x74A1, 29857 Field bus interpolator: Speed too high

Error:	Position setpoint step too high.
Cause of Error:	The position change sent by field bus master within the last bus cycle was too high. The calculation of the interpolated path profile is not possible.
Measure:	Reduce profile speed of the axis on PLC controller (field bus master).

Error reaction is configurable!

Error is quittable !

Default error reaction: Ramp down with quick down ramp - Disable control loops

EventID: 131 Warning Word Number (0x3c35 .. / PNU953 ..): 5 Bit: 3

0x74A2, 29858 Field bus interpolator: Position input value out of range

Error:	The position setpoint sent by the field bus is out of the defined valid range.
Cause of Error:	The position setpoint sent by the field bus is out of the defined valid range (only possible if field bus reset distance (modulo) range is defined).
Measure:	Check configuration of field bus reset distance (objects 0x36A1.2 ‘Resetdistance_Incr’ and 0x36A1.3 ‘ResetdistanceLow_Incr’ or adapt setpoint position output modulo range of the axis on PLC controller (field bus master) side.

Error reaction is configurable!

Error is quittable !

Default error reaction: Ramp down with quick down ramp - Disable control loops

EventID: 132 Warning Word Number (0x3c35 .. / PNU953 ..): 5 Bit: 4

0x74A3, 29859 Field bus interpolator: Invalid modulo settings

Error:	Invalid setting of modulo (reset distance) (objects 0x36A1.2 ‘ResetDistance_incr’ and 0x36A1.3 ‘ResetDistanceLow_incr’).
Cause of Error:	
Measure:	The following modulo setting is invalid: Upper reset distance not zero but lower than lower reset distance.

Error reaction is configurable!

Error is quittable !

Default error reaction: Ramp down with quick down ramp - Disable control loops

EventID: 133 Warning Word Number (0x3c35 .. / PNU953 ..): 5 Bit: 5

0x74A4, 29860 Fieldbus Interpolator: Speed Limiter Overflow

Error:	Speed Limiter Overflow
Cause of Error:	Differentiated Position Setpoint is continuously in limitation. Setpoint step from Fieldbus is greater than configured maximal motor speed.
Measure:	Decrease Setpoint speed from Fieldbus. Check controller settings. Check drive configuration.

Error reaction is configurable!

Error is quittable !

Default error reaction: Ramp down with quick down ramp - Disable control loops

EventID: 0 Warning Word Number (0x3c35 .. / PNU953 ..): 1 Bit: 0

0x7583, 30083 Field bus interface (FBI) timeout

Error:	Timeout of field-bus connection.
Cause of Error:	Reaction of field-bus communication monitoring (connection to field-bus master is interrupted). Note: For Profinet a communication break is only detected if a cyclic data exchange has already been executed.
Measure:	Re-establish field-bus connection and restart communication. The hardware or cables may be defective. Check the bus master operation state. Check machine regarding EMC conformant installation.

Error reaction is configurable!

Error is quittable !

Default error reaction: Ramp down with quick down ramp - Disable control loops

EventID: 120 Warning Word Number (0x3c35 .. / PNU953 ..): 4 Bit: 24

0x7584 Field bus interface (FBI) Passive (CAN)

No description found !

Error reaction is configurable!

Error is quittable !

Default error reaction: Throw warning

EventID: 121 Warning Word Number (0x3c35 .. / PNU953 ..): 4 Bit: 25

0x7585 Field bus interface (FBI) Bus off (CAN)

No description found !

Error reaction is configurable!

Error is quittable !

Default error reaction: Ramp down with slow down ramp - Disable control loops

EventID: 122 Warning Word Number (0x3c35 .. / PNU953 ..): 4 Bit: 26

0x7586 Field bus interface (FBI) RxBuffer overflow

No description found !

Error reaction is configurable!

Error is quittable !

Default error reaction: Throw warning

EventID: 123 Warning Word Number (0x3c35 .. / PNU953 ..): 4 Bit: 27

0x7587, 30087 Field bus interface (FBI) synchronization error

Error:	Error in field bus synchronization
Cause of Error:	No new field bus set point was received for 3 repetitive bus cycles or drive internal synchronization PLL is not locked anymore (max allowed jitter is +/-125us for 500us bus cycle, +/- 250us for > 500us bus cycle). For older firmware the error is also generated if the fieldbus was in 'operational' state and falls back to 'init', pre op' or 'safe op' states without cyclic data exchange.
Measure:	Check field bus communication. If Jitter is too high, increase field bus cycle time and/or activate distributed clock synchronization mechanism. Avoid EMI coupling into field bus cables by keeping them away from dirty lines like servo motor cables.

Error reaction is configurable!

Error is quittable !

Default error reaction: Ramp down with slow down ramp - Disable control loops

EventID: 124 Warning Word Number (0x3c35 .. / PNU953 ..): 4 Bit: 28

0x7588 Field bus interface (FBI) RxFiFo overflow

No description found !

Error reaction is configurable!

Error is quittable !

Default error reaction: Throw warning

EventID: 125 Warning Word Number (0x3c35 .. / PNU953 ..): 4 Bit: 29

0x7589 Field bus interface (FBI) TxFiFo overflow

No description found !

Error reaction is configurable!

Error is quittable !

Default error reaction: Throw warning

EventID: 127 Warning Word Number (0x3c35 .. / PNU953 ..): 4 Bit: 31

0x7673, 30323 Homing error

Error:	No machine zero found.
Cause of Error:	i) One of the limit switches (or in case of homing reversal via current the configured homing current threshold) was detected twice without finding the machine zero event. j) In case of rotatory motor with hardware index track and homing method 33 or 34 there was no hardware zero pulse detected within 1.25 motor revolutions.
Measure:	• Choose correct homing method • Check reference source (limit switches, machine zero) wiring, position and polarity • Check drive configuration digital input functionality assignment • Check feedback type and wiring • Debounce limit/homing switches (by configuration or objects 0x31C0.5...8 'Inputx_Debounce' (0=off,1=on) and 0x31C0.9 'DebounceTime' [500us]) • Check general drive configuration and tuning of closed loop control (CLC) loops • if the homing method is using limit switches and the option 'use mechanical end-stop as homing limit switch' is set: a) check configured current threshold (too low?) b) check homing acceleration parameter (too high?) c) check homing speed (too high -> voltage limitation ?) • If a homing method with hardware feedback zero pulse is used issue might be that no index pulse can be detected. Make sure the feedback wiring is correct a and feedback system (encoder or read head/ scale) is used supporting that feature is mounted.

FORCE default error reaction !

Error is quittable !

Default error reaction: Ramp down with quick down ramp - Disable control loops

EventID: 24 Warning Word Number (0x3c35 .. / PNU953 ..): 1 Bit: 24

0x7680, 30336 Homing configuration error

Error:	Digital or index pulse input configuration for the selected of homing mode is missing or incomplete.
Cause of Error:	11. At least one of the input functionality required for the selected homing mode (limit switches and/or the machine-zero switch) is not assigned to the drive digital inputs within the drive configuration. 12. And incremental feedback system (1Vpp or A/B encoder) is used with a homing method requiring hardware index pulses but the feedback is not configured to have a hardware index(zero) pulse (object 0x30D6.0 'FeedbackZeroByIndexTrack').
Measure:	1. Check assignment of limit switches and/or machine zero switch within digital input configuration (is it fitting to the configured homing method?). 2. Switch to a homing method without zero pulses or configure the hardware index track availability in the feedback settings.

FORCE default error reaction !

Error is quittable !

Default error reaction: Ramp down with quick down ramp - Disable control loops

EventID: 25 Warning Word Number (0x3c35 .. / PNU953 ..): 1 Bit: 25

0x8181, 33153 Invalid velocity

Error:	Setpoint target velocity higher than configured speed limit
Cause of Error:	Setpoint target velocity out of range. The error occurs if the target velocity is greater than the positive or lower than the negative speed limit. PosSpeedLimit(0x3309.0x15) = +MIN(MaxProfileVelocity(0x3200.0)[incr/s] , **motor_speed_limit**) NegSpeedLimit(0x3309.0x16)= -MIN(MinProfileVelocity(0x3201.0)[incr/s] , **motor_speed_limit**) With **motor_speed_limit**= rotatory motor: MotorMaxSpeed[rpm](0x6080.0)_converted_to_incr/s (limited to 590Hz electrical=70800rpm/0x308E (=number_of_motor_poles)) linear motor: MotorMaxSpeed[mm/s](0x3083.5)_converted_to_incr/s (limited to 590Hz electrical=590000/0x3083.1 (=motor_pitch_in_um) mm/s) Drive internal profile generator target velocity is limited to the range NegSpeedLimit…PosSpeedLimit. If the value is exceeded error 0x8181 “Invalid velocity” is given. Closed loop control setpoint velocity limit is 1.1 times the limit values (1.1*NegSpeedLimit…1.1*PosSpeedLimit).
Measure:	• Decrease velocity setpoint • Adapt speed thresholds according to the requirements in the configuration or via objects 0x3200.0 ‘MaxProfileVelocity’ and 0x3201.0 ‘MinProfileVelocity’, unit is incr/s. Hint: The currently active velocity target limits can be monitored on status objects 0x3309.0x15 ‘VelocityPositiveLimit’ and 0x3309.0x16 ‘VelocityNegativeLimit’. • Maybe the motor is not fast enough for this application. Verify the motor data (0x6080.0 ‘MaxMotorSpeed’ or MotorMaxSpeed[mm/s] (0x3083.5)).

Error reaction is configurable!

Error is quittable !

Default error reaction: Ramp down with quick down ramp - Disable control loops

EventID: 10 Warning Word Number (0x3c35 .. / PNU953 ..): 1 Bit: 10

0x8182, 33154 Invalid Acceleration/Deceleration

Error:	Setpoint target acceleration (deceleration) higher than maximum possible acceleration (deceleration)
Cause of Error:	Setpoint target acceleration (deceleration) out of range. The error occurs if the **target acceleration (deceleration) is greater than the minimum of** maximal possible acceleration (internal limitation) and maximal possible incremental acceleration (number format limitation) visible on status object 0x3311.09
Measure:	Decrease acceleration (deceleration) setpoint according to the status object 0x3311.09 'MaxAccelerationNumericalAxis' (unit is incr/s²)

Error reaction is configurable!

Error is quittable !

Default error reaction: Ramp down with quick down ramp - Disable control loops

EventID: 11 Warning Word Number (0x3c35 .. / PNU953 ..): 1 Bit: 11

0x8183, 33155 Watchdog 'Setup mode'

Error:	Timeout in Ethernet communication in ‚setup mode' of PSD Servomanager.
Cause of Error:	Issue with Ethernet communication (interrupted or too slow).
Measure:	• Using a Laptop check the energy options (should be permanent operation or desktop mode). • If required increase 'setup mode' watchdog timeout value (default is 1000ms) by entering cmd '*wdset timeout_in_500us*' into the PSD Servomanager optimization input line. Example: 'wdset 4000' sets the timeout value to 2s.  Attention: The watchdog is a safety feature and should not be deactivated. • Execute an error quit and re-enter ‚setup mode'.

Error reaction is configurable!

Error is quittable !

Default error reaction: Ramp down with quick down ramp - Disable control loops

EventID: 98 Warning Word Number (0x3c35 .. / PNU953 ..): 4 Bit: 2

0x8184, 33156 Undefined absolute position

Error:	Drive reference system (absolute position) is not valid.
Cause of Error:	No homing performed since • an error in the drive retain data was detected • power on with multi-turn emulation active and multi-turn-emulation window being violated
Measure:	Start new homing procedure from within PSD servo manager setup mode, perform upgrade to latest firmware (to apply probably included fixes for issues in retain data storage). Note: In case of retain data issue this error is a subsequent error of error 0xFF41'Retain data invalid'. As absolute position information is lost for absolute multi-turn encoders (and also single-turn encoders where multi-turn emulation is active) a new drive reference move is required. Until the drive was not referenced again commanding an absolute positioning (and also entering cyclic synchronous positioning (csp) mode (mode of operation = 8)) will result in error 0x8184 'Undefined absolute position'. As csp mode and thus homing is not possible when using e.g. a PAC controller the reference move in this case must be executed from within PSD servo manager setup mode.

Error reaction is configurable!

Error is quittable !

Default error reaction: Ramp down with quick down ramp - Disable control loops

EventID: 12 Warning Word Number (0x3c35 .. / PNU953 ..): 1 Bit: 12

0x8611, 34321 Following error

Error:	The position setpoint to actual position deviation is higher than configured following error limit.
Cause of Error:	The motor cannot follow the position setpoint within the desired tolerance.

Measure:	• Optimize controller tuning (increase stiffness, run autotuning to detect the correct load inertia/load mass, …)
	• Check setpoint profile:
	- Acceleration or deceleration too high?
	- Motion profile speed too high?
	(above might additionally lead to operation at voltage limit (as high velocity and high current))
	• Increase 'following error window' (GUI or object 0x6065.0) and / or 'following error timeout' (GUI or object 0x6066.0)
	• Maybe current (drive or motor) or voltage is limited (or there is a motor wiring issue)
	-> Heed notes for error 0x2381 'Current continuously limited'
	• Check for speed setpoint limitation in case of external setpoint usage (e.g. DS402 'cyclic sync position', gearing, …). In this case if possible increase speed limits:
	  • Adapt speed thresholds according to the requirements in the configuration or via objects 0x3200.0 'MaxProfileVelocity' and 0x3201.0 'MinProfileVelocity', unit is incr/s.
	  Hint: The currently active velocity limits can be monitored on status objects 0x3309.15 'VelocityPositiveLimit' and 0x3309.16 'VelocityNegativeLimit'. Control limitation thresholds are object values * 1.1, error thresholds are object values * 1.21.
	  • Verify the motor data (object 0x6080.0 'MaxMotorSpeed'). Maybe the motor is not fast enough for this application.
	
	Note: Unlike the Compax3 servo drive with the PSD servo drive the following error monitoring is not disabled if the position is loop gain KV (0x3832.01) is set to zero. To disable following error monitoring, you could adapt the drive error reaction for this error or configure the following error threshold to zero.
	If the drive is operating in velocity control mode (=position controller inactive) the following error status value (0x60F4.0) is always zero and no error is generated.
	
	Warning: For safety reasons it is not recommended to (permanently) disable or to make ineffective the following error monitoring in applications with closed loop position control!!

Error reaction is configurable!

Error is quittable !

Default error reaction: Ramp down with quick down ramp - Disable control loops

EventID: 6 Warning Word Number (0x3c35 .. / PNU953 ..): 1 Bit: 6

0xFF41, 65345 Retain data invalid

Error:	Power-fail-safe data are invalid (error history, retain variables and absolute positions).
Cause of Error:	Error history, retain variables and absolute positions are invalid. Flash memory could be defective, maybe data set was not stored properly.
Measure:	Verify drive shutdown sequence, perform upgrade to latest firmware (in order to apply probably included fixes for issues in retain data storage). A new data block with default values is created and saved with the next drive shutdown (24V off). Note: As absolute position information is lost for absolute multi-turn encoders (and also single-turn encoders where multi-turn emulation is active) a new drive reference move is required. Until the drive was not referenced again commanding an absolute positioning (and also entering cyclic synchronous positioning (csp) mode (mode of operation = 8)) will result in error 0x8184 'Undefined absolute position'. As csp mode and thus homing is not possible when using e.g. a PAC controller the reference move in this case must be executed from within PSD servo manager setup mode.

Error reaction is configurable!

Error NOT quittable !

Default error reaction: Ramp down with quick down ramp - Disable control loops

EventID: 82 Warning Word Number (0x3c35 .. / PNU953 ..): 3 Bit: 18

0xFF42, 65346 No objects available

Error:	Error in object directory.
Cause of Error:	Inconsistency of object directory and firmware version e.g. after firmware downgrade.
Measure:	• Download a new drive configuration • Download existing drive configuration with option ‘preset to default’ (= without the uploaded object content stored in the configuration) • Execute a “reset to default values” via object 0x2064.02 ‘Preset2Default’ = 1

Error reaction is configurable!

Error is quittable !

Default error reaction: Ramp down with quick down ramp - Disable control loops

EventID: 83 Warning Word Number (0x3c35 .. / PNU953 ..): 3 Bit: 19

0xFF51, 65361 Drive intercom timeout

Error:	A timeout occurred in the drive to drive communication interface.
Cause of Error:	The slave axis did not receive a new data package within the expected time frame (500us).
Measure:	Check wiring, reduce EMI influence, check drive configuration (is the axis desired to be a PSD drive intercommunication master or slave axis?). After fixing the connection the error can be acknowledged via object 0x2538.02 “DIC_Config.Control” (on master axis drive!)

Error reaction is configurable!

Error is quittable !

Default error reaction: Ramp down with quick down ramp - Disable control loops

EventID: 126 Warning Word Number (0x3c35 .. / PNU953 ..): 4 Bit: 30

0xFFA8, 65448 SinCos: Counter overflow

Error:	SinCos user counter overflow.
Cause of Error:	SinCos user counter overflow.
Measure:	Reset the user counter.

Error reaction is configurable!

Error is quittable !

Default error reaction: Ramp down with quick down ramp - Disable control loops

EventID: 161 Warning Word Number (0x3c35 .. / PNU953 ..): 6 Bit: 1

0xFFAB, 65451 SinCos: No access to encoder resources

Error:	No access to encoder resources.
Cause of Error:	A problem occurred while drive firmware tried to access to encoder resources.
Measure:	• Replace the encoder • Update to a drive firmware which supports the used encoder.

Error reaction is configurable!

Error is quittable !

Default error reaction: Throw warning

EventID: 164 Warning Word Number (0x3c35 .. / PNU953 ..): 6 Bit: 4

0xFFBB, 65467 Feedback: Critical supply voltage

Error:	Feedback critical supply voltage. A wrong feedback type could be configured.
Cause of Error:	The supply voltage of the encoder exceeds the allowed voltage level.
Measure:	• Check the configured encoder type • Check Encoder and cable. (e.g. short circuit on the cable) • Servo controller hardware defect

Error reaction is configurable!

Error is quittable !

Default error reaction: Ramp down with quick down ramp - Disable control loops

EventID: 181 Warning Word Number (0x3c35 .. / PNU953 ..): 6 Bit: 21

0xFFBD, 65469 SinCos: Transmitter current approaching limit

Error:	Transmitter current approaching limit.
Cause of Error:	• The encoder LED is defective or fatigued. • Internal mechanical damage. • Internal contamination.
Measure:	Exchange Feedback, inform customer service.

Error reaction is configurable!

Error is quittable !

Default error reaction: Ramp down with quick down ramp - Disable control loops

EventID: 176 Warning Word Number (0x3c35 .. / PNU953 ..): 6 Bit: 16

0xFFBE, 65470 SinCos: Feedback temperature approaching limit

Error:	Feedback temperature approaching limit.
Cause of Error:	Critical temperature of the encoder (too high or too low).
Measure:	• Check possible ambient temperature VS allowed encoder temperature. • Allow the encoder to cool down or warm up. • Check the installation position of the encoder.

Error reaction is configurable!

Error is quittable !

Default error reaction: Ramp down with quick down ramp - Disable control loops

EventID: 177 Warning Word Number (0x3c35 .. / PNU953 ..): 6 Bit: 17

0xFFBF, 65471 SinCos: Critical speed

Error:	SinCos speed exceeds allowed range, no position generation possible anymore.
Cause of Error:	The rotation speed limit given in the encoder data sheet was exceeded.
Measure:	Check the application, reduce the speed setpoint profile max value.

Error reaction is configurable!

Error is quittable !

Default error reaction: Ramp down with quick down ramp - Disable control loops

EventID: 178 Warning Word Number (0x3c35 .. / PNU953 ..): 6 Bit: 18

0xFFC0, 65472 Single-turn position unreliable

Error:	Single-turn position unreliable.
Cause of Error:	Internal feedback error reported by the feedback, might be impossible to acknowledge.
Measure:	Exchange the feedback system or the complete motor.

Error reaction is configurable!

Error is quittable !

Default error reaction: Ramp down with quick down ramp - Disable control loops

EventID: 179 Warning Word Number (0x3c35 .. / PNU953 ..): 6 Bit: 19

0xFFC1, 65473 Multi-turn position unreliable

Error:	Multi-turn position unreliable.
Cause of Error:	Internal feedback error reported by the feedback, might be impossible to acknowledge.
Measure:	Exchange the feedback system or the complete motor.

Error reaction is configurable!

Error is quittable !

Default error reaction: Ramp down with quick down ramp - Disable control loops

EventID: 180 Warning Word Number (0x3c35 .. / PNU953 ..): 6 Bit: 20

0xFFD5, 65493 SinCos: Unknown encoder type

Error:	The used Sincos encoder is not supported by the drive firmware.
Cause of Error:	The used Sincos encoder is not (yet) supported by the drive firmware.
Measure:	• Update the drive firmware • Maybe switch to a working/supported encoder type • Contact technical support

Error reaction is configurable!

Error NOT quittable !

Default error reaction: Ramp down with quick down ramp - Disable control loops

EventID: 189 Warning Word Number (0x3c35 .. / PNU953 ..): 6 Bit: 29

0xFFE0, 65504 Error loading Sub System Firmware

Error:	The Subsystem Firmware wasn't load correctly
Cause of Error:	The Subsystem Firmware was not load correct. Causes c) Maybe the Subsystem Firmware file is missing (firmware download was not completed, or file isn't on SD card) d) The wrong Subsystem Firmware variant was loaded for the used device. e) The configured fieldbus doesn't fit to the actual Firmware
Measure:	a) Re-download firmware package, use complete (matching) file set on SD card. b) Use the correct firmware package for download, if the servo drive is booting from SD card use correct file set for the used servo drive type.

Error reaction is configurable!

Error NOT quittable !

Default error reaction: Ramp down with quick down ramp - Disable control loops

EventID: 88 Warning Word Number (0x3c35 .. / PNU953 ..): 3 Bit: 24

0xFFE5, 65509 Error in file system

Error:	Error in file system configuration.
Cause of Error:	The file system could not be configured.
Measure:	The file system is corrupted or the hardware defective.

Error reaction is configurable!

Error NOT quittable !

Default error reaction: Ramp down with quick down ramp - Disable control loops

EventID: 85 Warning Word Number (0x3c35 .. / PNU953 ..): 3 Bit: 21

0xFFE6, 65510 FPGA not configured

Error:	The FPGA is not correctly configured.
Cause of Error:	The FPGA could not be configured. Causes c) Maybe the FPGA configuration file is missing (firmware download was not completed, or file not on SD card) d) The wrong FPGA configuration file variant was loaded for the used device. e) The configured fieldbus doesn't fit to the actual Firmware
Measure:	a) Re-download firmware package, use complete (matching) file set on SD card. b) Use the correct firmware package for download, if the servo drive is booting from SD card use correct file set for the used servo drive type.

Error reaction is configurable!

Error NOT quittable !

Default error reaction: Ramp down with quick down ramp - Disable control loops

EventID: 86 Warning Word Number (0x3c35 .. / PNU953 ..): 3 Bit: 22

0xFFE7, 65511 Error loading SRAM-firmware

Error:	The loading of CPU internal memory main firmware part failed.
Cause of Error:	The firmware file on internal SRAM could not be started. Probably the firmware file for internal SRAM is missing (iSRAM.bin, P1Nx0000.bin).
Measure:	(Re-)download the (matching) firmware package *.psd1fwp with PSD Servomanager into the device. If the servo drive starts from the SD card make sure you use a complete firmware file set on the SD card.

Error reaction is configurable!

Error NOT quittable !

Default error reaction: Ramp down with quick down ramp - Disable control loops

EventID: 87 Warning Word Number (0x3c35 .. / PNU953 ..): 3 Bit: 23

0xFFE8, 65512 Invalid startup command file

Error:	Error during executing a startup Script on the SD-Card
Cause of Error:	Error during execution of a startup script (startup.bin) on the SD-card.
Measure:	Check content of the startup file on the SD Card (e.g. syntax error, …).

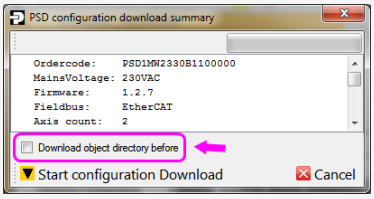
Error reaction is configurable!

Error is quittable !

Default error reaction: Ramp down with quick down ramp - Disable control loops

EventID: 81 Warning Word Number (0x3c35 .. / PNU953 ..): 3 Bit: 17

xFFE9, 65513 Configuration error

Error:	Error during calculation of configuration (triggered by valid configuration (VC) command).
Cause of Error:	Configuration invalid (parameter missing or out of permitted range).
Measure:	• Check configuration • Clear field bus mapping  • Create a new configuration or download old configuration with 'preset to default' option  (attention: controller-tuning is reset to default values) • Update firmware to latest version (as the error might have been caused by meanwhile corrected firmware bugs) Note: Objects 0x2112.02 'GlobalVC_ErrorID' and 0xz052.02 'VC_ErrorID' (Axis1: z=3, Axis2: z=4, Axis3: z=5) give details about the error cause. Please write down the object values before contacting Parker technical support.

Error reaction is configurable!

Error is quittable !

Default error reaction: Disable Control Loops - Motor Is Free To Rotate

EventID: 90 Warning Word Number (0x3c35 .. / PNU953 ..): 3 Bit: 26

0xFFEA, 65514 Analog to digital converter (ADC) not initialized

Error:	No current measurement available.
Cause of Error:	ADC isn’t initialized correctly.
Measure:	Set up a new configuration and restart the device.

Error reaction is configurable!

Error NOT quittable !

Default error reaction: Ramp down with quick down ramp - Disable control loops

EventID: 80 Warning Word Number (0x3c35 .. / PNU953 ..): 3 Bit: 16

0xFFEB, 65515 Internal Phase Current Offset too high

Error:	Internal Phase Current Offset too high
Cause of Error:	Error in current measurement: problems during initialisation of Current ADC or Sigma Delta Converter (PSD1S device) or caused by defect current sensors.
Measure:	Repower motor or restart of the PSD1 drive (Switch off 24V). If error still occurs, Hardware might be defect.

FORCE default error reaction !

Error is quittable !

Default error reaction: Disable Control Loops - Motor Is Free To Rotate

EventID: 91 Warning Word Number (0x3c35 .. / PNU953 ..): 3 Bit: 27

0xFFF0, 65520 User Error No 0

Error:	User Error 0 occurred (Triggered by rising edge of object 0x32FC.00, Bit0)
Cause of Error:	Error is called by PLC program
Measure:	

Error reaction is configurable!

Error is quittable !

Default error reaction: Error Is Completely Disregarded

EventID: 240 Warning Word Number (0x3c35 .. / PNU953 ..): 8 Bit: 16

0xFFF1, 65521 User Error No 1

Error:	User Error 1 occurred (Triggered by rising edge of object 0x32FC.00, Bit1)
Cause of Error:	Error is called by PLC program
Measure:	

Error reaction is configurable!

Error is quittable !

Default error reaction: Error Is Completely Disregarded

EventID: 241 Warning Word Number (0x3c35 .. / PNU953 ..): 8 Bit: 17

0xFFF2, 65522 User Error No 2

Error:	User Error 2 occurred (Triggered by rising edge of object 0x32FC.00, Bit2)
Cause of Error:	Error is called by PLC program
Measure:	

Error reaction is configurable!

Error is quittable !

Default error reaction: Error Is Completely Disregarded

EventID: 242 Warning Word Number (0x3c35 .. / PNU953 ..): 8 Bit: 18

0xFFF3, 65523 User Error No 3

Error:	User Error 3 occurred (Triggered by rising edge of object 0x32FC.00, Bit3)
Cause of Error:	Error is called by PLC program
Measure:	

Error reaction is configurable!

Error is quittable !

Default error reaction: Error Is Completely Disregarded

EventID: 243 Warning Word Number (0x3c35 .. / PNU953 ..): 8 Bit: 19

0xFFF4, 65524 User Error No 4

Error:	User Error 4 occurred (Triggered by rising edge of object 0x32FC.00, Bit4)
Cause of Error:	Error is called by PLC program
Measure:	

Error reaction is configurable!

Error is quittable !

Default error reaction: Error Is Completely Disregarded

EventID: 244 Warning Word Number (0x3c35 .. / PNU953 ..): 8 Bit: 20

0xFFF5, 65525 User Error No 5

Error:	User Error 5 occurred (Triggered by rising edge of object 0x32FC.00, Bit5)
Cause of Error:	Error is called by PLC program
Measure:	

Error reaction is configurable!

Error is quittable !

Default error reaction: Error Is Completely Disregarded

EventID: 245 Warning Word Number (0x3c35 .. / PNU953 ..): 8 Bit: 21

0xFFF6, 65526 User Error No 6

Error:	User Error 6 occurred (Triggered by rising edge of object 0x32FC.00, Bit6)
Cause of Error:	Error is called by PLC program
Measure:	

Error reaction is configurable!

Error is quittable !

Default error reaction: Error Is Completely Disregarded

EventID: 246 Warning Word Number (0x3c35 .. / PNU953 ..): 8 Bit: 22

0xFFF7, 65527 User Error No 7

Error:	User Error 7 occurred (Triggered by rising edge of object 0x32FC.00, Bit7)
Cause of Error:	Error is called by PLC program
Measure:	

Error reaction is configurable!

Error is quittable !

Default error reaction: Error Is Completely Disregarded

EventID: 247 Warning Word Number (0x3c35 .. / PNU953 ..): 8 Bit: 23

0xFFF8, 65528 User Error No 8

Error:	User Error 8 occurred (Triggered by rising edge of object 0x32FC.00, Bit8)
Cause of Error:	Error is called by PLC program
Measure:	

Error reaction is configurable!

Error is quittable !

Default error reaction: Error Is Completely Disregarded

EventID: 248 Warning Word Number (0x3c35 .. / PNU953 ..): 8 Bit: 24

0xFFF9, 65529 User Error No 9

Error:	User Error 9 occurred (Triggered by rising edge of object 0x32FC.00, Bit9)
Cause of Error:	Error is called by PLC program
Measure:	

Error reaction is configurable!

Error is quittable !

Default error reaction: Error Is Completely Disregarded

EventID: 249 Warning Word Number (0x3c35 .. / PNU953 ..): 8 Bit: 25

0xFFFA, 65530 User Error No 10

Error:	User Error 10 occurred (Triggered by rising edge of object 0x32FC.00, Bit10)
Cause of Error:	Error is called by PLC program
Measure:	

Error reaction is configurable!

Error is quittable !

Default error reaction: Error Is Completely Disregarded

EventID: 250 Warning Word Number (0x3c35 .. / PNU953 ..): 8 Bit: 26

0xFFFB, 65531 User Error No 11

Error:	User Error 11 occurred (Triggered by rising edge of object 0x32FC.00, Bit11)
Cause of Error:	Error is called by PLC program
Measure:	

Error reaction is configurable!

Error is quittable !

Default error reaction: Error Is Completely Disregarded

EventID: 251 Warning Word Number (0x3c35 .. / PNU953 ..): 8 Bit: 27

0xFFFC, 65532 User Error No 12

Error:	User Error 12 occurred (Triggered by rising edge of object 0x32FC.00, Bit12)
Cause of Error:	Error is called by PLC program
Measure:	

Error reaction is configurable!

Error is quittable !

Default error reaction: Error Is Completely Disregarded

EventID: 252 Warning Word Number (0x3c35 .. / PNU953 ..): 8 Bit: 28

0xFFFD, 65533 User Error No 13

Error:	User Error 13 occurred (Triggered by rising edge of object 0x32FC.00, Bit13)
Cause of Error:	Error is called by PLC program
Measure:	

Error reaction is configurable!

Error is quittable !

Default error reaction: Error Is Completely Disregarded

EventID: 253 Warning Word Number (0x3c35 .. / PNU953 ..): 8 Bit: 29

0xFFFE, 65534 User Error No 14

Error:	User Error 14 occurred (Triggered by rising edge of object 0x32FC.00, Bit14)
Cause of Error:	Error is called by PLC program
Measure:	

Error reaction is configurable!

Error is quittable !

Default error reaction: Error Is Completely Disregarded

EventID: 254 Warning Word Number (0x3c35 .. / PNU953 ..): 8 Bit: 30

0xFFFF, 65535 User Error No 15

Error:	User Error 15 occurred (Triggered by rising edge of object 0x32FC.00, Bit15)
Cause of Error:	Error is called by PLC program
Measure:	

Error reaction is configurable!

Error is quittable !

Default error reaction: Error Is Completely Disregarded

EventID: 255 Warning Word Number (0x3c35 .. / PNU953 ..): 8 Bit: 31