IO-Link data table

GENERAL INFORMATION	
Communication mode IO-Link	COM 2
Min. cycle time	2.3 ms
SIO mode	Supported
Length process data	8 Bit
Vendor ID	297 / 0x0129
Device ID	102 / 0x000066
Data storage	Supported
Specification IO-Link	1.1

PROCESS DATA

SENSOR PROFILE

Byte 0							
7	6	5	4	3	2	1	0
X	X	X	X	X	X	X	Switching Q1

IDENTIFICATION DATA

Index (dec/hex)	Access(1)	Data type	Length	Sub-index	Default value	Value Range	Object Name	Description
16 / 0x10	R	StringT	64 Bytes	0	Schneider Electric	-	Vendor Name	Manufacturer name
17 / 0x11				0	https://www.tesen-sors.com/	-	Vendor Text	Manufacturer website
18 / 0x12				0	XUB5APYNM12 XUB5BPYNM12 XUB6APYNM12 XUB6APYWM12 XUB6BPYNM12 XUB6BPYWM12 XUN5APYNM12 XUN6APYNM12		Product Name	The parameter Product Name contains the complete product name (Commercial Reference).
19 / 0x13				0			Product ID	The parameter Product ID contains the vendor specific product or type identification of the device.
20 / 0x14				0	Proximity sensor	-	Product Text	The parameter Product Text contains additional product information for the device.
22 / 0x16				0	-	-	Hardware Revision	Unique, vendor-specific identifier of the hardware revision of the individual device (For example: HW-V1.0).
23 / 0x17				0	-	-	Firmware Revision	Unique, vendor-specific identifier of the firmware revision of the individual device (For example: FW-V1.0).
24 / 0x18	R/W	StringT	32 Bytes	0	***	-	Application Specific Tag	The parameter Application Specific Tag is dedicated for the user application. It can be used as a "tag function" (role of the Device) or a "tag location" (location of the Device).

SYSTEM COMMAND

Index (dec/hex)	Access(1)	Data type	Length	Sub-index	Default value	Value Range	Object Name	Description
2 / 0x02	W	UIntegerT	1 Byte	0	-	65, 130	System command	65 = Launch the teach process (see feedback in index 59) 130 = Restore factory settings

DETECTION PARAMETERS (1/2)

Index (dec/hex)	Access(1)	Data type	Length	Sub-index	Default value	Value Range	Object Name	Description
					Teach in Status			
59 / 0x3B	R	RecordT	1 Byte	0	-	-	Teach-in status	The parameter "Teach-in Status" provides feedback on the status and the results of the teach-in process (SP1 Single Value Teach / index 2). This status information is split into "Teach State" and "Teach Flags".
		BooleanT	1 Bit	1	0	false = Teachpoint x not taught or not successful true = Teachpoint x successfully taugh	SP2 TP2	Teach flag for SP2 TP2 (Only for XU●8 BGS)
		BooleanT	1 Bit	2	0	false = Teachpoint x not taught or not successful true = Teachpoint x successfully taugh	SP2 TP1	Teach flag for SP2 TP1 (Only for XU●8 BGS)
		BooleanT	1 Bit	3	0	false = Teachpoint x not taught or not successful true = Teachpoint x successfully taugh	SP1 TP2	Teach flag for SP1 TP2 (Only for XU●8 BGS)
		BooleanT	1 Bit	4	0	false = Teachpoint x not taught or not successful true = Teachpoint x successfully taugh	SP1 TP1	Teach flag for SP1 TP1
		UIntegerT	4 Bits	5	0	0 = IDLE 1 = SP1 SUCCESS 2 = SP2 SUCCESS 3 = SP12 SUCCESS 4 = WAIT FOR COMMAND 5 = BUSY 6 = RESERVED 7 = ERROR	Teach State	Teach State result: 0 = IDLE, teach not yet done 1 = SP1 SUCCESS, the teach process for the detection point 1 is succeeded 2 = SP2 SUCCESS, the teach process for the detection point 2 is succeeded (Only for XU●8 BGS) 3 = SP12 SUCCESS, the teach process for the detection point 1 + 2 is succeeded (Only for XU●8 BGS) 4 = WAIT FOR COMMAND (Only for XU●8 BGS) 5 = BUSY (Only for XU●8 BGS) 6 = RESERVED (Only for XU●8 BGS) 7 = ERROR, If no object in front of the sensor / out of the sensing range / Object too close
					Detection point			
81 / 0x51	R/W	UIntegerT	1 Byte	0	0	0 = External 255 = IO-Link	BDC1 setpoints setting: IO-Link/External Selection	Define the way to configure the BDC1 setpoints (by IO-Link or externally).
60 / 0x3C	R/W	RecordT	2 Bytes	0	-	-	Setpoints of BDC1	The following 3 parameters define the detection point for BDC1
		UIntegerT	1 Byte	1	0	0...100	Setpoint 1	BDC1 Setpoint 1 (set in “IO-Link” first in Index 81)
		UIntegerT	1 Byte	2	0	-	Setpoint 2	BDC1 Setpoint 2 (Only for XU●8 BGS)

(1) R = Read / W = Write

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DETECTION PARAMETERS (2/2)

Index (dec/hex)	Access(1)	Data type	Length	Sub-index	Default value	Value Range	Object Name	Description
	Detection signal							
100 / 0x64	R	Float32T	4 Bytes	0	-	0.1 ... 100	Read energy quantity	Read the energy quantity received to ensure a reliable detection.
101 / 0x65	R	StringT	1 Byte	0	-	0 = Not Enough 1 = Limit 2 = Acceptable 3 = Excellent	Energy quantity result	Provides a feedback on the energy quantity received by levels: • 0 = Not Enough (energy quantity between 0.0 and 1.5) • 1 = Limit (energy quantity between 1.5 and 2.5) • 2 = Acceptable (energy quantity between 2.5 and 5.0) • 3 = Excellent (energy quantity between 5.0 and 100)
	Potentiometer setting							
80 / 0x50	R/W	UIntegerT	1 Byte	0	255	0 = Lock 255 = Unlock	Product settings lock	Lock all the settings of the product (potentiometer value and the input wires value).
83 0x53	R/W	UIntegerT	1 Byte	0	-	0 ... 100	Read target position	Return the potentiometer minimum value in % (0% means minimum position and 100% means maximum position) to detect the target. The value depends on the color & material of the object. If it is less to 1% the teaching will be in error 7. After a teach success, the value read from this index should correspond to “BDC1 Setpoint 1”, index 60 sub-index 1.

DATA PARAMETERS

Index (dec/hex)	Access(1)	Data type	Length	Sub-index	Default value	Value Range	Object Name	Description
	Read operating data							
103 / 0x67	R	UIntegerT	4 Bytes	0	-	0 ... 2^{32}-1	Operating Hours	Number of operating hours. The data can only be read; no reset possible
102 / 0x66	R	UIntegerT	4 Bytes	0	-	0 ... 2^{32}-1	Change State Number	Number of output change status (On & Off). Passing a target increases the object value twice.
107 / 0x6B	W	UIntegerT	1 Byte	0	-	255 = Reset	Reset Change of States Counter	Reset the change of states counter to 0.

FUNCTION PARAMETERS

Index (dec/hex)	Access(1)	Data type	Length	Sub-index	Default value	Value Range	Object Name	Description
	Timer configuration							
90 / 0x5A	R/W	UIntegerT	1 Byte	0	0	0 = No Timer 1 = On/Off Delay 2 = Rising Edge Delayed One Shot 3 = Falling Edge Delayed One Shot	Timer Selection	Defines which Timer Function should be applied on the output.
91 / 0x5B	R/W	UIntegerT	2 Bytes	0	0	0ms, 5ms, 10ms, 25ms, 50ms, 100ms, 250ms, 500ms, 1000ms, 2500ms, 5000ms, 10000ms, 25000ms	T1	Defines the value of T1 for Timer Function.
92 / 0x5C	R/W	UIntegerT	2 Bytes	0	0		T2	Defines the value of T2 for Timer Function.
	Other function							
14 / 0x0E	R	Array of bytes StringT	Variable	0	0x01, 0x01, 0x00	-	PDInput-Descriptor	Mandatory for Common Profile, not implemented in diffuse sensor.

OUTPUT PARAMETERS

Index (dec/hex)	Access(1)	Data type	Length	Sub-index	Default value	Value Range	Object Name	Description
	Output behaviour							
71 / 0x47	R/W	UIntegerT	1 Byte	0	0	0 = External 255 = IO-Link	BDC1 Switchpoint logic setting: IO-Link / External Selection	Define the way to configure NO/NC function (by IO-Link or through IN wire).
61 / 0x3D	R/W	RecordT	4 Bytes	0	-	-	Switch Parameters of BDC1	The following 3 parameters define the switching behavior of a BDC1 (output 1)
		UIntegerT	1 Byte	1	0	0 = Not inverted (NO) 1 = Inverted (NC)	Switchpoint logic	The parameter "Switchpoint logic" defines whether the switching information is transmitted in inverted or not inverted manner. Select the output function between NO (Normally Open) and NC (Normally Closed). Select first Index 71=IO-link.
		UIntegerT	1 Byte	2	1	0 = Deactivated 1 = Single point mode 2 = Window mode 3 = Two points mode	Switchpoint mode	Select the detection mode: 1= Single point mode is selected when one point of detection is needed 2 = Window mode is selected when detection is needed between two detection points called near point and far point (Only for XU●8 BGS). 3 = Two points mode (Only for XU●8 BGS)
		UIntegerT	2 Bytes	3	0	0	Switchpoint hysteresis	The parameter "Switchpoint hysteresis" defines whether a hysteresis is associated with the Setpoints SP1 and SP2. The layout of the hysteresis in respect to SP1 and SP2, for example symmetrical, right-aligned, or left-aligned, etc. is manufacturer/vendor specific. It cannot be defined in the FunctionClass. The interpretation of the hysteresis values (relative or absolute) is also manufacturer/vendor specific.(Only for XU●8 BGS)
	Output configuration							
70 / 0x46	R/W	UIntegerT	1 Byte	0	128	0 = NPN 128 = AUTODETECT 255 = PNP	Output function type	Define the output function type of the sensor (NPN / AUTODETCT / PNP).
40 / 0x28	R	UIntegerT	1 Byte	0	-	0 = OFF 1 = ON	PD Input	Last valid process input data of the device.
58 / 0x3A	R/W	UIntegerT	1 Byte	0	0	0	Teach-in channel	The parameter "Teach-in Channel" allows addressing the particular BDC or a set of BDCs for which the teach-in commands apply. A maximum of 128 BDCs can be addressed. (Only for XU●8 BGS)

(1) R = Read / W = Write