IO-Link

PLC Integration of GSX14E_2502

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

Leuze

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1   Legal information

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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_ GSX14E_2502" 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

```
                         FB_Leuze_IOL_xxx
──  bExecute   BOOL                                  BOOL  bDone   ──
──  sNetID     T_AmsNetID                            BOOL  bBusy   ──
──  nPort      T_AmsPort                             BOOL  bError  ──
──  nIdxGroup  UDINT              ST_Leuze_IOL_Error  stErrorCode  ──
──  bRW        BOOL
──  tTimeOut   TIME
──  stDeviceData  ST_Leuze_IOL_xxx
```

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_ GSX14E_2502	Sensor data

See structure description of ST_Leuze_IOL_ GSX14E_2502 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_ GSX14E_2502". 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_ GSX14E_2502" 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_ GSX14E_2502" 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 F_Leuze_PD_ GSX14E_2502 simplifies the interpretation of composed IO-Link process data. This data is provided as a data structure on the PLC side.

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

5.1 Calling and designation


```
                          F_Leuze_PD_xxx
—aProcessData  ARRAY [0..0] OF BYTE        ST_Leuze_PD_xxx  F_Leuze_PD_xxx—
                                                   BOOL  bError—
```

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.
bError	OUTPUT	BOOL	Error flag FALSE: No error TRUE: Error detected
F_Leuze_PD_ GSX14E_2502	OUTPUT	ST_Leuze_PD_ GSX14E_2502	Reference to the instance of the data structure ST_Leuze_PD_ GSX14E_2502. The structure includes the disaggregated values of the process data.

See structure description of ST_Leuze_PD_ GSX14E_2502 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).

7 Data structures

Tab. 7.1:   ST_Leuze_IOL_ GSX14E_2502

Parameter name	Data type	Description
stDeviceData.stSelection.stCommands.bDeviceReset	BOOL	[WRITE_ONLY] Device Reset
stDeviceData.stSelection.stCommands.bApplicationReset	BOOL	[WRITE_ONLY] Application Reset
stDeviceData.stSelection.stCommands.bRestoreFactorySettings	BOOL	[WRITE_ONLY] Restore Factory Settings
stDeviceData.stSelection.stCommands.bTeachSp1	BOOL	[WRITE_ONLY] Teach SP1
stDeviceData.stSelection.stCommands.bTeachSp1Start	BOOL	[WRITE_ONLY] Teach SP1 Start
stDeviceData.stSelection.stCommands.bTeachSp1Stop	BOOL	[WRITE_ONLY] Teach SP1 Stop
stDeviceData.stSelection.stCommands.bAbortTeach	BOOL	[WRITE_ONLY] Abort Teach
stDeviceData.stSelection.stCommands.bEasytuneDown	BOOL	[WRITE_ONLY] easyTune Down
stDeviceData.stSelection.stCommands.bEasytuneUp	BOOL	[WRITE_ONLY] easyTune Up
stDeviceData.stSelection.stCommands.bClearError	BOOL	[WRITE_ONLY] Clear Error
stDeviceData.stSelection.stCommands.bMethodUltrasonic	BOOL	[WRITE_ONLY] Method Ultrasonic
stDeviceData.stSelection.stCommands.bMethodOptical	BOOL	[WRITE_ONLY] Method Optical
stDeviceData.stSelection.stCommands.bSaveWorkIndex	BOOL	[WRITE_ONLY] Save Work Index
stDeviceData.stSelection.stCommands.bLoadWorkIndex	BOOL	[WRITE_ONLY] Load Work Index
stDeviceData.stSelection.stDirectParameters1.bAll	BOOL	[READ_WRITE] all parameters of complex data type
stDeviceData.stSelection.stDirectParameters1.bReserved_1	BOOL	[READ_ONLY]
stDeviceData.stSelection.stDirectParameters1.bMasterCycleTime	BOOL	[READ_ONLY]
stDeviceData.stSelection.stDirectParameters1.bMinCycleTime	BOOL	[READ_ONLY]
stDeviceData.stSelection.stDirectParameters1.bMSequenceCapability	BOOL	[READ_ONLY]
stDeviceData.stSelection.stDirectParameters1.bIoLinkVersionId	BOOL	[READ_ONLY]
stDeviceData.stSelection.stDirectParameters1.bProcessDataInputLength	BOOL	[READ_ONLY]
stDeviceData.stSelection.stDirectParameters1.bProcessDataOutputLength	BOOL	[READ_ONLY]
stDeviceData.stSelection.stDirectParameters1.bVendorId1	BOOL	[READ_ONLY]
stDeviceData.stSelection.stDirectParameters1.bVendorId2	BOOL	[READ_ONLY]
stDeviceData.stSelection.stDirectParameters1.bDeviceId1	BOOL	[READ_ONLY]

Parameter name	Data type	Description
stDeviceData.stSelection.stDirectParameters1.bDeviceId2	BOOL	[READ_ONLY]
stDeviceData.stSelection.stDirectParameters1.bDeviceId3	BOOL	[READ_ONLY]
stDeviceData.stSelection.stDirectParameters1.bReserved_13	BOOL	[READ_ONLY]
stDeviceData.stSelection.stDirectParameters1.bReserved_14	BOOL	[READ_ONLY]
stDeviceData.stSelection.stDirectParameters1.bReserved_15	BOOL	[READ_ONLY]
stDeviceData.stSelection.stDirectParameters2.bAll	BOOL	[READ_WRITE] all parameters of complex data type
stDeviceData.stSelection.stDirectParameters2.bDeviceSpecificParameter1	BOOL	[READ_WRITE]
stDeviceData.stSelection.stDirectParameters2.bDeviceSpecificParameter2	BOOL	[READ_WRITE]
stDeviceData.stSelection.stDirectParameters2.bDeviceSpecificParameter3	BOOL	[READ_WRITE]
stDeviceData.stSelection.stDirectParameters2.bDeviceSpecificParameter4	BOOL	[READ_WRITE]
stDeviceData.stSelection.stDirectParameters2.bDeviceSpecificParameter5	BOOL	[READ_WRITE]
stDeviceData.stSelection.stDirectParameters2.bDeviceSpecificParameter6	BOOL	[READ_WRITE]
stDeviceData.stSelection.stDirectParameters2.bDeviceSpecificParameter7	BOOL	[READ_WRITE]
stDeviceData.stSelection.stDirectParameters2.bDeviceSpecificParameter8	BOOL	[READ_WRITE]
stDeviceData.stSelection.stDirectParameters2.bDeviceSpecificParameter9	BOOL	[READ_WRITE]
stDeviceData.stSelection.stDirectParameters2.bDeviceSpecificParameter10	BOOL	[READ_WRITE]
stDeviceData.stSelection.stDirectParameters2.bDeviceSpecificParameter11	BOOL	[READ_WRITE]
stDeviceData.stSelection.stDirectParameters2.bDeviceSpecificParameter12	BOOL	[READ_WRITE]
stDeviceData.stSelection.stDirectParameters2.bDeviceSpecificParameter13	BOOL	[READ_WRITE]
stDeviceData.stSelection.stDirectParameters2.bDeviceSpecificParameter14	BOOL	[READ_WRITE]
stDeviceData.stSelection.stDirectParameters2.bDeviceSpecificParameter15	BOOL	[READ_WRITE]
stDeviceData.stSelection.stDirectParameters2.bDeviceSpecificParameter16	BOOL	[READ_WRITE]
stDeviceData.stSelection.bStandardCommand	BOOL	[WRITE_ONLY]
stDeviceData.stSelection.stDeviceAccessLocks.bAll	BOOL	[READ_WRITE] all parameters of complex data type
stDeviceData.stSelection.stProfileCharacteristic.bAll	BOOL	[READ_ONLY] all parameters of complex data type
stDeviceData.stSelection.bVendorName	BOOL	[READ_ONLY]

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Parameter name	Data type	Description
stDeviceData.stSelection.bVendorText	BOOL	[READ_ONLY]
stDeviceData.stSelection.bProductName	BOOL	[READ_ONLY]
stDeviceData.stSelection.bProductId	BOOL	[READ_ONLY]
stDeviceData.stSelection.bProductText	BOOL	[READ_ONLY]
stDeviceData.stSelection.bSerialNumber	BOOL	[READ_ONLY]
stDeviceData.stSelection.bHardwareVersion	BOOL	[READ_ONLY]
stDeviceData.stSelection.bFirmwareVersion	BOOL	[READ_ONLY]
stDeviceData.stSelection.bApplicationSpecificTag	BOOL	[READ_WRITE]
stDeviceData.stSelection.bFunctionTag	BOOL	[READ_WRITE]
stDeviceData.stSelection.bLocationTag	BOOL	[READ_WRITE]
stDeviceData.stSelection.bDeviceStatus	BOOL	[READ_ONLY]
stDeviceData.stSelection.stDetailedDeviceStatus.bAll	BOOL	[READ_ONLY] all parameters of complex data type
stDeviceData.stSelection.bSscParamSp	BOOL	[READ_WRITE] sensitivity or setpoint values for switching signal channel
stDeviceData.stSelection.bSscConfigLogic	BOOL	[READ_WRITE] defines the logical behaviour of the switching signal and derived output signal
stDeviceData.stSelection.stTiErgebnis.bAll	BOOL	[READ_ONLY] all parameters of complex data type
stDeviceData.stSelection.bTeachSettingsDynamic	BOOL	[READ_WRITE] Teach Settings Dynamic
stDeviceData.stSelection.stSystem.bAll	BOOL	[READ_ONLY] all parameters of complex data type
stDeviceData.stSelection.bAmplitude	BOOL	[READ_ONLY] Actual Amplitude
stDeviceData.stSelection.bThreshold	BOOL	[READ_ONLY] Threshold
stDeviceData.stSelection.bWorkingParameterLoadSaveIndex	BOOL	[READ_WRITE] Working Parameter load / save index
stDeviceData.stSelection.stWorkingParameter.bAll	BOOL	[READ_WRITE] all parameters of complex data type
stDeviceData.stSelection.stWorkingParameter.bActiveMeasMethod	BOOL	[READ_WRITE]
stDeviceData.stSelection.stWorkingParameter.bUltrasonicThreshold	BOOL	[READ_WRITE]
stDeviceData.stSelection.stWorkingParameter.bOpticalThreshold	BOOL	[READ_WRITE]
stDeviceData.stSelection.stWorkingParameter.bUltrasonicHysteresis	BOOL	[READ_WRITE]

Parameter name	Data type	Description
stDeviceData.stSelection.stWorkingParameter.bOpticalHysteresis	BOOL	[READ_WRITE]
stDeviceData.stSelection.stWorkingParameter.bUltrasonicGain	BOOL	[READ_WRITE]
stDeviceData.stSelection.stWorkingParameter.bOpticalGain	BOOL	[READ_WRITE]
stDeviceData.stSelection.stWorkingParameter.bUltrasonicTeachParameter	BOOL	[READ_WRITE]
stDeviceData.stSelection.stWorkingParameter.bOpticalTeachParameter	BOOL	[READ_WRITE]
stDeviceData.stSelection.stDataset0.bAll	BOOL	[READ_WRITE] all parameters of complex data type
stDeviceData.stSelection.stDataset0.bActiveMeasMethod	BOOL	[READ_WRITE]
stDeviceData.stSelection.stDataset0.bUltrasonicThreshold	BOOL	[READ_WRITE]
stDeviceData.stSelection.stDataset0.bOpticalThreshold	BOOL	[READ_WRITE]
stDeviceData.stSelection.stDataset0.bUltrasonicHysteresis	BOOL	[READ_WRITE]
stDeviceData.stSelection.stDataset0.bOpticalHysteresis	BOOL	[READ_WRITE]
stDeviceData.stSelection.stDataset0.bUltrasonicGain	BOOL	[READ_WRITE]
stDeviceData.stSelection.stDataset0.bOpticalGain	BOOL	[READ_WRITE]
stDeviceData.stSelection.stDataset0.bUltrasonicTeachParameter	BOOL	[READ_WRITE]
stDeviceData.stSelection.stDataset0.bOpticalTeachParameter	BOOL	[READ_WRITE]
stDeviceData.stSelection.stDataset1.bAll	BOOL	[READ_WRITE] all parameters of complex data type
stDeviceData.stSelection.stDataset1.bActiveMeasMethod	BOOL	[READ_WRITE]
stDeviceData.stSelection.stDataset1.bUltrasonicThreshold	BOOL	[READ_WRITE]
stDeviceData.stSelection.stDataset1.bOpticalThreshold	BOOL	[READ_WRITE]
stDeviceData.stSelection.stDataset1.bUltrasonicHysteresis	BOOL	[READ_WRITE]
stDeviceData.stSelection.stDataset1.bOpticalHysteresis	BOOL	[READ_WRITE]
stDeviceData.stSelection.stDataset1.bUltrasonicGain	BOOL	[READ_WRITE]
stDeviceData.stSelection.stDataset1.bOpticalGain	BOOL	[READ_WRITE]
stDeviceData.stSelection.stDataset1.bUltrasonicTeachParameter	BOOL	[READ_WRITE]
stDeviceData.stSelection.stDataset1.bOpticalTeachParameter	BOOL	[READ_WRITE]
stDeviceData.stSelection.stDataset2.bAll	BOOL	[READ_WRITE] all parameters of complex data type

Parameter name	Data type	Description
stDeviceData.stSelection.stDataset2.bActiveMeasMethod	BOOL	[READ_WRITE]
stDeviceData.stSelection.stDataset2.bUltrasonicThreshold	BOOL	[READ_WRITE]
stDeviceData.stSelection.stDataset2.bOpticalThreshold	BOOL	[READ_WRITE]
stDeviceData.stSelection.stDataset2.bUltrasonicHysteresis	BOOL	[READ_WRITE]
stDeviceData.stSelection.stDataset2.bOpticalHysteresis	BOOL	[READ_WRITE]
stDeviceData.stSelection.stDataset2.bUltrasonicGain	BOOL	[READ_WRITE]
stDeviceData.stSelection.stDataset2.bOpticalGain	BOOL	[READ_WRITE]
stDeviceData.stSelection.stDataset2.bUltrasonicTeachParameter	BOOL	[READ_WRITE]
stDeviceData.stSelection.stDataset2.bOpticalTeachParameter	BOOL	[READ_WRITE]
stDeviceData.stSelection.stDataset3.bAll	BOOL	[READ_WRITE] all parameters of complex data type
stDeviceData.stSelection.stDataset3.bActiveMeasMethod	BOOL	[READ_WRITE]
stDeviceData.stSelection.stDataset3.bUltrasonicThreshold	BOOL	[READ_WRITE]
stDeviceData.stSelection.stDataset3.bOpticalThreshold	BOOL	[READ_WRITE]
stDeviceData.stSelection.stDataset3.bUltrasonicHysteresis	BOOL	[READ_WRITE]
stDeviceData.stSelection.stDataset3.bOpticalHysteresis	BOOL	[READ_WRITE]
stDeviceData.stSelection.stDataset3.bUltrasonicGain	BOOL	[READ_WRITE]
stDeviceData.stSelection.stDataset3.bOpticalGain	BOOL	[READ_WRITE]
stDeviceData.stSelection.stDataset3.bUltrasonicTeachParameter	BOOL	[READ_WRITE]
stDeviceData.stSelection.stDataset3.bOpticalTeachParameter	BOOL	[READ_WRITE]
stDeviceData.stSelection.stDataset4.bAll	BOOL	[READ_WRITE] all parameters of complex data type
stDeviceData.stSelection.stDataset4.bActiveMeasMethod	BOOL	[READ_WRITE]
stDeviceData.stSelection.stDataset4.bUltrasonicThreshold	BOOL	[READ_WRITE]
stDeviceData.stSelection.stDataset4.bOpticalThreshold	BOOL	[READ_WRITE]
stDeviceData.stSelection.stDataset4.bUltrasonicHysteresis	BOOL	[READ_WRITE]
stDeviceData.stSelection.stDataset4.bOpticalHysteresis	BOOL	[READ_WRITE]
stDeviceData.stSelection.stDataset4.bUltrasonicGain	BOOL	[READ_WRITE]
stDeviceData.stSelection.stDataset4.bOpticalGain	BOOL	[READ_WRITE]

Parameter name	Data type	Description
stDeviceData.stSelection.stDataset4.bUltrasonicTeachParameter	BOOL	[READ_WRITE]
stDeviceData.stSelection.stDataset4.bOpticalTeachParameter	BOOL	[READ_WRITE]
stDeviceData.stSelection.stDataset5.bAll	BOOL	[READ_WRITE] all parameters of complex data type
stDeviceData.stSelection.stDataset5.bActiveMeasMethod	BOOL	[READ_WRITE]
stDeviceData.stSelection.stDataset5.bUltrasonicThreshold	BOOL	[READ_WRITE]
stDeviceData.stSelection.stDataset5.bOpticalThreshold	BOOL	[READ_WRITE]
stDeviceData.stSelection.stDataset5.bUltrasonicHysteresis	BOOL	[READ_WRITE]
stDeviceData.stSelection.stDataset5.bOpticalHysteresis	BOOL	[READ_WRITE]
stDeviceData.stSelection.stDataset5.bUltrasonicGain	BOOL	[READ_WRITE]
stDeviceData.stSelection.stDataset5.bOpticalGain	BOOL	[READ_WRITE]
stDeviceData.stSelection.stDataset5.bUltrasonicTeachParameter	BOOL	[READ_WRITE]
stDeviceData.stSelection.stDataset5.bOpticalTeachParameter	BOOL	[READ_WRITE]
stDeviceData.stSelection.stDataset6.bAll	BOOL	[READ_WRITE] all parameters of complex data type
stDeviceData.stSelection.stDataset6.bActiveMeasMethod	BOOL	[READ_WRITE]
stDeviceData.stSelection.stDataset6.bUltrasonicThreshold	BOOL	[READ_WRITE]
stDeviceData.stSelection.stDataset6.bOpticalThreshold	BOOL	[READ_WRITE]
stDeviceData.stSelection.stDataset6.bUltrasonicHysteresis	BOOL	[READ_WRITE]
stDeviceData.stSelection.stDataset6.bOpticalHysteresis	BOOL	[READ_WRITE]
stDeviceData.stSelection.stDataset6.bUltrasonicGain	BOOL	[READ_WRITE]
stDeviceData.stSelection.stDataset6.bOpticalGain	BOOL	[READ_WRITE]
stDeviceData.stSelection.stDataset6.bUltrasonicTeachParameter	BOOL	[READ_WRITE]
stDeviceData.stSelection.stDataset6.bOpticalTeachParameter	BOOL	[READ_WRITE]
stDeviceData.stSelection.stDataset7.bAll	BOOL	[READ_WRITE] all parameters of complex data type
stDeviceData.stSelection.stDataset7.bActiveMeasMethod	BOOL	[READ_WRITE]
stDeviceData.stSelection.stDataset7.bUltrasonicThreshold	BOOL	[READ_WRITE]
stDeviceData.stSelection.stDataset7.bOpticalThreshold	BOOL	[READ_WRITE]

Parameter name	Data type	Description
stDeviceData.stSelection.stDataset7.bUltrasonicHysteresis	BOOL	[READ_WRITE]
stDeviceData.stSelection.stDataset7.bOpticalHysteresis	BOOL	[READ_WRITE]
stDeviceData.stSelection.stDataset7.bUltrasonicGain	BOOL	[READ_WRITE]
stDeviceData.stSelection.stDataset7.bOpticalGain	BOOL	[READ_WRITE]
stDeviceData.stSelection.stDataset7.bUltrasonicTeachParameter	BOOL	[READ_WRITE]
stDeviceData.stSelection.stDataset7.bOpticalTeachParameter	BOOL	[READ_WRITE]
stDeviceData.stSelection.stDataset8.bAll	BOOL	[READ_WRITE] all parameters of complex data type
stDeviceData.stSelection.stDataset8.bActiveMeasMethod	BOOL	[READ_WRITE]
stDeviceData.stSelection.stDataset8.bUltrasonicThreshold	BOOL	[READ_WRITE]
stDeviceData.stSelection.stDataset8.bOpticalThreshold	BOOL	[READ_WRITE]
stDeviceData.stSelection.stDataset8.bUltrasonicHysteresis	BOOL	[READ_WRITE]
stDeviceData.stSelection.stDataset8.bOpticalHysteresis	BOOL	[READ_WRITE]
stDeviceData.stSelection.stDataset8.bUltrasonicGain	BOOL	[READ_WRITE]
stDeviceData.stSelection.stDataset8.bOpticalGain	BOOL	[READ_WRITE]
stDeviceData.stSelection.stDataset8.bUltrasonicTeachParameter	BOOL	[READ_WRITE]
stDeviceData.stSelection.stDataset8.bOpticalTeachParameter	BOOL	[READ_WRITE]
stDeviceData.stSelection.stDataset9.bAll	BOOL	[READ_WRITE] all parameters of complex data type
stDeviceData.stSelection.stDataset9.bActiveMeasMethod	BOOL	[READ_WRITE]
stDeviceData.stSelection.stDataset9.bUltrasonicThreshold	BOOL	[READ_WRITE]
stDeviceData.stSelection.stDataset9.bOpticalThreshold	BOOL	[READ_WRITE]
stDeviceData.stSelection.stDataset9.bUltrasonicHysteresis	BOOL	[READ_WRITE]
stDeviceData.stSelection.stDataset9.bOpticalHysteresis	BOOL	[READ_WRITE]
stDeviceData.stSelection.stDataset9.bUltrasonicGain	BOOL	[READ_WRITE]
stDeviceData.stSelection.stDataset9.bOpticalGain	BOOL	[READ_WRITE]
stDeviceData.stSelection.stDataset9.bUltrasonicTeachParameter	BOOL	[READ_WRITE]
stDeviceData.stSelection.stDataset9.bOpticalTeachParameter	BOOL	[READ_WRITE]

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Parameter name	Data type	Description
stDeviceData.stSelection.stDataset10.bAll	BOOL	[READ_WRITE] all parameters of complex data type
stDeviceData.stSelection.stDataset10.bActiveMeasMethod	BOOL	[READ_WRITE]
stDeviceData.stSelection.stDataset10.bUltrasonicThreshold	BOOL	[READ_WRITE]
stDeviceData.stSelection.stDataset10.bOpticalThreshold	BOOL	[READ_WRITE]
stDeviceData.stSelection.stDataset10.bUltrasonicHysteresis	BOOL	[READ_WRITE]
stDeviceData.stSelection.stDataset10.bOpticalHysteresis	BOOL	[READ_WRITE]
stDeviceData.stSelection.stDataset10.bUltrasonicGain	BOOL	[READ_WRITE]
stDeviceData.stSelection.stDataset10.bOpticalGain	BOOL	[READ_WRITE]
stDeviceData.stSelection.stDataset10. bUltrasonicTeachParameter	BOOL	[READ_WRITE]
stDeviceData.stSelection.stDataset10.bOpticalTeachParameter	BOOL	[READ_WRITE]
stDeviceData.stSelection.stDataset11.bAll	BOOL	[READ_WRITE] all parameters of complex data type
stDeviceData.stSelection.stDataset11.bActiveMeasMethod	BOOL	[READ_WRITE]
stDeviceData.stSelection.stDataset11.bUltrasonicThreshold	BOOL	[READ_WRITE]
stDeviceData.stSelection.stDataset11.bOpticalThreshold	BOOL	[READ_WRITE]
stDeviceData.stSelection.stDataset11.bUltrasonicHysteresis	BOOL	[READ_WRITE]
stDeviceData.stSelection.stDataset11.bOpticalHysteresis	BOOL	[READ_WRITE]
stDeviceData.stSelection.stDataset11.bUltrasonicGain	BOOL	[READ_WRITE]
stDeviceData.stSelection.stDataset11.bOpticalGain	BOOL	[READ_WRITE]
stDeviceData.stSelection.stDataset11. bUltrasonicTeachParameter	BOOL	[READ_WRITE]
stDeviceData.stSelection.stDataset11.bOpticalTeachParameter	BOOL	[READ_WRITE]
stDeviceData.stSelection.stDataset12.bAll	BOOL	[READ_WRITE] all parameters of complex data type
stDeviceData.stSelection.stDataset12.bActiveMeasMethod	BOOL	[READ_WRITE]
stDeviceData.stSelection.stDataset12.bUltrasonicThreshold	BOOL	[READ_WRITE]
stDeviceData.stSelection.stDataset12.bOpticalThreshold	BOOL	[READ_WRITE]
stDeviceData.stSelection.stDataset12.bUltrasonicHysteresis	BOOL	[READ_WRITE]
stDeviceData.stSelection.stDataset12.bOpticalHysteresis	BOOL	[READ_WRITE]

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Parameter name	Data type	Description
stDeviceData.stSelection.stDataset12.bUltrasonicGain	BOOL	[READ_WRITE]
stDeviceData.stSelection.stDataset12.bOpticalGain	BOOL	[READ_WRITE]
stDeviceData.stSelection.stDataset12.bUltrasonicTeachParameter	BOOL	[READ_WRITE]
stDeviceData.stSelection.stDataset12.bOpticalTeachParameter	BOOL	[READ_WRITE]
stDeviceData.stSelection.stDataset13.bAll	BOOL	[READ_WRITE] all parameters of complex data type
stDeviceData.stSelection.stDataset13.bActiveMeasMethod	BOOL	[READ_WRITE]
stDeviceData.stSelection.stDataset13.bUltrasonicThreshold	BOOL	[READ_WRITE]
stDeviceData.stSelection.stDataset13.bOpticalThreshold	BOOL	[READ_WRITE]
stDeviceData.stSelection.stDataset13.bUltrasonicHysteresis	BOOL	[READ_WRITE]
stDeviceData.stSelection.stDataset13.bOpticalHysteresis	BOOL	[READ_WRITE]
stDeviceData.stSelection.stDataset13.bUltrasonicGain	BOOL	[READ_WRITE]
stDeviceData.stSelection.stDataset13.bOpticalGain	BOOL	[READ_WRITE]
stDeviceData.stSelection.stDataset13.bUltrasonicTeachParameter	BOOL	[READ_WRITE]
stDeviceData.stSelection.stDataset13.bOpticalTeachParameter	BOOL	[READ_WRITE]
stDeviceData.stSelection.stDataset14.bAll	BOOL	[READ_WRITE] all parameters of complex data type
stDeviceData.stSelection.stDataset14.bActiveMeasMethod	BOOL	[READ_WRITE]
stDeviceData.stSelection.stDataset14.bUltrasonicThreshold	BOOL	[READ_WRITE]
stDeviceData.stSelection.stDataset14.bOpticalThreshold	BOOL	[READ_WRITE]
stDeviceData.stSelection.stDataset14.bUltrasonicHysteresis	BOOL	[READ_WRITE]
stDeviceData.stSelection.stDataset14.bOpticalHysteresis	BOOL	[READ_WRITE]
stDeviceData.stSelection.stDataset14.bUltrasonicGain	BOOL	[READ_WRITE]
stDeviceData.stSelection.stDataset14.bOpticalGain	BOOL	[READ_WRITE]
stDeviceData.stSelection.stDataset14.bUltrasonicTeachParameter	BOOL	[READ_WRITE]
stDeviceData.stSelection.stDataset14.bOpticalTeachParameter	BOOL	[READ_WRITE]
stDeviceData.stSelection.stDataset15.bAll	BOOL	[READ_WRITE] all parameters of complex data type
stDeviceData.stSelection.stDataset15.bActiveMeasMethod	BOOL	[READ_WRITE]

Parameter name	Data type	Description
stDeviceData.stSelection.stDataset15.bUltrasonicThreshold	BOOL	[READ_WRITE]
stDeviceData.stSelection.stDataset15.bOpticalThreshold	BOOL	[READ_WRITE]
stDeviceData.stSelection.stDataset15.bUltrasonicHysteresis	BOOL	[READ_WRITE]
stDeviceData.stSelection.stDataset15.bOpticalHysteresis	BOOL	[READ_WRITE]
stDeviceData.stSelection.stDataset15.bUltrasonicGain	BOOL	[READ_WRITE]
stDeviceData.stSelection.stDataset15.bOpticalGain	BOOL	[READ_WRITE]
stDeviceData.stSelection.stDataset15.bUltrasonicTeachParameter	BOOL	[READ_WRITE]
stDeviceData.stSelection.stDataset15.bOpticalTeachParameter	BOOL	[READ_WRITE]
stDeviceData.stSelection.stDataset16.bAll	BOOL	[READ_WRITE] all parameters of complex data type
stDeviceData.stSelection.stDataset16.bActiveMeasMethod	BOOL	[READ_WRITE]
stDeviceData.stSelection.stDataset16.bUltrasonicThreshold	BOOL	[READ_WRITE]
stDeviceData.stSelection.stDataset16.bOpticalThreshold	BOOL	[READ_WRITE]
stDeviceData.stSelection.stDataset16.bUltrasonicHysteresis	BOOL	[READ_WRITE]
stDeviceData.stSelection.stDataset16.bOpticalHysteresis	BOOL	[READ_WRITE]
stDeviceData.stSelection.stDataset16.bUltrasonicGain	BOOL	[READ_WRITE]
stDeviceData.stSelection.stDataset16.bOpticalGain	BOOL	[READ_WRITE]
stDeviceData.stSelection.stDataset16.bUltrasonicTeachParameter	BOOL	[READ_WRITE]
stDeviceData.stSelection.stDataset16.bOpticalTeachParameter	BOOL	[READ_WRITE]
stDeviceData.stSelection.stDataset17.bAll	BOOL	[READ_WRITE] all parameters of complex data type
stDeviceData.stSelection.stDataset17.bActiveMeasMethod	BOOL	[READ_WRITE]
stDeviceData.stSelection.stDataset17.bUltrasonicThreshold	BOOL	[READ_WRITE]
stDeviceData.stSelection.stDataset17.bOpticalThreshold	BOOL	[READ_WRITE]
stDeviceData.stSelection.stDataset17.bUltrasonicHysteresis	BOOL	[READ_WRITE]
stDeviceData.stSelection.stDataset17.bOpticalHysteresis	BOOL	[READ_WRITE]
stDeviceData.stSelection.stDataset17.bUltrasonicGain	BOOL	[READ_WRITE]
stDeviceData.stSelection.stDataset17.bOpticalGain	BOOL	[READ_WRITE]
stDeviceData.stSelection.stDataset17.bUltrasonicTeachParameter	BOOL	[READ_WRITE]

Parameter name	Data type	Description
stDeviceData.stSelection.stDataset17.bOpticalTeachParameter	BOOL	[READ_WRITE]
stDeviceData.stSelection.stDataset18.bAll	BOOL	[READ_WRITE] all parameters of complex data type
stDeviceData.stSelection.stDataset18.bActiveMeasMethod	BOOL	[READ_WRITE]
stDeviceData.stSelection.stDataset18.bUltrasonicThreshold	BOOL	[READ_WRITE]
stDeviceData.stSelection.stDataset18.bOpticalThreshold	BOOL	[READ_WRITE]
stDeviceData.stSelection.stDataset18.bUltrasonicHysteresis	BOOL	[READ_WRITE]
stDeviceData.stSelection.stDataset18.bOpticalHysteresis	BOOL	[READ_WRITE]
stDeviceData.stSelection.stDataset18.bUltrasonicGain	BOOL	[READ_WRITE]
stDeviceData.stSelection.stDataset18.bOpticalGain	BOOL	[READ_WRITE]
stDeviceData.stSelection.stDataset18.bUltrasonicTeachParameter	BOOL	[READ_WRITE]
stDeviceData.stSelection.stDataset18.bOpticalTeachParameter	BOOL	[READ_WRITE]
stDeviceData.stSelection.stDataset19.bAll	BOOL	[READ_WRITE] all parameters of complex data type
stDeviceData.stSelection.stDataset19.bActiveMeasMethod	BOOL	[READ_WRITE]
stDeviceData.stSelection.stDataset19.bUltrasonicThreshold	BOOL	[READ_WRITE]
stDeviceData.stSelection.stDataset19.bOpticalThreshold	BOOL	[READ_WRITE]
stDeviceData.stSelection.stDataset19.bUltrasonicHysteresis	BOOL	[READ_WRITE]
stDeviceData.stSelection.stDataset19.bOpticalHysteresis	BOOL	[READ_WRITE]
stDeviceData.stSelection.stDataset19.bUltrasonicGain	BOOL	[READ_WRITE]
stDeviceData.stSelection.stDataset19.bOpticalGain	BOOL	[READ_WRITE]
stDeviceData.stSelection.stDataset19.bUltrasonicTeachParameter	BOOL	[READ_WRITE]
stDeviceData.stSelection.stDataset19.bOpticalTeachParameter	BOOL	[READ_WRITE]
stDeviceData.stSelection.bUltrasonicAnalysisDepth	BOOL	[READ_WRITE] Number of scans considered for switching the output, with ultrasonic method
stDeviceData.stSelection.bUltrasonicAutoLevelControl	BOOL	[READ_WRITE] Ultrasonic Auto-Level-Control function
stDeviceData.stSelection.bOpticalAnalysisDepth	BOOL	[READ_WRITE] Number of scans considered for switching the output, with optical method
stDeviceData.stSelection.bOpticalAutoLevelControl	BOOL	[READ_WRITE] Optical Auto-Level-Control function

Parameter name	Data type	Description
stDeviceData.stSelection.bTimerUnit	BOOL	[READ_WRITE] Timer Unit
stDeviceData.stSelection.bFunctionOfTimerUnit	BOOL	[READ_WRITE] Function of Timer Unit
stDeviceData.stSelection.bTime_194	BOOL	[READ_WRITE] Time
stDeviceData.stSelection.bNumberOfObjects	BOOL	[READ_WRITE] Internal Object Counter
stDeviceData.stSelection.bWireFunctionLevel1	BOOL	[READ_WRITE] Wire function level 1: 20 - 80 ms
stDeviceData.stSelection.bWireFunctionLevel2	BOOL	[READ_WRITE] Wire function level 2: 120 - 180 ms
stDeviceData.stSelection.bWireFunctionLevel3	BOOL	[READ_WRITE] Wire function level 3: 220 - 280 ms
stDeviceData.stSelection.bWireFunctionLevel4	BOOL	[READ_WRITE] Wire function level 4: 320 - 380 ms
stDeviceData.stSelection.bWireFunctionLevel5	BOOL	[READ_WRITE] Wire function level 5: 420 - 480 ms
stDeviceData.stSelection.bWireFunctionLevel6	BOOL	[READ_WRITE] Wire function level 6: 520 - 580 ms
stDeviceData.stSelection.bWireFunctionLevel7	BOOL	[READ_WRITE] Wire function level 7: 620 - 680 ms
stDeviceData.stSelection.bWireFunctionLevel8	BOOL	[READ_WRITE] Wire function level 8: 720 - 780 ms
stDeviceData.stSelection.bWireFunctionLevel9	BOOL	[READ_WRITE] Wire function level 9: 820 - 880 ms
stDeviceData.stSelection.bWireFunctionLevel10	BOOL	[READ_WRITE] Wire function level 10: 920 - 980 ms
stDeviceData.stSelection.bWireFunctionLevel11	BOOL	[READ_WRITE] Wire function level 11: 1020 - 1080 ms
stDeviceData.stSelection.bWireFunctionLevel12	BOOL	[READ_WRITE] Wire function level 12: 1120 - 1180 ms
stDeviceData.stSelection.bTemperature	BOOL	[READ_ONLY] Temperature
stDeviceData.stSelection.bMinusButtonEasytuneDisable	BOOL	[READ_WRITE] Minus button easyTune disable
stDeviceData.stSelection.bTeachButtonEasytuneDisable	BOOL	[READ_WRITE] Teach button easyTune disable
stDeviceData.stSelection.bMinusButtonFunctionLevel1	BOOL	[READ_WRITE] Minus button function level 1
stDeviceData.stSelection.bMinusButtonFunctionLevel2	BOOL	[READ_WRITE] Minus button function level 2
stDeviceData.stSelection.bMinusButtonFunctionLevel3	BOOL	[READ_WRITE] Minus button function level 3
stDeviceData.stSelection.bTeachButtonFunctionLevel1	BOOL	[READ_WRITE] Teach button function level 1
stDeviceData.stSelection.bTeachButtonFunctionLevel2	BOOL	[READ_WRITE] Teach button function level 2

Parameter name	Data type	Description
stDeviceData.stSelection.bTeachButtonFunctionLevel3	BOOL	[READ_WRITE] Teach button function level 3
stDeviceData.stSelection.bPin4Function	BOOL	[READ_WRITE] Pin 4 function
stDeviceData.stSelection.bPin2Function	BOOL	[READ_WRITE] Pin 2 function
stDeviceData.stData.stCommands.nDeviceReset	UINT	[WRITE_ONLY] Device Reset
stDeviceData.stData.stCommands.nApplicationReset	UINT	[WRITE_ONLY] Application Reset
stDeviceData.stData.stCommands.nRestoreFactorySettings	UINT	[WRITE_ONLY] Restore Factory Settings
stDeviceData.stData.stCommands.nTeachSp1	UINT	[WRITE_ONLY] Teach SP1
stDeviceData.stData.stCommands.nTeachSp1Start	UINT	[WRITE_ONLY] Teach SP1 Start
stDeviceData.stData.stCommands.nTeachSp1Stop	UINT	[WRITE_ONLY] Teach SP1 Stop
stDeviceData.stData.stCommands.nAbortTeach	UINT	[WRITE_ONLY] Abort Teach
stDeviceData.stData.stCommands.nEasytuneDown	UINT	[WRITE_ONLY] easyTune Down
stDeviceData.stData.stCommands.nEasytuneUp	UINT	[WRITE_ONLY] easyTune Up
stDeviceData.stData.stCommands.nClearError	UINT	[WRITE_ONLY] Clear Error
stDeviceData.stData.stCommands.nMethodUltrasonic	UINT	[WRITE_ONLY] Method Ultrasonic
stDeviceData.stData.stCommands.nMethodOptical	UINT	[WRITE_ONLY] Method Optical
stDeviceData.stData.stCommands.nSaveWorkIndex	UINT	[WRITE_ONLY] Save Work Index
stDeviceData.stData.stCommands.nLoadWorkIndex	UINT	[WRITE_ONLY] Load Work Index
stDeviceData.stData.stDirectParameters1.nReserved_1	UINT	[READ_ONLY]
stDeviceData.stData.stDirectParameters1.nMasterCycleTime	UINT	[READ_ONLY]
stDeviceData.stData.stDirectParameters1.nMinCycleTime	UINT	[READ_ONLY]
stDeviceData.stData.stDirectParameters1.nMSequenceCapability	UINT	[READ_ONLY]
stDeviceData.stData.stDirectParameters1.nIoLinkVersionId	UINT	[READ_ONLY]
stDeviceData.stData.stDirectParameters1.nProcessDataInputLength	UINT	[READ_ONLY]
stDeviceData.stData.stDirectParameters1.nProcessDataOutputLength	UINT	[READ_ONLY]
stDeviceData.stData.stDirectParameters1.nVendorId1	UINT	[READ_ONLY]
stDeviceData.stData.stDirectParameters1.nVendorId2	UINT	[READ_ONLY]
stDeviceData.stData.stDirectParameters1.nDeviceId1	UINT	[READ_ONLY]

Parameter name	Data type	Description
stDeviceData.stData.stDirectParameters1.nDeviceId2	UINT	[READ_ONLY]
stDeviceData.stData.stDirectParameters1.nDeviceId3	UINT	[READ_ONLY]
stDeviceData.stData.stDirectParameters1.nReserved_13	UINT	[READ_ONLY]
stDeviceData.stData.stDirectParameters1.nReserved_14	UINT	[READ_ONLY]
stDeviceData.stData.stDirectParameters1.nReserved_15	UINT	[READ_ONLY]
stDeviceData.stData.stDirectParameters2. nDeviceSpecificParameter1	UINT	[READ_WRITE]
stDeviceData.stData.stDirectParameters2. nDeviceSpecificParameter2	UINT	[READ_WRITE]
stDeviceData.stData.stDirectParameters2. nDeviceSpecificParameter3	UINT	[READ_WRITE]
stDeviceData.stData.stDirectParameters2. nDeviceSpecificParameter4	UINT	[READ_WRITE]
stDeviceData.stData.stDirectParameters2. nDeviceSpecificParameter5	UINT	[READ_WRITE]
stDeviceData.stData.stDirectParameters2. nDeviceSpecificParameter6	UINT	[READ_WRITE]
stDeviceData.stData.stDirectParameters2. nDeviceSpecificParameter7	UINT	[READ_WRITE]
stDeviceData.stData.stDirectParameters2. nDeviceSpecificParameter8	UINT	[READ_WRITE]
stDeviceData.stData.stDirectParameters2. nDeviceSpecificParameter9	UINT	[READ_WRITE]
stDeviceData.stData.stDirectParameters2. nDeviceSpecificParameter10	UINT	[READ_WRITE]
stDeviceData.stData.stDirectParameters2. nDeviceSpecificParameter11	UINT	[READ_WRITE]
stDeviceData.stData.stDirectParameters2. nDeviceSpecificParameter12	UINT	[READ_WRITE]
stDeviceData.stData.stDirectParameters2. nDeviceSpecificParameter13	UINT	[READ_WRITE]
stDeviceData.stData.stDirectParameters2. nDeviceSpecificParameter14	UINT	[READ_WRITE]
stDeviceData.stData.stDirectParameters2. nDeviceSpecificParameter15	UINT	[READ_WRITE]
stDeviceData.stData.stDirectParameters2. nDeviceSpecificParameter16	UINT	[READ_WRITE]
stDeviceData.stData.nStandardCommand	UINT	[WRITE_ONLY]
stDeviceData.stData.stDeviceAccessLocks. bParameterWriteAccessLock	BOOL	[READ_WRITE]
stDeviceData.stData.stDeviceAccessLocks.bDataStorageLock	BOOL	[READ_WRITE]
stDeviceData.stData.stDeviceAccessLocks. bLocalParameterizationLock	BOOL	[READ_WRITE]
stDeviceData.stData.stDeviceAccessLocks. bLocalUserInterfaceLock	BOOL	[READ_WRITE]

Parameter name	Data type	Description
stDeviceData.stData.stProfileCharacteristic.nDeviceProfile1	UINT	[READ_ONLY] 0x0007: Adjustable Switching Sensor, Single Value Teach, Disable Function
stDeviceData.stData.stProfileCharacteristic.nApplicationProfile	UINT	[READ_ONLY] 0x4000: Identification and Diagnosis
stDeviceData.stData.stProfileCharacteristic.nFunctionClass1	UINT	[READ_ONLY] 0x8009: Teach-in dynamic
stDeviceData.stData.sVendorName	STRING	[READ_ONLY]
stDeviceData.stData.sVendorText	STRING	[READ_ONLY]
stDeviceData.stData.sProductName	STRING	[READ_ONLY]
stDeviceData.stData.sProductId	STRING	[READ_ONLY]
stDeviceData.stData.sProductText	STRING	[READ_ONLY]
stDeviceData.stData.sSerialNumber	STRING	[READ_ONLY]
stDeviceData.stData.sHardwareVersion	STRING	[READ_ONLY]
stDeviceData.stData.sFirmwareVersion	STRING	[READ_ONLY]
stDeviceData.stData.sApplicationSpecificTag	STRING	[READ_WRITE]
stDeviceData.stData.sFunctionTag	STRING	[READ_WRITE]
stDeviceData.stData.sLocationTag	STRING	[READ_WRITE]
stDeviceData.stData.nDeviceStatus	UINT	[READ_ONLY]
stDeviceData.stData.stDetailedDeviceStatus.sItem_1	STRING	[READ_ONLY]
stDeviceData.stData.stDetailedDeviceStatus.sItem_2	STRING	[READ_ONLY]
stDeviceData.stData.nSscParamSp	UINT	[READ_WRITE] sensitivity or setpoint values for switching signal channel
stDeviceData.stData.nSscConfigLogic	UINT	[READ_WRITE] defines the logical behaviour of the switching signal and derived output signal
stDeviceData.stData.stTiErgebnis.nTiResultState	UINT	[READ_ONLY]
stDeviceData.stData.stTiErgebnis.bTiResultFlagSp1Tp1	BOOL	[READ_ONLY]
stDeviceData.stData.nTeachSettingsDynamic	UINT	[READ_WRITE] Teach Settings Dynamic
stDeviceData.stData.stSystem.bSsc1	BOOL	[READ_ONLY]
stDeviceData.stData.stSystem.bMeasurementAndEvaluation	BOOL	[READ_ONLY]
stDeviceData.stData.stSystem.bMeasuredValue	BOOL	[READ_ONLY]

Parameter name	Data type	Description
stDeviceData.stData.stSystem.bWarning	BOOL	[READ_ONLY]
stDeviceData.stData.stSystem.bTeachTerminateFlag	BOOL	[READ_ONLY]
stDeviceData.stData.stSystem.bAutoLevelControlState	BOOL	[READ_ONLY]
stDeviceData.stData.stSystem.nActiveMethod	UINT	[READ_ONLY]
stDeviceData.stData.stSystem.bCalibration	BOOL	[READ_ONLY]
stDeviceData.stData.stSystem.bButton	BOOL	[READ_ONLY]
stDeviceData.stData.stSystem.bDeviceOperation	BOOL	[READ_ONLY]
stDeviceData.stData.stSystem.bAutoLevelControl_12	BOOL	[READ_ONLY]
stDeviceData.stData.stSystem.bAutoLevelControl_13	BOOL	[READ_ONLY]
stDeviceData.stData.stSystem.bTeach	BOOL	[READ_ONLY]
stDeviceData.stData.stSystem.bEasyTune	BOOL	[READ_ONLY]
stDeviceData.stData.stSystem.bTemperature	BOOL	[READ_ONLY]
stDeviceData.stData.stSystem.bAutoLevelControlGain	BOOL	[READ_ONLY]
stDeviceData.stData.stSystem.bAutoLevelControlThreshold	BOOL	[READ_ONLY]
stDeviceData.stData.nAmplitude	UINT	[READ_ONLY] Actual Amplitude
stDeviceData.stData.nThreshold	UINT	[READ_ONLY] Threshold
stDeviceData.stData.nWorkingParameterLoadSaveIndex	UINT	[READ_WRITE] Working Parameter load / save index
stDeviceData.stData.stWorkingParameter.nActiveMeasMethod	UINT	[READ_WRITE]
stDeviceData.stData.stWorkingParameter.nUltrasonicThreshold	UINT	[READ_WRITE]
stDeviceData.stData.stWorkingParameter.nOpticalThreshold	UINT	[READ_WRITE]
stDeviceData.stData.stWorkingParameter.nUltrasonicHysteresis	UINT	[READ_WRITE]
stDeviceData.stData.stWorkingParameter.nOpticalHysteresis	UINT	[READ_WRITE]
stDeviceData.stData.stWorkingParameter.nUltrasonicGain	UINT	[READ_WRITE]
stDeviceData.stData.stWorkingParameter.nOpticalGain	UINT	[READ_WRITE]
stDeviceData.stData.stWorkingParameter. nUltrasonicTeachParameter	UINT	[READ_WRITE]
stDeviceData.stData.stWorkingParameter. nOpticalTeachParameter	UINT	[READ_WRITE]
stDeviceData.stData.stDataset0.nActiveMeasMethod	UINT	[READ_WRITE]

Parameter name	Data type	Description
stDeviceData.stData.stDataset0.nUltrasonicThreshold	UINT	[READ_WRITE]
stDeviceData.stData.stDataset0.nOpticalThreshold	UINT	[READ_WRITE]
stDeviceData.stData.stDataset0.nUltrasonicHysteresis	UINT	[READ_WRITE]
stDeviceData.stData.stDataset0.nOpticalHysteresis	UINT	[READ_WRITE]
stDeviceData.stData.stDataset0.nUltrasonicGain	UINT	[READ_WRITE]
stDeviceData.stData.stDataset0.nOpticalGain	UINT	[READ_WRITE]
stDeviceData.stData.stDataset0.nUltrasonicTeachParameter	UINT	[READ_WRITE]
stDeviceData.stData.stDataset0.nOpticalTeachParameter	UINT	[READ_WRITE]
stDeviceData.stData.stDataset1.nActiveMeasMethod	UINT	[READ_WRITE]
stDeviceData.stData.stDataset1.nUltrasonicThreshold	UINT	[READ_WRITE]
stDeviceData.stData.stDataset1.nOpticalThreshold	UINT	[READ_WRITE]
stDeviceData.stData.stDataset1.nUltrasonicHysteresis	UINT	[READ_WRITE]
stDeviceData.stData.stDataset1.nOpticalHysteresis	UINT	[READ_WRITE]
stDeviceData.stData.stDataset1.nUltrasonicGain	UINT	[READ_WRITE]
stDeviceData.stData.stDataset1.nOpticalGain	UINT	[READ_WRITE]
stDeviceData.stData.stDataset1.nUltrasonicTeachParameter	UINT	[READ_WRITE]
stDeviceData.stData.stDataset1.nOpticalTeachParameter	UINT	[READ_WRITE]
stDeviceData.stData.stDataset2.nActiveMeasMethod	UINT	[READ_WRITE]
stDeviceData.stData.stDataset2.nUltrasonicThreshold	UINT	[READ_WRITE]
stDeviceData.stData.stDataset2.nOpticalThreshold	UINT	[READ_WRITE]
stDeviceData.stData.stDataset2.nUltrasonicHysteresis	UINT	[READ_WRITE]
stDeviceData.stData.stDataset2.nOpticalHysteresis	UINT	[READ_WRITE]
stDeviceData.stData.stDataset2.nUltrasonicGain	UINT	[READ_WRITE]
stDeviceData.stData.stDataset2.nOpticalGain	UINT	[READ_WRITE]
stDeviceData.stData.stDataset2.nUltrasonicTeachParameter	UINT	[READ_WRITE]
stDeviceData.stData.stDataset2.nOpticalTeachParameter	UINT	[READ_WRITE]
stDeviceData.stData.stDataset3.nActiveMeasMethod	UINT	[READ_WRITE]

Parameter name	Data type	Description
stDeviceData.stData.stDataset3.nUltrasonicThreshold	UINT	[READ_WRITE]
stDeviceData.stData.stDataset3.nOpticalThreshold	UINT	[READ_WRITE]
stDeviceData.stData.stDataset3.nUltrasonicHysteresis	UINT	[READ_WRITE]
stDeviceData.stData.stDataset3.nOpticalHysteresis	UINT	[READ_WRITE]
stDeviceData.stData.stDataset3.nUltrasonicGain	UINT	[READ_WRITE]
stDeviceData.stData.stDataset3.nOpticalGain	UINT	[READ_WRITE]
stDeviceData.stData.stDataset3.nUltrasonicTeachParameter	UINT	[READ_WRITE]
stDeviceData.stData.stDataset3.nOpticalTeachParameter	UINT	[READ_WRITE]
stDeviceData.stData.stDataset4.nActiveMeasMethod	UINT	[READ_WRITE]
stDeviceData.stData.stDataset4.nUltrasonicThreshold	UINT	[READ_WRITE]
stDeviceData.stData.stDataset4.nOpticalThreshold	UINT	[READ_WRITE]
stDeviceData.stData.stDataset4.nUltrasonicHysteresis	UINT	[READ_WRITE]
stDeviceData.stData.stDataset4.nOpticalHysteresis	UINT	[READ_WRITE]
stDeviceData.stData.stDataset4.nUltrasonicGain	UINT	[READ_WRITE]
stDeviceData.stData.stDataset4.nOpticalGain	UINT	[READ_WRITE]
stDeviceData.stData.stDataset4.nUltrasonicTeachParameter	UINT	[READ_WRITE]
stDeviceData.stData.stDataset4.nOpticalTeachParameter	UINT	[READ_WRITE]
stDeviceData.stData.stDataset5.nActiveMeasMethod	UINT	[READ_WRITE]
stDeviceData.stData.stDataset5.nUltrasonicThreshold	UINT	[READ_WRITE]
stDeviceData.stData.stDataset5.nOpticalThreshold	UINT	[READ_WRITE]
stDeviceData.stData.stDataset5.nUltrasonicHysteresis	UINT	[READ_WRITE]
stDeviceData.stData.stDataset5.nOpticalHysteresis	UINT	[READ_WRITE]
stDeviceData.stData.stDataset5.nUltrasonicGain	UINT	[READ_WRITE]
stDeviceData.stData.stDataset5.nOpticalGain	UINT	[READ_WRITE]
stDeviceData.stData.stDataset5.nUltrasonicTeachParameter	UINT	[READ_WRITE]
stDeviceData.stData.stDataset5.nOpticalTeachParameter	UINT	[READ_WRITE]
stDeviceData.stData.stDataset6.nActiveMeasMethod	UINT	[READ_WRITE]

Parameter name	Data type	Description
stDeviceData.stData.stDataset6.nUltrasonicThreshold	UINT	[READ_WRITE]
stDeviceData.stData.stDataset6.nOpticalThreshold	UINT	[READ_WRITE]
stDeviceData.stData.stDataset6.nUltrasonicHysteresis	UINT	[READ_WRITE]
stDeviceData.stData.stDataset6.nOpticalHysteresis	UINT	[READ_WRITE]
stDeviceData.stData.stDataset6.nUltrasonicGain	UINT	[READ_WRITE]
stDeviceData.stData.stDataset6.nOpticalGain	UINT	[READ_WRITE]
stDeviceData.stData.stDataset6.nUltrasonicTeachParameter	UINT	[READ_WRITE]
stDeviceData.stData.stDataset6.nOpticalTeachParameter	UINT	[READ_WRITE]
stDeviceData.stData.stDataset7.nActiveMeasMethod	UINT	[READ_WRITE]
stDeviceData.stData.stDataset7.nUltrasonicThreshold	UINT	[READ_WRITE]
stDeviceData.stData.stDataset7.nOpticalThreshold	UINT	[READ_WRITE]
stDeviceData.stData.stDataset7.nUltrasonicHysteresis	UINT	[READ_WRITE]
stDeviceData.stData.stDataset7.nOpticalHysteresis	UINT	[READ_WRITE]
stDeviceData.stData.stDataset7.nUltrasonicGain	UINT	[READ_WRITE]
stDeviceData.stData.stDataset7.nOpticalGain	UINT	[READ_WRITE]
stDeviceData.stData.stDataset7.nUltrasonicTeachParameter	UINT	[READ_WRITE]
stDeviceData.stData.stDataset7.nOpticalTeachParameter	UINT	[READ_WRITE]
stDeviceData.stData.stDataset8.nActiveMeasMethod	UINT	[READ_WRITE]
stDeviceData.stData.stDataset8.nUltrasonicThreshold	UINT	[READ_WRITE]
stDeviceData.stData.stDataset8.nOpticalThreshold	UINT	[READ_WRITE]
stDeviceData.stData.stDataset8.nUltrasonicHysteresis	UINT	[READ_WRITE]
stDeviceData.stData.stDataset8.nOpticalHysteresis	UINT	[READ_WRITE]
stDeviceData.stData.stDataset8.nUltrasonicGain	UINT	[READ_WRITE]
stDeviceData.stData.stDataset8.nOpticalGain	UINT	[READ_WRITE]
stDeviceData.stData.stDataset8.nUltrasonicTeachParameter	UINT	[READ_WRITE]
stDeviceData.stData.stDataset8.nOpticalTeachParameter	UINT	[READ_WRITE]
stDeviceData.stData.stDataset9.nActiveMeasMethod	UINT	[READ_WRITE]

Parameter name	Data type	Description
stDeviceData.stData.stDataset9.nUltrasonicThreshold	UINT	[READ_WRITE]
stDeviceData.stData.stDataset9.nOpticalThreshold	UINT	[READ_WRITE]
stDeviceData.stData.stDataset9.nUltrasonicHysteresis	UINT	[READ_WRITE]
stDeviceData.stData.stDataset9.nOpticalHysteresis	UINT	[READ_WRITE]
stDeviceData.stData.stDataset9.nUltrasonicGain	UINT	[READ_WRITE]
stDeviceData.stData.stDataset9.nOpticalGain	UINT	[READ_WRITE]
stDeviceData.stData.stDataset9.nUltrasonicTeachParameter	UINT	[READ_WRITE]
stDeviceData.stData.stDataset9.nOpticalTeachParameter	UINT	[READ_WRITE]
stDeviceData.stData.stDataset10.nActiveMeasMethod	UINT	[READ_WRITE]
stDeviceData.stData.stDataset10.nUltrasonicThreshold	UINT	[READ_WRITE]
stDeviceData.stData.stDataset10.nOpticalThreshold	UINT	[READ_WRITE]
stDeviceData.stData.stDataset10.nUltrasonicHysteresis	UINT	[READ_WRITE]
stDeviceData.stData.stDataset10.nOpticalHysteresis	UINT	[READ_WRITE]
stDeviceData.stData.stDataset10.nUltrasonicGain	UINT	[READ_WRITE]
stDeviceData.stData.stDataset10.nOpticalGain	UINT	[READ_WRITE]
stDeviceData.stData.stDataset10.nUltrasonicTeachParameter	UINT	[READ_WRITE]
stDeviceData.stData.stDataset10.nOpticalTeachParameter	UINT	[READ_WRITE]
stDeviceData.stData.stDataset11.nActiveMeasMethod	UINT	[READ_WRITE]
stDeviceData.stData.stDataset11.nUltrasonicThreshold	UINT	[READ_WRITE]
stDeviceData.stData.stDataset11.nOpticalThreshold	UINT	[READ_WRITE]
stDeviceData.stData.stDataset11.nUltrasonicHysteresis	UINT	[READ_WRITE]
stDeviceData.stData.stDataset11.nOpticalHysteresis	UINT	[READ_WRITE]
stDeviceData.stData.stDataset11.nUltrasonicGain	UINT	[READ_WRITE]
stDeviceData.stData.stDataset11.nOpticalGain	UINT	[READ_WRITE]
stDeviceData.stData.stDataset11.nUltrasonicTeachParameter	UINT	[READ_WRITE]
stDeviceData.stData.stDataset11.nOpticalTeachParameter	UINT	[READ_WRITE]
stDeviceData.stData.stDataset12.nActiveMeasMethod	UINT	[READ_WRITE]

Parameter name	Data type	Description
stDeviceData.stData.stDataset12.nUltrasonicThreshold	UINT	[READ_WRITE]
stDeviceData.stData.stDataset12.nOpticalThreshold	UINT	[READ_WRITE]
stDeviceData.stData.stDataset12.nUltrasonicHysteresis	UINT	[READ_WRITE]
stDeviceData.stData.stDataset12.nOpticalHysteresis	UINT	[READ_WRITE]
stDeviceData.stData.stDataset12.nUltrasonicGain	UINT	[READ_WRITE]
stDeviceData.stData.stDataset12.nOpticalGain	UINT	[READ_WRITE]
stDeviceData.stData.stDataset12.nUltrasonicTeachParameter	UINT	[READ_WRITE]
stDeviceData.stData.stDataset12.nOpticalTeachParameter	UINT	[READ_WRITE]
stDeviceData.stData.stDataset13.nActiveMeasMethod	UINT	[READ_WRITE]
stDeviceData.stData.stDataset13.nUltrasonicThreshold	UINT	[READ_WRITE]
stDeviceData.stData.stDataset13.nOpticalThreshold	UINT	[READ_WRITE]
stDeviceData.stData.stDataset13.nUltrasonicHysteresis	UINT	[READ_WRITE]
stDeviceData.stData.stDataset13.nOpticalHysteresis	UINT	[READ_WRITE]
stDeviceData.stData.stDataset13.nUltrasonicGain	UINT	[READ_WRITE]
stDeviceData.stData.stDataset13.nOpticalGain	UINT	[READ_WRITE]
stDeviceData.stData.stDataset13.nUltrasonicTeachParameter	UINT	[READ_WRITE]
stDeviceData.stData.stDataset13.nOpticalTeachParameter	UINT	[READ_WRITE]
stDeviceData.stData.stDataset14.nActiveMeasMethod	UINT	[READ_WRITE]
stDeviceData.stData.stDataset14.nUltrasonicThreshold	UINT	[READ_WRITE]
stDeviceData.stData.stDataset14.nOpticalThreshold	UINT	[READ_WRITE]
stDeviceData.stData.stDataset14.nUltrasonicHysteresis	UINT	[READ_WRITE]
stDeviceData.stData.stDataset14.nOpticalHysteresis	UINT	[READ_WRITE]
stDeviceData.stData.stDataset14.nUltrasonicGain	UINT	[READ_WRITE]
stDeviceData.stData.stDataset14.nOpticalGain	UINT	[READ_WRITE]
stDeviceData.stData.stDataset14.nUltrasonicTeachParameter	UINT	[READ_WRITE]
stDeviceData.stData.stDataset14.nOpticalTeachParameter	UINT	[READ_WRITE]
stDeviceData.stData.stDataset15.nActiveMeasMethod	UINT	[READ_WRITE]

Parameter name	Data type	Description
stDeviceData.stData.stDataset15.nUltrasonicThreshold	UINT	[READ_WRITE]
stDeviceData.stData.stDataset15.nOpticalThreshold	UINT	[READ_WRITE]
stDeviceData.stData.stDataset15.nUltrasonicHysteresis	UINT	[READ_WRITE]
stDeviceData.stData.stDataset15.nOpticalHysteresis	UINT	[READ_WRITE]
stDeviceData.stData.stDataset15.nUltrasonicGain	UINT	[READ_WRITE]
stDeviceData.stData.stDataset15.nOpticalGain	UINT	[READ_WRITE]
stDeviceData.stData.stDataset15.nUltrasonicTeachParameter	UINT	[READ_WRITE]
stDeviceData.stData.stDataset15.nOpticalTeachParameter	UINT	[READ_WRITE]
stDeviceData.stData.stDataset16.nActiveMeasMethod	UINT	[READ_WRITE]
stDeviceData.stData.stDataset16.nUltrasonicThreshold	UINT	[READ_WRITE]
stDeviceData.stData.stDataset16.nOpticalThreshold	UINT	[READ_WRITE]
stDeviceData.stData.stDataset16.nUltrasonicHysteresis	UINT	[READ_WRITE]
stDeviceData.stData.stDataset16.nOpticalHysteresis	UINT	[READ_WRITE]
stDeviceData.stData.stDataset16.nUltrasonicGain	UINT	[READ_WRITE]
stDeviceData.stData.stDataset16.nOpticalGain	UINT	[READ_WRITE]
stDeviceData.stData.stDataset16.nUltrasonicTeachParameter	UINT	[READ_WRITE]
stDeviceData.stData.stDataset16.nOpticalTeachParameter	UINT	[READ_WRITE]
stDeviceData.stData.stDataset17.nActiveMeasMethod	UINT	[READ_WRITE]
stDeviceData.stData.stDataset17.nUltrasonicThreshold	UINT	[READ_WRITE]
stDeviceData.stData.stDataset17.nOpticalThreshold	UINT	[READ_WRITE]
stDeviceData.stData.stDataset17.nUltrasonicHysteresis	UINT	[READ_WRITE]
stDeviceData.stData.stDataset17.nOpticalHysteresis	UINT	[READ_WRITE]
stDeviceData.stData.stDataset17.nUltrasonicGain	UINT	[READ_WRITE]
stDeviceData.stData.stDataset17.nOpticalGain	UINT	[READ_WRITE]
stDeviceData.stData.stDataset17.nUltrasonicTeachParameter	UINT	[READ_WRITE]
stDeviceData.stData.stDataset17.nOpticalTeachParameter	UINT	[READ_WRITE]
stDeviceData.stData.stDataset18.nActiveMeasMethod	UINT	[READ_WRITE]

Parameter name	Data type	Description
stDeviceData.stData.stDataset18.nUltrasonicThreshold	UINT	[READ_WRITE]
stDeviceData.stData.stDataset18.nOpticalThreshold	UINT	[READ_WRITE]
stDeviceData.stData.stDataset18.nUltrasonicHysteresis	UINT	[READ_WRITE]
stDeviceData.stData.stDataset18.nOpticalHysteresis	UINT	[READ_WRITE]
stDeviceData.stData.stDataset18.nUltrasonicGain	UINT	[READ_WRITE]
stDeviceData.stData.stDataset18.nOpticalGain	UINT	[READ_WRITE]
stDeviceData.stData.stDataset18.nUltrasonicTeachParameter	UINT	[READ_WRITE]
stDeviceData.stData.stDataset18.nOpticalTeachParameter	UINT	[READ_WRITE]
stDeviceData.stData.stDataset19.nActiveMeasMethod	UINT	[READ_WRITE]
stDeviceData.stData.stDataset19.nUltrasonicThreshold	UINT	[READ_WRITE]
stDeviceData.stData.stDataset19.nOpticalThreshold	UINT	[READ_WRITE]
stDeviceData.stData.stDataset19.nUltrasonicHysteresis	UINT	[READ_WRITE]
stDeviceData.stData.stDataset19.nOpticalHysteresis	UINT	[READ_WRITE]
stDeviceData.stData.stDataset19.nUltrasonicGain	UINT	[READ_WRITE]
stDeviceData.stData.stDataset19.nOpticalGain	UINT	[READ_WRITE]
stDeviceData.stData.stDataset19.nUltrasonicTeachParameter	UINT	[READ_WRITE]
stDeviceData.stData.stDataset19.nOpticalTeachParameter	UINT	[READ_WRITE]
stDeviceData.stData.nUltrasonicAnalysisDepth	INT	[READ_WRITE] Number of scans considered for switching the output, with ultrasonic method
stDeviceData.stData.nUltrasonicAutoLevelControl	UINT	[READ_WRITE] Ultrasonic Auto-Level-Control function
stDeviceData.stData.nOpticalAnalysisDepth	INT	[READ_WRITE] Number of scans considered for switching the output, with optical method
stDeviceData.stData.nOpticalAutoLevelControl	UINT	[READ_WRITE] Optical Auto-Level-Control function
stDeviceData.stData.nTimerUnit	UINT	[READ_WRITE] Timer Unit
stDeviceData.stData.nFunctionOfTimerUnit	UINT	[READ_WRITE] Function of Timer Unit
stDeviceData.stData.nTime_194	UINT	[READ_WRITE] Time
stDeviceData.stData.nNumberOfObjects	UINT	[READ_WRITE] Internal Object Counter

Parameter name	Data type	Description
stDeviceData.stData.nWireFunctionLevel1	UINT	[READ_WRITE] Wire function level 1: 20 - 80 ms
stDeviceData.stData.nWireFunctionLevel2	UINT	[READ_WRITE] Wire function level 2: 120 - 180 ms
stDeviceData.stData.nWireFunctionLevel3	UINT	[READ_WRITE] Wire function level 3: 220 - 280 ms
stDeviceData.stData.nWireFunctionLevel4	UINT	[READ_WRITE] Wire function level 4: 320 - 380 ms
stDeviceData.stData.nWireFunctionLevel5	UINT	[READ_WRITE] Wire function level 5: 420 - 480 ms
stDeviceData.stData.nWireFunctionLevel6	UINT	[READ_WRITE] Wire function level 6: 520 - 580 ms
stDeviceData.stData.nWireFunctionLevel7	UINT	[READ_WRITE] Wire function level 7: 620 - 680 ms
stDeviceData.stData.nWireFunctionLevel8	UINT	[READ_WRITE] Wire function level 8: 720 - 780 ms
stDeviceData.stData.nWireFunctionLevel9	UINT	[READ_WRITE] Wire function level 9: 820 - 880 ms
stDeviceData.stData.nWireFunctionLevel10	UINT	[READ_WRITE] Wire function level 10: 920 - 980 ms
stDeviceData.stData.nWireFunctionLevel11	UINT	[READ_WRITE] Wire function level 11: 1020 - 1080 ms
stDeviceData.stData.nWireFunctionLevel12	UINT	[READ_WRITE] Wire function level 12: 1120 - 1180 ms
stDeviceData.stData.nTemperature	INT	[READ_ONLY] Temperature
stDeviceData.stData.nMinusButtonEasytuneDisable	UINT	[READ_WRITE] Minus button easyTune disable
stDeviceData.stData.nTeachButtonEasytuneDisable	UINT	[READ_WRITE] Teach button easyTune disable
stDeviceData.stData.nMinusButtonFunctionLevel1	INT	[READ_WRITE] Minus button function level 1
stDeviceData.stData.nMinusButtonFunctionLevel2	INT	[READ_WRITE] Minus button function level 2
stDeviceData.stData.nMinusButtonFunctionLevel3	INT	[READ_WRITE] Minus button function level 3
stDeviceData.stData.nTeachButtonFunctionLevel1	INT	[READ_WRITE] Teach button function level 1
stDeviceData.stData.nTeachButtonFunctionLevel2	INT	[READ_WRITE] Teach button function level 2
stDeviceData.stData.nTeachButtonFunctionLevel3	INT	[READ_WRITE] Teach button function level 3
stDeviceData.stData.nPin4Function	UINT	[READ_WRITE] Pin 4 function
stDeviceData.stData.nPin2Function	UINT	[READ_WRITE] Pin 2 function

Tab. 7.2:   ST_Leuze_PD_ GSX14E_2502

Parameter name	Data type	Description
ST_Leuze_PD_GSX14E_2502.bSsc1	BOOL	
ST_Leuze_PD_GSX14E_2502.bMeasurementAndEvaluation	BOOL	
ST_Leuze_PD_GSX14E_2502.bMeasuredValue	BOOL	
ST_Leuze_PD_GSX14E_2502.bWarning	BOOL	
ST_Leuze_PD_GSX14E_2502.bTeachTerminateFlag	BOOL	
ST_Leuze_PD_GSX14E_2502.bAutoLevelControlState	BOOL	

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	
Device Reset			UIntegerT	128	W	Device Reset
Application Reset			UIntegerT	129	W	Application Reset
Restore Factory Settings			UIntegerT	130	W	Restore Factory Settings
Teach SP1			UIntegerT	65	W	Teach SP1
Teach SP1 Start			UIntegerT	71	W	Teach SP1 Start
Teach SP1 Stop			UIntegerT	72	W	Teach SP1 Stop
Abort Teach			UIntegerT	79	W	Abort Teach
easyTune Down			UIntegerT	192	W	easyTune Down
easyTune Up			UIntegerT	193	W	easyTune Up
Clear Error			UIntegerT	200	W	Clear Error
Method Ultrasonic			UIntegerT	214	W	Method Ultrasonic
Method Optical			UIntegerT	215	W	Method Optical
Save Work Index			UIntegerT	226	W	Save Work Index
Load Work Index			UIntegerT	227	W	Load Work Index
Direct Parameters 1	0	0	RecordT		RW	
Reserved	0	1	UIntegerT		R	
Master Cycle Time	0	2	UIntegerT		R	
Min Cycle Time	0	3	UIntegerT		R	
M-Sequence Capability	0	4	UIntegerT		R	
IO-Link Version ID	0	5	UIntegerT	17	R	
Process Data Input Length	0	6	UIntegerT		R	
Process Data Output Length	0	7	UIntegerT		R	
Vendor ID 1	0	8	UIntegerT		R	

Parameter	Index	Subindex	Data type	Default	AR	Description
Vendor ID 2	0	9	UIntegerT		R	
Device ID 1	0	10	UIntegerT		R	
Device ID 2	0	11	UIntegerT		R	
Device ID 3	0	12	UIntegerT		R	
Reserved	0	13	UIntegerT		R	
Reserved	0	14	UIntegerT		R	
Reserved	0	15	UIntegerT		R	
Standard Command	0	16	UIntegerT		W	(0 ... 63): Reserved 128: Device Reset 129: Application Reset 130: Restore Factory Settings (131 ... 159): Reserved
Direct Parameters 2	1	0	RecordT		RW	
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	

Leuze

Parameter	Index	Subindex	Data type	Default	AR	Description
Standard Command	2	0	UIntegerT		W	(0 ... 63): Reserved 128: Device Reset 129: Application Reset 130: Restore Factory Settings (131 ... 159): Reserved 65: Teach SP1 71: Teach SP1 Start 72: Teach SP1 Stop 79: Abort Teach 192: easyTune Down 193: easyTune Up 200: Clear Error 214: Method Ultrasonic 215: Method Optical 226: Save Work Index 227: Load Work Index
Device Access Locks	12	0	RecordT		RW	
Parameter (write) Access Lock	12	1	BooleanT		RW	
Data Storage Lock	12	2	BooleanT		RW	
Local Parameterization Lock	12	3	BooleanT		RW	
Local User Interface Lock	12	4	BooleanT		RW	
Profile Characteristic	13	0	RecordT		R	Collection of Profile Identifiers
Device Profile 1	13	1	UIntegerT	7	R	0x0007: Adjustable Switching Sensor, Single Value Teach, Disable Function 7: 0x0007: Adjustable Switching Sensor, Single Value Teach, Disable Function (SSP 2.4) 9: 0x0009: Adjustable Switching Sensor, dynamic Teach, Disable Function (SSP 2.6) 16384: 0x4000: Identification and Diagnosis
Application Profile	13	2	UIntegerT	9	R	0x4000: Identification and Diagnosis 7: 0x0007: Adjustable Switching Sensor, Single Value Teach, Disable Function (SSP 2.4) 9: 0x0009: Adjustable Switching Sensor, dynamic Teach, Disable Function (SSP 2.6) 16384: 0x4000: Identification and Diagnosis
Function Class 1	13	3	UIntegerT	16384	R	0x8009: Teach-in dynamic 7: 0x0007: Adjustable Switching Sensor, Single Value Teach, Disable Function (SSP 2.4) 9: 0x0009: Adjustable Switching Sensor, dynamic Teach, Disable Function (SSP 2.6) 16384: 0x4000: Identification and Diagnosis

Parameter	Index	Subindex	Data type	Default	AR	Description
Vendor Name	16	0	StringT	Leuze electronic GmbH + Co. KG	R	
Vendor Text	17	0	StringT	Leuze electronic - the sensor people	R	
Product Name	18	0	StringT		R	
Product ID	19	0	StringT		R	
Product Text	20	0	StringT	Label Sensor	R	
Serial Number	21	0	StringT		R	
Hardware Version	22	0	StringT		R	
Firmware Version	23	0	StringT		R	
Application Specific Tag	24	0	StringT	***	RW	
Function Tag	25	0	StringT	***	RW	
Location Tag	26	0	StringT	***	RW	
Device Status	36	0	UIntegerT		R	0: Device is OK 1: Maintenance required 2: Out of specification 3: Functional check 4: Failure (5 ... 255): Reserved
Detailed Device Status	37	0	ArrayT		R	
	37	0	OctetStringT		R	
SSC Param - SP	56	0	UIntegerT		RW	sensitivity or setpoint values for switching signal channel
SSC Config - Logic	57	0	UIntegerT	0	RW	defines the logical behaviour of the switching signal and derived output signal 0: High active - Not Inverted 1: Low active - Inverted
TI Ergebnis	59	0	RecordT		R	Teach-In Result (Teachstatus und erfolgsanzeigende Flags)
TI Result - State	59	1	UIntegerT		R	0: Idle. No Teach since power-on 1: Teach of SP1 succeeded 5: Busy. Teach is running 7: Teach Error
TI Result - Flag SP1 TP1	59	2	BooleanT		R	False: No teach of SP1 TP1 since power-on or teach error True: Teach of SP1 TP1 was successful
Teach Settings Dynamic	71	0	UIntegerT	0	RW	Teach Settings Dynamic 0: easyTeach Mode intelligent 1: easyTeach Mode manually
System	80	0	RecordT		R	System State

Parameter	Index	Subindex	Data type	Default	AR	Description
SSC1	80	1	BooleanT		R	False: SSC1 low True: SSC1 high
Measurement and evaluation	80	2	BooleanT		R	False: Teach, deactivation or run-up in progress True: Measurement/evaluation in progress
Measured value	80	3	BooleanT		R	False: NO measured value available True: valid measured value available
Warning	80	4	BooleanT		R	False: NO Warning True: Warning
Teach terminate flag	80	5	BooleanT		R	False: Teach runnig or not started True: Teach terminated
Auto-Level-Control State	80	6	BooleanT		R	False: Auto-Level-Control is inactive True: Auto-Level-Control is active
Active Method	80	7	UIntegerT		R	0: none 1: Ultrasonic 2: Optical 3: Dual
Calibration	80	8	BooleanT		R	False: Calibration ERROR True: Calibration ok
Button	80	9	BooleanT		R	False: Button unlocked True: Button locked
Device Operation	80	10	BooleanT		R	False: Normal operation True: Transducer disable - Emitter off
Auto-Level-Control	80	12	BooleanT		R	False: no regulation - no strip motion True: in progress
Auto-Level-Control	80	13	BooleanT		R	False: normal operation or not active True: Error has occurred
Teach	80	14	BooleanT		R	False: NO error True: Error has occurred
easyTune	80	15	BooleanT		R	False: ok True: limit reached
Temperature	80	17	BooleanT		R	False: Safe operation True: Temperature above specified limit
Auto-Level-Control gain	80	18	BooleanT		R	False: normal range True: limit reached
Auto-Level-Control threshold	80	19	BooleanT		R	False: normal range True: limit reached
Amplitude	81	0	UIntegerT		R	Actual Amplitude (0 ... 4095)
Threshold	85	0	UIntegerT		R	Threshold (0 ... 4095)
Working Parameter load / save index	98	0	UIntegerT	0	RW	Working Parameter load / save index (0 ... 20)
Working Parameter	99	0	RecordT		RW	Working Parameter
Active Meas Method	99	1	UIntegerT		RW	0: Ultrasonic 1: Optical 2: Error
Ultrasonic threshold	99	2	UIntegerT		RW	(0 ... 4095)
Optical threshold	99	3	UIntegerT		RW	(0 ... 4095)
Ultrasonic hysteresis	99	4	UIntegerT		RW	(0 ... 4095)

Parameter	Index	Subindex	Data type	Default	AR	Description
Optical hysteresis	99	5	UIntegerT		RW	(0 ... 4095)
Ultrasonic gain	99	6	UIntegerT		RW	(0 ... 255)
Optical gain	99	7	UIntegerT		RW	(0 ... 255)
Ultrasonic Teach parameter	99	8	UIntegerT		RW	(0 ... 4095)
Optical Teach parameter	99	9	UIntegerT		RW	(0 ... 4095)
Dataset 0	100	0	RecordT		RW	Dataset 0
Active Meas Method	100	1	UIntegerT		RW	0: Ultrasonic 1: Optical 2: Error
Ultrasonic threshold	100	2	UIntegerT		RW	(0 ... 4095)
Optical threshold	100	3	UIntegerT		RW	(0 ... 4095)
Ultrasonic hysteresis	100	4	UIntegerT		RW	(0 ... 4095)
Optical hysteresis	100	5	UIntegerT		RW	(0 ... 4095)
Ultrasonic gain	100	6	UIntegerT		RW	(0 ... 255)
Optical gain	100	7	UIntegerT		RW	(0 ... 255)
Ultrasonic Teach parameter	100	8	UIntegerT		RW	(0 ... 4095)
Optical Teach parameter	100	9	UIntegerT		RW	(0 ... 4095)
Dataset 1	101	0	RecordT		RW	Dataset 1
Active Meas Method	101	1	UIntegerT		RW	0: Ultrasonic 1: Optical 2: Error
Ultrasonic threshold	101	2	UIntegerT		RW	(0 ... 4095)
Optical threshold	101	3	UIntegerT		RW	(0 ... 4095)
Ultrasonic hysteresis	101	4	UIntegerT		RW	(0 ... 4095)
Optical hysteresis	101	5	UIntegerT		RW	(0 ... 4095)
Ultrasonic gain	101	6	UIntegerT		RW	(0 ... 255)
Optical gain	101	7	UIntegerT		RW	(0 ... 255)
Ultrasonic Teach parameter	101	8	UIntegerT		RW	(0 ... 4095)
Optical Teach parameter	101	9	UIntegerT		RW	(0 ... 4095)
Dataset 2	102	0	RecordT		RW	Dataset 2

Parameter	Index	Subindex	Data type	Default	AR	Description
Active Meas Method	102	1	UIntegerT		RW	0: Ultrasonic 1: Optical 2: Error
Ultrasonic threshold	102	2	UIntegerT		RW	(0 ... 4095)
Optical threshold	102	3	UIntegerT		RW	(0 ... 4095)
Ultrasonic hysteresis	102	4	UIntegerT		RW	(0 ... 4095)
Optical hysteresis	102	5	UIntegerT		RW	(0 ... 4095)
Ultrasonic gain	102	6	UIntegerT		RW	(0 ... 255)
Optical gain	102	7	UIntegerT		RW	(0 ... 255)
Ultrasonic Teach parameter	102	8	UIntegerT		RW	(0 ... 4095)
Optical Teach parameter	102	9	UIntegerT		RW	(0 ... 4095)
Dataset 3	103	0	RecordT		RW	Dataset 3
Active Meas Method	103	1	UIntegerT		RW	0: Ultrasonic 1: Optical 2: Error
Ultrasonic threshold	103	2	UIntegerT		RW	(0 ... 4095)
Optical threshold	103	3	UIntegerT		RW	(0 ... 4095)
Ultrasonic hysteresis	103	4	UIntegerT		RW	(0 ... 4095)
Optical hysteresis	103	5	UIntegerT		RW	(0 ... 4095)
Ultrasonic gain	103	6	UIntegerT		RW	(0 ... 255)
Optical gain	103	7	UIntegerT		RW	(0 ... 255)
Ultrasonic Teach parameter	103	8	UIntegerT		RW	(0 ... 4095)
Optical Teach parameter	103	9	UIntegerT		RW	(0 ... 4095)
Dataset 4	104	0	RecordT		RW	Dataset 4
Active Meas Method	104	1	UIntegerT		RW	0: Ultrasonic 1: Optical 2: Error
Ultrasonic threshold	104	2	UIntegerT		RW	(0 ... 4095)
Optical threshold	104	3	UIntegerT		RW	(0 ... 4095)
Ultrasonic hysteresis	104	4	UIntegerT		RW	(0 ... 4095)
Optical hysteresis	104	5	UIntegerT		RW	(0 ... 4095)
Ultrasonic gain	104	6	UIntegerT		RW	(0 ... 255)

Parameter	Index	Subindex	Data type	Default	AR	Description
Optical gain	104	7	UIntegerT		RW	(0 ... 255)
Ultrasonic Teach parameter	104	8	UIntegerT		RW	(0 ... 4095)
Optical Teach parameter	104	9	UIntegerT		RW	(0 ... 4095)
Dataset 5	105	0	RecordT		RW	Dataset 5
Active Meas Method	105	1	UIntegerT		RW	0: Ultrasonic 1: Optical 2: Error
Ultrasonic threshold	105	2	UIntegerT		RW	(0 ... 4095)
Optical threshold	105	3	UIntegerT		RW	(0 ... 4095)
Ultrasonic hysteresis	105	4	UIntegerT		RW	(0 ... 4095)
Optical hysteresis	105	5	UIntegerT		RW	(0 ... 4095)
Ultrasonic gain	105	6	UIntegerT		RW	(0 ... 255)
Optical gain	105	7	UIntegerT		RW	(0 ... 255)
Ultrasonic Teach parameter	105	8	UIntegerT		RW	(0 ... 4095)
Optical Teach parameter	105	9	UIntegerT		RW	(0 ... 4095)
Dataset 6	106	0	RecordT		RW	Dataset 6
Active Meas Method	106	1	UIntegerT		RW	0: Ultrasonic 1: Optical 2: Error
Ultrasonic threshold	106	2	UIntegerT		RW	(0 ... 4095)
Optical threshold	106	3	UIntegerT		RW	(0 ... 4095)
Ultrasonic hysteresis	106	4	UIntegerT		RW	(0 ... 4095)
Optical hysteresis	106	5	UIntegerT		RW	(0 ... 4095)
Ultrasonic gain	106	6	UIntegerT		RW	(0 ... 255)
Optical gain	106	7	UIntegerT		RW	(0 ... 255)
Ultrasonic Teach parameter	106	8	UIntegerT		RW	(0 ... 4095)
Optical Teach parameter	106	9	UIntegerT		RW	(0 ... 4095)
Dataset 7	107	0	RecordT		RW	Dataset 7
Active Meas Method	107	1	UIntegerT		RW	0: Ultrasonic 1: Optical 2: Error
Ultrasonic threshold	107	2	UIntegerT		RW	(0 ... 4095)

Parameter	Index	Subindex	Data type	Default	AR	Description
Optical threshold	107	3	UIntegerT		RW	(0 ... 4095)
Ultrasonic hysteresis	107	4	UIntegerT		RW	(0 ... 4095)
Optical hysteresis	107	5	UIntegerT		RW	(0 ... 4095)
Ultrasonic gain	107	6	UIntegerT		RW	(0 ... 255)
Optical gain	107	7	UIntegerT		RW	(0 ... 255)
Ultrasonic Teach parameter	107	8	UIntegerT		RW	(0 ... 4095)
Optical Teach parameter	107	9	UIntegerT		RW	(0 ... 4095)
Dataset 8	108	0	RecordT		RW	Dataset 8
Active Meas Method	108	1	UIntegerT		RW	0: Ultrasonic 1: Optical 2: Error
Ultrasonic threshold	108	2	UIntegerT		RW	(0 ... 4095)
Optical threshold	108	3	UIntegerT		RW	(0 ... 4095)
Ultrasonic hysteresis	108	4	UIntegerT		RW	(0 ... 4095)
Optical hysteresis	108	5	UIntegerT		RW	(0 ... 4095)
Ultrasonic gain	108	6	UIntegerT		RW	(0 ... 255)
Optical gain	108	7	UIntegerT		RW	(0 ... 255)
Ultrasonic Teach parameter	108	8	UIntegerT		RW	(0 ... 4095)
Optical Teach parameter	108	9	UIntegerT		RW	(0 ... 4095)
Dataset 9	109	0	RecordT		RW	Dataset 9
Active Meas Method	109	1	UIntegerT		RW	0: Ultrasonic 1: Optical 2: Error
Ultrasonic threshold	109	2	UIntegerT		RW	(0 ... 4095)
Optical threshold	109	3	UIntegerT		RW	(0 ... 4095)
Ultrasonic hysteresis	109	4	UIntegerT		RW	(0 ... 4095)
Optical hysteresis	109	5	UIntegerT		RW	(0 ... 4095)
Ultrasonic gain	109	6	UIntegerT		RW	(0 ... 255)
Optical gain	109	7	UIntegerT		RW	(0 ... 255)
Ultrasonic Teach parameter	109	8	UIntegerT		RW	(0 ... 4095)
Optical Teach parameter	109	9	UIntegerT		RW	(0 ... 4095)

Parameter	Index	Subindex	Data type	Default	AR	Description
Dataset 10	110	0	RecordT		RW	Dataset 10
Active Meas Method	110	1	UIntegerT		RW	0: Ultrasonic 1: Optical 2: Error
Ultrasonic threshold	110	2	UIntegerT		RW	(0 ... 4095)
Optical threshold	110	3	UIntegerT		RW	(0 ... 4095)
Ultrasonic hysteresis	110	4	UIntegerT		RW	(0 ... 4095)
Optical hysteresis	110	5	UIntegerT		RW	(0 ... 4095)
Ultrasonic gain	110	6	UIntegerT		RW	(0 ... 255)
Optical gain	110	7	UIntegerT		RW	(0 ... 255)
Ultrasonic Teach parameter	110	8	UIntegerT		RW	(0 ... 4095)
Optical Teach parameter	110	9	UIntegerT		RW	(0 ... 4095)
Dataset 11	111	0	RecordT		RW	Dataset 11
Active Meas Method	111	1	UIntegerT		RW	0: Ultrasonic 1: Optical 2: Error
Ultrasonic threshold	111	2	UIntegerT		RW	(0 ... 4095)
Optical threshold	111	3	UIntegerT		RW	(0 ... 4095)
Ultrasonic hysteresis	111	4	UIntegerT		RW	(0 ... 4095)
Optical hysteresis	111	5	UIntegerT		RW	(0 ... 4095)
Ultrasonic gain	111	6	UIntegerT		RW	(0 ... 255)
Optical gain	111	7	UIntegerT		RW	(0 ... 255)
Ultrasonic Teach parameter	111	8	UIntegerT		RW	(0 ... 4095)
Optical Teach parameter	111	9	UIntegerT		RW	(0 ... 4095)
Dataset 12	112	0	RecordT		RW	Dataset 12
Active Meas Method	112	1	UIntegerT		RW	0: Ultrasonic 1: Optical 2: Error
Ultrasonic threshold	112	2	UIntegerT		RW	(0 ... 4095)
Optical threshold	112	3	UIntegerT		RW	(0 ... 4095)
Ultrasonic hysteresis	112	4	UIntegerT		RW	(0 ... 4095)
Optical hysteresis	112	5	UIntegerT		RW	(0 ... 4095)

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Parameter	Index	Subindex	Data type	Default	AR	Description
Ultrasonic gain	112	6	UIntegerT		RW	(0 ... 255)
Optical gain	112	7	UIntegerT		RW	(0 ... 255)
Ultrasonic Teach parameter	112	8	UIntegerT		RW	(0 ... 4095)
Optical Teach parameter	112	9	UIntegerT		RW	(0 ... 4095)
Dataset 13	113	0	RecordT		RW	Dataset 13
Active Meas Method	113	1	UIntegerT		RW	0: Ultrasonic 1: Optical 2: Error
Ultrasonic threshold	113	2	UIntegerT		RW	(0 ... 4095)
Optical threshold	113	3	UIntegerT		RW	(0 ... 4095)
Ultrasonic hysteresis	113	4	UIntegerT		RW	(0 ... 4095)
Optical hysteresis	113	5	UIntegerT		RW	(0 ... 4095)
Ultrasonic gain	113	6	UIntegerT		RW	(0 ... 255)
Optical gain	113	7	UIntegerT		RW	(0 ... 255)
Ultrasonic Teach parameter	113	8	UIntegerT		RW	(0 ... 4095)
Optical Teach parameter	113	9	UIntegerT		RW	(0 ... 4095)
Dataset 14	114	0	RecordT		RW	Dataset 14
Active Meas Method	114	1	UIntegerT		RW	0: Ultrasonic 1: Optical 2: Error
Ultrasonic threshold	114	2	UIntegerT		RW	(0 ... 4095)
Optical threshold	114	3	UIntegerT		RW	(0 ... 4095)
Ultrasonic hysteresis	114	4	UIntegerT		RW	(0 ... 4095)
Optical hysteresis	114	5	UIntegerT		RW	(0 ... 4095)
Ultrasonic gain	114	6	UIntegerT		RW	(0 ... 255)
Optical gain	114	7	UIntegerT		RW	(0 ... 255)
Ultrasonic Teach parameter	114	8	UIntegerT		RW	(0 ... 4095)
Optical Teach parameter	114	9	UIntegerT		RW	(0 ... 4095)
Dataset 15	115	0	RecordT		RW	Dataset 15
Active Meas Method	115	1	UIntegerT		RW	0: Ultrasonic 1: Optical 2: Error

Parameter	Index	Subindex	Data type	Default	AR	Description
Ultrasonic threshold	115	2	UIntegerT		RW	(0 ... 4095)
Optical threshold	115	3	UIntegerT		RW	(0 ... 4095)
Ultrasonic hysteresis	115	4	UIntegerT		RW	(0 ... 4095)
Optical hysteresis	115	5	UIntegerT		RW	(0 ... 4095)
Ultrasonic gain	115	6	UIntegerT		RW	(0 ... 255)
Optical gain	115	7	UIntegerT		RW	(0 ... 255)
Ultrasonic Teach parameter	115	8	UIntegerT		RW	(0 ... 4095)
Optical Teach parameter	115	9	UIntegerT		RW	(0 ... 4095)
Dataset 16	116	0	RecordT		RW	Dataset 16
Active Meas Method	116	1	UIntegerT		RW	0: Ultrasonic 1: Optical 2: Error
Ultrasonic threshold	116	2	UIntegerT		RW	(0 ... 4095)
Optical threshold	116	3	UIntegerT		RW	(0 ... 4095)
Ultrasonic hysteresis	116	4	UIntegerT		RW	(0 ... 4095)
Optical hysteresis	116	5	UIntegerT		RW	(0 ... 4095)
Ultrasonic gain	116	6	UIntegerT		RW	(0 ... 255)
Optical gain	116	7	UIntegerT		RW	(0 ... 255)
Ultrasonic Teach parameter	116	8	UIntegerT		RW	(0 ... 4095)
Optical Teach parameter	116	9	UIntegerT		RW	(0 ... 4095)
Dataset 17	117	0	RecordT		RW	Dataset 17
Active Meas Method	117	1	UIntegerT		RW	0: Ultrasonic 1: Optical 2: Error
Ultrasonic threshold	117	2	UIntegerT		RW	(0 ... 4095)
Optical threshold	117	3	UIntegerT		RW	(0 ... 4095)
Ultrasonic hysteresis	117	4	UIntegerT		RW	(0 ... 4095)
Optical hysteresis	117	5	UIntegerT		RW	(0 ... 4095)
Ultrasonic gain	117	6	UIntegerT		RW	(0 ... 255)
Optical gain	117	7	UIntegerT		RW	(0 ... 255)
Ultrasonic Teach parameter	117	8	UIntegerT		RW	(0 ... 4095)

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Parameter	Index	Subindex	Data type	Default	AR	Description
Optical Teach parameter	117	9	UIntegerT		RW	(0 ... 4095)
Dataset 18	118	0	RecordT		RW	Dataset 18
Active Meas Method	118	1	UIntegerT		RW	0: Ultrasonic 1: Optical 2: Error
Ultrasonic threshold	118	2	UIntegerT		RW	(0 ... 4095)
Optical threshold	118	3	UIntegerT		RW	(0 ... 4095)
Ultrasonic hysteresis	118	4	UIntegerT		RW	(0 ... 4095)
Optical hysteresis	118	5	UIntegerT		RW	(0 ... 4095)
Ultrasonic gain	118	6	UIntegerT		RW	(0 ... 255)
Optical gain	118	7	UIntegerT		RW	(0 ... 255)
Ultrasonic Teach parameter	118	8	UIntegerT		RW	(0 ... 4095)
Optical Teach parameter	118	9	UIntegerT		RW	(0 ... 4095)
Dataset 19	119	0	RecordT		RW	Dataset 19
Active Meas Method	119	1	UIntegerT		RW	0: Ultrasonic 1: Optical 2: Error
Ultrasonic threshold	119	2	UIntegerT		RW	(0 ... 4095)
Optical threshold	119	3	UIntegerT		RW	(0 ... 4095)
Ultrasonic hysteresis	119	4	UIntegerT		RW	(0 ... 4095)
Optical hysteresis	119	5	UIntegerT		RW	(0 ... 4095)
Ultrasonic gain	119	6	UIntegerT		RW	(0 ... 255)
Optical gain	119	7	UIntegerT		RW	(0 ... 255)
Ultrasonic Teach parameter	119	8	UIntegerT		RW	(0 ... 4095)
Optical Teach parameter	119	9	UIntegerT		RW	(0 ... 4095)
Ultrasonic Analysis depth	135	0	IntegerT	2	RW	Number of scans considered for switching the output, with ultrasonic method (1 ... 100)
Ultrasonic Auto-Level-Control	136	0	UIntegerT	255	RW	Ultrasonic Auto-Level-Control function 255: Enabled 0: Disabled
Optical Analysis Depth	145	0	IntegerT	2	RW	Number of scans considered for switching the output, with optical method (1 ... 100)

Parameter	Index	Subindex	Data type	Default	AR	Description
Optical Auto-Level-Control	146	0	UIntegerT	255	RW	Optical Auto-Level-Control function 255: Enabled 0: Disabled
Timer Unit	192	0	UIntegerT	0	RW	Timer Unit 0: off 255: on
Function of Timer Unit	193	0	UIntegerT	2	RW	Function of Timer Unit 0: On Delay 1: Off Delay 2: Pulse Stretching 3: Pulse Suppression
Time	194	0	UIntegerT	200	RW	Time (1 ... 50000)
Number of Objects	195	0	UIntegerT		RW	Internal Object Counter
Wire function level 1	201	0	UIntegerT	1	RW	Wire function level 1: 20 - 80 ms 0: None 1: easyTeach 3: Static Teach 10: Method Ultrasonic 11: Method Optical 15: easyTune Down 16: easyTune Up 19: Logic High active - Not Inverted 20: Logic Low active - Inverted 22: Pulse stretching on 23: Pulse stretching off 32: Auto-Level-Control on 33: Auto-Level-Control off 34: easyTeach manuell 35: easyTeach intelligent
Wire function level 2	202	0	UIntegerT	3	RW	Wire function level 2: 120 - 180 ms 0: None 1: easyTeach 3: Static Teach 10: Method Ultrasonic 11: Method Optical 15: easyTune Down 16: easyTune Up 19: Logic High active - Not Inverted 20: Logic Low active - Inverted 22: Pulse stretching on 23: Pulse stretching off 32: Auto-Level-Control on 33: Auto-Level-Control off 34: easyTeach manuell 35: easyTeach intelligent

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Parameter	Index	Subindex	Data type	Default	AR	Description
Wire function level 3	203	0	UIntegerT	19	RW	Wire function level 3: 220 - 280 ms 0: None 1: easyTeach 3: Static Teach 10: Method Ultrasonic 11: Method Optical 15: easyTune Down 16: easyTune Up 19: Logic High active - Not Inverted 20: Logic Low active - Inverted 22: Pulse stretching on 23: Pulse stretching off 32: Auto-Level-Control on 33: Auto-Level-Control off 34: easyTeach manuell 35: easyTeach intelligent
Wire function level 4	204	0	UIntegerT	20	RW	Wire function level 4: 320 - 380 ms 0: None 1: easyTeach 3: Static Teach 10: Method Ultrasonic 11: Method Optical 15: easyTune Down 16: easyTune Up 19: Logic High active - Not Inverted 20: Logic Low active - Inverted 22: Pulse stretching on 23: Pulse stretching off 32: Auto-Level-Control on 33: Auto-Level-Control off 34: easyTeach manuell 35: easyTeach intelligent
Wire function level 5	205	0	UIntegerT	15	RW	Wire function level 5: 420 - 480 ms 0: None 1: easyTeach 3: Static Teach 10: Method Ultrasonic 11: Method Optical 15: easyTune Down 16: easyTune Up 19: Logic High active - Not Inverted 20: Logic Low active - Inverted 22: Pulse stretching on 23: Pulse stretching off 32: Auto-Level-Control on 33: Auto-Level-Control off 34: easyTeach manuell 35: easyTeach intelligent

Parameter	Index	Subindex	Data type	Default	AR	Description
Wire function level 6	206	0	UIntegerT	16	RW	Wire function level 6: 520 - 580 ms 0: None 1: easyTeach 3: Static Teach 10: Method Ultrasonic 11: Method Optical 15: easyTune Down 16: easyTune Up 19: Logic High active - Not Inverted 20: Logic Low active - Inverted 22: Pulse stretching on 23: Pulse stretching off 32: Auto-Level-Control on 33: Auto-Level-Control off 34: easyTeach manuell 35: easyTeach intelligent
Wire function level 7	207	0	UIntegerT	32	RW	Wire function level 7: 620 - 680 ms 0: None 1: easyTeach 3: Static Teach 10: Method Ultrasonic 11: Method Optical 15: easyTune Down 16: easyTune Up 19: Logic High active - Not Inverted 20: Logic Low active - Inverted 22: Pulse stretching on 23: Pulse stretching off 32: Auto-Level-Control on 33: Auto-Level-Control off 34: easyTeach manuell 35: easyTeach intelligent
Wire function level 8	208	0	UIntegerT	33	RW	Wire function level 8: 720 - 780 ms 0: None 1: easyTeach 3: Static Teach 10: Method Ultrasonic 11: Method Optical 15: easyTune Down 16: easyTune Up 19: Logic High active - Not Inverted 20: Logic Low active - Inverted 22: Pulse stretching on 23: Pulse stretching off 32: Auto-Level-Control on 33: Auto-Level-Control off 34: easyTeach manuell 35: easyTeach intelligent

Parameter	Index	Subindex	Data type	Default	AR	Description
Wire function level 9	209	0	UIntegerT	10	RW	Wire function level 9: 820 - 880 ms 0: None 1: easyTeach 3: Static Teach 10: Method Ultrasonic 11: Method Optical 15: easyTune Down 16: easyTune Up 19: Logic High active - Not Inverted 20: Logic Low active - Inverted 22: Pulse stretching on 23: Pulse stretching off 32: Auto-Level-Control on 33: Auto-Level-Control off 34: easyTeach manuell 35: easyTeach intelligent
Wire function level 10	210	0	UIntegerT	11	RW	Wire function level 10: 920 - 980 ms 0: None 1: easyTeach 3: Static Teach 10: Method Ultrasonic 11: Method Optical 15: easyTune Down 16: easyTune Up 19: Logic High active - Not Inverted 20: Logic Low active - Inverted 22: Pulse stretching on 23: Pulse stretching off 32: Auto-Level-Control on 33: Auto-Level-Control off 34: easyTeach manuell 35: easyTeach intelligent
Wire function level 11	211	0	UIntegerT	34	RW	Wire function level 11: 1020 - 1080 ms 0: None 1: easyTeach 3: Static Teach 10: Method Ultrasonic 11: Method Optical 15: easyTune Down 16: easyTune Up 19: Logic High active - Not Inverted 20: Logic Low active - Inverted 22: Pulse stretching on 23: Pulse stretching off 32: Auto-Level-Control on 33: Auto-Level-Control off 34: easyTeach manuell 35: easyTeach intelligent

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Parameter	Index	Subindex	Data type	Default	AR	Description
Wire function level 12	212	0	UIntegerT	35	RW	Wire function level 12: 1120 - 1180 ms 0: None 1: easyTeach 3: Static Teach 10: Method Ultrasonic 11: Method Optical 15: easyTune Down 16: easyTune Up 19: Logic High active - Not Inverted 20: Logic Low active - Inverted 22: Pulse stretching on 23: Pulse stretching off 32: Auto-Level-Control on 33: Auto-Level-Control off 34: easyTeach manuell 35: easyTeach intelligent
Temperature	220	0	IntegerT		R	Temperature
Minus button easyTune disable	227	0	UIntegerT	0	RW	Minus button easyTune disable 255: enable 0: disable
Teach button easyTune disable	230	0	UIntegerT	0	RW	Teach button easyTune disable 255: enable 0: disable
Minus button function level 1	238	0	IntegerT	8	RW	Minus button function level 1 0: None 1: easyTeach 3: Static Teach 7: KeyLock toggle 8: Method toggle 15: easyTune Down 16: easyTune Up 21: Logic toggle 24: Pulse stretching toggle 27: Auto-Level-Control toggle 31: easyTeach intelligent/manual toggle -1: Disable
Minus button function level 2	239	0	IntegerT	27	RW	Minus button function level 2 0: None 1: easyTeach 3: Static Teach 7: KeyLock toggle 8: Method toggle 15: easyTune Down 16: easyTune Up 21: Logic toggle 24: Pulse stretching toggle 27: Auto-Level-Control toggle 31: easyTeach intelligent/manual toggle -1: Disable

Parameter	Index	Subindex	Data type	Default	AR	Description
Minus button function level 3	240	0	IntegerT	31	RW	Minus button function level 3 0: None 1: easyTeach 3: Static Teach 7: KeyLock toggle 8: Method toggle 15: easyTune Down 16: easyTune Up 21: Logic toggle 24: Pulse stretching toggle 27: Auto-Level-Control toggle 31: easyTeach intelligent/manual toggle -1: Disable
Teach button function level 1	241	0	IntegerT	1	RW	Teach button function level 1 0: None 1: easyTeach 3: Static Teach 7: KeyLock toggle 8: Method toggle 15: easyTune Down 16: easyTune Up 21: Logic toggle 24: Pulse stretching toggle 27: Auto-Level-Control toggle 31: easyTeach intelligent/manual toggle -1: Disable
Teach button function level 2	242	0	IntegerT	3	RW	Teach button function level 2 0: None 1: easyTeach 3: Static Teach 7: KeyLock toggle 8: Method toggle 15: easyTune Down 16: easyTune Up 21: Logic toggle 24: Pulse stretching toggle 27: Auto-Level-Control toggle 31: easyTeach intelligent/manual toggle -1: Disable
Teach button function level 3	243	0	IntegerT	21	RW	Teach button function level 3 0: None 1: easyTeach 3: Static Teach 7: KeyLock toggle 8: Method toggle 15: easyTune Down 16: easyTune Up 21: Logic toggle 24: Pulse stretching toggle 27: Auto-Level-Control toggle 31: easyTeach intelligent/manual toggle -1: Disable

Parameter	Index	Subindex	Data type	Default	AR	Description
Pin 4 function	251	0	UIntegerT	1	RW	Pin 4 function 0: No Pin Function 1: Pin is SSC1 (High active – Not inverted) 2: Pin is SSC1 (Low active – Inverted) 7: Pin is Warning (High active – Not inverted) 8: Pin is Warning (Low active – Inverted)
Pin 2 function	252	0	UIntegerT	2	RW	Pin 2 function 0: No Pin Function 1: Pin is SSC1 (High active – Not inverted) 2: Pin is SSC1 (Low active – Inverted) 7: Pin is Warning (High active – Not inverted) 8: Pin is Warning (Low active – Inverted)

9 Technical specifications

9.1 General data

Tab. 9.1:   Sensor and IODD version

IODD version	V1.2
IODD release date	2020-9-24
Device family	Label Sensor
Device ID	2502
Device name	GSX14E/LGT
Device variants	GSX14E/LGT.3-M12 (50144142)