



PLC Integration of TL305_5001

IO-Link service data function block + process data parser function for Beckhoff (TwinCAT 3.x) PLC systems in combination with a EtherCAT IO-Link Master

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1 Legal information

1.1 Disclaimer

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2 About this document

Please read this chapter carefully before working with this documentation and the Leuze IO-Link device.

2.1 Purpose of use

These instructions have been designed for the technical personnel for the use of the IO-Link PLC blocks.

These instructions are intended to provide support during the commissioning of a Leuze IO-Link sensor using standard software from Siemens. The described module is part of this standard software.

2.2 Target group

These instructions are addressed to programming engineers and the operators of machines and systems, which are operated by one or several IO-Link devices. They also address people, who connect the IO-Link device via an IO-Link-Master-Gateway to a PLC-Control for data exchange.

3 General use of function block

3.1 Short description

The function block "FB_Leuze_IOL_TL305_5001" simplifies the usage of Leuze IO-Link devices on Beckhoff (TwinCAT 3.x) PLC controls. This FB supports IO-Link Masters which can be connected via EtherCAT to the PLC system.

The function block is device type-specific and thus only suitable for the appropriate Leuze IO-Link devices. The FB interprets the call-up of the acyclic service data between the PLC and the IO-Link device.

The IO-Link function block can only be used in combination with the listed helper functions / libraries.

3.2 Calling and designation



Fig. 3.1: Example of module call

3.3 Configuration

Tab. 3.1: Parameter IN

Parameter	Data type	Description
bExecute	Bool	Positive trigger: Start data transfer
bRW	Bool	Read or write the selected IO-Link parameter. FALSE: Read parameter TRUE: Write Parameter
nPort	T_AmsPort	Port number of the ADS device.
sNetId	T_AmsNetID	String containing the AMS network identifier of the target device to which the ADS command is directed. Beckhoff EL6224/EP6224: AoeNetId of the IO-Link Master
nIdxGroup	UDInt	Index group number.
tTimeOut	Time	Time, after a Timeout-Error is triggered.

Tab. 3.2: Parameter INOUT

Parameter	Data type	Description
stDeviceData	ST_Leuze_IOL_TL305_5001	Sensor data

See structure description of ST_Leuze_IOL_TL305_5001 in chapter 7.

Tab. 3.3: Parameter OUT

Parameter	Data type	Description
bDone	Bool	Indicates whether data is valid.

Parameter	Data type	Description
bBusy	Bool	Request in process. FALSE: Request is terminated TRUE: Request is being processed
bError	Bool	Error flag FALSE: No error TRUE: Error detected
stErrorCode	ST_Leuze_IOL_Error	Status of the function block

See structure description of ST_Leuze_IOL_Error in chapter 6.

3.4 Method of function

The function block uses the data structure "ST_Leuze_IOL_TL305_5001". The PLC data structure contains the values of all IO-Link variables. Before you can use it, the structure must be instantiated by a data block. Each IO-Link FB parameter has a data point representing it in this data structure. This data point will be actualized every time a read request was executed successfully.

The desired parameters can be selected via the input variables. Depending on the device definition, IO-Link parameters are read or writable. The input variable must be "bRW" = FALSE to read parameter. The value that should be written can be defined in the data structure, as soon as the input parameter "bRW" = TRUE. You start each transfer by calling up the "FB_Leuze_IOL_TL305_5001" with a positive trigger at the "bExecute" input. As long as there is no valid answer the output "bBusy" is TRUE. In the case that the chosen timeout period has elapsed a timeout error will be generated and the thread will be terminated. The "bDone" = TRUE output shows that the transmission was successful. The outputs retain there states as long as there is no new positive trigger at the "bExecute" input again.

The function block allows you to read or write multiple IO-Link parameters sequentially (multi-selection). Please note that it may happen, that a single parameter can not be written. The function block aborts at this point and it is possible, that the IO-Link device contains an inconsistent set of parameters.

3.5 Behavior when error occurs


An error bit (bError) is set and an error code (ST_Leuze_IOL_Error) generated, if there is a spurious input value or an incorrect input connection of the FB. In this case, no further processing is carried out, until the input has been corrected.

4 Integration into the PLC project

The function block "FB_Leuze_IOL_TL305_5001" is a part of the TwinCAT V3.x library. The library can be installed by using the Library Repository. Afterwards the library can be added to your project (References --> Add library...).

Integration step by step:

- Download the library
- Open the Library repository in Library Manager tab in Beckhoff TwinCAT
- Click Install... and select downloaded library
- Open Add library in Library Manager tab
- Find installed library under Leuze electronic GmbH + Co. KG

NOTICE	
	If several devices connect to the IO-Link Master, you can only exchange acyclic data (service data) with one device at the same time. Due this restriction, the service data communication blocks must to be blocked against each other.

5 Process data parser function

The function -- Process Data Function not generated for this device -- simplifies the interpretation of composed IO-Link process data. This data is provided as a data structure on the PLC side. Some sensors supports different process data output. User must select mode of PD according to the sensors settings.

The function is device type-specific and thus only suitable for the appropriated Leuze IO-Link devices.

5.1 Calling and designation



Fig. 5.1: Example of process data parsing function call

5.2 Configuration

Tab. 5.1: Parameters

Parameter name	Declaration	Data type	Description
aProcessData	INPUT	ARRAY OF BYTE	Raw process data of the IO-Link device.
nPDMode	INPUT	INT	Mode of the PD. User must select mode of PD according to the sensors settings. The PD Mode parameter only appears for some sensors.
bError	OUTPUT	BOOL	Error flag FALSE: No error TRUE: Error detected
-- Process Data Function not generated for this device --	OUTPUT	-- Process Data UDT not generated for this device --	Reference to the instance of the data structure -- Process Data UDT not generated for this device --. The structure includes the disaggregated values of the process data.

See structure description of -- Process Data UDT not generated for this device -- in chapter 7.

6 Error description

The parameter "ErrorCode" can be interpreted using the PLC data type ST_Leuze_IOL_Error. This data type contains the following error information:

Tab. 6.1: ST_Leuze_IOL_Error description

Parameter name	Data type	Description
ErrorStatus.nBlockError	WORD	Error number representing FB where error occurred
ErrorStatus.nAdsReadError	UDINT	ADS read error code
ErrorStatus.nAdsWriteError	UDINT	ADS write error code
ErrorStatus.nIndex	INT	IO-Link index to which the error code refers
ErrorStatus.nSubIndex	INT	IO-Link sub-index to which the error code refers

Tab. 6.2: Error description for nBlockError

Error code (nBlockError)	Error description
0x0000	No error
0x8001	Time out error occurred
0x8002	No parameter selected
0x8003	Error in FB_Leuze_IOL_AdsReadWrite block

For additional information see the Beckhoff ADS Return Codes (<https://infosys.beckhoff.com>).

Tab. 6.3: Description of device specific errors.

Error code	Error name	Description
0x800	Device application error - no details	Service was denied by the technology-specific application. No detailed root-cause information is available.
0x8011	Index not available	Read or write access attempt to a non-existing index.
0x8012	Subindex not available	Read or write access attempt to a non-existing subindex of an existing index.
0x8020	Service temporarily not available	Parameter not accessible due to the current state of the technology-specific application.
0x8023	Access denied	Write access to a read-only parameter or read access to write-only parameter.
0x8030	Parameter value out of range	Written parameter value is outside of the permitted value range.
0x8031	Parameter value above limit	Written parameter value is above its specified value range.
0x8032	Parameter value below limit	Written parameter value is below its specified value range.
0x8033	Parameter length overrun	Written parameter is longer than specified.
0x8034	Parameter length underrun	Written parameter is shorter than specified.

Error code	Error name	Description
0x8035	Function unavailable	Written command is not supported by the technology-specific application.
0x8036	Function temporarily unavailable	Written command is unavailable due to the current state of the technology-specific application.
0x8040	Invalid parameter set	Written single parameter value collides with other existing parameter settings.
0x8041	Inconsistent parameter set	Parameter set inconsistencies at the end of block parameter transfer. Device plausibility check failed.
0x8082	Application not ready	Read or write access denied. The technology-specific application is temporarily unavailable.

7 Data structures

Tab. 7.1: ST_Leuze_IOL_TL305_5001

Parameter name	Data type	Description
stDeviceData.stSelection.stCommands.bCmdRestoreFactorySettings	BOOL	[WRITE_ONLY] Restore Factory Settings
stDeviceData.stSelection.stCommands.bCmdLocatorStart	BOOL	[WRITE_ONLY] Locator Start
stDeviceData.stSelection.stCommands.bCmdLocatorStop	BOOL	[WRITE_ONLY] Locator Stop
stDeviceData.stSelection.stCommands.bCmdFunctionTest	BOOL	[WRITE_ONLY] Function Test
stDeviceData.stSelection.stCommands.bCmdFunctionTestStop	BOOL	[WRITE_ONLY] Function Test stop
stDeviceData.stSelection.stCommands.bCmdResetToFactorySettingsColor0	BOOL	[WRITE_ONLY] Reset to Factory Settings Color 0
stDeviceData.stSelection.stCommands.bCmdResetToFactorySettingsColor1	BOOL	[WRITE_ONLY] Reset to Factory Settings Color 1
stDeviceData.stSelection.stCommands.bCmdResetToFactorySettingsColor2	BOOL	[WRITE_ONLY] Reset to Factory Settings Color 2
stDeviceData.stSelection.stCommands.bCmdResetToFactorySettingsColor3	BOOL	[WRITE_ONLY] Reset to Factory Settings Color 3
stDeviceData.stSelection.stCommands.bCmdResetToFactorySettingsColor4	BOOL	[WRITE_ONLY] Reset to Factory Settings Color 4
stDeviceData.stSelection.stCommands.bCmdResetToFactorySettingsColor5	BOOL	[WRITE_ONLY] Reset to Factory Settings Color 5
stDeviceData.stSelection.stCommands.bCmdResetToFactorySettingsColor6	BOOL	[WRITE_ONLY] Reset to Factory Settings Color 6
stDeviceData.stSelection.stCommands.bCmdResetToFactorySettingsColor7	BOOL	[WRITE_ONLY] Reset to Factory Settings Color 7
stDeviceData.stSelection.stCommands.bCmdIoLink11SystemTestCommand240Event8DfeAppears	BOOL	[WRITE_ONLY] IO-Link 1.1 system test command 240, Event 8DFE appears
stDeviceData.stSelection.stCommands.bCmdIoLink11SystemTestCommand241Event8DfeDisappears	BOOL	[WRITE_ONLY] IO-Link 1.1 system test command 241, Event 8DFE disappears
stDeviceData.stSelection.stCommands.bCmdIoLink11SystemTestCommand242Event8DffAppears	BOOL	[WRITE_ONLY] IO-Link 1.1 system test command 242, Event 8DFF appears
stDeviceData.stSelection.stCommands.bCmdIoLink11SystemTestCommand243Event8DffDisappears	BOOL	[WRITE_ONLY] IO-Link 1.1 system test command 243, Event 8DFF disappears
stDeviceData.stSelection.stDirectParametersPage1.bAll	BOOL	[READ_WRITE] all parameters of complex data type
stDeviceData.stSelection.stDirectParametersPage1.bReserved_1	BOOL	[READ_ONLY] ; Suffix "_1" (parameter index or subindex) added because of duplicate parameter names.
stDeviceData.stSelection.stDirectParametersPage1.bMasterCycleTime	BOOL	[READ_ONLY] Communication: Current communication cycle duration used by the master. This value defines the process data cycle.

Parameter name	Data type	Description
stDeviceData.stSelection.stDirectParametersPage1. bMinCycleTime	BOOL	[READ_ONLY] Communication: Minimum communication cycle duration supported by the device. This value defines the lowest possible process data cycle.
stDeviceData.stSelection.stDirectParametersPage1. bMSequenceCapability	BOOL	[READ_ONLY] Communication: Information on the structure and the supported features of the communication messages.
stDeviceData.stSelection.stDirectParametersPage1. bloLinkRevisionId	BOOL	[READ_ONLY] Communication: Identifier for the currently used communication protocol revision.
stDeviceData.stSelection.stDirectParametersPage1. bProcessDataInputLength	BOOL	[READ_ONLY] Communication: Information on width and features of the process input data (Process Data from Device to Master).
stDeviceData.stSelection.stDirectParametersPage1. bProcessDataOutputLength	BOOL	[READ_ONLY] Communication: Information on width of the process output data (Process Data from Master to Device).
stDeviceData.stSelection.stDirectParametersPage1.bVendorId1	BOOL	[READ_ONLY] Identification: Highest octet of the Vendor ID. Combined with the parameter Vendor ID 2, this parameter defines the 16-bit value of the unique Vendor ID as assigned by the IO-Link Community.
stDeviceData.stSelection.stDirectParametersPage1.bVendorId2	BOOL	[READ_ONLY] Identification: Lowest octet of the Vendor ID. Combined with the parameter Vendor ID 1, this parameter defines the 16-bit value of the unique Vendor ID as assigned by the IO-Link Community.
stDeviceData.stSelection.stDirectParametersPage1.bDeviceId1	BOOL	[READ_ONLY] Identification: Highest octet of the Device ID. Combined with the parameters Device ID 2 and 3, this parameter defines the 24-bit value of the vendor-specific Device ID.

Parameter name	Data type	Description
stDeviceData.stSelection.stDirectParametersPage1.bDeviceId2	BOOL	[READ_ONLY] Identification: Middle octet of the Device ID. Combined with the parameters Device ID 1 and 3, this parameter defines the 24-bit value of the vendor-specific Device ID.
stDeviceData.stSelection.stDirectParametersPage1.bDeviceId3	BOOL	[READ_ONLY] Identification: Lowest octet of the Device ID. Combined with the parameters Device ID 1 and 2, this parameter defines the 24-bit value of the vendor-specific Device ID.
stDeviceData.stSelection.stDirectParametersPage1.bReserved_13	BOOL	[READ_ONLY] ; Suffix "_13" (parameter index or subindex) added because of duplicate parameter names.
stDeviceData.stSelection.stDirectParametersPage1.bReserved_14	BOOL	[READ_ONLY] ; Suffix "_14" (parameter index or subindex) added because of duplicate parameter names.
stDeviceData.stSelection.stDirectParametersPage1.bReserved_15	BOOL	[READ_ONLY] ; Suffix "_15" (parameter index or subindex) added because of duplicate parameter names.
stDeviceData.stSelection.stDirectParametersPage1.bSystemCommand	BOOL	[WRITE_ONLY] Application: Command interface for devices without ISDU support. Validity and execution of commands are not confirmed.
stDeviceData.stSelection.stDirectParametersPage2.bAll	BOOL	[READ_WRITE] all parameters of complex data type
stDeviceData.stSelection.stDirectParametersPage2.bDeviceSpecificParameter1	BOOL	[READ_WRITE]
stDeviceData.stSelection.stDirectParametersPage2.bDeviceSpecificParameter2	BOOL	[READ_WRITE]
stDeviceData.stSelection.stDirectParametersPage2.bDeviceSpecificParameter3	BOOL	[READ_WRITE]
stDeviceData.stSelection.stDirectParametersPage2.bDeviceSpecificParameter4	BOOL	[READ_WRITE]
stDeviceData.stSelection.stDirectParametersPage2.bDeviceSpecificParameter5	BOOL	[READ_WRITE]
stDeviceData.stSelection.stDirectParametersPage2.bDeviceSpecificParameter6	BOOL	[READ_WRITE]
stDeviceData.stSelection.stDirectParametersPage2.bDeviceSpecificParameter7	BOOL	[READ_WRITE]
stDeviceData.stSelection.stDirectParametersPage2.bDeviceSpecificParameter8	BOOL	[READ_WRITE]
stDeviceData.stSelection.stDirectParametersPage2.bDeviceSpecificParameter9	BOOL	[READ_WRITE]

Parameter name	Data type	Description
stDeviceData.stSelection.stDirectParametersPage2. bDeviceSpecificParameter10	BOOL	[READ_WRITE]
stDeviceData.stSelection.stDirectParametersPage2. bDeviceSpecificParameter11	BOOL	[READ_WRITE]
stDeviceData.stSelection.stDirectParametersPage2. bDeviceSpecificParameter12	BOOL	[READ_WRITE]
stDeviceData.stSelection.stDirectParametersPage2. bDeviceSpecificParameter13	BOOL	[READ_WRITE]
stDeviceData.stSelection.stDirectParametersPage2. bDeviceSpecificParameter14	BOOL	[READ_WRITE]
stDeviceData.stSelection.stDirectParametersPage2. bDeviceSpecificParameter15	BOOL	[READ_WRITE]
stDeviceData.stSelection.stDirectParametersPage2. bDeviceSpecificParameter16	BOOL	[READ_WRITE]
stDeviceData.stSelection.bSystemCommand	BOOL	[WRITE_ONLY] Command interface for applications. A positive acknowledge indicates the complete and correct finalization of the requested function.
stDeviceData.stSelection.stDeviceAccessLocks.bAll	BOOL	[READ_WRITE] all parameters of complex data type
stDeviceData.stSelection.bVendorName	BOOL	[READ_ONLY] The vendor name that is assigned to a Vendor ID.
stDeviceData.stSelection.bVendorText	BOOL	[READ_ONLY] Additional information about the vendor.
stDeviceData.stSelection.bProductName	BOOL	[READ_ONLY] Complete product name.
stDeviceData.stSelection.bProductId	BOOL	[READ_ONLY] Vendor-specific product or type identification (e.g., item number or model number).
stDeviceData.stSelection.bProductText	BOOL	[READ_ONLY] Additional product information for the device.
stDeviceData.stSelection.bSerialNumber	BOOL	[READ_ONLY] Unique, vendor-specific identifier of the individual device.
stDeviceData.stSelection.bHardwareRevision	BOOL	[READ_ONLY] Unique, vendor-specific identifier of the hardware revision of the individual device.
stDeviceData.stSelection.bFirmwareRevision	BOOL	[READ_ONLY] Unique, vendor-specific identifier of the firmware revision of the individual device.
stDeviceData.stSelection.bApplicationSpecificTag	BOOL	[READ_WRITE] Possibility to mark a device with user- or application-specific information.
stDeviceData.stSelection.bFunctionTag	BOOL	[READ_WRITE] User defined function tag
stDeviceData.stSelection.bLocationTag	BOOL	[READ_WRITE] User defined location tag

Parameter name	Data type	Description
stDeviceData.stSelection.bErrorCount	BOOL	[READ_ONLY] Number of errors that occurred in the technology-specific application since power on or restart.
stDeviceData.stSelection.bDeviceStatus	BOOL	[READ_ONLY] Indicator for the current device condition and diagnosis state.
stDeviceData.stSelection.stDetailedDeviceStatus.bAll	BOOL	[READ_ONLY] all parameters of complex data type
stDeviceData.stSelection.bLot	BOOL	[READ_ONLY] Production Lot
stDeviceData.stSelection.bTemperature	BOOL	[READ_ONLY] Device Temperature
stDeviceData.stSelection.bOperatingHours	BOOL	[READ_ONLY] Duration of Duty
stDeviceData.stSelection.bNumberOfSwitchOn	BOOL	[READ_ONLY] Number of Switch On
stDeviceData.stSelection.bMinimalTemperature	BOOL	[READ_ONLY] Minimal Temperature in Use
stDeviceData.stSelection.bMaximalTemperature	BOOL	[READ_ONLY] Maximal Temperature in Use
stDeviceData.stSelection.bErrorIndicationIOLCommunication	BOOL	[READ_WRITE] Error Indication IOL-Communication
stDeviceData.stSelection.bDeviceControl	BOOL	[READ_WRITE] Device Control
stDeviceData.stSelection.bSelectionPreSet	BOOL	[READ_WRITE] Simulation of all eight selectable presets in external trigger mode parallel to an IO-Link connection
stDeviceData.stSelection.bSelectionNumberOfSegments	BOOL	[READ_WRITE] Selection of the number of segments in segment mode (PD)
stDeviceData.stSelection.bDirectionOfDisplay	BOOL	[READ_WRITE] Direction Of Display
stDeviceData.stSelection.bMode	BOOL	[READ_WRITE] Mode
stDeviceData.stSelection.bDynamicModeActiveSegment	BOOL	[READ_WRITE] Dynamic mode active segment (foreground color)
stDeviceData.stSelection.bDynamicModeInactiveSegment	BOOL	[READ_WRITE] Dynamic mode inactive segment (background color)
stDeviceData.stSelection.bName_620	BOOL	[READ_WRITE] Designation freely selectable; Suffix "_620" (parameter index or subindex) added because of duplicate parameter names.

Parameter name	Data type	Description
stDeviceData.stSelection.bName_621	BOOL	[READ_WRITE] Designation freely selectable; Suffix "_621" (parameter index or subindex) added because of duplicate parameter names.
stDeviceData.stSelection.bName_622	BOOL	[READ_WRITE] Designation freely selectable; Suffix "_622" (parameter index or subindex) added because of duplicate parameter names.
stDeviceData.stSelection.bName_623	BOOL	[READ_WRITE] Designation freely selectable; Suffix "_623" (parameter index or subindex) added because of duplicate parameter names.
stDeviceData.stSelection.bName_624	BOOL	[READ_WRITE] Designation freely selectable; Suffix "_624" (parameter index or subindex) added because of duplicate parameter names.
stDeviceData.stSelection.bName_625	BOOL	[READ_WRITE] Designation freely selectable; Suffix "_625" (parameter index or subindex) added because of duplicate parameter names.
stDeviceData.stSelection.bName_626	BOOL	[READ_WRITE] Designation freely selectable; Suffix "_626" (parameter index or subindex) added because of duplicate parameter names.
stDeviceData.stSelection.bName_627	BOOL	[READ_WRITE] Designation freely selectable; Suffix "_627" (parameter index or subindex) added because of duplicate parameter names.
stDeviceData.stSelection.stColorProportion_650.bAll	BOOL	[READ_WRITE] all parameters of complex data type
stDeviceData.stSelection.stColorProportion_650.bRed	BOOL	[READ_WRITE] Red Proportion
stDeviceData.stSelection.stColorProportion_650.bGreen	BOOL	[READ_WRITE] Green Proportion
stDeviceData.stSelection.stColorProportion_650.bBlue	BOOL	[READ_WRITE] Blue Proportion
stDeviceData.stSelection.stColorProportion_651.bAll	BOOL	[READ_WRITE] all parameters of complex data type
stDeviceData.stSelection.stColorProportion_651.bRed	BOOL	[READ_WRITE] Red Proportion

Parameter name	Data type	Description
stDeviceData.stSelection.stColorProportion_651.bGreen	BOOL	[READ_WRITE] Green Proportion
stDeviceData.stSelection.stColorProportion_651.bBlue	BOOL	[READ_WRITE] Blue Proportion
stDeviceData.stSelection.stColorProportion_652.bAll	BOOL	[READ_WRITE] all parameters of complex data type
stDeviceData.stSelection.stColorProportion_652.bRed	BOOL	[READ_WRITE] Red Proportion
stDeviceData.stSelection.stColorProportion_652.bGreen	BOOL	[READ_WRITE] Green Proportion
stDeviceData.stSelection.stColorProportion_652.bBlue	BOOL	[READ_WRITE] Blue Proportion
stDeviceData.stSelection.stColorProportion_653.bAll	BOOL	[READ_WRITE] all parameters of complex data type
stDeviceData.stSelection.stColorProportion_653.bRed	BOOL	[READ_WRITE] Red Proportion
stDeviceData.stSelection.stColorProportion_653.bGreen	BOOL	[READ_WRITE] Green Proportion
stDeviceData.stSelection.stColorProportion_653.bBlue	BOOL	[READ_WRITE] Blue Proportion
stDeviceData.stSelection.stColorProportion_654.bAll	BOOL	[READ_WRITE] all parameters of complex data type
stDeviceData.stSelection.stColorProportion_654.bRed	BOOL	[READ_WRITE] Red Proportion
stDeviceData.stSelection.stColorProportion_654.bGreen	BOOL	[READ_WRITE] Green Proportion
stDeviceData.stSelection.stColorProportion_654.bBlue	BOOL	[READ_WRITE] Blue Proportion
stDeviceData.stSelection.stColorProportion_655.bAll	BOOL	[READ_WRITE] all parameters of complex data type
stDeviceData.stSelection.stColorProportion_655.bRed	BOOL	[READ_WRITE] Red Proportion
stDeviceData.stSelection.stColorProportion_655.bGreen	BOOL	[READ_WRITE] Green Proportion
stDeviceData.stSelection.stColorProportion_655.bBlue	BOOL	[READ_WRITE] Blue Proportion
stDeviceData.stSelection.stColorProportion_656.bAll	BOOL	[READ_WRITE] all parameters of complex data type
stDeviceData.stSelection.stColorProportion_656.bRed	BOOL	[READ_WRITE] Red Proportion
stDeviceData.stSelection.stColorProportion_656.bGreen	BOOL	[READ_WRITE] Green Proportion
stDeviceData.stSelection.stColorProportion_656.bBlue	BOOL	[READ_WRITE] Blue Proportion
stDeviceData.stSelection.stColorProportion_657.bAll	BOOL	[READ_WRITE] all parameters of complex data type
stDeviceData.stSelection.stColorProportion_657.bRed	BOOL	[READ_WRITE] Red Proportion
stDeviceData.stSelection.stColorProportion_657.bGreen	BOOL	[READ_WRITE] Green Proportion

Parameter name	Data type	Description
stDeviceData.stSelection.stColorProportion_657.bBlue	BOOL	[READ_WRITE] Blue Proportion
stDeviceData.stSelection.stSeg1_681.bAll	BOOL	[READ_WRITE] all parameters of complex data type
stDeviceData.stSelection.stSeg1_681.bIntensity	BOOL	[READ_WRITE] Intensity
stDeviceData.stSelection.stSeg1_681.bDynamicMode	BOOL	[READ_WRITE] Dynamic-Mode
stDeviceData.stSelection.stSeg2_682.bAll	BOOL	[READ_WRITE] all parameters of complex data type
stDeviceData.stSelection.stSeg2_682.bIntensity	BOOL	[READ_WRITE] Intensity
stDeviceData.stSelection.stSeg2_682.bDynamicMode	BOOL	[READ_WRITE] Dynamic-Mode
stDeviceData.stSelection.stSeg3_683.bAll	BOOL	[READ_WRITE] all parameters of complex data type
stDeviceData.stSelection.stSeg3_683.bIntensity	BOOL	[READ_WRITE] Intensity
stDeviceData.stSelection.stSeg3_683.bDynamicMode	BOOL	[READ_WRITE] Dynamic-Mode
stDeviceData.stSelection.bBuzzer_700	BOOL	[READ_WRITE] intermittent slow (1Hz) / intermittent fast (2,5Hz); Suffix "_700" (parameter index or subindex) added because of duplicate parameter names.
stDeviceData.stSelection.stSeg1_701.bAll	BOOL	[READ_WRITE] all parameters of complex data type
stDeviceData.stSelection.stSeg1_701.bColor	BOOL	[READ_WRITE] Color
stDeviceData.stSelection.stSeg1_701.bIntensity	BOOL	[READ_WRITE] Intensity
stDeviceData.stSelection.stSeg1_701.bMode	BOOL	[READ_WRITE] Mode
stDeviceData.stSelection.stSeg2_702.bAll	BOOL	[READ_WRITE] all parameters of complex data type
stDeviceData.stSelection.stSeg2_702.bColor	BOOL	[READ_WRITE] Color
stDeviceData.stSelection.stSeg2_702.bIntensity	BOOL	[READ_WRITE] Intensity
stDeviceData.stSelection.stSeg2_702.bMode	BOOL	[READ_WRITE] Mode
stDeviceData.stSelection.stSeg3_703.bAll	BOOL	[READ_WRITE] all parameters of complex data type
stDeviceData.stSelection.stSeg3_703.bColor	BOOL	[READ_WRITE] Color
stDeviceData.stSelection.stSeg3_703.bIntensity	BOOL	[READ_WRITE] Intensity
stDeviceData.stSelection.stSeg3_703.bMode	BOOL	[READ_WRITE] Mode

Parameter name	Data type	Description
stDeviceData.stSelection.bBuzzer_720	BOOL	[READ_WRITE] intermittent slow (1Hz) / intermittent fast (2,5Hz); Suffix "_720" (parameter index or subindex) added because of duplicate parameter names.
stDeviceData.stSelection.stSeg1_721.bAll	BOOL	[READ_WRITE] all parameters of complex data type
stDeviceData.stSelection.stSeg1_721.bColor	BOOL	[READ_WRITE] Color
stDeviceData.stSelection.stSeg1_721.bIntensity	BOOL	[READ_WRITE] Intensity
stDeviceData.stSelection.stSeg1_721.bMode	BOOL	[READ_WRITE] Mode
stDeviceData.stSelection.stSeg2_722.bAll	BOOL	[READ_WRITE] all parameters of complex data type
stDeviceData.stSelection.stSeg2_722.bColor	BOOL	[READ_WRITE] Color
stDeviceData.stSelection.stSeg2_722.bIntensity	BOOL	[READ_WRITE] Intensity
stDeviceData.stSelection.stSeg2_722.bMode	BOOL	[READ_WRITE] Mode
stDeviceData.stSelection.stSeg3_723.bAll	BOOL	[READ_WRITE] all parameters of complex data type
stDeviceData.stSelection.stSeg3_723.bColor	BOOL	[READ_WRITE] Color
stDeviceData.stSelection.stSeg3_723.bIntensity	BOOL	[READ_WRITE] Intensity
stDeviceData.stSelection.stSeg3_723.bMode	BOOL	[READ_WRITE] Mode
stDeviceData.stSelection.bBuzzer_740	BOOL	[READ_WRITE] intermittent slow (1Hz) / intermittent fast (2,5Hz); Suffix "_740" (parameter index or subindex) added because of duplicate parameter names.
stDeviceData.stSelection.stSeg1_741.bAll	BOOL	[READ_WRITE] all parameters of complex data type
stDeviceData.stSelection.stSeg1_741.bColor	BOOL	[READ_WRITE] Color
stDeviceData.stSelection.stSeg1_741.bIntensity	BOOL	[READ_WRITE] Intensity
stDeviceData.stSelection.stSeg1_741.bMode	BOOL	[READ_WRITE] Mode
stDeviceData.stSelection.stSeg2_742.bAll	BOOL	[READ_WRITE] all parameters of complex data type
stDeviceData.stSelection.stSeg2_742.bColor	BOOL	[READ_WRITE] Color
stDeviceData.stSelection.stSeg2_742.bIntensity	BOOL	[READ_WRITE] Intensity
stDeviceData.stSelection.stSeg2_742.bMode	BOOL	[READ_WRITE] Mode

Parameter name	Data type	Description
stDeviceData.stSelection.stSeg3_743.bAll	BOOL	[READ_WRITE] all parameters of complex data type
stDeviceData.stSelection.stSeg3_743.bColor	BOOL	[READ_WRITE] Color
stDeviceData.stSelection.stSeg3_743.bIntensity	BOOL	[READ_WRITE] Intensity
stDeviceData.stSelection.stSeg3_743.bMode	BOOL	[READ_WRITE] Mode
stDeviceData.stSelection.bBuzzer_760	BOOL	[READ_WRITE] intermittent slow (1Hz) / intermittent fast (2,5Hz); Suffix "_760" (parameter index or subindex) added because of duplicate parameter names.
stDeviceData.stSelection.stSeg1_761.bAll	BOOL	[READ_WRITE] all parameters of complex data type
stDeviceData.stSelection.stSeg1_761.bColor	BOOL	[READ_WRITE] Color
stDeviceData.stSelection.stSeg1_761.bIntensity	BOOL	[READ_WRITE] Intensity
stDeviceData.stSelection.stSeg1_761.bMode	BOOL	[READ_WRITE] Mode
stDeviceData.stSelection.stSeg2_762.bAll	BOOL	[READ_WRITE] all parameters of complex data type
stDeviceData.stSelection.stSeg2_762.bColor	BOOL	[READ_WRITE] Color
stDeviceData.stSelection.stSeg2_762.bIntensity	BOOL	[READ_WRITE] Intensity
stDeviceData.stSelection.stSeg2_762.bMode	BOOL	[READ_WRITE] Mode
stDeviceData.stSelection.stSeg3_763.bAll	BOOL	[READ_WRITE] all parameters of complex data type
stDeviceData.stSelection.stSeg3_763.bColor	BOOL	[READ_WRITE] Color
stDeviceData.stSelection.stSeg3_763.bIntensity	BOOL	[READ_WRITE] Intensity
stDeviceData.stSelection.stSeg3_763.bMode	BOOL	[READ_WRITE] Mode
stDeviceData.stSelection.bBuzzer_780	BOOL	[READ_WRITE] intermittent slow (1Hz) / intermittent fast (2,5Hz); Suffix "_780" (parameter index or subindex) added because of duplicate parameter names.
stDeviceData.stSelection.stSeg1_781.bAll	BOOL	[READ_WRITE] all parameters of complex data type
stDeviceData.stSelection.stSeg1_781.bColor	BOOL	[READ_WRITE] Color
stDeviceData.stSelection.stSeg1_781.bIntensity	BOOL	[READ_WRITE] Intensity
stDeviceData.stSelection.stSeg1_781.bMode	BOOL	[READ_WRITE] Mode

Parameter name	Data type	Description
stDeviceData.stSelection.stSeg2_782.bAll	BOOL	[READ_WRITE] all parameters of complex data type
stDeviceData.stSelection.stSeg2_782.bColor	BOOL	[READ_WRITE] Color
stDeviceData.stSelection.stSeg2_782.bIntensity	BOOL	[READ_WRITE] Intensity
stDeviceData.stSelection.stSeg2_782.bMode	BOOL	[READ_WRITE] Mode
stDeviceData.stSelection.stSeg3_783.bAll	BOOL	[READ_WRITE] all parameters of complex data type
stDeviceData.stSelection.stSeg3_783.bColor	BOOL	[READ_WRITE] Color
stDeviceData.stSelection.stSeg3_783.bIntensity	BOOL	[READ_WRITE] Intensity
stDeviceData.stSelection.stSeg3_783.bMode	BOOL	[READ_WRITE] Mode
stDeviceData.stSelection.bBuzzer_800	BOOL	[READ_WRITE] intermittent slow (1Hz) / intermittent fast (2,5Hz); Suffix "_800" (parameter index or subindex) added because of duplicate parameter names.
stDeviceData.stSelection.stSeg1_801.bAll	BOOL	[READ_WRITE] all parameters of complex data type
stDeviceData.stSelection.stSeg1_801.bColor	BOOL	[READ_WRITE] Color
stDeviceData.stSelection.stSeg1_801.bIntensity	BOOL	[READ_WRITE] Intensity
stDeviceData.stSelection.stSeg1_801.bMode	BOOL	[READ_WRITE] Mode
stDeviceData.stSelection.stSeg2_802.bAll	BOOL	[READ_WRITE] all parameters of complex data type
stDeviceData.stSelection.stSeg2_802.bColor	BOOL	[READ_WRITE] Color
stDeviceData.stSelection.stSeg2_802.bIntensity	BOOL	[READ_WRITE] Intensity
stDeviceData.stSelection.stSeg2_802.bMode	BOOL	[READ_WRITE] Mode
stDeviceData.stSelection.stSeg3_803.bAll	BOOL	[READ_WRITE] all parameters of complex data type
stDeviceData.stSelection.stSeg3_803.bColor	BOOL	[READ_WRITE] Color
stDeviceData.stSelection.stSeg3_803.bIntensity	BOOL	[READ_WRITE] Intensity
stDeviceData.stSelection.stSeg3_803.bMode	BOOL	[READ_WRITE] Mode
stDeviceData.stSelection.bBuzzer_820	BOOL	[READ_WRITE] intermittent slow (1Hz) / intermittent fast (2,5Hz); Suffix "_820" (parameter index or subindex) added because of duplicate parameter names.

Parameter name	Data type	Description
stDeviceData.stSelection.stSeg1_821.bAll	BOOL	[READ_WRITE] all parameters of complex data type
stDeviceData.stSelection.stSeg1_821.bColor	BOOL	[READ_WRITE] Color
stDeviceData.stSelection.stSeg1_821.bIntensity	BOOL	[READ_WRITE] Intensity
stDeviceData.stSelection.stSeg1_821.bMode	BOOL	[READ_WRITE] Mode
stDeviceData.stSelection.stSeg2_822.bAll	BOOL	[READ_WRITE] all parameters of complex data type
stDeviceData.stSelection.stSeg2_822.bColor	BOOL	[READ_WRITE] Color
stDeviceData.stSelection.stSeg2_822.bIntensity	BOOL	[READ_WRITE] Intensity
stDeviceData.stSelection.stSeg2_822.bMode	BOOL	[READ_WRITE] Mode
stDeviceData.stSelection.stSeg3_823.bAll	BOOL	[READ_WRITE] all parameters of complex data type
stDeviceData.stSelection.stSeg3_823.bColor	BOOL	[READ_WRITE] Color
stDeviceData.stSelection.stSeg3_823.bIntensity	BOOL	[READ_WRITE] Intensity
stDeviceData.stSelection.stSeg3_823.bMode	BOOL	[READ_WRITE] Mode
stDeviceData.stSelection.bBuzzer_840	BOOL	[READ_WRITE] intermittent slow (1Hz) / intermittent fast (2,5Hz); Suffix "_840" (parameter index or subindex) added because of duplicate parameter names.
stDeviceData.stSelection.stSeg1_841.bAll	BOOL	[READ_WRITE] all parameters of complex data type
stDeviceData.stSelection.stSeg1_841.bColor	BOOL	[READ_WRITE] Color
stDeviceData.stSelection.stSeg1_841.bIntensity	BOOL	[READ_WRITE] Intensity
stDeviceData.stSelection.stSeg1_841.bMode	BOOL	[READ_WRITE] Mode
stDeviceData.stSelection.stSeg2_842.bAll	BOOL	[READ_WRITE] all parameters of complex data type
stDeviceData.stSelection.stSeg2_842.bColor	BOOL	[READ_WRITE] Color
stDeviceData.stSelection.stSeg2_842.bIntensity	BOOL	[READ_WRITE] Intensity
stDeviceData.stSelection.stSeg2_842.bMode	BOOL	[READ_WRITE] Mode
stDeviceData.stSelection.stSeg3_843.bAll	BOOL	[READ_WRITE] all parameters of complex data type
stDeviceData.stSelection.stSeg3_843.bColor	BOOL	[READ_WRITE] Color

Parameter name	Data type	Description
stDeviceData.stSelection.stSeg3_843.bIntensity	BOOL	[READ_WRITE] Intensity
stDeviceData.stSelection.stSeg3_843.bMode	BOOL	[READ_WRITE] Mode
stDeviceData.stData.stCommands.nCmdRestoreFactorySettings	UINT	[WRITE_ONLY] Restore Factory Settings
stDeviceData.stData.stCommands.nCmdLocatorStart	UINT	[WRITE_ONLY] Locator Start
stDeviceData.stData.stCommands.nCmdLocatorStop	UINT	[WRITE_ONLY] Locator Stop
stDeviceData.stData.stCommands.nCmdFunctionTest	UINT	[WRITE_ONLY] Function Test
stDeviceData.stData.stCommands.nCmdFunctionTestStop	UINT	[WRITE_ONLY] Function Test stop
stDeviceData.stData.stCommands.nCmdResetToFactorySettingsColor0	UINT	[WRITE_ONLY] Reset to Factory Settings Color 0
stDeviceData.stData.stCommands.nCmdResetToFactorySettingsColor1	UINT	[WRITE_ONLY] Reset to Factory Settings Color 1
stDeviceData.stData.stCommands.nCmdResetToFactorySettingsColor2	UINT	[WRITE_ONLY] Reset to Factory Settings Color 2
stDeviceData.stData.stCommands.nCmdResetToFactorySettingsColor3	UINT	[WRITE_ONLY] Reset to Factory Settings Color 3
stDeviceData.stData.stCommands.nCmdResetToFactorySettingsColor4	UINT	[WRITE_ONLY] Reset to Factory Settings Color 4
stDeviceData.stData.stCommands.nCmdResetToFactorySettingsColor5	UINT	[WRITE_ONLY] Reset to Factory Settings Color 5
stDeviceData.stData.stCommands.nCmdResetToFactorySettingsColor6	UINT	[WRITE_ONLY] Reset to Factory Settings Color 6
stDeviceData.stData.stCommands.nCmdResetToFactorySettingsColor7	UINT	[WRITE_ONLY] Reset to Factory Settings Color 7
stDeviceData.stData.stCommands.nCmdIoLink11SystemTestCommand240Event8DfeAppears	UINT	[WRITE_ONLY] IO-Link 1.1 system test command 240, Event 8DFE appears
stDeviceData.stData.stCommands.nCmdIoLink11SystemTestCommand241Event8DfeDisappears	UINT	[WRITE_ONLY] IO-Link 1.1 system test command 241, Event 8DFE disappears
stDeviceData.stData.stCommands.nCmdIoLink11SystemTestCommand242Event8DffAppears	UINT	[WRITE_ONLY] IO-Link 1.1 system test command 242, Event 8DFF appears
stDeviceData.stData.stCommands.nCmdIoLink11SystemTestCommand243Event8DffDisappears	UINT	[WRITE_ONLY] IO-Link 1.1 system test command 243, Event 8DFF disappears
stDeviceData.stData.stDirectParametersPage1.nReserved_1	UINT	[READ_ONLY] ; Suffix "_1" (parameter index or subindex) added because of duplicate parameter names.
stDeviceData.stData.stDirectParametersPage1.nMasterCycleTime	UINT	[READ_ONLY] Communication: Current communication cycle duration used by the master. This value defines the process data cycle.

Parameter name	Data type	Description
stDeviceData.stData.stDirectParametersPage1.nMinCycleTime	UINT	[READ_ONLY] Communication: Minimum communication cycle duration supported by the device. This value defines the lowest possible process data cycle.
stDeviceData.stData.stDirectParametersPage1.nMSequenceCapability	UINT	[READ_ONLY] Communication: Information on the structure and the supported features of the communication messages.
stDeviceData.stData.stDirectParametersPage1.nIoLinkRevisionId	UINT	[READ_ONLY] Communication: Identifier for the currently used communication protocol revision.
stDeviceData.stData.stDirectParametersPage1.nProcessDataInputLength	UINT	[READ_ONLY] Communication: Information on width and features of the process input data (Process Data from Device to Master).
stDeviceData.stData.stDirectParametersPage1.nProcessDataOutputLength	UINT	[READ_ONLY] Communication: Information on width of the process output data (Process Data from Master to Device).
stDeviceData.stData.stDirectParametersPage1.nVendorId1	UINT	[READ_ONLY] Identification: Highest octet of the Vendor ID. Combined with the parameter Vendor ID 2, this parameter defines the 16-bit value of the unique Vendor ID as assigned by the IO-Link Community.
stDeviceData.stData.stDirectParametersPage1.nVendorId2	UINT	[READ_ONLY] Identification: Lowest octet of the Vendor ID. Combined with the parameter Vendor ID 1, this parameter defines the 16-bit value of the unique Vendor ID as assigned by the IO-Link Community.
stDeviceData.stData.stDirectParametersPage1.nDeviceId1	UINT	[READ_ONLY] Identification: Highest octet of the Device ID. Combined with the parameters Device ID 2 and 3, this parameter defines the 24-bit value of the vendor-specific Device ID.

Parameter name	Data type	Description
stDeviceData.stData.stDirectParametersPage1.nDeviceId2	UINT	[READ_ONLY] Identification: Middle octet of the Device ID. Combined with the parameters Device ID 1 and 3, this parameter defines the 24-bit value of the vendor-specific Device ID.
stDeviceData.stData.stDirectParametersPage1.nDeviceId3	UINT	[READ_ONLY] Identification: Lowest octet of the Device ID. Combined with the parameters Device ID 1 and 2, this parameter defines the 24-bit value of the vendor-specific Device ID.
stDeviceData.stData.stDirectParametersPage1.nReserved_13	UINT	[READ_ONLY] ; Suffix "_13" (parameter index or subindex) added because of duplicate parameter names.
stDeviceData.stData.stDirectParametersPage1.nReserved_14	UINT	[READ_ONLY] ; Suffix "_14" (parameter index or subindex) added because of duplicate parameter names.
stDeviceData.stData.stDirectParametersPage1.nReserved_15	UINT	[READ_ONLY] ; Suffix "_15" (parameter index or subindex) added because of duplicate parameter names.
stDeviceData.stData.stDirectParametersPage1.nSystemCommand	UINT	[WRITE_ONLY] Application: Command interface for devices without ISDU support. Validity and execution of commands are not confirmed.
stDeviceData.stData.stDirectParametersPage2.nDeviceSpecificParameter1	UINT	[READ_WRITE]
stDeviceData.stData.stDirectParametersPage2.nDeviceSpecificParameter2	UINT	[READ_WRITE]
stDeviceData.stData.stDirectParametersPage2.nDeviceSpecificParameter3	UINT	[READ_WRITE]
stDeviceData.stData.stDirectParametersPage2.nDeviceSpecificParameter4	UINT	[READ_WRITE]
stDeviceData.stData.stDirectParametersPage2.nDeviceSpecificParameter5	UINT	[READ_WRITE]
stDeviceData.stData.stDirectParametersPage2.nDeviceSpecificParameter6	UINT	[READ_WRITE]
stDeviceData.stData.stDirectParametersPage2.nDeviceSpecificParameter7	UINT	[READ_WRITE]
stDeviceData.stData.stDirectParametersPage2.nDeviceSpecificParameter8	UINT	[READ_WRITE]
stDeviceData.stData.stDirectParametersPage2.nDeviceSpecificParameter9	UINT	[READ_WRITE]
stDeviceData.stData.stDirectParametersPage2.nDeviceSpecificParameter10	UINT	[READ_WRITE]

Parameter name	Data type	Description
stDeviceData.stData.stDirectParametersPage2. nDeviceSpecificParameter11	UINT	[READ_WRITE]
stDeviceData.stData.stDirectParametersPage2. nDeviceSpecificParameter12	UINT	[READ_WRITE]
stDeviceData.stData.stDirectParametersPage2. nDeviceSpecificParameter13	UINT	[READ_WRITE]
stDeviceData.stData.stDirectParametersPage2. nDeviceSpecificParameter14	UINT	[READ_WRITE]
stDeviceData.stData.stDirectParametersPage2. nDeviceSpecificParameter15	UINT	[READ_WRITE]
stDeviceData.stData.stDirectParametersPage2. nDeviceSpecificParameter16	UINT	[READ_WRITE]
stDeviceData.stData.nSystemCommand	UINT	[WRITE_ONLY] Command interface for applications. A positive acknowledge indicates the complete and correct finalization of the requested function.
stDeviceData.stData.stDeviceAccessLocks. bParameterWriteAccess	BOOL	[READ_WRITE] This lock prevents the write access to all read/write parameters of the device except for the parameter 'Device Access Locks'.
stDeviceData.stData.stDeviceAccessLocks.bDataStorage	BOOL	[READ_WRITE] This lock prevents the write access to the device parameters via the data storage mechanism.
stDeviceData.stData.stDeviceAccessLocks. bLocalParameterization	BOOL	[READ_WRITE] This lock prevents the device settings from being changed via local operating elements on the device.
stDeviceData.stData.stDeviceAccessLocks.bLocalUserInterface	BOOL	[READ_WRITE] This lock prevents the access to the device settings and display via a local user interface. The user interface is disabled.
stDeviceData.stData.sVendorName	STRING	[READ_ONLY] The vendor name that is assigned to a Vendor ID.
stDeviceData.stData.sVendorText	STRING	[READ_ONLY] Additional information about the vendor.
stDeviceData.stData.sProductName	STRING	[READ_ONLY] Complete product name.
stDeviceData.stData.sProductId	STRING	[READ_ONLY] Vendor-specific product or type identification (e.g., item number or model number).
stDeviceData.stData.sProductText	STRING	[READ_ONLY] Additional product information for the device.
stDeviceData.stData.sSerialNumber	STRING	[READ_ONLY] Unique, vendor-specific identifier of the individual device.

Parameter name	Data type	Description
stDeviceData.stData.sHardwareRevision	STRING	[READ_ONLY] Unique, vendor-specific identifier of the hardware revision of the individual device.
stDeviceData.stData.sFirmwareRevision	STRING	[READ_ONLY] Unique, vendor-specific identifier of the firmware revision of the individual device.
stDeviceData.stData.sApplicationSpecificTag	STRING	[READ_WRITE] Possibility to mark a device with user- or application-specific information.
stDeviceData.stData.sFunctionTag	STRING	[READ_WRITE] User defined function tag
stDeviceData.stData.sLocationTag	STRING	[READ_WRITE] User defined location tag
stDeviceData.stData.nErrorCount	UINT	[READ_ONLY] Number of errors that occurred in the technology-specific application since power on or restart.
stDeviceData.stData.nDeviceStatus	UINT	[READ_ONLY] Indicator for the current device condition and diagnosis state.
stDeviceData.stData.stDetailedDeviceStatus.sltem_1	STRING	[READ_ONLY] List of all currently pending events in the device.
stDeviceData.stData.stDetailedDeviceStatus.sltem_2	STRING	[READ_ONLY] List of all currently pending events in the device.
stDeviceData.stData.sLot	STRING	[READ_ONLY] Production Lot
stDeviceData.stData.nTemperature	INT	[READ_ONLY] Device Temperature
stDeviceData.stData.nOperatingHours	UINT	[READ_ONLY] Duration of Duty
stDeviceData.stData.nNumberOfSwitchOn	UINT	[READ_ONLY] Number of Switch On
stDeviceData.stData.nMinimalTemperature	INT	[READ_ONLY] Minimal Temperature in Use
stDeviceData.stData.nMaximalTemperature	INT	[READ_ONLY] Maximal Temperature in Use
stDeviceData.stData.nErrorIndicationIOLCommunication	UINT	[READ_WRITE] Error Indication IOL-Communication
stDeviceData.stData.nDeviceControl	UINT	[READ_WRITE] Device Control
stDeviceData.stData.nSelectionPreSet	UINT	[READ_WRITE] Simulation of all eight selectable presets in external trigger mode parallel to an IO-Link connection
stDeviceData.stData.nSelectionNumberOfSegments	UINT	[READ_WRITE] Selection of the number of segments in segment mode (PD)
stDeviceData.stData.nDirectionOfDisplay	UINT	[READ_WRITE] Direction Of Display

Parameter name	Data type	Description
stDeviceData.stData.nMode	UINT	[READ_WRITE] Mode
stDeviceData.stData.nDynamicModeActiveSegment	UINT	[READ_WRITE] Dynamic mode active segment (foreground color)
stDeviceData.stData.nDynamicModeInactiveSegment	UINT	[READ_WRITE] Dynamic mode inactive segment (background color)
stDeviceData.stData.sName_620	STRING	[READ_WRITE] Designation freely selectable; Suffix "_620" (parameter index or subindex) added because of duplicate parameter names.
stDeviceData.stData.sName_621	STRING	[READ_WRITE] Designation freely selectable; Suffix "_621" (parameter index or subindex) added because of duplicate parameter names.
stDeviceData.stData.sName_622	STRING	[READ_WRITE] Designation freely selectable; Suffix "_622" (parameter index or subindex) added because of duplicate parameter names.
stDeviceData.stData.sName_623	STRING	[READ_WRITE] Designation freely selectable; Suffix "_623" (parameter index or subindex) added because of duplicate parameter names.
stDeviceData.stData.sName_624	STRING	[READ_WRITE] Designation freely selectable; Suffix "_624" (parameter index or subindex) added because of duplicate parameter names.
stDeviceData.stData.sName_625	STRING	[READ_WRITE] Designation freely selectable; Suffix "_625" (parameter index or subindex) added because of duplicate parameter names.
stDeviceData.stData.sName_626	STRING	[READ_WRITE] Designation freely selectable; Suffix "_626" (parameter index or subindex) added because of duplicate parameter names.
stDeviceData.stData.sName_627	STRING	[READ_WRITE] Designation freely selectable; Suffix "_627" (parameter index or subindex) added because of duplicate parameter names.

Parameter name	Data type	Description
stDeviceData.stData.stColorProportion_650.nRed	UINT	[READ_WRITE] Red Proportion
stDeviceData.stData.stColorProportion_650.nGreen	UINT	[READ_WRITE] Green Proportion
stDeviceData.stData.stColorProportion_650.nBlue	UINT	[READ_WRITE] Blue Proportion
stDeviceData.stData.stColorProportion_651.nRed	UINT	[READ_WRITE] Red Proportion
stDeviceData.stData.stColorProportion_651.nGreen	UINT	[READ_WRITE] Green Proportion
stDeviceData.stData.stColorProportion_651.nBlue	UINT	[READ_WRITE] Blue Proportion
stDeviceData.stData.stColorProportion_652.nRed	UINT	[READ_WRITE] Red Proportion
stDeviceData.stData.stColorProportion_652.nGreen	UINT	[READ_WRITE] Green Proportion
stDeviceData.stData.stColorProportion_652.nBlue	UINT	[READ_WRITE] Blue Proportion
stDeviceData.stData.stColorProportion_653.nRed	UINT	[READ_WRITE] Red Proportion
stDeviceData.stData.stColorProportion_653.nGreen	UINT	[READ_WRITE] Green Proportion
stDeviceData.stData.stColorProportion_653.nBlue	UINT	[READ_WRITE] Blue Proportion
stDeviceData.stData.stColorProportion_654.nRed	UINT	[READ_WRITE] Red Proportion
stDeviceData.stData.stColorProportion_654.nGreen	UINT	[READ_WRITE] Green Proportion
stDeviceData.stData.stColorProportion_654.nBlue	UINT	[READ_WRITE] Blue Proportion
stDeviceData.stData.stColorProportion_655.nRed	UINT	[READ_WRITE] Red Proportion
stDeviceData.stData.stColorProportion_655.nGreen	UINT	[READ_WRITE] Green Proportion
stDeviceData.stData.stColorProportion_655.nBlue	UINT	[READ_WRITE] Blue Proportion
stDeviceData.stData.stColorProportion_656.nRed	UINT	[READ_WRITE] Red Proportion
stDeviceData.stData.stColorProportion_656.nGreen	UINT	[READ_WRITE] Green Proportion
stDeviceData.stData.stColorProportion_656.nBlue	UINT	[READ_WRITE] Blue Proportion
stDeviceData.stData.stColorProportion_657.nRed	UINT	[READ_WRITE] Red Proportion
stDeviceData.stData.stColorProportion_657.nGreen	UINT	[READ_WRITE] Green Proportion
stDeviceData.stData.stColorProportion_657.nBlue	UINT	[READ_WRITE] Blue Proportion
stDeviceData.stData.stSeg1_681.nIntensity	UINT	[READ_WRITE] Intensity
stDeviceData.stData.stSeg1_681.nDynamicMode	UINT	[READ_WRITE] Dynamic-Mode
stDeviceData.stData.stSeg2_682.nIntensity	UINT	[READ_WRITE] Intensity

Parameter name	Data type	Description
stDeviceData.stData.stSeg2_682.nDynamicMode	UINT	[READ_WRITE] Dynamic-Mode
stDeviceData.stData.stSeg3_683.nIntensity	UINT	[READ_WRITE] Intensity
stDeviceData.stData.stSeg3_683.nDynamicMode	UINT	[READ_WRITE] Dynamic-Mode
stDeviceData.stData.nBuzzer_700	UINT	[READ_WRITE] intermittent slow (1Hz) / intermittent fast (2,5Hz); Suffix "_700" (parameter index or subindex) added because of duplicate parameter names.
stDeviceData.stData.stSeg1_701.nColor	UINT	[READ_WRITE] Color
stDeviceData.stData.stSeg1_701.nIntensity	UINT	[READ_WRITE] Intensity
stDeviceData.stData.stSeg1_701.nMode	UINT	[READ_WRITE] Mode
stDeviceData.stData.stSeg2_702.nColor	UINT	[READ_WRITE] Color
stDeviceData.stData.stSeg2_702.nIntensity	UINT	[READ_WRITE] Intensity
stDeviceData.stData.stSeg2_702.nMode	UINT	[READ_WRITE] Mode
stDeviceData.stData.stSeg3_703.nColor	UINT	[READ_WRITE] Color
stDeviceData.stData.stSeg3_703.nIntensity	UINT	[READ_WRITE] Intensity
stDeviceData.stData.stSeg3_703.nMode	UINT	[READ_WRITE] Mode
stDeviceData.stData.nBuzzer_720	UINT	[READ_WRITE] intermittent slow (1Hz) / intermittent fast (2,5Hz); Suffix "_720" (parameter index or subindex) added because of duplicate parameter names.
stDeviceData.stData.stSeg1_721.nColor	UINT	[READ_WRITE] Color
stDeviceData.stData.stSeg1_721.nIntensity	UINT	[READ_WRITE] Intensity
stDeviceData.stData.stSeg1_721.nMode	UINT	[READ_WRITE] Mode
stDeviceData.stData.stSeg2_722.nColor	UINT	[READ_WRITE] Color
stDeviceData.stData.stSeg2_722.nIntensity	UINT	[READ_WRITE] Intensity
stDeviceData.stData.stSeg2_722.nMode	UINT	[READ_WRITE] Mode
stDeviceData.stData.stSeg3_723.nColor	UINT	[READ_WRITE] Color
stDeviceData.stData.stSeg3_723.nIntensity	UINT	[READ_WRITE] Intensity
stDeviceData.stData.stSeg3_723.nMode	UINT	[READ_WRITE] Mode

Parameter name	Data type	Description
stDeviceData.stData.nBuzzer_740	UINT	[READ_WRITE] intermittent slow (1Hz) / intermittent fast (2,5Hz); Suffix "_740" (parameter index or subindex) added because of duplicate parameter names.
stDeviceData.stData.stSeg1_741.nColor	UINT	[READ_WRITE] Color
stDeviceData.stData.stSeg1_741.nIntensity	UINT	[READ_WRITE] Intensity
stDeviceData.stData.stSeg1_741.nMode	UINT	[READ_WRITE] Mode
stDeviceData.stData.stSeg2_742.nColor	UINT	[READ_WRITE] Color
stDeviceData.stData.stSeg2_742.nIntensity	UINT	[READ_WRITE] Intensity
stDeviceData.stData.stSeg2_742.nMode	UINT	[READ_WRITE] Mode
stDeviceData.stData.stSeg3_743.nColor	UINT	[READ_WRITE] Color
stDeviceData.stData.stSeg3_743.nIntensity	UINT	[READ_WRITE] Intensity
stDeviceData.stData.stSeg3_743.nMode	UINT	[READ_WRITE] Mode
stDeviceData.stData.nBuzzer_760	UINT	[READ_WRITE] intermittent slow (1Hz) / intermittent fast (2,5Hz); Suffix "_760" (parameter index or subindex) added because of duplicate parameter names.
stDeviceData.stData.stSeg1_761.nColor	UINT	[READ_WRITE] Color
stDeviceData.stData.stSeg1_761.nIntensity	UINT	[READ_WRITE] Intensity
stDeviceData.stData.stSeg1_761.nMode	UINT	[READ_WRITE] Mode
stDeviceData.stData.stSeg2_762.nColor	UINT	[READ_WRITE] Color
stDeviceData.stData.stSeg2_762.nIntensity	UINT	[READ_WRITE] Intensity
stDeviceData.stData.stSeg2_762.nMode	UINT	[READ_WRITE] Mode
stDeviceData.stData.stSeg3_763.nColor	UINT	[READ_WRITE] Color
stDeviceData.stData.stSeg3_763.nIntensity	UINT	[READ_WRITE] Intensity
stDeviceData.stData.stSeg3_763.nMode	UINT	[READ_WRITE] Mode
stDeviceData.stData.nBuzzer_780	UINT	[READ_WRITE] intermittent slow (1Hz) / intermittent fast (2,5Hz); Suffix "_780" (parameter index or subindex) added because of duplicate parameter names.

Parameter name	Data type	Description
stDeviceData.stData.stSeg1_781.nColor	UINT	[READ_WRITE] Color
stDeviceData.stData.stSeg1_781.nIntensity	UINT	[READ_WRITE] Intensity
stDeviceData.stData.stSeg1_781.nMode	UINT	[READ_WRITE] Mode
stDeviceData.stData.stSeg2_782.nColor	UINT	[READ_WRITE] Color
stDeviceData.stData.stSeg2_782.nIntensity	UINT	[READ_WRITE] Intensity
stDeviceData.stData.stSeg2_782.nMode	UINT	[READ_WRITE] Mode
stDeviceData.stData.stSeg3_783.nColor	UINT	[READ_WRITE] Color
stDeviceData.stData.stSeg3_783.nIntensity	UINT	[READ_WRITE] Intensity
stDeviceData.stData.stSeg3_783.nMode	UINT	[READ_WRITE] Mode
stDeviceData.stData.nBuzzer_800	UINT	[READ_WRITE] intermittent slow (1Hz) / intermittent fast (2,5Hz); Suffix "_800" (parameter index or subindex) added because of duplicate parameter names.
stDeviceData.stData.stSeg1_801.nColor	UINT	[READ_WRITE] Color
stDeviceData.stData.stSeg1_801.nIntensity	UINT	[READ_WRITE] Intensity
stDeviceData.stData.stSeg1_801.nMode	UINT	[READ_WRITE] Mode
stDeviceData.stData.stSeg2_802.nColor	UINT	[READ_WRITE] Color
stDeviceData.stData.stSeg2_802.nIntensity	UINT	[READ_WRITE] Intensity
stDeviceData.stData.stSeg2_802.nMode	UINT	[READ_WRITE] Mode
stDeviceData.stData.stSeg3_803.nColor	UINT	[READ_WRITE] Color
stDeviceData.stData.stSeg3_803.nIntensity	UINT	[READ_WRITE] Intensity
stDeviceData.stData.stSeg3_803.nMode	UINT	[READ_WRITE] Mode
stDeviceData.stData.nBuzzer_820	UINT	[READ_WRITE] intermittent slow (1Hz) / intermittent fast (2,5Hz); Suffix "_820" (parameter index or subindex) added because of duplicate parameter names.
stDeviceData.stData.stSeg1_821.nColor	UINT	[READ_WRITE] Color
stDeviceData.stData.stSeg1_821.nIntensity	UINT	[READ_WRITE] Intensity
stDeviceData.stData.stSeg1_821.nMode	UINT	[READ_WRITE] Mode

Parameter name	Data type	Description
stDeviceData.stData.stSeg2_822.nColor	UINT	[READ_WRITE] Color
stDeviceData.stData.stSeg2_822.nIntensity	UINT	[READ_WRITE] Intensity
stDeviceData.stData.stSeg2_822.nMode	UINT	[READ_WRITE] Mode
stDeviceData.stData.stSeg3_823.nColor	UINT	[READ_WRITE] Color
stDeviceData.stData.stSeg3_823.nIntensity	UINT	[READ_WRITE] Intensity
stDeviceData.stData.stSeg3_823.nMode	UINT	[READ_WRITE] Mode
stDeviceData.stData.nBuzzer_840	UINT	[READ_WRITE] intermittent slow (1Hz) / intermittent fast (2,5Hz); Suffix "_840" (parameter index or subindex) added because of duplicate parameter names.
stDeviceData.stData.stSeg1_841.nColor	UINT	[READ_WRITE] Color
stDeviceData.stData.stSeg1_841.nIntensity	UINT	[READ_WRITE] Intensity
stDeviceData.stData.stSeg1_841.nMode	UINT	[READ_WRITE] Mode
stDeviceData.stData.stSeg2_842.nColor	UINT	[READ_WRITE] Color
stDeviceData.stData.stSeg2_842.nIntensity	UINT	[READ_WRITE] Intensity
stDeviceData.stData.stSeg2_842.nMode	UINT	[READ_WRITE] Mode
stDeviceData.stData.stSeg3_843.nColor	UINT	[READ_WRITE] Color
stDeviceData.stData.stSeg3_843.nIntensity	UINT	[READ_WRITE] Intensity
stDeviceData.stData.stSeg3_843.nMode	UINT	[READ_WRITE] Mode

Tab. 7.2: -- Process Data UDT not generated for this device --

Parameter name	Data type	Description
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8 Parameter descriptions

Tab. 8.1: IODD parameter descriptions

(AR - Access Rights, R - Read only, W - Write only, RW - Read and Write, NS - Not specified)

Parameter	Index	Subindex	Data type	Default	AR	Description
Commands			RecordT		W	Command interface for applications. A positive acknowledge indicates the complete and correct finalization of the requested function.
Restore Factory Settings			UIntegerT	130	W	Restore Factory Settings
Locator Start			UIntegerT	126	W	Locator Start
Locator Stop			UIntegerT	127	W	Locator Stop
Function Test			UIntegerT	161	W	Function Test
Function Test stop			UIntegerT	162	W	Function Test stop
Reset to Factory Settings Color 0			UIntegerT	200	W	Reset to Factory Settings Color 0
Reset to Factory Settings Color 1			UIntegerT	201	W	Reset to Factory Settings Color 1
Reset to Factory Settings Color 2			UIntegerT	202	W	Reset to Factory Settings Color 2
Reset to Factory Settings Color 3			UIntegerT	203	W	Reset to Factory Settings Color 3
Reset to Factory Settings Color 4			UIntegerT	204	W	Reset to Factory Settings Color 4
Reset to Factory Settings Color 5			UIntegerT	205	W	Reset to Factory Settings Color 5
Reset to Factory Settings Color 6			UIntegerT	206	W	Reset to Factory Settings Color 6
Reset to Factory Settings Color 7			UIntegerT	207	W	Reset to Factory Settings Color 7
IO-Link 1.1 system test command 240, Event 8DFE appears			UIntegerT	240	W	IO-Link 1.1 system test command 240, Event 8DFE appears
IO-Link 1.1 system test command 241, Event 8DFE disappears			UIntegerT	241	W	IO-Link 1.1 system test command 241, Event 8DFE disappears
IO-Link 1.1 system test command 242, Event 8DFF appears			UIntegerT	242	W	IO-Link 1.1 system test command 242, Event 8DFF appears
IO-Link 1.1 system test command 243, Event 8DFF disappears			UIntegerT	243	W	IO-Link 1.1 system test command 243, Event 8DFF disappears
Direct Parameters - Page 1	0	0	RecordT		RW	Comprises the required parameters defining the communication characteristics and identifiers for device validation.
Reserved	0	1	UIntegerT		R	
Master Cycle Time	0	2	UIntegerT		R	Communication: Current communication cycle duration used by the master. This value defines the process data cycle.

Parameter	Index	Subindex	Data type	Default	AR	Description
Min Cycle Time	0	3	UIntegerT		R	Communication: Minimum communication cycle duration supported by the device. This value defines the lowest possible process data cycle.
M-Sequence Capability	0	4	UIntegerT		R	Communication: Information on the structure and the supported features of the communication messages.
IO-Link Revision ID	0	5	UIntegerT	17	R	Communication: Identifier for the currently used communication protocol revision.
Process Data Input Length	0	6	UIntegerT		R	Communication: Information on width and features of the process input data (Process Data from Device to Master).
Process Data Output Length	0	7	UIntegerT		R	Communication: Information on width of the process output data (Process Data from Master to Device).
Vendor ID 1	0	8	UIntegerT		R	Identification: Highest octet of the Vendor ID. Combined with the parameter Vendor ID 2, this parameter defines the 16-bit value of the unique Vendor ID as assigned by the IO-Link Community.
Vendor ID 2	0	9	UIntegerT		R	Identification: Lowest octet of the Vendor ID. Combined with the parameter Vendor ID 1, this parameter defines the 16-bit value of the unique Vendor ID as assigned by the IO-Link Community.
Device ID 1	0	10	UIntegerT		R	Identification: Highest octet of the Device ID. Combined with the parameters Device ID 2 and 3, this parameter defines the 24-bit value of the vendor-specific Device ID.
Device ID 2	0	11	UIntegerT		R	Identification: Middle octet of the Device ID. Combined with the parameters Device ID 1 and 3, this parameter defines the 24-bit value of the vendor-specific Device ID.
Device ID 3	0	12	UIntegerT		R	Identification: Lowest octet of the Device ID. Combined with the parameters Device ID 1 and 2, this parameter defines the 24-bit value of the vendor-specific Device ID.
Reserved	0	13	UIntegerT		R	
Reserved	0	14	UIntegerT		R	
Reserved	0	15	UIntegerT		R	
System Command	0	16	UIntegerT		W	Application: Command interface for devices without ISDU support. Validity and execution of commands are not confirmed. (0 ... 63): Reserved 128: Device Reset 129: Application Reset 130: Restore Factory Settings 131: Back-to-box (132 ... 159): Reserved
Direct Parameters - Page 2	1	0	RecordT		RW	A set of parameters for devices without ISDU support.

Parameter	Index	Subindex	Data type	Default	AR	Description
Device-specific Parameter 1	1	1	UIntegerT		RW	
Device-specific Parameter 2	1	2	UIntegerT		RW	
Device-specific Parameter 3	1	3	UIntegerT		RW	
Device-specific Parameter 4	1	4	UIntegerT		RW	
Device-specific Parameter 5	1	5	UIntegerT		RW	
Device-specific Parameter 6	1	6	UIntegerT		RW	
Device-specific Parameter 7	1	7	UIntegerT		RW	
Device-specific Parameter 8	1	8	UIntegerT		RW	
Device-specific Parameter 9	1	9	UIntegerT		RW	
Device-specific Parameter 10	1	10	UIntegerT		RW	
Device-specific Parameter 11	1	11	UIntegerT		RW	
Device-specific Parameter 12	1	12	UIntegerT		RW	
Device-specific Parameter 13	1	13	UIntegerT		RW	
Device-specific Parameter 14	1	14	UIntegerT		RW	
Device-specific Parameter 15	1	15	UIntegerT		RW	
Device-specific Parameter 16	1	16	UIntegerT		RW	

Parameter	Index	Subindex	Data type	Default	AR	Description
System Command	2	0	UIntegerT		W	<p>Command interface for applications. A positive acknowledge indicates the complete and correct finalization of the requested function.</p> <p>130: Restore Factory Settings (0 ... 63): Reserved (132 ... 159): Reserved 126: Locator Start 127: Locator Stop 161: Function Test 162: Function Test stop 200: Reset to Factory Settings Color 0 201: Reset to Factory Settings Color 1 202: Reset to Factory Settings Color 2 203: Reset to Factory Settings Color 3 204: Reset to Factory Settings Color 4 205: Reset to Factory Settings Color 5 206: Reset to Factory Settings Color 6 207: Reset to Factory Settings Color 7 240: IO-Link 1.1 system test command 240, Event 8DFE appears 241: IO-Link 1.1 system test command 241, Event 8DFE disappears 242: IO-Link 1.1 system test command 242, Event 8DFF appears 243: IO-Link 1.1 system test command 243, Event 8DFF disappears</p>
Device Access Locks	12	0	RecordT		RW	<p>The access to the device parameters can be restricted by setting appropriate flags within this parameter.</p>
Parameter Write Access	12	1	BooleanT		RW	<p>This lock prevents the write access to all read/write parameters of the device except for the parameter 'Device Access Locks'.</p> <p>True: Locked False: Unlocked</p>
Data Storage	12	2	BooleanT	0	RW	<p>This lock prevents the write access to the device parameters via the data storage mechanism.</p> <p>True: Locked False: Unlocked</p>
Local Parameterization	12	3	BooleanT		RW	<p>This lock prevents the device settings from being changed via local operating elements on the device.</p> <p>True: Locked False: Unlocked</p>
Local User Interface	12	4	BooleanT		RW	<p>This lock prevents the access to the device settings and display via a local user interface. The user interface is disabled.</p> <p>True: Locked False: Unlocked</p>
Vendor Name	16	0	StringT	Leuze electronic GmbH + Co. KG	R	The vendor name that is assigned to a Vendor ID.
Vendor Text	17	0	StringT	The Sensor People	R	Additional information about the vendor.

Parameter	Index	Subindex	Data type	Default	AR	Description
Product Name	18	0	StringT		R	Complete product name.
Product ID	19	0	StringT		R	Vendor-specific product or type identification (e.g., item number or model number).
Product Text	20	0	StringT		R	Additional product information for the device.
Serial Number	21	0	StringT		R	Unique, vendor-specific identifier of the individual device.
Hardware Revision	22	0	StringT		R	Unique, vendor-specific identifier of the hardware revision of the individual device.
Firmware Revision	23	0	StringT		R	Unique, vendor-specific identifier of the firmware revision of the individual device.
Application-specific Tag	24	0	StringT		RW	Possibility to mark a device with user- or application-specific information.
Function tag	25	0	StringT	***	RW	User defined function tag
Location tag	26	0	StringT	***	RW	User defined location tag
Error Count	32	0	UIntegerT		R	Number of errors that occurred in the technology-specific application since power on or restart.
Device Status	36	0	UIntegerT		R	Indicator for the current device condition and diagnosis state.
Detailed Device Status	37	0	ArrayT	0x00,0x00,0x00	R	List of all currently pending events in the device.
	37	0	OctetStringT		R	
Lot	64	0	StringT		R	Production Lot
Temperature	86	0	IntegerT		R	Device Temperature
Operating Hours	93	0	UIntegerT		R	Duration of Duty
Number of Switch On	94	0	UIntegerT		R	Number of Switch On
Minimal Temperature	95	0	IntegerT		R	Minimal Temperature in Use
Maximal Temperature	96	0	IntegerT		R	Maximal Temperature in Use
Error Indication IOL-Communication	601	0	UIntegerT	0	RW	Error Indication IOL-Communication 0: disabled 1: enabled
Device Control	602	0	UIntegerT	1	RW	Device Control 1: External Trigger 2: Segment-Mode (PD) 3: Level-Mode (PD) 4: Demo-Mode

Parameter	Index	Subindex	Data type	Default	AR	Description
Selection Pre-Set	604	0	UIntegerT	0	RW	Simulation of all eight selectable presets in external trigger mode parallel to an IO-Link connection 0: 0 (Simulation off) 1: Pre-Set 1 2: Pre-Set 2 3: Pre-Set 3 4: Pre-Set 4 5: Pre-Set 5 6: Pre-Set 6 7: Pre-Set 7 8: Pre-Set 8
Selection Number of Segments	610	0	UIntegerT	3	RW	Selection of the number of segments in segment mode (PD) 1, 3
Direction Of Display	615	0	UIntegerT	0	RW	Direction Of Display 0: Bottom > Top 1: Top > Bottom
Mode	616	0	UIntegerT	0	RW	Mode 0: Segments increasing 1: Segments moving
Dynamic-Mode active Segment	617	0	UIntegerT	1	RW	Dynamic mode active segment (foreground color) 1: Cycling 2: Flashing
Dynamic-Mode inactive Segment	618	0	UIntegerT	1	RW	Dynamic mode inactive segment (background color) 1: Cycling 2: Flashing
Name	620	0	StringT	Aus/Off (Factory Setting)	RW	Designation freely selectable
Name	621	0	StringT	Rot/Red (Factory Setting)	RW	Designation freely selectable
Name	622	0	StringT	Grün/Green (Factory Setting)	RW	Designation freely selectable
Name	623	0	StringT	Gelb/Yellow (Factory Setting)	RW	Designation freely selectable
Name	624	0	StringT	Blau/Blue (Factory Setting)	RW	Designation freely selectable
Name	625	0	StringT	Weiß/White (Factory Setting)	RW	Designation freely selectable
Name	626	0	StringT	Orange (Factory Setting)	RW	Designation freely selectable
Name	627	0	StringT	Rosa/Pink (Factory Setting)	RW	Designation freely selectable
Color Proportion	650	0	RecordT		RW	Color Proportion

Parameter	Index	Subindex	Data type	Default	AR	Description
Red	650	1	UIntegerT	0	RW	Red Proportion (0 ... 100)
Green	650	2	UIntegerT	0	RW	Green Proportion (0 ... 100)
Blue	650	3	UIntegerT	0	RW	Blue Proportion (0 ... 100)
Color Proportion	651	0	RecordT		RW	Color Proportion
Red	651	1	UIntegerT	100	RW	Red Proportion (0 ... 100)
Green	651	2	UIntegerT	0	RW	Green Proportion (0 ... 100)
Blue	651	3	UIntegerT	0	RW	Blue Proportion (0 ... 100)
Color Proportion	652	0	RecordT		RW	Color Proportion
Red	652	1	UIntegerT	0	RW	Red Proportion (0 ... 100)
Green	652	2	UIntegerT	100	RW	Green Proportion (0 ... 100)
Blue	652	3	UIntegerT	0	RW	Blue Proportion (0 ... 100)
Color Proportion	653	0	RecordT		RW	Color Proportion
Red	653	1	UIntegerT	73	RW	Red Proportion (0 ... 100)
Green	653	2	UIntegerT	52	RW	Green Proportion (0 ... 100)
Blue	653	3	UIntegerT	0	RW	Blue Proportion (0 ... 100)
Color Proportion	654	0	RecordT		RW	Color Proportion
Red	654	1	UIntegerT	0	RW	Red Proportion (0 ... 100)
Green	654	2	UIntegerT	0	RW	Green Proportion (0 ... 100)
Blue	654	3	UIntegerT	100	RW	Blue Proportion (0 ... 100)
Color Proportion	655	0	RecordT		RW	Color Proportion
Red	655	1	UIntegerT	40	RW	Red Proportion (0 ... 100)
Green	655	2	UIntegerT	50	RW	Green Proportion (0 ... 100)

Parameter	Index	Subindex	Data type	Default	AR	Description
Blue	655	3	UIntegerT	35	RW	Blue Proportion (0 ... 100)
Color Proportion	656	0	RecordT		RW	Color Proportion
Red	656	1	UIntegerT	94	RW	Red Proportion (0 ... 100)
Green	656	2	UIntegerT	31	RW	Green Proportion (0 ... 100)
Blue	656	3	UIntegerT	0	RW	Blue Proportion (0 ... 100)
Color Proportion	657	0	RecordT		RW	Color Proportion
Red	657	1	UIntegerT	85	RW	Red Proportion (0 ... 100)
Green	657	2	UIntegerT	7	RW	Green Proportion (0 ... 100)
Blue	657	3	UIntegerT	33	RW	Blue Proportion (0 ... 100)
Seg 1	681	0	RecordT		RW	Segment
Intensity	681	1	UIntegerT	100	RW	Intensity (10 ... 100)
Dynamic-Mode	681	2	UIntegerT	1	RW	Dynamic-Mode 1: Cycling 2: Flashing
Seg 2	682	0	RecordT		RW	Segment
Intensity	682	1	UIntegerT	100	RW	Intensity (10 ... 100)
Dynamic-Mode	682	2	UIntegerT	1	RW	Dynamic-Mode 1: Cycling 2: Flashing
Seg 3	683	0	RecordT		RW	Segment
Intensity	683	1	UIntegerT	100	RW	Intensity (10 ... 100)
Dynamic-Mode	683	2	UIntegerT	1	RW	Dynamic-Mode 1: Cycling 2: Flashing
Buzzer	700	0	UIntegerT	0	RW	intermittent slow (1Hz) / intermittent fast (2,5Hz) 0: off 1: on (cont) 2: intermittent slow 3: intermittent fast
Seg 1	701	0	RecordT		RW	Segment Preset

Parameter	Index	Subindex	Data type	Default	AR	Description
Color	701	1	UIntegerT	0	RW	Color 0: Color 000 1: Color 001 2: Color 010 3: Color 011 4: Color 100 5: Color 101 6: Color 110 7: Color 111
Intensity	701	2	UIntegerT	100	RW	Intensity (10 ... 100)
Mode	701	3	UIntegerT	0	RW	Mode 0: static 1: cycling 2: flashing
Seg 2	702	0	RecordT		RW	Segment Preset
Color	702	1	UIntegerT	0	RW	Color 0: Color 000 1: Color 001 2: Color 010 3: Color 011 4: Color 100 5: Color 101 6: Color 110 7: Color 111
Intensity	702	2	UIntegerT	100	RW	Intensity (10 ... 100)
Mode	702	3	UIntegerT	0	RW	Mode 0: static 1: cycling 2: flashing
Seg 3	703	0	RecordT		RW	Segment Preset
Color	703	1	UIntegerT	0	RW	Color 0: Color 000 1: Color 001 2: Color 010 3: Color 011 4: Color 100 5: Color 101 6: Color 110 7: Color 111
Intensity	703	2	UIntegerT	100	RW	Intensity (10 ... 100)
Mode	703	3	UIntegerT	0	RW	Mode 0: static 1: cycling 2: flashing

Parameter	Index	Subindex	Data type	Default	AR	Description
Buzzer	720	0	UIntegerT	0	RW	intermittent slow (1Hz) / intermittent fast (2,5Hz) 0: off 1: on (cont) 2: intermittent slow 3: intermittent fast
Seg 1	721	0	RecordT		RW	Segment Preset
Color	721	1	UIntegerT	0	RW	Color 0: Color 000 1: Color 001 2: Color 010 3: Color 011 4: Color 100 5: Color 101 6: Color 110 7: Color 111
Intensity	721	2	UIntegerT	100	RW	Intensity (10 ... 100)
Mode	721	3	UIntegerT	0	RW	Mode 0: static 1: cycling 2: flashing
Seg 2	722	0	RecordT		RW	Segment Preset
Color	722	1	UIntegerT	0	RW	Color 0: Color 000 1: Color 001 2: Color 010 3: Color 011 4: Color 100 5: Color 101 6: Color 110 7: Color 111
Intensity	722	2	UIntegerT	100	RW	Intensity (10 ... 100)
Mode	722	3	UIntegerT	0	RW	Mode 0: static 1: cycling 2: flashing
Seg 3	723	0	RecordT		RW	Segment Preset
Color	723	1	UIntegerT	1	RW	Color 0: Color 000 1: Color 001 2: Color 010 3: Color 011 4: Color 100 5: Color 101 6: Color 110 7: Color 111
Intensity	723	2	UIntegerT	100	RW	Intensity (10 ... 100)

Parameter	Index	Subindex	Data type	Default	AR	Description
Mode	723	3	UIntegerT	0	RW	Mode 0: static 1: cycling 2: flashing
Buzzer	740	0	UIntegerT	0	RW	intermittent slow (1Hz) / intermittent fast (2,5Hz) 0: off 1: on (cont) 2: intermittent slow 3: intermittent fast
Seg 1	741	0	RecordT		RW	Segment Preset
Color	741	1	UIntegerT	2	RW	Color 0: Color 000 1: Color 001 2: Color 010 3: Color 011 4: Color 100 5: Color 101 6: Color 110 7: Color 111
Intensity	741	2	UIntegerT	100	RW	Intensity (10 ... 100)
Mode	741	3	UIntegerT	0	RW	Mode 0: static 1: cycling 2: flashing
Seg 2	742	0	RecordT		RW	Segment Preset
Color	742	1	UIntegerT	0	RW	Color 0: Color 000 1: Color 001 2: Color 010 3: Color 011 4: Color 100 5: Color 101 6: Color 110 7: Color 111
Intensity	742	2	UIntegerT	100	RW	Intensity (10 ... 100)
Mode	742	3	UIntegerT	0	RW	Mode 0: static 1: cycling 2: flashing
Seg 3	743	0	RecordT		RW	Segment Preset

Parameter	Index	Subindex	Data type	Default	AR	Description
Color	743	1	UIntegerT	0	RW	Color 0: Color 000 1: Color 001 2: Color 010 3: Color 011 4: Color 100 5: Color 101 6: Color 110 7: Color 111
Intensity	743	2	UIntegerT	100	RW	Intensity (10 ... 100)
Mode	743	3	UIntegerT	0	RW	Mode 0: static 1: cycling 2: flashing
Buzzer	760	0	UIntegerT	0	RW	intermittent slow (1Hz) / intermittent fast (2,5Hz) 0: off 1: on (cont) 2: intermittent slow 3: intermittent fast
Seg 1	761	0	RecordT		RW	Segment Preset
Color	761	1	UIntegerT	0	RW	Color 0: Color 000 1: Color 001 2: Color 010 3: Color 011 4: Color 100 5: Color 101 6: Color 110 7: Color 111
Intensity	761	2	UIntegerT	100	RW	Intensity (10 ... 100)
Mode	761	3	UIntegerT	0	RW	Mode 0: static 1: cycling 2: flashing
Seg 2	762	0	RecordT		RW	Segment Preset
Color	762	1	UIntegerT	3	RW	Color 0: Color 000 1: Color 001 2: Color 010 3: Color 011 4: Color 100 5: Color 101 6: Color 110 7: Color 111
Intensity	762	2	UIntegerT	100	RW	Intensity (10 ... 100)

Parameter	Index	Subindex	Data type	Default	AR	Description
Mode	762	3	UIntegerT	0	RW	Mode 0: static 1: cycling 2: flashing
Seg 3	763	0	RecordT		RW	Segment Preset
Color	763	1	UIntegerT	0	RW	Color 0: Color 000 1: Color 001 2: Color 010 3: Color 011 4: Color 100 5: Color 101 6: Color 110 7: Color 111
Intensity	763	2	UIntegerT	100	RW	Intensity (10 ... 100)
Mode	763	3	UIntegerT	0	RW	Mode 0: static 1: cycling 2: flashing
Buzzer	780	0	UIntegerT	0	RW	intermittent slow (1Hz) / intermittent fast (2,5Hz) 0: off 1: on (cont) 2: intermittent slow 3: intermittent fast
Seg 1	781	0	RecordT		RW	Segment Preset
Color	781	1	UIntegerT	4	RW	Color 0: Color 000 1: Color 001 2: Color 010 3: Color 011 4: Color 100 5: Color 101 6: Color 110 7: Color 111
Intensity	781	2	UIntegerT	100	RW	Intensity (10 ... 100)
Mode	781	3	UIntegerT	0	RW	Mode 0: static 1: cycling 2: flashing
Seg 2	782	0	RecordT		RW	Segment Preset

Parameter	Index	Subindex	Data type	Default	AR	Description
Color	782	1	UIntegerT	0	RW	Color 0: Color 000 1: Color 001 2: Color 010 3: Color 011 4: Color 100 5: Color 101 6: Color 110 7: Color 111
Intensity	782	2	UIntegerT	100	RW	Intensity (10 ... 100)
Mode	782	3	UIntegerT	0	RW	Mode 0: static 1: cycling 2: flashing
Seg 3	783	0	RecordT		RW	Segment Preset
Color	783	1	UIntegerT	0	RW	Color 0: Color 000 1: Color 001 2: Color 010 3: Color 011 4: Color 100 5: Color 101 6: Color 110 7: Color 111
Intensity	783	2	UIntegerT	100	RW	Intensity (10 ... 100)
Mode	783	3	UIntegerT	0	RW	Mode 0: static 1: cycling 2: flashing
Buzzer	800	0	UIntegerT	0	RW	intermittent slow (1Hz) / intermittent fast (2,5Hz) 0: off 1: on (cont) 2: intermittent slow 3: intermittent fast
Seg 1	801	0	RecordT		RW	Segment Preset
Color	801	1	UIntegerT	5	RW	Color 0: Color 000 1: Color 001 2: Color 010 3: Color 011 4: Color 100 5: Color 101 6: Color 110 7: Color 111
Intensity	801	2	UIntegerT	100	RW	Intensity (10 ... 100)

Parameter	Index	Subindex	Data type	Default	AR	Description
Mode	801	3	UIntegerT	0	RW	Mode 0: static 1: cycling 2: flashing
Seg 2	802	0	RecordT		RW	Segment Preset
Color	802	1	UIntegerT	0	RW	Color 0: Color 000 1: Color 001 2: Color 010 3: Color 011 4: Color 100 5: Color 101 6: Color 110 7: Color 111
Intensity	802	2	UIntegerT	100	RW	Intensity (10 ... 100)
Mode	802	3	UIntegerT	0	RW	Mode 0: static 1: cycling 2: flashing
Seg 3	803	0	RecordT		RW	Segment Preset
Color	803	1	UIntegerT	0	RW	Color 0: Color 000 1: Color 001 2: Color 010 3: Color 011 4: Color 100 5: Color 101 6: Color 110 7: Color 111
Intensity	803	2	UIntegerT	100	RW	Intensity (10 ... 100)
Mode	803	3	UIntegerT	0	RW	Mode 0: static 1: cycling 2: flashing
Buzzer	820	0	UIntegerT	2	RW	intermittent slow (1Hz) / intermittent fast (2,5Hz) 0: off 1: on (cont) 2: intermittent slow 3: intermittent fast
Seg 1	821	0	RecordT		RW	Segment Preset

Parameter	Index	Subindex	Data type	Default	AR	Description
Color	821	1	UIntegerT	0	RW	Color 0: Color 000 1: Color 001 2: Color 010 3: Color 011 4: Color 100 5: Color 101 6: Color 110 7: Color 111
Intensity	821	2	UIntegerT	100	RW	Intensity (10 ... 100)
Mode	821	3	UIntegerT	0	RW	Mode 0: static 1: cycling 2: flashing
Seg 2	822	0	RecordT		RW	Segment Preset
Color	822	1	UIntegerT	0	RW	Color 0: Color 000 1: Color 001 2: Color 010 3: Color 011 4: Color 100 5: Color 101 6: Color 110 7: Color 111
Intensity	822	2	UIntegerT	100	RW	Intensity (10 ... 100)
Mode	822	3	UIntegerT	0	RW	Mode 0: static 1: cycling 2: flashing
Seg 3	823	0	RecordT		RW	Segment Preset
Color	823	1	UIntegerT	1	RW	Color 0: Color 000 1: Color 001 2: Color 010 3: Color 011 4: Color 100 5: Color 101 6: Color 110 7: Color 111
Intensity	823	2	UIntegerT	100	RW	Intensity (10 ... 100)
Mode	823	3	UIntegerT	1	RW	Mode 0: static 1: cycling 2: flashing

Parameter	Index	Subindex	Data type	Default	AR	Description
Buzzer	840	0	UIntegerT	3	RW	intermittent slow (1Hz) / intermittent fast (2,5Hz) 0: off 1: on (cont) 2: intermittent slow 3: intermittent fast
Seg 1	841	0	RecordT		RW	Segment Preset
Color	841	1	UIntegerT	0	RW	Color 0: Color 000 1: Color 001 2: Color 010 3: Color 011 4: Color 100 5: Color 101 6: Color 110 7: Color 111
Intensity	841	2	UIntegerT	100	RW	Intensity (10 ... 100)
Mode	841	3	UIntegerT	0	RW	Mode 0: static 1: cycling 2: flashing
Seg 2	842	0	RecordT		RW	Segment Preset
Color	842	1	UIntegerT	0	RW	Color 0: Color 000 1: Color 001 2: Color 010 3: Color 011 4: Color 100 5: Color 101 6: Color 110 7: Color 111
Intensity	842	2	UIntegerT	100	RW	Intensity (10 ... 100)
Mode	842	3	UIntegerT	0	RW	Mode 0: static 1: cycling 2: flashing
Seg 3	843	0	RecordT		RW	Segment Preset
Color	843	1	UIntegerT	1	RW	Color 0: Color 000 1: Color 001 2: Color 010 3: Color 011 4: Color 100 5: Color 101 6: Color 110 7: Color 111
Intensity	843	2	UIntegerT	100	RW	Intensity (10 ... 100)

Parameter	Index	Subindex	Data type	Default	AR	Description
Mode	843	3	UIntegerT	2	RW	Mode 0: static 1: cycling 2: flashing

9 Technical specifications

9.1 General data

Tab. 9.1: Sensor and IODD version

IODD version	V1.0
IODD release date	2022-11-22
Device family	Signaling Column
Device ID	5001
Device name	TL305-3MC-BZ-IOL-M12
Device variants	TL305-3MC-BZ-IOL-M12 (50149098)