

## **TwinCAT Library: Tria-Link Messages**

### ***Application Note AN103***

The Triamec TwinCAT library generates errors, warnings and messages, which are propagated to the user through the TwinCAT Event mechanism. This application note describes all messages and suggests solutions.

This list is generated for library release 3.10.2.

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## 1 Triamec TwinCAT Trialink Adapter

The messages of SourceId 3700 are related to the Tria-Link in general or the Tria-Link adapter. The following list starts with the EventId and its class. The first parameter %1 is always the nDevId of the Tria-Link adapter, see alarm 066.

0065	Message <b>Session consistency check</b>
Description	An internal error of the session handler
Solution	Reduce the number of concurrent accesses to the Tria-Link. If this does not solve the problem, send a bug report to Triamec Motion AG
Details	Class:Alarm; Firmware:LibVersion3.0.0-
0066	Message <b>Trialink PCI board not found</b>
Description	The Tria-Link adapter board as specified by the input Trialink.Config.nDevId in the PLC code was not found in the TwinCat System manager.
Solution	Make sure a Tria-Link PCI board is installed and found in the TwinCat System manager entry for device DPRAM with id=nDevId.
Details	Class:Alarm; Firmware:LibVersion3.0.0-
0067	Message <b>Trialink PCI board: FPGA firmware ID must be 1041 or newer</b>
Description	The Tria-Link PCI board firmware is outdated
Solution	Upgrade to a recent firmware version using the TAM System Explorer
Details	Class:Alarm; Firmware:LibVersion3.0.0-
0068	Message <b>Trialink PCI adapter could not be accessed</b>
Description	Internal local bus communication to the PCI adapter was not possible.
Solution	Shutdown the PC for 20s and reboot, send bug report to Triamec Motion AG.
Details	Class:Alarm; Firmware:LibVersion3.0.0-
0069	Message <b>Trialink not closed(%1) or FastCall missing</b>
Description	The Tria-Link PCI adapter was found but detected an open Tria-Link ring.
Solution	Make sure the ring is closed and all members have gotten 24V. Check cabling. Check if the fast task is missing.
Details	Class:Alarm; Firmware:LibVersion3.0.0-
0070	Message <b>Sampling rate of CallFast is too slow</b>
Description	The sampling rate of the CallFast task in the PLC-Code must be faster or equal than 2ms and faster than CallSlow.
Solution	Adjust the sampling rate of CallFast in the PLC code.
Details	Class:Alarm; Firmware:LibVersion3.0.0-
0071	Message <b>Smart Sync out of bounds</b>
Description	A very large mismatch between the adapter time base and the TwinCat time has been detected.
Solution	Re-Boot the Tria-Link and send an error report to Triamec.
Details	Class:Alarm; Firmware:LibVersion3.0.0-

0072		Message <b>Sync warning: too small buffertime or TwinCat task exceeded too much</b>
	Description	A mismatch has been detected between the adapter time base and the Twin-Cat time. This might be an indication of TwinCat task jitter or task Exceeds or a tight buffer time in Trialink.FastHandler.pll.BufferTicks.
	Solution	Make sure the TwinCat jitter is low and there are no Task Exceeds. Also make sure, BufferTicks * FastTaskTime is larger than TwinCat Jitter.
	Details	Class:Warning; Firmware:LibVersion3.0.0-
0073		Message <b>Trialink Boot Timeout (%1)</b>
	Description	The Tria-Link should be booted but did not reach the end of booting.
	Solution	See solutions for error 069
	Details	Class:Alarm; Firmware:LibVersion3.0.0-
0074		Message <b>Trialink two masters in the ring (%1)</b>
	Description	There are two Tria-Link masters in the ring.
	Solution	Make sure any second PCI board in the ring is configured as "Observer"
	Details	Class:Alarm; Firmware:LibVersion3.0.0-
0075		Message <b>Trialink shutting down (%1)</b>
	Description	The Tria-Link has been turned off by the PLC code.
	Solution	Boot Tria-Link using Trialink.Execute.
	Details	Class:Message; Firmware:LibVersion3.0.0-
0076		Message <b>Trialink booting (%1)</b>
	Description	The Tria-Link is currently booting.
	Solution	Wait until booting has finished.
	Details	Class:Message; Firmware:LibVersion3.0.0-
0077		Message <b>Trialink.Config.Rootfolder is not a valid folder path(%1)</b>
	Description	The Tria-Link PLC configuration contains an invalid path.
	Solution	Modify PLC code
	Details	Class:Message; Firmware:LibVersion3.0.0-
0078		Message <b>FB not supported for TLO400(%1)</b>
	Description	Old adapter mode not supported for TLO400 (Application note AN134).
	Solution	Modify PLC code and use adapter mode Trialink2 instead of Trialink
	Details	Class:Message; Firmware:LibVersion3.0.0-
0079		Message <b>The PCIe board firmware is too old (%1)</b>
	Description	The PCIe firmware is older than the specified minimum firmware version.
	Solution	Instal an actual firmware and shut down the PC for 15 seconds.
	Details	Class:Message; ErrorReaction:FW3.9.0-; Firmware:PENDING: No firmware specified
0080		Message <b>Trialink PCI board unknown</b>
	Description	The Tria-Link adapter board, respectively the Hardware ID is unknown.
	Solution	Make sure that the used library supports the Hardware.
	Details	Class:Alarm; Firmware:LibVersion3.0.0-

## 2 Triamec Tria-Link Messages from the axis object in the library

The messages of SourceId 3701 are related to TwinCAT library axes objects. The first parameter %1 is always the axis ID.

0128		Message <b>Axis internal error (Axis %1)</b>
	Description	An internal error.
	Solution	Reboot Tria-Link and send a bug report to Triamec.
	Details	Class:Alarm; Firmware:LibVersion3.0.0-
0129		Message <b>Axis power RLID not supported (Axis %1)</b>
	Description	The servo drive found at the specified station address is not compatible.
	Solution	Is there a second axis configuration in the PLC code that points to a single axis drive? Is the axis firmware compatible with the library version?
	Details	Class:Alarm; Firmware:LibVersion3.0.0-
0130		Message <b>No communication with drive (Axis %1)</b>
	Description	The drive cannot be accessed through the Tria-Link.
	Solution	Check cabling, check if drive has been made persistent with the correct station address and 24V rebooted ones since.
	Details	Class:Alarm; Firmware:LibVersion3.0.0-
0133		Message <b>PublishAndSubscribe error (Axis %1)</b>
	Description	Same as Alarm 130
	Solution	Check usage of TL_PublishAndSubscribe with correct station numbers.
	Details	Class:Alarm; Firmware:LibVersion3.0.0-
0134		Message <b>Axis power enable but missing communication (Axis %1)</b>
	Description	The drive stopped communicating.
	Solution	Reboot Tria-Link or reboot 24V and send a bug report to Triamec.
	Details	Class:Alarm; Firmware:LibVersion3.0.0-
0137		Message <b>Axis power enable failed (Axis %1)</b>
	Description	Same as Alarm 130.
	Solution	Same as Alarm 130.
	Details	Class:Alarm; Firmware:LibVersion3.0.0-
0140		Message <b>Axis power enable while NotReadyToSwitchOn (Axis %1)</b>
	Description	The axis is not ready to be switched on but PLC code tries to enable
	Solution	Make sure any error is cleared and no axis warnings are active.
	Details	Class:Warning; Firmware:LibVersion3.0.0-
0141		Message <b>Axis move absolute with commanded velocity zero and not discardVelocity (Axis %1)</b>
	Description	A move absolute was commanded with input velocity zero and the input discardVelocity was FALSE. This command was ignored.
	Solution	Check parameters of the function block TL_MoveAbsolute.
	Details	Class:Warning; Firmware:LibVersion3.0.0-

0143		Message <b>Axis power enable but no communication (Axis %1)</b>
	Description	Same as Alarm 130.
	Solution	
	Details	Class:Alarm; Firmware:LibVersion3.0.0-
0145		Message <b>Axis power GetBrakeConfig failed (Axis %1)</b>
	Description	Same as Alarm 130.
	Solution	
	Details	Class:Alarm; Firmware:LibVersion3.0.0-
0147		Message <b>Publish buffer full or abold counter overrun (Axis %1)</b>
	Description	Attempt to acquire too much publish ressources
	Solution	Check usage of TL_PublishAndSubscribe in the PLC code.
	Details	Class:Alarm; Firmware:LibVersion3.0.0-
0148		Message <b>Axis set brake write register failed</b>
	Description	Same as Alarm 130
	Solution	
	Details	Class:Alarm; Firmware:LibVersion3.0.0-
0149		Message <b>Bad axis configuration: bad station or iAxis</b>
	Description	The PLC code configuration parameters "station" or "iAxis" are illegal.
	Solution	Correct PLC code
	Details	Class:Alarm; Firmware:LibVersion3.0.0-
0150		Message <b>Axis MoveAbs/MoveVel/MoveCond commandSend failed (Axis %1)</b>
	Description	Same as Alarm 130.
	Solution	
	Details	Class:Alarm; Firmware:LibVersion3.0.0-
0151		Message <b>Axis MoveAbs/MoveVel axis not ready for move (Axis %1)</b>
	Description	A MoveAbsolute or MoveVelocity was commanded but the axis was not ready to move.
	Solution	Make sure the axis is enabled and is not in an error state.
	Details	Class:Alarm; Firmware:LibVersion3.0.0-
0152		Message <b>Axis MoveAbs/MoveVel command aborted (Axis %1)</b>
	Description	A MoveAbsolute or MoveVelocity command was started but ended before reaching the final state (standstill or ContinuousMotion).
	Solution	Check, if an axis error or a Tama program or another move command has interrupted the command
	Details	Class:Warning; Firmware:LibVersion3.0.0-
0153		Message <b>Axis MoveCondition maximum distance reached (Axis %1)</b>
	Description	A moveToCondition command has reached the maximum travel distance without finding the marker or index. For example in a reference move.
	Solution	Check if the marker or index is connected and shows up at the servo drive IO.
	Details	Class:Alarm; Firmware:LibVersion3.0.0-

0154		Message <b>MC_SetPosition failed (Axis %1)</b>
	Description	It was not possible to stop the axis before setposition or setPosition communication failed.
	Solution	Check if an emergency stop was active.
	Details	Class:Alarm; Firmware:LibVersion3.0.0-
0158		Message <b>Axis Endat failed (Axis %1)</b>
	Description	Failed to read the endat Position.
	Solution	Make sure the encoder supports endat 2.1
	Details	Class:Alarm; Firmware:LibVersion3.0.0-
0170		Message <b>MC_Stop failed (Axis %1)</b>
	Description	Same as Alarm 130.
	Solution	
	Details	Class:Alarm; Firmware:LibVersion3.0.0-
0171		Message <b>MC_Reset failed (Axis %1)</b>
	Description	Same as Alarm 130.
	Solution	
	Details	Class:Alarm; Firmware:LibVersion3.0.0-
0178		Message <b>MC_MoveSync waiting for synchronization (Axis %1)</b>
	Description	The axis should couple to the external path planner (NC) and is waiting for PLL synchronization.
	Solution	This should disappear as soon as the PLL has settled, 10s after booting Tri-alink.
	Details	Class:Message; Firmware:LibVersion3.0.0-
0179		Message <b>MC_MoveSync synchronization lost (Axis %1)</b>
	Description	The synchronization of the PLL was lost while following the external path planner (NC). This might cause irregular commanded drive positions.
	Solution	Check for workpiece irregularities and find what caused irregular calls of the position task, e.g., check for illegal drivers.
	Details	Class:Alarm; Firmware:LibVersion3.0.0-
0180		Message <b>MC_MoveSync, logical axis ID not valid (Axis %1)</b>
	Description	The logical axis ID iAxis must be between 1 and 32=TL_CH_AX_MAX.
	Solution	change configuration settings in the PLC code.
	Details	Class:Alarm; Firmware:LibVersion3.0.0-
0181		Message <b>MoveSync AboSubscribe failed (station%1)</b>
	Description	Abo subscription failed. There might be too many subscriptions active.
	Solution	Correct PLC code.
	Details	Class:Alarm; Firmware:LibVersion3.0.0-
0182		Message <b>MoveSync MoveToStart failed (Axis %1)</b>
	Description	The initial move before entering couple mode failed.
	Solution	Check if the dynamic settings of the axis are too fast.
	Details	Class:Alarm; Firmware:LibVersion3.0.0-

0183		Message <b>MoveSync Coupling failed (Axis %1)</b>
	Description	Entering coupled mode failed
	Solution	Make sure, the commanded position of the NC/CNC is the same as the actual position of the drive in the very moment, the coupling command is issued (axis tracking).
	Details	Class:Alarm; Firmware:LibVersion3.0.0-
0184		Message <b>MoveSync SetPosition failed (Axis %1)</b>
	Description	For unknown reasons, the SetPosition command within coupling failed.
	Solution	This is a special configuration. Please consult Triamec.
	Details	Class:Alarm; Firmware:LibVersion3.0.0-
0185		Message <b>Axis %1 homing is running: searching switch</b>
	Description	The axis is currently searching for an IO, e.g., an end marker switch or a measurement tool signal.
	Solution	
	Details	Class:Message; Firmware:LibVersion3.0.0-
0186		Message <b>Axis %1 homing is running: searching index</b>
	Description	The axis is currently searching for an encoder index.
	Solution	
	Details	Class:Message; Firmware:LibVersion3.0.0-
0187		Message <b>Tama programm used for homing is not running (Axis %1)</b>
	Description	The asynchronous TAMA VM has to be enabled.
	Solution	Load the appropriate tama program used for homing and enable 'start asynchronous Tama virtual machine' in the start up settings (Tam System Explorer).
	Details	Class:Alarm; Firmware:LibVersion3.0.0-
0188		Message <b>Tama programm used for homing is not ready (Axis %1)</b>
	Description	To start the homing sequence, the Tama state has to be IDLE.
	Solution	Check if the correct Tama program is loaded and if the Tama VM is enabled.
	Details	Class:Alarm; Firmware:LibVersion3.0.0-
0189		Message <b>Tama homing error (Axis%1)</b>
	Description	The Tama VM used for homing is in error state.
	Solution	Check if the Tama program and verify if the precondition to run the homing sequence are fulfilled.
	Details	Class:Alarm; Firmware:LibVersion3.0.0-
0191		Message <b>The homing method is not supported (Axis %1)</b>
	Description	The selected homing method is not supported by drive. For example because the selected position source is not available
	Solution	Select a homing method which is supported by the drive.
	Details	Class:Alarm; Firmware:LibVersion3.0.0-

0192		Message <b>The homing method is not supported (Axis %1)</b>
	Description	The register layout of the drive is not supported by the library.
	Solution	Ask Triamec
	Details	Class:Alarm; Firmware:LibVersion3.0.0-
0194		Message <b>Gear factor is zero (Axis %1)</b>
	Description	The function was aborted because the gear factor is zero.
	Solution	Use a gear factor not equal to zero
	Details	Class:Alarm; Firmware:LibVersion3.0.0-
0261		Message <b>Waiting for drive bridge voltage (Axis %1)</b>
	Description	The bridge voltage is not within the specified range in General/Parameters/PowerBridgeVoltageUpperLimit and ...LowerLimit.
	Solution	Check, if the power supply is on.
	Details	Class:Warning; Firmware:LibVersion3.0.0-
0262		Message <b>SafeTorqueOff (STO) is active (Axis %1)</b>
	Description	The STO feature is active. The drive may currently not be enabled.
	Solution	Close the STO connector, e.g., the door. If this warning persists with bridged STO connector, an internal (safety) fuse might be blown.
	Details	Class:Message; Firmware:LibVersion3.0.0-
0264		Message <b>PLL not locked (Axis %1)</b>
	Description	An unknown error has disturbed the PLL of the drive
	Solution	Clear the axis error and send a bug report to Triamec.
	Details	Class:Alarm; Firmware:LibVersion3.0.0-
0265		Message <b>Computing time error (Axis %1)</b>
	Description	Something exceeded the drive controller calculation time.
	Solution	Check if a TAMA program is consuming too much calculation load.
	Details	Class:Alarm; Firmware:LibVersion3.0.0-
0266		Message <b>I2t limit (Axis %1)</b>
	Description	The I2t limit of the motor or drive has been reached
	Solution	Clear the axis error and reduce the dynamic settings of the path controller. Check the parameter Environment/MotorNominalCurrent.
	Details	Class:Alarm; Firmware:LibVersion3.0.0-
0267		Message <b>Current limit motor or drive (Axis %1)</b>
	Description	The limit of the current vector is succeeded (motor or drive).
	Solution	Same as Alarm 266 but check the parameter Environment/MotorPeakCurrent
	Details	Class:Alarm; Firmware:LibVersion3.0.0-
0268		Message <b>Bridge voltage error (Axis %1)</b>
	Description	Same as Warning 261, but because it was enabled before, this was considered an error. This error may also show up, if the application tries to enable an axis before the power supply reached its stable voltage during startup or before its internal inrush-current-relay turned on.
	Solution	Clear the axis error, check if the power supply is on.
	Details	Class:Alarm; Firmware:LibVersion3.0.0-



0269	Description	<p>Message <b>Bridge overcurrent or midvoltage out of range (Axis %1)</b></p> <p>This can be one of two errors: Either the limit of the power bridge current is succeeded. This is a hard limit to prevent damage in a short situation. Or the midvoltage controller of a TSP350/TSP700 detected a deviation from midvoltage.</p>
	Solution	<p>Make sure there is no short of the motor and in case of a TSP350/TSP700 check cabling of the DCBus.</p>
	Details	<p>Class:Alarm; Firmware:LibVersion3.0.0-</p>
0270	Description	<p>Message <b>Temperature limit (Axis %1)</b></p> <p>A temperature sensor of the drive (motor or internal) has reached the limit</p>
	Solution	<p>Make sure there is enough cooling of the drive or the motor</p>
	Details	<p>Class:Alarm; Firmware:LibVersion3.0.0-</p>
0271	Description	<p>Message <b>Voltage out of range (Axis %1)</b></p> <p>At least one operating voltage is out of range</p>
	Solution	<p>Check if the encoder shorts its supply voltage. Otherwise the drive hardware might be damaged.</p>
	Details	<p>Class:Alarm; Firmware:LibVersion3.0.0-</p>
0272	Description	<p>Message <b>External error (Axis %1)</b></p> <p>A software error has been triggered</p>
	Solution	<p>This is application specific. Consider if a TAMA code feature triggers this error.</p>
	Details	<p>Class:Alarm; Firmware:LibVersion3.0.0-</p>
0273	Description	<p>Message <b>No valid Tama code (Axis %1)</b></p> <p>The tama code in the servo drive is not valid</p>
	Solution	<p>Download and activate a valid tama code.</p>
	Details	<p>Class:Alarm; Firmware:LibVersion3.0.0-</p>
0274	Description	<p>Message <b>PERSISTENT parameters are NOT compatible with running firmware (Axis %1)</b></p> <p>This is a special firmware upgrade situation</p>
	Solution	<p>Reload configuration and make the drive persistent again</p>
	Details	<p>Class:Alarm; Firmware:LibVersion3.0.0-</p>
0275	Description	<p>Message <b>While executing a Tama program, the program memory became full during heap allocation (Axis %1)</b></p> <p>A Tama program allocated too much heap.</p>
	Solution	<p>Check memory allocated using the command "new" in the C# code.</p>
	Details	<p>Class:Alarm; Firmware:LibVersion3.0.0-</p>
0276	Description	<p>Message <b>While executing a Tama program, an attempt was made to divide by zero (Axis %1)</b></p> <p>The Tama code aborted due to a division by zero.</p>
	Solution	<p>Prevent division by zero.</p>
	Details	<p>Class:Alarm; Firmware:LibVersion3.0.0-</p>

0277		Message <b>While executing a Tama program, an object property was requested, but there was a null reference (Axis %1)</b>
	Description	This is a TAMA application code problem.
	Solution	Prevent calling null reference
	Details	Class:Alarm; Firmware:LibVersion3.0.0-
0278		Message <b>While executing a Tama program, an array element index was outside the range of the array (Axis %1)</b>
	Description	This is a TAMA application code problem.
	Solution	Make sure index boundaries are maintained.
	Details	Class:Alarm; Firmware:LibVersion3.0.0-
0279		Message <b>While executing a Tama program, Tama program state was corrupted. This value is returned when an unknown operation code is encountered (Axis %1)</b>
	Description	This is a TAMA application code problem.
	Solution	Send a bug report to Triamec.
	Details	Class:Alarm; Firmware:LibVersion3.0.0-
0280		Message <b>Position error limit (Axis %1)</b>
	Description	The position following error has succeeded the maximum distance allowed.
	Solution	Make sure the axis is free to move and check the parameter PositionController/PositionErrorLimit.
	Details	Class:Alarm; Firmware:LibVersion3.0.0-
0283		Message <b>id or iq error limit (Axis %1)</b>
	Description	The current vector exceeded too much from the commanded current.
	Solution	Make sure, the path planner does not command too fast accelerations or jerks. Check the parameter CurrentController/CurrentErrorLimit.
	Details	Class:Alarm; Firmware:LibVersion3.0.0-
0284		Message <b>Enable no motor axis (Axis %1)</b>
	Description	The servo drive configuration does not contain a motor type definition
	Solution	Make sure, there is a valid Triamec configuration on the drive
	Details	Class:Alarm; Firmware:LibVersion3.0.0-
0285		Message <b>Analog encoder amplitude too low (Axis %1)</b>
	Description	The analog encoder amplitude ( $\sin^2 + \cos^2$ ) was too low. This is an indication that the encoder is not connected, or one of the signal lines is damaged.
	Solution	Repair the encoder
	Details	Class:Alarm; Firmware:LibVersion3.0.0-
0286		Message <b>Encoder Shorted (Axis %1)</b>
	Description	The power supply of the encoder is shorted.
	Solution	Repair the encoder or its cable.
	Details	Class:Alarm; Firmware:LibVersion3.0.0-

0287		Message <b>Digital Output Shorted (Axis %1)</b>
	Description	A digital output is shorted.
	Solution	Repair the device attached to the digital output or its cable.
	Details	Class:Alarm; Firmware:LibVersion3.0.0-
0288		Message <b>Motor Continous Current Limit (Axis %1)</b>
	Description	The continuous current limit (I2t) of the motor was reached.
	Solution	Reduce the current or the dynamic settings of the path planner.
	Details	Class:Alarm; Firmware:LibVersion3.0.0-
0289		Message <b>Power Bridge Continous Current Limit (Axis %1)</b>
	Description	The continuous limit of the power bridge was reached.
	Solution	Reduce the current or the dynamic settings of the path planner.
	Details	Class:Alarm; Firmware:LibVersion3.0.0-
0290		Message <b>Hardware monitor on the device is not running (Axis %1)</b>
	Description	This is an internal error
	Solution	Reboot 24V and send a bug report to Triamec
	Details	Class:Alarm; Firmware:LibVersion3.0.0-
0293		Message <b>SafeTorqueOff (STO) error (Axis %1)</b>
	Description	The STO state was detected while the drive was enabled. This causes an error
	Solution	Clear error. PLC code may disable the axis before entering STO mode.
	Details	Class:Alarm; Firmware:LibVersion3.0.0-
0294		Message <b>SafeTorqueOff (STO) is inconsistent (only one contact is closed) (Axis %1)</b>
	Description	The STO state was entered, but only one channel (one pair of contacts) where opened. This is illegal.
	Solution	Make sure STO always opens both channels.
	Details	Class:Alarm; Firmware:LibVersion3.0.0-
0295		Message <b>SafeTorqueOff (STO) startup test failure (Axis %1)</b>
	Description	The boot test of the safety circuit failed.
	Solution	The drive needs to be repaired.
	Details	Class:Alarm; Firmware:LibVersion3.0.0-
0296		Message <b>SafeTorqueOff (STO) pulse test failure (Axis %1)</b>
	Description	The internal pulse test of the STO channels failed.
	Solution	The drive needs to be repaired.
	Details	Class:Alarm; Firmware:LibVersion3.0.0-
0297		Message <b>SafeTorqueOff (STO) Temperature Limit (Axis %1)</b>
	Description	The STO circuit detected a temperature failure and entered the safe state.
	Solution	Make sure temperatures are within the limits and reset the error.
	Details	Class:Alarm; Firmware:LibVersion3.0.0-

0298		Message <b>Motor Peak Current Limit (Axis %1)</b>
	Description	The current of a motor phase reached the peak limit of the motor.
	Solution	Reduce the peak currents or the dynamic settings of the path planner.
	Details	Class:Alarm; Firmware:LibVersion3.0.0-
0299		Message <b>Power bridge peak current limit (Axis %1)</b>
	Description	The current of a motor phase reached the peak limit of the power bridge.
	Solution	Same as for 298.
	Details	Class:Alarm; Firmware:LibVersion3.0.0-
0300		Message <b>Encoder configuration error (Axis %1)</b>
	Description	The encoder parameters are inconsistent.
	Solution	Check the encoder settings.
	Details	Class:Alarm; Firmware:LibVersion3.0.0-
0301		Message <b>Option module failure (Axis %1)</b>
	Description	An option module has been configured but is either missing or not functional.
	Solution	Contact Triamec after verifying that the option module is installed.
	Details	Class:Alarm; Firmware:LibVersion3.0.0-
0302		Message <b>Encoder databus Error (Axis %1)</b>
	Description	Digital Encoder data bus is not connected, or communication failed.
	Solution	Possible cause: faulty wiring, see AN107.
	Details	Class:Alarm; Firmware:LibVersion3.0.0-
0303		Message <b>Encoder not supported (Axis %1)</b>
	Description	This encoder type is not supported.
	Solution	Verify with Triamec if the drive supports your version of a (digital) encoder.
	Details	Class:Alarm; Firmware:LibVersion3.0.0-
0304		Message <b>No digital encoder persistency (Axis %1)</b>
	Description	The encoder does not contain persistency data.
	Solution	Find the reference and save persistency as described in AN107.
	Details	Class:Alarm; Firmware:LibVersion3.0.0-
0305		Message <b>Encoder subresolution error (Axis %1)</b>
	Description	The sub-resolution of the encoder is ambiguous.
	Solution	Possible cause: faulty wiring, see AN107.
	Details	Class:Alarm; Firmware:LibVersion3.0.0-
0306		Message <b>Phase Short (Axis %1)</b>
	Description	The drive detected a short between the motor phases or between a phase and earth during enabling the axis.
	Solution	Test Motor wiring.
	Details	Class:Alarm; Firmware:LibVersion3.0.0-

0307		Message <b>Synchronization Lost (Axis %1)</b>
	Description	Lost the synchronization between TwinCAT and the drive.
	Solution	Check Tria-Link cabling and TwinCAT timing.
	Details	Class:Alarm; Firmware:LibVersion3.0.0-
0308		Message <b>Mid Voltage out of Range (Axis %1)</b>
	Description	The center voltage of this three level drive is out of specification.
	Solution	Check motor shortage against earth. If the error persists, call Triamec Motion AG.
	Details	Class:Alarm; Firmware:LibVersion3.0.0-
0309		Message <b>PowerSupply or Brake not ok (Axis %1)</b>
	Description	The power line voltages are out of specification.
	Solution	Measure the power line voltages.
	Details	Class:Warning; Firmware:LibVersion3.0.0-
0310		Message <b>PowerSupply or Brake not ok (Axis %1)</b>
	Description	The power line voltages are out of specification.
	Solution	Measure the power line voltages.
	Details	Class:Alarm; Firmware:LibVersion3.0.0-
0311		Message <b>Gantry Tracking Error (Axis %1)</b>
	Description	The distance between the two gantry axes was larger than the GantryDeviationLimit.
	Solution	Check the homing positions of both axes.
	Details	Class:Alarm; Firmware:LibVersion3.0.0-
0312		Message <b>Commutation 600Hz Limit (Axis %1)</b>
	Description	The 600Hz commutation frequency limit of this product was reached.
	Solution	Measure the commutation velocity.
	Details	Class:Alarm; Firmware:LibVersion3.0.0-
0313		Message <b>Unspecified Position Unit (Axis %1)</b>
	Description	The position unit is not specified or not known.
	Solution	Specify Parameter/PositionController.Units.
	Details	Class:Alarm; Firmware:LibVersion3.0.0-
0314		Message <b>Motor Temperature Limit (Axis %1)</b>
	Description	The motor temperature limit was reached.
	Solution	Check the motor temperature sensor cabling.
	Details	Class:Alarm; Firmware:LibVersion3.0.0-
0315		Message <b>Axis Parameter Error (Axis %1)</b>
	Description	A parameter of this axis is unknown.
	Solution	Check for unknown parameter enums in this firmware version.
	Details	Class:Alarm; Firmware:LibVersion3.0.0-

0316		Message <b>Axis Command Error (Axis %1)</b>
	Description	A command of this axis is unknown.
	Solution	Check for unknown or illegal command enums.
	Details	Class:Alarm; Firmware:LibVersion3.0.0-
0317		Message <b>Disabling of Axis failed. Transmit of command was not confirmed within timeout. (Axis %1)</b>
	Description	Disabling of Axis failed. Transmit of command was not confirmed within time-out.
	Solution	Reboot Tria-Link and send a bug report to Triamec.
	Details	Class:Alarm; Firmware:LibVersion3.0.0-
0333		Message <b>Homing: First search: (Axis %1)</b>
	Description	This message informs about an ongoing homing in the first search state
	Solution	
	Details	Class:Message; Firmware:LibVersion3.0.0-
0335		Message <b>Homing: Relocation move: (Axis %1)</b>
	Description	This message informs about an ongoing homing in the relocation move state
	Solution	
	Details	Class:Message; Firmware:LibVersion3.0.0-
0344		Message <b>Homing: Second search: (Axis %1)</b>
	Description	This message informs about an ongoing homing in the second search state
	Solution	
	Details	Class:Message; Firmware:LibVersion3.0.0-
0346		Message <b>Homing: Move to home: (Axis %1)</b>
	Description	This message informs about an ongoing homing in the move to home state
	Solution	
	Details	Class:Message; Firmware:LibVersion3.0.0-
0512		Message <b>DirectFeed: Invalid pointer</b>
	Description	The pAxisSlow argument in TL_DirectFeedResampling.callSlow is not a valid pointer to TL_AxisSolw array.
	Solution	Check the pAxisSlow argument in TL_DirectFeedResampling.callSlow.
	Details	Class:Alarm; Firmware:LibVersion3.0.0-
0513		Message <b>DirectFeed: The flag enqueueIsDone is set but the queue is still empty</b>
	Description	The flag enqueueIsDone is set but no data were added to the queue.
	Solution	Check in your code if data were added to the queue before enqueueIsDone is set.
	Details	Class:Alarm; Firmware:LibVersion3.0.0-
0514		Message <b>DirectFeed: Data send failed</b>
	Description	Send data failed because of internal FIFO overflow.
	Solution	Check Trialink communication.
	Details	Class:Alarm; Firmware:LibVersion3.0.0-

0515		Message <b>DirectFeed: Trialink is not ready</b>
	Description	Trialink is not ready.
	Solution	Check Trialink communication.
	Details	Class:Alarm; Firmware:LibVersion3.0.0-
0516		Message <b>Invalid sampling rate for direct feed data</b>
	Description	The requested direct feed sampling rate exceeds the max sampling rate.
	Solution	Reduce the sampling rate in direct feed data.
	Details	Class:Alarm; Firmware:LibVersion3.0.0-
0517		Message <b>DirectFeed: Speed override parameter are out of limit.</b>
	Description	Speed override parameter are out of limit.
	Solution	Check the documentation for the allowed range of the speed override parameters.
	Details	Class:Alarm; Firmware:LibVersion3.0.0-
0518		Message <b>DirectFeed: Invalid axis index</b>
	Description	Out of range axis index or two table columns with same axis index detected.
	Solution	Check the axis index of the direct feed data.
	Details	Class:Alarm; Firmware:LibVersion3.0.0-
0519		Message <b>DirectFeed: Table is nearly empty but import is not done yet</b>
	Description	The table gets empty and enqueueIsDone is not set.
	Solution	Check the timing of TL_DirectFeedResampling.callSlow call and check if enqueueIsDone is set correctly.
	Details	Class:Alarm; Firmware:LibVersion3.0.0-
0520		Message <b>DirectFeed: Abort command failed</b>
	Description	An error occurred during the abort sequence.
	Solution	Check the axis setup and the abort configuration.
	Details	Class:Alarm; Firmware:LibVersion3.0.0-
0521		Message <b>DirectFeed: Calculation of speed override parameters failed</b>
	Description	Calculation of speed override parameters failed.
	Solution	Check the axis setup and the speed override configuration.
	Details	Class:Alarm; Firmware:LibVersion3.0.0-
0522		Message <b>DirectFeed: Internal Error</b>
	Description	Internal Error.
	Solution	Contact Triamec Motion AG.
	Details	Class:Alarm; Firmware:LibVersion3.0.0-
0577		Message <b>DirectFeed: Initial position mismatch (Axis %1)</b>
	Description	Initial position of table does not match with the current axis position.
	Solution	Make sure actual axis position is aligned with the initial table position.
	Details	Class:Alarm; Firmware:LibVersion3.0.0-

0578		Message <b>DirectFeed: Dynamic limits of table are out of the configured axis limits. (Axis %1)</b>
	Description	Dynamic limits of table are out of the configured axis limits.
	Solution	Check the axis configuration or adjust the direct feed tables.
	Details	Class:Alarm; Firmware:LibVersion3.0.0-
0579		Message <b>DirectFeed: Axis is not ready. (Axis %1)</b>
	Description	Axis is not ready, coupled and enabled required.
	Solution	Ensure axes are enabled and coupled before direct feed is executed.
	Details	Class:Alarm; Firmware:LibVersion3.0.0-
0580		Message <b>DirectFeed: Modulo mismatch. (Axis %1)</b>
	Description	Configured modulo wrap in header does not match with the configuration of the axis.
	Solution	Adjust the modulo configuration.
	Details	Class:Alarm; Firmware:LibVersion3.0.0-
0581		Message <b>DirectFeed: Position is out of range (Axis %1)</b>
	Description	Position is out of allowed range.
	Solution	Adjust the position range or the direct feed position.
	Details	Class:Alarm; Firmware:LibVersion3.0.0-
0582		Message <b>DirectFeed: Final position mismatch. (Axis %1)</b>
	Description	The final position of table does not match with the commanded position.
	Solution	Make sure the axis position is aligned with the final table position.
	Details	Class:Alarm; Firmware:LibVersion3.0.0-
0583		Message <b>DirectFeed: Velocity is out of limit. (Axis %1)</b>
	Description	Velocity is out of limit.
	Solution	Check velocity
	Details	Class:Alarm; Firmware:LibVersion3.0.0-
0584		Message <b>DirectFeed: Acceleration is out of limit. (Axis %1)</b>
	Description	Acceleration is out of limit.
	Solution	Check acceleration.
	Details	Class:Alarm; Firmware:LibVersion3.0.0-



## Revision History

Version	Date	Editor	Comment
001	2013-01-25	mvx	Copy from Event file and add descriptions and solutions
002	2013-05-22	mvx	Add comment on bridge voltage error and new errors for firmware 1040
003	2014-10-20	dg	Add Reference by Tama information messages 187, 188, 189 (SVN671)
005	2016-01-19	dg	Messages added used for homing with TSD80 (191,...193)
006	2016-03-14	mvx	New messages for digital endat encoders. (302..305) (TSD80)
007	2017-09-05	mvx	New messages (306..309) for (FW1048 and 1049) (TC2: 305.6 / TC3: 371.7)
008	2018-06-30	dg	Changed 309 to Warning and added 310 as alarm.
009	2019-04-29	mvx	New errors 311-316
010	2020-01-27	dg	New error 317
011	2022-03-22	chm	Renamed from TwinCAT-ErrorMessages. Restructuring of the whole document.
012	2023-03-06	sm	Move EtherCAT Legacy Codes to AN151.
013	2024-04-04	dg,ab	Update to LibRelease 3.10.2 (direct feed error messages added, correct version field)

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Triamec Motion AG  
Lindenstrasse 16  
6340 Baar / Switzerland

Phone +41 41 747 4040  
Email [info@triamec.com](mailto:info@triamec.com)  
Web [www.triamec.com](http://www.triamec.com)

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