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IO-Link

PLC Integration GSX14E_2502

IO - Link service data function block + process data parser function for ModuleSiemens S7-1200 / S7 - 1500 (TIA - Portal V15.1 or higher) PLC systems in combination with a PROFIBUS / PROFINET 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_ GSX14E_2502" simplifies the usage of Leuze IO-Link devices on Siemens S7-1200/S7-1500 (TIA-Portal V15.1 or higher) PLC controls. This FB supports IO-Link Masters which can be connected via PROFIBUS / PROFINET 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

The module can be called as a single-instance.
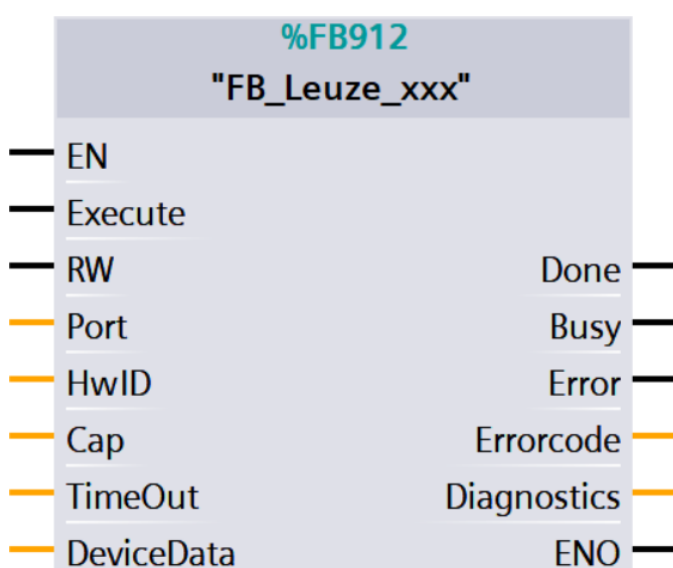
Fig. 3.1:   Example of module call with single instance

3.3 Configuration

Tab. 3.1:   Parameter IN

Parameter	Data type	Description
Execute	Bool	Positive trigger: Start data transfer
RW	Bool	Read or write the selected IO-Link parameter. FALSE: Read parameter TRUE: Write Parameter
Port	Int	Number of the master port the IO-Link device is connected, starting with 1.
HwID	HW_IO	Hardware IO-Address of the IO-Link master
Cap	DInt	Client access point of the IO-Link function (IO-LinkMaster specific). Siemens: 227 Weidmüller: 227 Other manufacturers: 255
TimeOut	Time	Time, after a Timeout-Error is triggered.

Tab. 3.2:   Parameter INOUT

Parameter	Data type	Description
DeviceData	Leuze_type_ GSX14E_2502	Sensor data

See structure description of Leuze_type_ GSX14E_2502 in chapter 7.

Tab. 3.3:   Parameter OUT

Parameter	Data type	Description
Done	Bool	Indicates whether data is valid.
Busy	Bool	Request in process. FALSE: Request is terminated TRUE: Request is being processed
Error	Bool	Error flag FALSE: No error TRUE: Error detected
ErrorCode	Leuze_type_IolError	Status of the function block
Diagnostics	LIOLink_typeDiagnostics	Detailed diagnostic information of the FB. See description of Siemens Library for IO-Link (LIOLink).

See structure description of Leuze_type_IolError in chapter 6.

3.4   Method of function

The function block uses the data structure "FB_Leuze_ 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 "RW" = FALSE to read parameter. The value that should be written can be defined in the data structure, as soon as the input parameter "RW" = TRUE. You start each transfer by calling up the "FB_Leuze_ GSX14E_2502" with a positive trigger at the "Execute" input. As long as there is no valid answer the output "Busy" 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 "Done" = TRUE output shows that the transmission was successful. The outputs retain there states as long as there is no new positive trigger at the "Execute" input again.

The function block allows you to read or write multiple IO-Link parameters sequentially (multiselection). 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 (Error) is set and an error code (Leuze_type_IolError) 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.

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4 Integration into the PLC project

The function block "FB_Leuze_ GSX14E_2502" is a part of the TIA-Portal library. To get all relevant blocks into your PLC project, please open the library as a "global" library. Afterwards, the library elements can be copied into the currently opened project.

Integration step by step:

- Downloading the library

- Open the library in the "global" library tab

- Including the blocks of the Leuze library into your project (code-blocks and data type)

- Compiling the PLC project

	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.

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5 Process data parser function

The function FC_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. Each sensor connected to Leuze IO-Link master has its own hardware ID. See Fig. 5.2.

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

5.1 Calling and designation


```
          %FC913
      "FC_Leuze_PD_xxx"

  — EN                    Ret_Val —
  — HwID                    Error —
  — RelByteOffset       ErrorCode —
                              ENO —
```
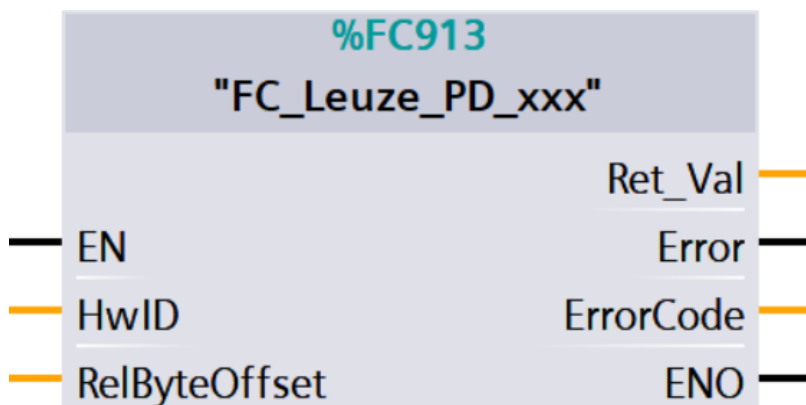
Fig. 5.1:   Example of process data parsing function call

5.2 Configuration

Tab. 5.1:   Parameters

Parameter name	Declaration	Data type	Description
HwID	INPUT	HW_IO	Hardware IO-Address of the IO-Link master (see HW-Configuration). For masters that do not use the Siemens PCT-Tool please use the HW IOAddress of the configured Master port.
RelByteOffset	INPUT	UINT	Relative start address of the IO-Link device on the IO-Link master port (see PCT-Tool -> Addresses -> Inputs Start). If the process date is mapped into a specified logical IO-Address, the relative byte offset = 0.
ErrorCode	OUTPUT	WORD	Error code details see in the Siemens help system ("DPRD_DAT").
RET_VAL	OUTPUT	Leuze_type_PD_ GSX14E_2502	Reference to the instance of the data structure Leuze_type_PD_ GSX14E_2502. The structure includes the disaggregated values of the process data.

See structure description of Leuze_type_PD_ GSX14E_2502 in chapter 7.
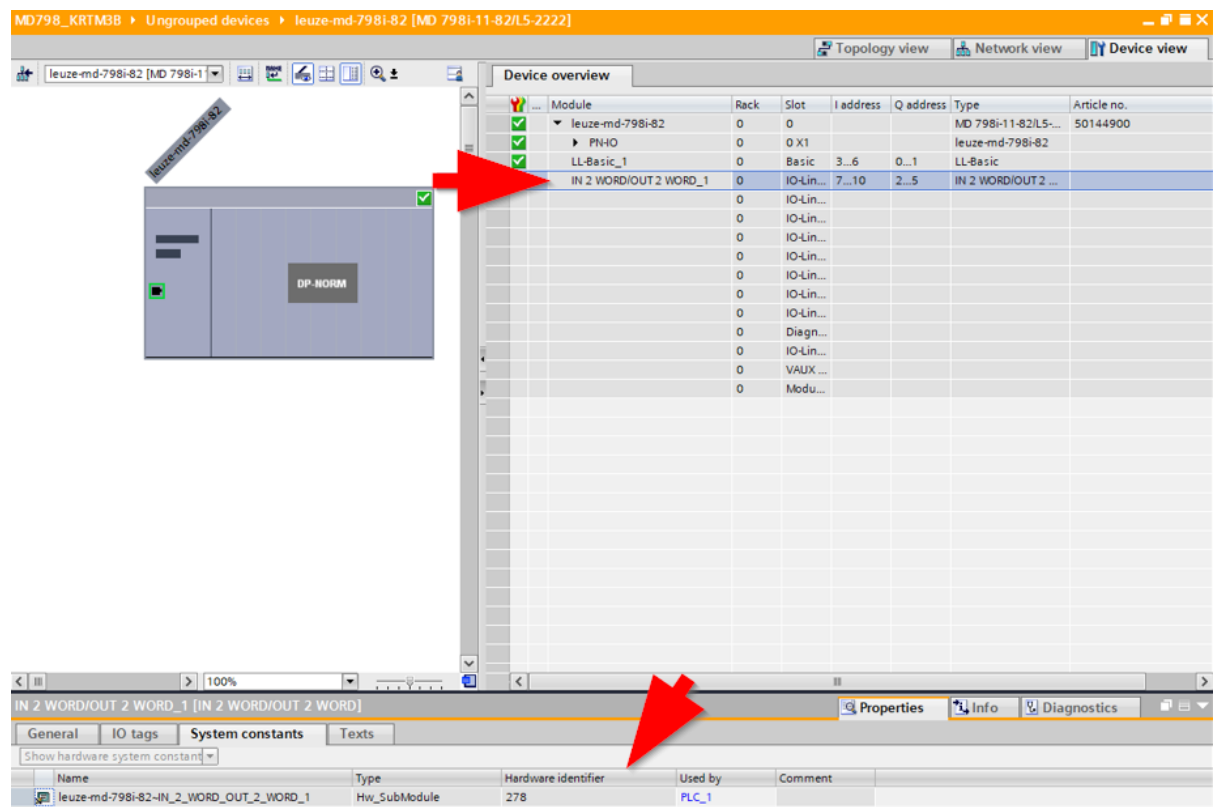
Fig. 5.2:   Hardware ID for sensors connected to Leuze MD798 IO-Link master

6 Error description

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

Tab. 6.1: Leuze_type_IolError description

Parameter name	Data type	Description
ErrorCode.status	Word	16#0000–16#7FFF: Status of the FB, 16#8000–16#FFFF: Error codes
ErrorCode.iolMError	Word	IO-Link Master error (see IO-Link specification)
ErrorCode.iolError	Word	IO-Link error. Contains the IOL Error_Code the IOL Add_Error_Code (see IO-Link specification) and the device specific error codes
ErrorCode.isduIndex	Int	IO-Link Index (ISDU) to which the error code refers

Tab. 6.2: Error description for status

Error code (status)	Error description
0x0000	Operation completed, no warning and no further details
0x7000	No operation in progress (initial value)
0x7001	First call after input of a new command (rising edge on "execute")
0x7002	Subsequent cal
0x8001	Time out error occurred
0x8002	No parameter selected
0x8201	Unsupported port
0x8202	Unsupported index
0x8203	Unsupported subindex
0x8205	The length at the "writeLen" parameter does not match the data record that will be written
0x8401	The IO-Link master has reported an error code, see "diagnostics"
0x8402	Received data record does not match operation
0x8403	Operation could not be completed in the specified time
0x8600	Internal state machine has reached an undefined state
0x8601	System function WRREC reports an error, see "diagnostics"
0x8602	System function RDREC reports an error, see "diagnostics"

Tab. 6.3:   Error description for iolMError

Error code (iolMError)	Error description
0x0000	No error
0x0001 ... 0x06FF	Reserved / Master specific
0x7000	Unexpected Write request instead of read request / Invalid response PDU
0x7001	Decode error
0x7002	Port occupied by another task
0x7003 ... 0x7FFF	Reserved / Master specific
0x8000	Timeout when IOL-Devices or IOL-Master port are busy
0x8001	IO-Link index > 32767
0x8002	Port address beyond defined maximum
0x8003	Port function not supported
0x8004	Reserved / Master specific
0x8005	Invalid length of the data that should be written (>232 / <1)
0x8006	Reserved / Master specific
0x8007	IO-Link subindex > 255
0x8008 ... 0x8051	Reserved / Master specific
0x8052	Error during acyclic data access (FB RDREC error)
0x8053	Error during acyclic data access (FB WRREC error)
0x8054 ... 0x8FFFF	Reserved / Master specific

For additional information see the technical specification "IO-Link Integration Part 1" (www.profibus.com).

Tab. 6.4:   Error description for iolError

Error code (iolError)	Error description
0x0000	No error
0x1000	Master communication error
0x1100	ISDU time out / Device event error
0x5200	Device checksum error
0x5600	Device checksum error

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Error code (iolError)	Error description
0x5700	Master ISDU illegal service
0x5800	Device error: Byte length does not fit to the chosen parameter
0x8000	The requested service has been refused by the device application
0x8011	Read write access to a not existing Index
0x8012	Read write access to a not existing sub index
0x8020	Parameter is not accessible for a read or write service due to the current state in the device
0x8021	Parameter is not accessible for a read or write service due to an ongoing local operation at the device
0x8022	Parameter is not accessible for a read or write service due to an remote triggered state of the device application
0x8023	Write service tries to access a read-only parameter
0x8030	Write service to a parameter outside its permitted range of values
0x8031	Write service to a parameter above its specified value range
0x8032	Write service to a parameter below its specified value range
0x8033	Write service to a parameter above its specified length
0x8034	Write service to a parameter below its predefined length
0x8035	Write service with a command value not supported by the device application
0x8036	Write service with a command value calling a device function not available due to the current state
0x8040	The value via single parameter transfer collide with other actual parameter settings
0x8041	Inconsistent parameter set (at least an ISDU cannot be written)
0x8082	The read or write service is refused due to a temporarily unavailable application
0x8100	Unspecified
0x8101 ... 0x81FF	Device specific (see device description)

For additional information see the specification "IO-Link Communication" (www.IO-Link.com).

7 Data structures

Tab. 7.1: Leuze_type_ GSX14E_2502

Parameter name	Data type	Description
DeviceData.Selection.Commands.DeviceReset	Bool	[WRITE_ONLY] Device Reset
DeviceData.Selection.Commands.ApplicationReset	Bool	[WRITE_ONLY] Application Reset
DeviceData.Selection.Commands.RestoreFactorySettings	Bool	[WRITE_ONLY] Restore Factory Settings
DeviceData.Selection.Commands.TeachSp1	Bool	[WRITE_ONLY] Teach SP1
DeviceData.Selection.Commands.TeachSp1Start	Bool	[WRITE_ONLY] Teach SP1 Start
DeviceData.Selection.Commands.TeachSp1Stop	Bool	[WRITE_ONLY] Teach SP1 Stop
DeviceData.Selection.Commands.AbortTeach	Bool	[WRITE_ONLY] Abort Teach
DeviceData.Selection.Commands.EasytuneDown	Bool	[WRITE_ONLY] easyTune Down
DeviceData.Selection.Commands.EasytuneUp	Bool	[WRITE_ONLY] easyTune Up
DeviceData.Selection.Commands.ClearError	Bool	[WRITE_ONLY] Clear Error
DeviceData.Selection.Commands.MethodUltrasonic	Bool	[WRITE_ONLY] Method Ultrasonic
DeviceData.Selection.Commands.MethodOptical	Bool	[WRITE_ONLY] Method Optical
DeviceData.Selection.Commands.SaveWorkIndex	Bool	[WRITE_ONLY] Save Work Index
DeviceData.Selection.Commands.LoadWorkIndex	Bool	[WRITE_ONLY] Load Work Index
DeviceData.Selection.DirectParameters1.All	Bool	[READ_WRITE] all parameters of complex data type
DeviceData.Selection.DirectParameters1.Reserved_1	Bool	[READ_ONLY]
DeviceData.Selection.DirectParameters1.MasterCycleTime	Bool	[READ_ONLY]
DeviceData.Selection.DirectParameters1.MinCycleTime	Bool	[READ_ONLY]
DeviceData.Selection.DirectParameters1.MSequenceCapability	Bool	[READ_ONLY]
DeviceData.Selection.DirectParameters1.IoLinkVersionId	Bool	[READ_ONLY]
DeviceData.Selection.DirectParameters1.ProcessDataInputLength	Bool	[READ_ONLY]
DeviceData.Selection.DirectParameters1.ProcessDataOutputLength	Bool	[READ_ONLY]
DeviceData.Selection.DirectParameters1.VendorId1	Bool	[READ_ONLY]
DeviceData.Selection.DirectParameters1.VendorId2	Bool	[READ_ONLY]
DeviceData.Selection.DirectParameters1.DeviceId1	Bool	[READ_ONLY]

Parameter name	Data type	Description
DeviceData.Selection.DirectParameters1.DeviceId2	Bool	[READ_ONLY]
DeviceData.Selection.DirectParameters1.DeviceId3	Bool	[READ_ONLY]
DeviceData.Selection.DirectParameters1.Reserved_13	Bool	[READ_ONLY]
DeviceData.Selection.DirectParameters1.Reserved_14	Bool	[READ_ONLY]
DeviceData.Selection.DirectParameters1.Reserved_15	Bool	[READ_ONLY]
DeviceData.Selection.DirectParameters2.All	Bool	[READ_WRITE] all parameters of complex data type
DeviceData.Selection.DirectParameters2.DeviceSpecificParameter1	Bool	[READ_WRITE]
DeviceData.Selection.DirectParameters2.DeviceSpecificParameter2	Bool	[READ_WRITE]
DeviceData.Selection.DirectParameters2.DeviceSpecificParameter3	Bool	[READ_WRITE]
DeviceData.Selection.DirectParameters2.DeviceSpecificParameter4	Bool	[READ_WRITE]
DeviceData.Selection.DirectParameters2.DeviceSpecificParameter5	Bool	[READ_WRITE]
DeviceData.Selection.DirectParameters2.DeviceSpecificParameter6	Bool	[READ_WRITE]
DeviceData.Selection.DirectParameters2.DeviceSpecificParameter7	Bool	[READ_WRITE]
DeviceData.Selection.DirectParameters2.DeviceSpecificParameter8	Bool	[READ_WRITE]
DeviceData.Selection.DirectParameters2.DeviceSpecificParameter9	Bool	[READ_WRITE]
DeviceData.Selection.DirectParameters2.DeviceSpecificParameter10	Bool	[READ_WRITE]
DeviceData.Selection.DirectParameters2.DeviceSpecificParameter11	Bool	[READ_WRITE]
DeviceData.Selection.DirectParameters2.DeviceSpecificParameter12	Bool	[READ_WRITE]
DeviceData.Selection.DirectParameters2.DeviceSpecificParameter13	Bool	[READ_WRITE]
DeviceData.Selection.DirectParameters2.DeviceSpecificParameter14	Bool	[READ_WRITE]
DeviceData.Selection.DirectParameters2.DeviceSpecificParameter15	Bool	[READ_WRITE]
DeviceData.Selection.DirectParameters2.DeviceSpecificParameter16	Bool	[READ_WRITE]
DeviceData.Selection.StandardCommand	Bool	[WRITE_ONLY]
DeviceData.Selection.DeviceAccessLocks.All	Bool	[READ_WRITE] all parameters of complex data type
DeviceData.Selection.ProfileCharacteristic.All	Bool	[READ_ONLY] all parameters of complex data type
DeviceData.Selection.VendorName	Bool	[READ_ONLY]

Parameter name	Data type	Description
DeviceData.Selection.VendorText	Bool	[READ_ONLY]
DeviceData.Selection.ProductName	Bool	[READ_ONLY]
DeviceData.Selection.ProductId	Bool	[READ_ONLY]
DeviceData.Selection.ProductText	Bool	[READ_ONLY]
DeviceData.Selection.SerialNumber	Bool	[READ_ONLY]
DeviceData.Selection.HardwareVersion	Bool	[READ_ONLY]
DeviceData.Selection.FirmwareVersion	Bool	[READ_ONLY]
DeviceData.Selection.ApplicationSpecificTag	Bool	[READ_WRITE]
DeviceData.Selection.FunctionTag	Bool	[READ_WRITE]
DeviceData.Selection.LocationTag	Bool	[READ_WRITE]
DeviceData.Selection.DeviceStatus	Bool	[READ_ONLY]
DeviceData.Selection.DetailedDeviceStatus.All	Bool	[READ_ONLY] all parameters of complex data type
DeviceData.Selection.SscParamSp	Bool	[READ_WRITE] sensitivity or setpoint values for switching signal channel
DeviceData.Selection.SscConfigLogic	Bool	[READ_WRITE] defines the logical behaviour of the switching signal and derived output signal
DeviceData.Selection.TiErgebnis.All	Bool	[READ_ONLY] all parameters of complex data type
DeviceData.Selection.TeachSettingsDynamic	Bool	[READ_WRITE] Teach Settings Dynamic
DeviceData.Selection.System.All	Bool	[READ_ONLY] all parameters of complex data type
DeviceData.Selection.Amplitude	Bool	[READ_ONLY] Actual Amplitude
DeviceData.Selection.Threshold	Bool	[READ_ONLY] Threshold
DeviceData.Selection.WorkingParameterLoadSaveIndex	Bool	[READ_WRITE] Working Parameter load / save index
DeviceData.Selection.WorkingParameter.All	Bool	[READ_WRITE] all parameters of complex data type
DeviceData.Selection.WorkingParameter.ActiveMeasMethod	Bool	[READ_WRITE]
DeviceData.Selection.WorkingParameter.UltrasonicThreshold	Bool	[READ_WRITE]
DeviceData.Selection.WorkingParameter.OpticalThreshold	Bool	[READ_WRITE]
DeviceData.Selection.WorkingParameter.UltrasonicHysteresis	Bool	[READ_WRITE]

Parameter name	Data type	Description
DeviceData.Selection.WorkingParameter.OpticalHysteresis	Bool	[READ_WRITE]
DeviceData.Selection.WorkingParameter.UltrasonicGain	Bool	[READ_WRITE]
DeviceData.Selection.WorkingParameter.OpticalGain	Bool	[READ_WRITE]
DeviceData.Selection.WorkingParameter.UltrasonicTeachParameter	Bool	[READ_WRITE]
DeviceData.Selection.WorkingParameter.OpticalTeachParameter	Bool	[READ_WRITE]
DeviceData.Selection.Dataset0.All	Bool	[READ_WRITE] all parameters of complex data type
DeviceData.Selection.Dataset0.ActiveMeasMethod	Bool	[READ_WRITE]
DeviceData.Selection.Dataset0.UltrasonicThreshold	Bool	[READ_WRITE]
DeviceData.Selection.Dataset0.OpticalThreshold	Bool	[READ_WRITE]
DeviceData.Selection.Dataset0.UltrasonicHysteresis	Bool	[READ_WRITE]
DeviceData.Selection.Dataset0.OpticalHysteresis	Bool	[READ_WRITE]
DeviceData.Selection.Dataset0.UltrasonicGain	Bool	[READ_WRITE]
DeviceData.Selection.Dataset0.OpticalGain	Bool	[READ_WRITE]
DeviceData.Selection.Dataset0.UltrasonicTeachParameter	Bool	[READ_WRITE]
DeviceData.Selection.Dataset0.OpticalTeachParameter	Bool	[READ_WRITE]
DeviceData.Selection.Dataset1.All	Bool	[READ_WRITE] all parameters of complex data type
DeviceData.Selection.Dataset1.ActiveMeasMethod	Bool	[READ_WRITE]
DeviceData.Selection.Dataset1.UltrasonicThreshold	Bool	[READ_WRITE]
DeviceData.Selection.Dataset1.OpticalThreshold	Bool	[READ_WRITE]
DeviceData.Selection.Dataset1.UltrasonicHysteresis	Bool	[READ_WRITE]
DeviceData.Selection.Dataset1.OpticalHysteresis	Bool	[READ_WRITE]
DeviceData.Selection.Dataset1.UltrasonicGain	Bool	[READ_WRITE]
DeviceData.Selection.Dataset1.OpticalGain	Bool	[READ_WRITE]
DeviceData.Selection.Dataset1.UltrasonicTeachParameter	Bool	[READ_WRITE]
DeviceData.Selection.Dataset1.OpticalTeachParameter	Bool	[READ_WRITE]
DeviceData.Selection.Dataset2.All	Bool	[READ_WRITE] all parameters of complex data type

Parameter name	Data type	Description
DeviceData.Selection.Dataset2.ActiveMeasMethod	Bool	[READ_WRITE]
DeviceData.Selection.Dataset2.UltrasonicThreshold	Bool	[READ_WRITE]
DeviceData.Selection.Dataset2.OpticalThreshold	Bool	[READ_WRITE]
DeviceData.Selection.Dataset2.UltrasonicHysteresis	Bool	[READ_WRITE]
DeviceData.Selection.Dataset2.OpticalHysteresis	Bool	[READ_WRITE]
DeviceData.Selection.Dataset2.UltrasonicGain	Bool	[READ_WRITE]
DeviceData.Selection.Dataset2.OpticalGain	Bool	[READ_WRITE]
DeviceData.Selection.Dataset2.UltrasonicTeachParameter	Bool	[READ_WRITE]
DeviceData.Selection.Dataset2.OpticalTeachParameter	Bool	[READ_WRITE]
DeviceData.Selection.Dataset3.All	Bool	[READ_WRITE] all parameters of complex data type
DeviceData.Selection.Dataset3.ActiveMeasMethod	Bool	[READ_WRITE]
DeviceData.Selection.Dataset3.UltrasonicThreshold	Bool	[READ_WRITE]
DeviceData.Selection.Dataset3.OpticalThreshold	Bool	[READ_WRITE]
DeviceData.Selection.Dataset3.UltrasonicHysteresis	Bool	[READ_WRITE]
DeviceData.Selection.Dataset3.OpticalHysteresis	Bool	[READ_WRITE]
DeviceData.Selection.Dataset3.UltrasonicGain	Bool	[READ_WRITE]
DeviceData.Selection.Dataset3.OpticalGain	Bool	[READ_WRITE]
DeviceData.Selection.Dataset3.UltrasonicTeachParameter	Bool	[READ_WRITE]
DeviceData.Selection.Dataset3.OpticalTeachParameter	Bool	[READ_WRITE]
DeviceData.Selection.Dataset4.All	Bool	[READ_WRITE] all parameters of complex data type
DeviceData.Selection.Dataset4.ActiveMeasMethod	Bool	[READ_WRITE]
DeviceData.Selection.Dataset4.UltrasonicThreshold	Bool	[READ_WRITE]
DeviceData.Selection.Dataset4.OpticalThreshold	Bool	[READ_WRITE]
DeviceData.Selection.Dataset4.UltrasonicHysteresis	Bool	[READ_WRITE]
DeviceData.Selection.Dataset4.OpticalHysteresis	Bool	[READ_WRITE]
DeviceData.Selection.Dataset4.UltrasonicGain	Bool	[READ_WRITE]
DeviceData.Selection.Dataset4.OpticalGain	Bool	[READ_WRITE]

Parameter name	Data type	Description
DeviceData.Selection.Dataset4.UltrasonicTeachParameter	Bool	[READ_WRITE]
DeviceData.Selection.Dataset4.OpticalTeachParameter	Bool	[READ_WRITE]
DeviceData.Selection.Dataset5.All	Bool	[READ_WRITE] all parameters of complex data type
DeviceData.Selection.Dataset5.ActiveMeasMethod	Bool	[READ_WRITE]
DeviceData.Selection.Dataset5.UltrasonicThreshold	Bool	[READ_WRITE]
DeviceData.Selection.Dataset5.OpticalThreshold	Bool	[READ_WRITE]
DeviceData.Selection.Dataset5.UltrasonicHysteresis	Bool	[READ_WRITE]
DeviceData.Selection.Dataset5.OpticalHysteresis	Bool	[READ_WRITE]
DeviceData.Selection.Dataset5.UltrasonicGain	Bool	[READ_WRITE]
DeviceData.Selection.Dataset5.OpticalGain	Bool	[READ_WRITE]
DeviceData.Selection.Dataset5.UltrasonicTeachParameter	Bool	[READ_WRITE]
DeviceData.Selection.Dataset5.OpticalTeachParameter	Bool	[READ_WRITE]
DeviceData.Selection.Dataset6.All	Bool	[READ_WRITE] all parameters of complex data type
DeviceData.Selection.Dataset6.ActiveMeasMethod	Bool	[READ_WRITE]
DeviceData.Selection.Dataset6.UltrasonicThreshold	Bool	[READ_WRITE]
DeviceData.Selection.Dataset6.OpticalThreshold	Bool	[READ_WRITE]
DeviceData.Selection.Dataset6.UltrasonicHysteresis	Bool	[READ_WRITE]
DeviceData.Selection.Dataset6.OpticalHysteresis	Bool	[READ_WRITE]
DeviceData.Selection.Dataset6.UltrasonicGain	Bool	[READ_WRITE]
DeviceData.Selection.Dataset6.OpticalGain	Bool	[READ_WRITE]
DeviceData.Selection.Dataset6.UltrasonicTeachParameter	Bool	[READ_WRITE]
DeviceData.Selection.Dataset6.OpticalTeachParameter	Bool	[READ_WRITE]
DeviceData.Selection.Dataset7.All	Bool	[READ_WRITE] all parameters of complex data type
DeviceData.Selection.Dataset7.ActiveMeasMethod	Bool	[READ_WRITE]
DeviceData.Selection.Dataset7.UltrasonicThreshold	Bool	[READ_WRITE]
DeviceData.Selection.Dataset7.OpticalThreshold	Bool	[READ_WRITE]

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Parameter name	Data type	Description
DeviceData.Selection.Dataset7.UltrasonicHysteresis	Bool	[READ_WRITE]
DeviceData.Selection.Dataset7.OpticalHysteresis	Bool	[READ_WRITE]
DeviceData.Selection.Dataset7.UltrasonicGain	Bool	[READ_WRITE]
DeviceData.Selection.Dataset7.OpticalGain	Bool	[READ_WRITE]
DeviceData.Selection.Dataset7.UltrasonicTeachParameter	Bool	[READ_WRITE]
DeviceData.Selection.Dataset7.OpticalTeachParameter	Bool	[READ_WRITE]
DeviceData.Selection.Dataset8.All	Bool	[READ_WRITE] all parameters of complex data type
DeviceData.Selection.Dataset8.ActiveMeasMethod	Bool	[READ_WRITE]
DeviceData.Selection.Dataset8.UltrasonicThreshold	Bool	[READ_WRITE]
DeviceData.Selection.Dataset8.OpticalThreshold	Bool	[READ_WRITE]
DeviceData.Selection.Dataset8.UltrasonicHysteresis	Bool	[READ_WRITE]
DeviceData.Selection.Dataset8.OpticalHysteresis	Bool	[READ_WRITE]
DeviceData.Selection.Dataset8.UltrasonicGain	Bool	[READ_WRITE]
DeviceData.Selection.Dataset8.OpticalGain	Bool	[READ_WRITE]
DeviceData.Selection.Dataset8.UltrasonicTeachParameter	Bool	[READ_WRITE]
DeviceData.Selection.Dataset8.OpticalTeachParameter	Bool	[READ_WRITE]
DeviceData.Selection.Dataset9.All	Bool	[READ_WRITE] all parameters of complex data type
DeviceData.Selection.Dataset9.ActiveMeasMethod	Bool	[READ_WRITE]
DeviceData.Selection.Dataset9.UltrasonicThreshold	Bool	[READ_WRITE]
DeviceData.Selection.Dataset9.OpticalThreshold	Bool	[READ_WRITE]
DeviceData.Selection.Dataset9.UltrasonicHysteresis	Bool	[READ_WRITE]
DeviceData.Selection.Dataset9.OpticalHysteresis	Bool	[READ_WRITE]
DeviceData.Selection.Dataset9.UltrasonicGain	Bool	[READ_WRITE]
DeviceData.Selection.Dataset9.OpticalGain	Bool	[READ_WRITE]
DeviceData.Selection.Dataset9.UltrasonicTeachParameter	Bool	[READ_WRITE]
DeviceData.Selection.Dataset9.OpticalTeachParameter	Bool	[READ_WRITE]

Parameter name	Data type	Description
DeviceData.Selection.Dataset10.All	Bool	[READ_WRITE] all parameters of complex data type
DeviceData.Selection.Dataset10.ActiveMeasMethod	Bool	[READ_WRITE]
DeviceData.Selection.Dataset10.UltrasonicThreshold	Bool	[READ_WRITE]
DeviceData.Selection.Dataset10.OpticalThreshold	Bool	[READ_WRITE]
DeviceData.Selection.Dataset10.UltrasonicHysteresis	Bool	[READ_WRITE]
DeviceData.Selection.Dataset10.OpticalHysteresis	Bool	[READ_WRITE]
DeviceData.Selection.Dataset10.UltrasonicGain	Bool	[READ_WRITE]
DeviceData.Selection.Dataset10.OpticalGain	Bool	[READ_WRITE]
DeviceData.Selection.Dataset10.UltrasonicTeachParameter	Bool	[READ_WRITE]
DeviceData.Selection.Dataset10.OpticalTeachParameter	Bool	[READ_WRITE]
DeviceData.Selection.Dataset11.All	Bool	[READ_WRITE] all parameters of complex data type
DeviceData.Selection.Dataset11.ActiveMeasMethod	Bool	[READ_WRITE]
DeviceData.Selection.Dataset11.UltrasonicThreshold	Bool	[READ_WRITE]
DeviceData.Selection.Dataset11.OpticalThreshold	Bool	[READ_WRITE]
DeviceData.Selection.Dataset11.UltrasonicHysteresis	Bool	[READ_WRITE]
DeviceData.Selection.Dataset11.OpticalHysteresis	Bool	[READ_WRITE]
DeviceData.Selection.Dataset11.UltrasonicGain	Bool	[READ_WRITE]
DeviceData.Selection.Dataset11.OpticalGain	Bool	[READ_WRITE]
DeviceData.Selection.Dataset11.UltrasonicTeachParameter	Bool	[READ_WRITE]
DeviceData.Selection.Dataset11.OpticalTeachParameter	Bool	[READ_WRITE]
DeviceData.Selection.Dataset12.All	Bool	[READ_WRITE] all parameters of complex data type
DeviceData.Selection.Dataset12.ActiveMeasMethod	Bool	[READ_WRITE]
DeviceData.Selection.Dataset12.UltrasonicThreshold	Bool	[READ_WRITE]
DeviceData.Selection.Dataset12.OpticalThreshold	Bool	[READ_WRITE]
DeviceData.Selection.Dataset12.UltrasonicHysteresis	Bool	[READ_WRITE]
DeviceData.Selection.Dataset12.OpticalHysteresis	Bool	[READ_WRITE]

Parameter name	Data type	Description
DeviceData.Selection.Dataset12.UltrasonicGain	Bool	[READ_WRITE]
DeviceData.Selection.Dataset12.OpticalGain	Bool	[READ_WRITE]
DeviceData.Selection.Dataset12.UltrasonicTeachParameter	Bool	[READ_WRITE]
DeviceData.Selection.Dataset12.OpticalTeachParameter	Bool	[READ_WRITE]
DeviceData.Selection.Dataset13.All	Bool	[READ_WRITE] all parameters of complex data type
DeviceData.Selection.Dataset13.ActiveMeasMethod	Bool	[READ_WRITE]
DeviceData.Selection.Dataset13.UltrasonicThreshold	Bool	[READ_WRITE]
DeviceData.Selection.Dataset13.OpticalThreshold	Bool	[READ_WRITE]
DeviceData.Selection.Dataset13.UltrasonicHysteresis	Bool	[READ_WRITE]
DeviceData.Selection.Dataset13.OpticalHysteresis	Bool	[READ_WRITE]
DeviceData.Selection.Dataset13.UltrasonicGain	Bool	[READ_WRITE]
DeviceData.Selection.Dataset13.OpticalGain	Bool	[READ_WRITE]
DeviceData.Selection.Dataset13.UltrasonicTeachParameter	Bool	[READ_WRITE]
DeviceData.Selection.Dataset13.OpticalTeachParameter	Bool	[READ_WRITE]
DeviceData.Selection.Dataset14.All	Bool	[READ_WRITE] all parameters of complex data type
DeviceData.Selection.Dataset14.ActiveMeasMethod	Bool	[READ_WRITE]
DeviceData.Selection.Dataset14.UltrasonicThreshold	Bool	[READ_WRITE]
DeviceData.Selection.Dataset14.OpticalThreshold	Bool	[READ_WRITE]
DeviceData.Selection.Dataset14.UltrasonicHysteresis	Bool	[READ_WRITE]
DeviceData.Selection.Dataset14.OpticalHysteresis	Bool	[READ_WRITE]
DeviceData.Selection.Dataset14.UltrasonicGain	Bool	[READ_WRITE]
DeviceData.Selection.Dataset14.OpticalGain	Bool	[READ_WRITE]
DeviceData.Selection.Dataset14.UltrasonicTeachParameter	Bool	[READ_WRITE]
DeviceData.Selection.Dataset14.OpticalTeachParameter	Bool	[READ_WRITE]
DeviceData.Selection.Dataset15.All	Bool	[READ_WRITE] all parameters of complex data type
DeviceData.Selection.Dataset15.ActiveMeasMethod	Bool	[READ_WRITE]

Parameter name	Data type	Description
DeviceData.Selection.Dataset15.UltrasonicThreshold	Bool	[READ_WRITE]
DeviceData.Selection.Dataset15.OpticalThreshold	Bool	[READ_WRITE]
DeviceData.Selection.Dataset15.UltrasonicHysteresis	Bool	[READ_WRITE]
DeviceData.Selection.Dataset15.OpticalHysteresis	Bool	[READ_WRITE]
DeviceData.Selection.Dataset15.UltrasonicGain	Bool	[READ_WRITE]
DeviceData.Selection.Dataset15.OpticalGain	Bool	[READ_WRITE]
DeviceData.Selection.Dataset15.UltrasonicTeachParameter	Bool	[READ_WRITE]
DeviceData.Selection.Dataset15.OpticalTeachParameter	Bool	[READ_WRITE]
DeviceData.Selection.Dataset16.All	Bool	[READ_WRITE] all parameters of complex data type
DeviceData.Selection.Dataset16.ActiveMeasMethod	Bool	[READ_WRITE]
DeviceData.Selection.Dataset16.UltrasonicThreshold	Bool	[READ_WRITE]
DeviceData.Selection.Dataset16.OpticalThreshold	Bool	[READ_WRITE]
DeviceData.Selection.Dataset16.UltrasonicHysteresis	Bool	[READ_WRITE]
DeviceData.Selection.Dataset16.OpticalHysteresis	Bool	[READ_WRITE]
DeviceData.Selection.Dataset16.UltrasonicGain	Bool	[READ_WRITE]
DeviceData.Selection.Dataset16.OpticalGain	Bool	[READ_WRITE]
DeviceData.Selection.Dataset16.UltrasonicTeachParameter	Bool	[READ_WRITE]
DeviceData.Selection.Dataset16.OpticalTeachParameter	Bool	[READ_WRITE]
DeviceData.Selection.Dataset17.All	Bool	[READ_WRITE] all parameters of complex data type
DeviceData.Selection.Dataset17.ActiveMeasMethod	Bool	[READ_WRITE]
DeviceData.Selection.Dataset17.UltrasonicThreshold	Bool	[READ_WRITE]
DeviceData.Selection.Dataset17.OpticalThreshold	Bool	[READ_WRITE]
DeviceData.Selection.Dataset17.UltrasonicHysteresis	Bool	[READ_WRITE]
DeviceData.Selection.Dataset17.OpticalHysteresis	Bool	[READ_WRITE]
DeviceData.Selection.Dataset17.UltrasonicGain	Bool	[READ_WRITE]
DeviceData.Selection.Dataset17.OpticalGain	Bool	[READ_WRITE]
DeviceData.Selection.Dataset17.UltrasonicTeachParameter	Bool	[READ_WRITE]

Parameter name	Data type	Description
DeviceData.Selection.Dataset17.OpticalTeachParameter	Bool	[READ_WRITE]
DeviceData.Selection.Dataset18.All	Bool	[READ_WRITE] all parameters of complex data type
DeviceData.Selection.Dataset18.ActiveMeasMethod	Bool	[READ_WRITE]
DeviceData.Selection.Dataset18.UltrasonicThreshold	Bool	[READ_WRITE]
DeviceData.Selection.Dataset18.OpticalThreshold	Bool	[READ_WRITE]
DeviceData.Selection.Dataset18.UltrasonicHysteresis	Bool	[READ_WRITE]
DeviceData.Selection.Dataset18.OpticalHysteresis	Bool	[READ_WRITE]
DeviceData.Selection.Dataset18.UltrasonicGain	Bool	[READ_WRITE]
DeviceData.Selection.Dataset18.OpticalGain	Bool	[READ_WRITE]
DeviceData.Selection.Dataset18.UltrasonicTeachParameter	Bool	[READ_WRITE]
DeviceData.Selection.Dataset18.OpticalTeachParameter	Bool	[READ_WRITE]
DeviceData.Selection.Dataset19.All	Bool	[READ_WRITE] all parameters of complex data type
DeviceData.Selection.Dataset19.ActiveMeasMethod	Bool	[READ_WRITE]
DeviceData.Selection.Dataset19.UltrasonicThreshold	Bool	[READ_WRITE]
DeviceData.Selection.Dataset19.OpticalThreshold	Bool	[READ_WRITE]
DeviceData.Selection.Dataset19.UltrasonicHysteresis	Bool	[READ_WRITE]
DeviceData.Selection.Dataset19.OpticalHysteresis	Bool	[READ_WRITE]
DeviceData.Selection.Dataset19.UltrasonicGain	Bool	[READ_WRITE]
DeviceData.Selection.Dataset19.OpticalGain	Bool	[READ_WRITE]
DeviceData.Selection.Dataset19.UltrasonicTeachParameter	Bool	[READ_WRITE]
DeviceData.Selection.Dataset19.OpticalTeachParameter	Bool	[READ_WRITE]
DeviceData.Selection.UltrasonicAnalysisDepth	Bool	[READ_WRITE] Number of scans considered for switching the output, with ultrasonic method
DeviceData.Selection.UltrasonicAutoLevelControl	Bool	[READ_WRITE] Ultrasonic Auto-Level-Control function
DeviceData.Selection.OpticalAnalysisDepth	Bool	[READ_WRITE] Number of scans considered for switching the output, with optical method
DeviceData.Selection.OpticalAutoLevelControl	Bool	[READ_WRITE] Optical Auto-Level-Control function

Parameter name	Data type	Description
DeviceData.Selection.TimerUnit	Bool	[READ_WRITE] Timer Unit
DeviceData.Selection.FunctionOfTimerUnit	Bool	[READ_WRITE] Function of Timer Unit
DeviceData.Selection.Time_194	Bool	[READ_WRITE] Time
DeviceData.Selection.NumberOfObjects	Bool	[READ_WRITE] Internal Object Counter
DeviceData.Selection.WireFunctionLevel1	Bool	[READ_WRITE] Wire function level 1: 20 - 80 ms
DeviceData.Selection.WireFunctionLevel2	Bool	[READ_WRITE] Wire function level 2: 120 - 180 ms
DeviceData.Selection.WireFunctionLevel3	Bool	[READ_WRITE] Wire function level 3: 220 - 280 ms
DeviceData.Selection.WireFunctionLevel4	Bool	[READ_WRITE] Wire function level 4: 320 - 380 ms
DeviceData.Selection.WireFunctionLevel5	Bool	[READ_WRITE] Wire function level 5: 420 - 480 ms
DeviceData.Selection.WireFunctionLevel6	Bool	[READ_WRITE] Wire function level 6: 520 - 580 ms
DeviceData.Selection.WireFunctionLevel7	Bool	[READ_WRITE] Wire function level 7: 620 - 680 ms
DeviceData.Selection.WireFunctionLevel8	Bool	[READ_WRITE] Wire function level 8: 720 - 780 ms
DeviceData.Selection.WireFunctionLevel9	Bool	[READ_WRITE] Wire function level 9: 820 - 880 ms
DeviceData.Selection.WireFunctionLevel10	Bool	[READ_WRITE] Wire function level 10: 920 - 980 ms
DeviceData.Selection.WireFunctionLevel11	Bool	[READ_WRITE] Wire function level 11: 1020 - 1080 ms
DeviceData.Selection.WireFunctionLevel12	Bool	[READ_WRITE] Wire function level 12: 1120 - 1180 ms
DeviceData.Selection.Temperature	Bool	[READ_ONLY] Temperature
DeviceData.Selection.MinusButtonEasytuneDisable	Bool	[READ_WRITE] Minus button easyTune disable
DeviceData.Selection.TeachButtonEasytuneDisable	Bool	[READ_WRITE] Teach button easyTune disable
DeviceData.Selection.MinusButtonFunctionLevel1	Bool	[READ_WRITE] Minus button function level 1
DeviceData.Selection.MinusButtonFunctionLevel2	Bool	[READ_WRITE] Minus button function level 2
DeviceData.Selection.MinusButtonFunctionLevel3	Bool	[READ_WRITE] Minus button function level 3
DeviceData.Selection.TeachButtonFunctionLevel1	Bool	[READ_WRITE] Teach button function level 1
DeviceData.Selection.TeachButtonFunctionLevel2	Bool	[READ_WRITE] Teach button function level 2

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Parameter name	Data type	Description
DeviceData.Selection.TeachButtonFunctionLevel3	Bool	[READ_WRITE] Teach button function level 3
DeviceData.Selection.Pin4Function	Bool	[READ_WRITE] Pin 4 function
DeviceData.Selection.Pin2Function	Bool	[READ_WRITE] Pin 2 function
DeviceData.Data.Commands.DeviceReset	UInt	[WRITE_ONLY] Device Reset
DeviceData.Data.Commands.ApplicationReset	UInt	[WRITE_ONLY] Application Reset
DeviceData.Data.Commands.RestoreFactorySettings	UInt	[WRITE_ONLY] Restore Factory Settings
DeviceData.Data.Commands.TeachSp1	UInt	[WRITE_ONLY] Teach SP1
DeviceData.Data.Commands.TeachSp1Start	UInt	[WRITE_ONLY] Teach SP1 Start
DeviceData.Data.Commands.TeachSp1Stop	UInt	[WRITE_ONLY] Teach SP1 Stop
DeviceData.Data.Commands.AbortTeach	UInt	[WRITE_ONLY] Abort Teach
DeviceData.Data.Commands.EasytuneDown	UInt	[WRITE_ONLY] easyTune Down
DeviceData.Data.Commands.EasytuneUp	UInt	[WRITE_ONLY] easyTune Up
DeviceData.Data.Commands.ClearError	UInt	[WRITE_ONLY] Clear Error
DeviceData.Data.Commands.MethodUltrasonic	UInt	[WRITE_ONLY] Method Ultrasonic
DeviceData.Data.Commands.MethodOptical	UInt	[WRITE_ONLY] Method Optical
DeviceData.Data.Commands.SaveWorkIndex	UInt	[WRITE_ONLY] Save Work Index
DeviceData.Data.Commands.LoadWorkIndex	UInt	[WRITE_ONLY] Load Work Index
DeviceData.Data.DirectParameters1.Reserved_1	UInt	[READ_ONLY]
DeviceData.Data.DirectParameters1.MasterCycleTime	UInt	[READ_ONLY]
DeviceData.Data.DirectParameters1.MinCycleTime	UInt	[READ_ONLY]
DeviceData.Data.DirectParameters1.MSequenceCapability	UInt	[READ_ONLY]
DeviceData.Data.DirectParameters1.IoLinkVersionId	UInt	[READ_ONLY]
DeviceData.Data.DirectParameters1.ProcessDataInputLength	UInt	[READ_ONLY]
DeviceData.Data.DirectParameters1.ProcessDataOutputLength	UInt	[READ_ONLY]
DeviceData.Data.DirectParameters1.VendorId1	UInt	[READ_ONLY]
DeviceData.Data.DirectParameters1.VendorId2	UInt	[READ_ONLY]
DeviceData.Data.DirectParameters1.DeviceId1	UInt	[READ_ONLY]

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Parameter name	Data type	Description
DeviceData.Data.DirectParameters1.DeviceId2	UInt	[READ_ONLY]
DeviceData.Data.DirectParameters1.DeviceId3	UInt	[READ_ONLY]
DeviceData.Data.DirectParameters1.Reserved_13	UInt	[READ_ONLY]
DeviceData.Data.DirectParameters1.Reserved_14	UInt	[READ_ONLY]
DeviceData.Data.DirectParameters1.Reserved_15	UInt	[READ_ONLY]
DeviceData.Data.DirectParameters2.DeviceSpecificParameter1	UInt	[READ_WRITE]
DeviceData.Data.DirectParameters2.DeviceSpecificParameter2	UInt	[READ_WRITE]
DeviceData.Data.DirectParameters2.DeviceSpecificParameter3	UInt	[READ_WRITE]
DeviceData.Data.DirectParameters2.DeviceSpecificParameter4	UInt	[READ_WRITE]
DeviceData.Data.DirectParameters2.DeviceSpecificParameter5	UInt	[READ_WRITE]
DeviceData.Data.DirectParameters2.DeviceSpecificParameter6	UInt	[READ_WRITE]
DeviceData.Data.DirectParameters2.DeviceSpecificParameter7	UInt	[READ_WRITE]
DeviceData.Data.DirectParameters2.DeviceSpecificParameter8	UInt	[READ_WRITE]
DeviceData.Data.DirectParameters2.DeviceSpecificParameter9	UInt	[READ_WRITE]
DeviceData.Data.DirectParameters2.DeviceSpecificParameter10	UInt	[READ_WRITE]
DeviceData.Data.DirectParameters2.DeviceSpecificParameter11	UInt	[READ_WRITE]
DeviceData.Data.DirectParameters2.DeviceSpecificParameter12	UInt	[READ_WRITE]
DeviceData.Data.DirectParameters2.DeviceSpecificParameter13	UInt	[READ_WRITE]
DeviceData.Data.DirectParameters2.DeviceSpecificParameter14	UInt	[READ_WRITE]
DeviceData.Data.DirectParameters2.DeviceSpecificParameter15	UInt	[READ_WRITE]
DeviceData.Data.DirectParameters2.DeviceSpecificParameter16	UInt	[READ_WRITE]
DeviceData.Data.StandardCommand	UInt	[WRITE_ONLY]
DeviceData.Data.DeviceAccessLocks.ParameterWriteAccessLock	Bool	[READ_WRITE]
DeviceData.Data.DeviceAccessLocks.DataStorageLock	Bool	[READ_WRITE]
DeviceData.Data.DeviceAccessLocks.LocalParameterizationLock	Bool	[READ_WRITE]
DeviceData.Data.DeviceAccessLocks.LocalUserInterfaceLock	Bool	[READ_WRITE]

Parameter name	Data type	Description
DeviceData.Data.ProfileCharacteristic.DeviceProfile1	UInt	[READ_ONLY] 0x0007: Adjustable Switching Sensor, Single Value Teach, Disable Function
DeviceData.Data.ProfileCharacteristic.ApplicationProfile	UInt	[READ_ONLY] 0x4000: Identification and Diagnosis
DeviceData.Data.ProfileCharacteristic.FunctionClass1	UInt	[READ_ONLY] 0x8009: Teach-in dynamic
DeviceData.Data.VendorName	String	[READ_ONLY]
DeviceData.Data.VendorText	String	[READ_ONLY]
DeviceData.Data.ProductName	String	[READ_ONLY]
DeviceData.Data.ProductId	String	[READ_ONLY]
DeviceData.Data.ProductText	String	[READ_ONLY]
DeviceData.Data.SerialNumber	String	[READ_ONLY]
DeviceData.Data.HardwareVersion	String	[READ_ONLY]
DeviceData.Data.FirmwareVersion	String	[READ_ONLY]
DeviceData.Data.ApplicationSpecificTag	String	[READ_WRITE]
DeviceData.Data.FunctionTag	String	[READ_WRITE]
DeviceData.Data.LocationTag	String	[READ_WRITE]
DeviceData.Data.DeviceStatus	UInt	[READ_ONLY]
DeviceData.Data.DetailedDeviceStatus.Item_1	String	[READ_ONLY]
DeviceData.Data.DetailedDeviceStatus.Item_2	String	[READ_ONLY]
DeviceData.Data.SscParamSp	UInt	[READ_WRITE] sensitivity or setpoint values for switching signal channel
DeviceData.Data.SscConfigLogic	UInt	[READ_WRITE] defines the logical behaviour of the switching signal and derived output signal
DeviceData.Data.TiErgebnis.TiResultState	UInt	[READ_ONLY]
DeviceData.Data.TiErgebnis.TiResultFlagSp1Tp1	Bool	[READ_ONLY]
DeviceData.Data.TeachSettingsDynamic	UInt	[READ_WRITE] Teach Settings Dynamic
DeviceData.Data.System.Ssc1	Bool	[READ_ONLY]
DeviceData.Data.System.MeasurementAndEvaluation	Bool	[READ_ONLY]
DeviceData.Data.System.MeasuredValue	Bool	[READ_ONLY]

Parameter name	Data type	Description
DeviceData.Data.System.Warning	Bool	[READ_ONLY]
DeviceData.Data.System.TeachTerminateFlag	Bool	[READ_ONLY]
DeviceData.Data.System.AutoLevelControlState	Bool	[READ_ONLY]
DeviceData.Data.System.ActiveMethod	UInt	[READ_ONLY]
DeviceData.Data.System.Calibration	Bool	[READ_ONLY]
DeviceData.Data.System.Button	Bool	[READ_ONLY]
DeviceData.Data.System.DeviceOperation	Bool	[READ_ONLY]
DeviceData.Data.System.AutoLevelControl_12	Bool	[READ_ONLY]
DeviceData.Data.System.AutoLevelControl_13	Bool	[READ_ONLY]
DeviceData.Data.System.Teach	Bool	[READ_ONLY]
DeviceData.Data.System.EasyTune	Bool	[READ_ONLY]
DeviceData.Data.System.Temperature	Bool	[READ_ONLY]
DeviceData.Data.System.AutoLevelControlGain	Bool	[READ_ONLY]
DeviceData.Data.System.AutoLevelControlThreshold	Bool	[READ_ONLY]
DeviceData.Data.Amplitude	UInt	[READ_ONLY] Actual Amplitude
DeviceData.Data.Threshold	UInt	[READ_ONLY] Threshold
DeviceData.Data.WorkingParameterLoadSaveIndex	UInt	[READ_WRITE] Working Parameter load / save index
DeviceData.Data.WorkingParameter.ActiveMeasMethod	UInt	[READ_WRITE]
DeviceData.Data.WorkingParameter.UltrasonicThreshold	UInt	[READ_WRITE]
DeviceData.Data.WorkingParameter.OpticalThreshold	UInt	[READ_WRITE]
DeviceData.Data.WorkingParameter.UltrasonicHysteresis	UInt	[READ_WRITE]
DeviceData.Data.WorkingParameter.OpticalHysteresis	UInt	[READ_WRITE]
DeviceData.Data.WorkingParameter.UltrasonicGain	UInt	[READ_WRITE]
DeviceData.Data.WorkingParameter.OpticalGain	UInt	[READ_WRITE]
DeviceData.Data.WorkingParameter.UltrasonicTeachParameter	UInt	[READ_WRITE]
DeviceData.Data.WorkingParameter.OpticalTeachParameter	UInt	[READ_WRITE]
DeviceData.Data.Dataset0.ActiveMeasMethod	UInt	[READ_WRITE]

Parameter name	Data type	Description
DeviceData.Data.Dataset0.UltrasonicThreshold	UInt	[READ_WRITE]
DeviceData.Data.Dataset0.OpticalThreshold	UInt	[READ_WRITE]
DeviceData.Data.Dataset0.UltrasonicHysteresis	UInt	[READ_WRITE]
DeviceData.Data.Dataset0.OpticalHysteresis	UInt	[READ_WRITE]
DeviceData.Data.Dataset0.UltrasonicGain	UInt	[READ_WRITE]
DeviceData.Data.Dataset0.OpticalGain	UInt	[READ_WRITE]
DeviceData.Data.Dataset0.UltrasonicTeachParameter	UInt	[READ_WRITE]
DeviceData.Data.Dataset0.OpticalTeachParameter	UInt	[READ_WRITE]
DeviceData.Data.Dataset1.ActiveMeasMethod	UInt	[READ_WRITE]
DeviceData.Data.Dataset1.UltrasonicThreshold	UInt	[READ_WRITE]
DeviceData.Data.Dataset1.OpticalThreshold	UInt	[READ_WRITE]
DeviceData.Data.Dataset1.UltrasonicHysteresis	UInt	[READ_WRITE]
DeviceData.Data.Dataset1.OpticalHysteresis	UInt	[READ_WRITE]
DeviceData.Data.Dataset1.UltrasonicGain	UInt	[READ_WRITE]
DeviceData.Data.Dataset1.OpticalGain	UInt	[READ_WRITE]
DeviceData.Data.Dataset1.UltrasonicTeachParameter	UInt	[READ_WRITE]
DeviceData.Data.Dataset1.OpticalTeachParameter	UInt	[READ_WRITE]
DeviceData.Data.Dataset2.ActiveMeasMethod	UInt	[READ_WRITE]
DeviceData.Data.Dataset2.UltrasonicThreshold	UInt	[READ_WRITE]
DeviceData.Data.Dataset2.OpticalThreshold	UInt	[READ_WRITE]
DeviceData.Data.Dataset2.UltrasonicHysteresis	UInt	[READ_WRITE]
DeviceData.Data.Dataset2.OpticalHysteresis	UInt	[READ_WRITE]
DeviceData.Data.Dataset2.UltrasonicGain	UInt	[READ_WRITE]
DeviceData.Data.Dataset2.OpticalGain	UInt	[READ_WRITE]
DeviceData.Data.Dataset2.UltrasonicTeachParameter	UInt	[READ_WRITE]
DeviceData.Data.Dataset2.OpticalTeachParameter	UInt	[READ_WRITE]
DeviceData.Data.Dataset3.ActiveMeasMethod	UInt	[READ_WRITE]

Parameter name	Data type	Description
DeviceData.Data.Dataset3.UltrasonicThreshold	UInt	[READ_WRITE]
DeviceData.Data.Dataset3.OpticalThreshold	UInt	[READ_WRITE]
DeviceData.Data.Dataset3.UltrasonicHysteresis	UInt	[READ_WRITE]
DeviceData.Data.Dataset3.OpticalHysteresis	UInt	[READ_WRITE]
DeviceData.Data.Dataset3.UltrasonicGain	UInt	[READ_WRITE]
DeviceData.Data.Dataset3.OpticalGain	UInt	[READ_WRITE]
DeviceData.Data.Dataset3.UltrasonicTeachParameter	UInt	[READ_WRITE]
DeviceData.Data.Dataset3.OpticalTeachParameter	UInt	[READ_WRITE]
DeviceData.Data.Dataset4.ActiveMeasMethod	UInt	[READ_WRITE]
DeviceData.Data.Dataset4.UltrasonicThreshold	UInt	[READ_WRITE]
DeviceData.Data.Dataset4.OpticalThreshold	UInt	[READ_WRITE]
DeviceData.Data.Dataset4.UltrasonicHysteresis	UInt	[READ_WRITE]
DeviceData.Data.Dataset4.OpticalHysteresis	UInt	[READ_WRITE]
DeviceData.Data.Dataset4.UltrasonicGain	UInt	[READ_WRITE]
DeviceData.Data.Dataset4.OpticalGain	UInt	[READ_WRITE]
DeviceData.Data.Dataset4.UltrasonicTeachParameter	UInt	[READ_WRITE]
DeviceData.Data.Dataset4.OpticalTeachParameter	UInt	[READ_WRITE]
DeviceData.Data.Dataset5.ActiveMeasMethod	UInt	[READ_WRITE]
DeviceData.Data.Dataset5.UltrasonicThreshold	UInt	[READ_WRITE]
DeviceData.Data.Dataset5.OpticalThreshold	UInt	[READ_WRITE]
DeviceData.Data.Dataset5.UltrasonicHysteresis	UInt	[READ_WRITE]
DeviceData.Data.Dataset5.OpticalHysteresis	UInt	[READ_WRITE]
DeviceData.Data.Dataset5.UltrasonicGain	UInt	[READ_WRITE]
DeviceData.Data.Dataset5.OpticalGain	UInt	[READ_WRITE]
DeviceData.Data.Dataset5.UltrasonicTeachParameter	UInt	[READ_WRITE]
DeviceData.Data.Dataset5.OpticalTeachParameter	UInt	[READ_WRITE]
DeviceData.Data.Dataset6.ActiveMeasMethod	UInt	[READ_WRITE]

Parameter name	Data type	Description
DeviceData.Data.Dataset6.UltrasonicThreshold	UInt	[READ_WRITE]
DeviceData.Data.Dataset6.OpticalThreshold	UInt	[READ_WRITE]
DeviceData.Data.Dataset6.UltrasonicHysteresis	UInt	[READ_WRITE]
DeviceData.Data.Dataset6.OpticalHysteresis	UInt	[READ_WRITE]
DeviceData.Data.Dataset6.UltrasonicGain	UInt	[READ_WRITE]
DeviceData.Data.Dataset6.OpticalGain	UInt	[READ_WRITE]
DeviceData.Data.Dataset6.UltrasonicTeachParameter	UInt	[READ_WRITE]
DeviceData.Data.Dataset6.OpticalTeachParameter	UInt	[READ_WRITE]
DeviceData.Data.Dataset7.ActiveMeasMethod	UInt	[READ_WRITE]
DeviceData.Data.Dataset7.UltrasonicThreshold	UInt	[READ_WRITE]
DeviceData.Data.Dataset7.OpticalThreshold	UInt	[READ_WRITE]
DeviceData.Data.Dataset7.UltrasonicHysteresis	UInt	[READ_WRITE]
DeviceData.Data.Dataset7.OpticalHysteresis	UInt	[READ_WRITE]
DeviceData.Data.Dataset7.UltrasonicGain	UInt	[READ_WRITE]
DeviceData.Data.Dataset7.OpticalGain	UInt	[READ_WRITE]
DeviceData.Data.Dataset7.UltrasonicTeachParameter	UInt	[READ_WRITE]
DeviceData.Data.Dataset7.OpticalTeachParameter	UInt	[READ_WRITE]
DeviceData.Data.Dataset8.ActiveMeasMethod	UInt	[READ_WRITE]
DeviceData.Data.Dataset8.UltrasonicThreshold	UInt	[READ_WRITE]
DeviceData.Data.Dataset8.OpticalThreshold	UInt	[READ_WRITE]
DeviceData.Data.Dataset8.UltrasonicHysteresis	UInt	[READ_WRITE]
DeviceData.Data.Dataset8.OpticalHysteresis	UInt	[READ_WRITE]
DeviceData.Data.Dataset8.UltrasonicGain	UInt	[READ_WRITE]
DeviceData.Data.Dataset8.OpticalGain	UInt	[READ_WRITE]
DeviceData.Data.Dataset8.UltrasonicTeachParameter	UInt	[READ_WRITE]
DeviceData.Data.Dataset8.OpticalTeachParameter	UInt	[READ_WRITE]
DeviceData.Data.Dataset9.ActiveMeasMethod	UInt	[READ_WRITE]

Parameter name	Data type	Description
DeviceData.Data.Dataset9.UltrasonicThreshold	UInt	[READ_WRITE]
DeviceData.Data.Dataset9.OpticalThreshold	UInt	[READ_WRITE]
DeviceData.Data.Dataset9.UltrasonicHysteresis	UInt	[READ_WRITE]
DeviceData.Data.Dataset9.OpticalHysteresis	UInt	[READ_WRITE]
DeviceData.Data.Dataset9.UltrasonicGain	UInt	[READ_WRITE]
DeviceData.Data.Dataset9.OpticalGain	UInt	[READ_WRITE]
DeviceData.Data.Dataset9.UltrasonicTeachParameter	UInt	[READ_WRITE]
DeviceData.Data.Dataset9.OpticalTeachParameter	UInt	[READ_WRITE]
DeviceData.Data.Dataset10.ActiveMeasMethod	UInt	[READ_WRITE]
DeviceData.Data.Dataset10.UltrasonicThreshold	UInt	[READ_WRITE]
DeviceData.Data.Dataset10.OpticalThreshold	UInt	[READ_WRITE]
DeviceData.Data.Dataset10.UltrasonicHysteresis	UInt	[READ_WRITE]
DeviceData.Data.Dataset10.OpticalHysteresis	UInt	[READ_WRITE]
DeviceData.Data.Dataset10.UltrasonicGain	UInt	[READ_WRITE]
DeviceData.Data.Dataset10.OpticalGain	UInt	[READ_WRITE]
DeviceData.Data.Dataset10.UltrasonicTeachParameter	UInt	[READ_WRITE]
DeviceData.Data.Dataset10.OpticalTeachParameter	UInt	[READ_WRITE]
DeviceData.Data.Dataset11.ActiveMeasMethod	UInt	[READ_WRITE]
DeviceData.Data.Dataset11.UltrasonicThreshold	UInt	[READ_WRITE]
DeviceData.Data.Dataset11.OpticalThreshold	UInt	[READ_WRITE]
DeviceData.Data.Dataset11.UltrasonicHysteresis	UInt	[READ_WRITE]
DeviceData.Data.Dataset11.OpticalHysteresis	UInt	[READ_WRITE]
DeviceData.Data.Dataset11.UltrasonicGain	UInt	[READ_WRITE]
DeviceData.Data.Dataset11.OpticalGain	UInt	[READ_WRITE]
DeviceData.Data.Dataset11.UltrasonicTeachParameter	UInt	[READ_WRITE]
DeviceData.Data.Dataset11.OpticalTeachParameter	UInt	[READ_WRITE]
DeviceData.Data.Dataset12.ActiveMeasMethod	UInt	[READ_WRITE]

Parameter name	Data type	Description
DeviceData.Data.Dataset12.UltrasonicThreshold	UInt	[READ_WRITE]
DeviceData.Data.Dataset12.OpticalThreshold	UInt	[READ_WRITE]
DeviceData.Data.Dataset12.UltrasonicHysteresis	UInt	[READ_WRITE]
DeviceData.Data.Dataset12.OpticalHysteresis	UInt	[READ_WRITE]
DeviceData.Data.Dataset12.UltrasonicGain	UInt	[READ_WRITE]
DeviceData.Data.Dataset12.OpticalGain	UInt	[READ_WRITE]
DeviceData.Data.Dataset12.UltrasonicTeachParameter	UInt	[READ_WRITE]
DeviceData.Data.Dataset12.OpticalTeachParameter	UInt	[READ_WRITE]
DeviceData.Data.Dataset13.ActiveMeasMethod	UInt	[READ_WRITE]
DeviceData.Data.Dataset13.UltrasonicThreshold	UInt	[READ_WRITE]
DeviceData.Data.Dataset13.OpticalThreshold	UInt	[READ_WRITE]
DeviceData.Data.Dataset13.UltrasonicHysteresis	UInt	[READ_WRITE]
DeviceData.Data.Dataset13.OpticalHysteresis	UInt	[READ_WRITE]
DeviceData.Data.Dataset13.UltrasonicGain	UInt	[READ_WRITE]
DeviceData.Data.Dataset13.OpticalGain	UInt	[READ_WRITE]
DeviceData.Data.Dataset13.UltrasonicTeachParameter	UInt	[READ_WRITE]
DeviceData.Data.Dataset13.OpticalTeachParameter	UInt	[READ_WRITE]
DeviceData.Data.Dataset14.ActiveMeasMethod	UInt	[READ_WRITE]
DeviceData.Data.Dataset14.UltrasonicThreshold	UInt	[READ_WRITE]
DeviceData.Data.Dataset14.OpticalThreshold	UInt	[READ_WRITE]
DeviceData.Data.Dataset14.UltrasonicHysteresis	UInt	[READ_WRITE]
DeviceData.Data.Dataset14.OpticalHysteresis	UInt	[READ_WRITE]
DeviceData.Data.Dataset14.UltrasonicGain	UInt	[READ_WRITE]
DeviceData.Data.Dataset14.OpticalGain	UInt	[READ_WRITE]
DeviceData.Data.Dataset14.UltrasonicTeachParameter	UInt	[READ_WRITE]
DeviceData.Data.Dataset14.OpticalTeachParameter	UInt	[READ_WRITE]
DeviceData.Data.Dataset15.ActiveMeasMethod	UInt	[READ_WRITE]

Parameter name	Data type	Description
DeviceData.Data.Dataset15.UltrasonicThreshold	UInt	[READ_WRITE]
DeviceData.Data.Dataset15.OpticalThreshold	UInt	[READ_WRITE]
DeviceData.Data.Dataset15.UltrasonicHysteresis	UInt	[READ_WRITE]
DeviceData.Data.Dataset15.OpticalHysteresis	UInt	[READ_WRITE]
DeviceData.Data.Dataset15.UltrasonicGain	UInt	[READ_WRITE]
DeviceData.Data.Dataset15.OpticalGain	UInt	[READ_WRITE]
DeviceData.Data.Dataset15.UltrasonicTeachParameter	UInt	[READ_WRITE]
DeviceData.Data.Dataset15.OpticalTeachParameter	UInt	[READ_WRITE]
DeviceData.Data.Dataset16.ActiveMeasMethod	UInt	[READ_WRITE]
DeviceData.Data.Dataset16.UltrasonicThreshold	UInt	[READ_WRITE]
DeviceData.Data.Dataset16.OpticalThreshold	UInt	[READ_WRITE]
DeviceData.Data.Dataset16.UltrasonicHysteresis	UInt	[READ_WRITE]
DeviceData.Data.Dataset16.OpticalHysteresis	UInt	[READ_WRITE]
DeviceData.Data.Dataset16.UltrasonicGain	UInt	[READ_WRITE]
DeviceData.Data.Dataset16.OpticalGain	UInt	[READ_WRITE]
DeviceData.Data.Dataset16.UltrasonicTeachParameter	UInt	[READ_WRITE]
DeviceData.Data.Dataset16.OpticalTeachParameter	UInt	[READ_WRITE]
DeviceData.Data.Dataset17.ActiveMeasMethod	UInt	[READ_WRITE]
DeviceData.Data.Dataset17.UltrasonicThreshold	UInt	[READ_WRITE]
DeviceData.Data.Dataset17.OpticalThreshold	UInt	[READ_WRITE]
DeviceData.Data.Dataset17.UltrasonicHysteresis	UInt	[READ_WRITE]
DeviceData.Data.Dataset17.OpticalHysteresis	UInt	[READ_WRITE]
DeviceData.Data.Dataset17.UltrasonicGain	UInt	[READ_WRITE]
DeviceData.Data.Dataset17.OpticalGain	UInt	[READ_WRITE]
DeviceData.Data.Dataset17.UltrasonicTeachParameter	UInt	[READ_WRITE]
DeviceData.Data.Dataset17.OpticalTeachParameter	UInt	[READ_WRITE]
DeviceData.Data.Dataset18.ActiveMeasMethod	UInt	[READ_WRITE]

Parameter name	Data type	Description
DeviceData.Data.Dataset18.UltrasonicThreshold	UInt	[READ_WRITE]
DeviceData.Data.Dataset18.OpticalThreshold	UInt	[READ_WRITE]
DeviceData.Data.Dataset18.UltrasonicHysteresis	UInt	[READ_WRITE]
DeviceData.Data.Dataset18.OpticalHysteresis	UInt	[READ_WRITE]
DeviceData.Data.Dataset18.UltrasonicGain	UInt	[READ_WRITE]
DeviceData.Data.Dataset18.OpticalGain	UInt	[READ_WRITE]
DeviceData.Data.Dataset18.UltrasonicTeachParameter	UInt	[READ_WRITE]
DeviceData.Data.Dataset18.OpticalTeachParameter	UInt	[READ_WRITE]
DeviceData.Data.Dataset19.ActiveMeasMethod	UInt	[READ_WRITE]
DeviceData.Data.Dataset19.UltrasonicThreshold	UInt	[READ_WRITE]
DeviceData.Data.Dataset19.OpticalThreshold	UInt	[READ_WRITE]
DeviceData.Data.Dataset19.UltrasonicHysteresis	UInt	[READ_WRITE]
DeviceData.Data.Dataset19.OpticalHysteresis	UInt	[READ_WRITE]
DeviceData.Data.Dataset19.UltrasonicGain	UInt	[READ_WRITE]
DeviceData.Data.Dataset19.OpticalGain	UInt	[READ_WRITE]
DeviceData.Data.Dataset19.UltrasonicTeachParameter	UInt	[READ_WRITE]
DeviceData.Data.Dataset19.OpticalTeachParameter	UInt	[READ_WRITE]
DeviceData.Data.UltrasonicAnalysisDepth	Int	[READ_WRITE] Number of scans considered for switching the output, with ultrasonic method
DeviceData.Data.UltrasonicAutoLevelControl	UInt	[READ_WRITE] Ultrasonic Auto-Level-Control function
DeviceData.Data.OpticalAnalysisDepth	Int	[READ_WRITE] Number of scans considered for switching the output, with optical method
DeviceData.Data.OpticalAutoLevelControl	UInt	[READ_WRITE] Optical Auto-Level-Control function
DeviceData.Data.TimerUnit	UInt	[READ_WRITE] Timer Unit
DeviceData.Data.FunctionOfTimerUnit	UInt	[READ_WRITE] Function of Timer Unit
DeviceData.Data.Time_194	UInt	[READ_WRITE] Time
DeviceData.Data.NumberOfObjects	UInt	[READ_WRITE] Internal Object Counter

Parameter name	Data type	Description
DeviceData.Data.WireFunctionLevel1	UInt	[READ_WRITE] Wire function level 1: 20 - 80 ms
DeviceData.Data.WireFunctionLevel2	UInt	[READ_WRITE] Wire function level 2: 120 - 180 ms
DeviceData.Data.WireFunctionLevel3	UInt	[READ_WRITE] Wire function level 3: 220 - 280 ms
DeviceData.Data.WireFunctionLevel4	UInt	[READ_WRITE] Wire function level 4: 320 - 380 ms
DeviceData.Data.WireFunctionLevel5	UInt	[READ_WRITE] Wire function level 5: 420 - 480 ms
DeviceData.Data.WireFunctionLevel6	UInt	[READ_WRITE] Wire function level 6: 520 - 580 ms
DeviceData.Data.WireFunctionLevel7	UInt	[READ_WRITE] Wire function level 7: 620 - 680 ms
DeviceData.Data.WireFunctionLevel8	UInt	[READ_WRITE] Wire function level 8: 720 - 780 ms
DeviceData.Data.WireFunctionLevel9	UInt	[READ_WRITE] Wire function level 9: 820 - 880 ms
DeviceData.Data.WireFunctionLevel10	UInt	[READ_WRITE] Wire function level 10: 920 - 980 ms
DeviceData.Data.WireFunctionLevel11	UInt	[READ_WRITE] Wire function level 11: 1020 - 1080 ms
DeviceData.Data.WireFunctionLevel12	UInt	[READ_WRITE] Wire function level 12: 1120 - 1180 ms
DeviceData.Data.Temperature	Int	[READ_ONLY] Temperature
DeviceData.Data.MinusButtonEasytuneDisable	UInt	[READ_WRITE] Minus button easyTune disable
DeviceData.Data.TeachButtonEasytuneDisable	UInt	[READ_WRITE] Teach button easyTune disable
DeviceData.Data.MinusButtonFunctionLevel1	Int	[READ_WRITE] Minus button function level 1
DeviceData.Data.MinusButtonFunctionLevel2	Int	[READ_WRITE] Minus button function level 2
DeviceData.Data.MinusButtonFunctionLevel3	Int	[READ_WRITE] Minus button function level 3
DeviceData.Data.TeachButtonFunctionLevel1	Int	[READ_WRITE] Teach button function level 1
DeviceData.Data.TeachButtonFunctionLevel2	Int	[READ_WRITE] Teach button function level 2
DeviceData.Data.TeachButtonFunctionLevel3	Int	[READ_WRITE] Teach button function level 3
DeviceData.Data.Pin4Function	UInt	[READ_WRITE] Pin 4 function
DeviceData.Data.Pin2Function	UInt	[READ_WRITE] Pin 2 function

Tab. 7.2:   Leuze_type_PD_ GSX14E_2502

Parameter name	Data type	Description
FC_Leuze_PD_GSX14E_2502.Ssc1	Bool	
FC_Leuze_PD_GSX14E_2502.MeasurementAndEvaluation	Bool	
FC_Leuze_PD_GSX14E_2502.MeasuredValue	Bool	
FC_Leuze_PD_GSX14E_2502.Warning	Bool	
FC_Leuze_PD_GSX14E_2502.TeachTerminateFlag	Bool	
FC_Leuze_PD_GSX14E_2502.AutoLevelControlState	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	

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)

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

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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)

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)

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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

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

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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

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)