

|                            |                       |                                                       |          |           |                                                                                        |                                                               |                                                    |                                                                                                                                                                                                                                                                                                  |
|----------------------------|-----------------------|-------------------------------------------------------|----------|-----------|----------------------------------------------------------------------------------------|---------------------------------------------------------------|----------------------------------------------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| 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                  |                       | 100 / 0x000064 (Thru Beam)<br>101 / 0x000065 (Reflex) |          |           |                                                                                        |                                                               |                                                    |                                                                                                                                                                                                                                                                                                  |
| Data storage               |                       | Supported                                             |          |           |                                                                                        |                                                               |                                                    |                                                                                                                                                                                                                                                                                                  |
| Specification IO-Link      |                       | 1.1.2                                                 |          |           |                                                                                        |                                                               |                                                    |                                                                                                                                                                                                                                                                                                  |
|                            |                       |                                                       |          |           |                                                                                        |                                                               |                                                    |                                                                                                                                                                                                                                                                                                  |
| 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 <sup>(1)</sup> | 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         | XUB2APYBM12R / XUB9APYBM12<br>XUB2APYWM12R / XUB9APYWM12                               |                                                               | Product Name                                       | The parameter Product Name contains the complete product name (Commercial Reference).                                                                                                                                                                                                            |
| 19 / 0x13                  |                       |                                                       |          | 0         | XUB2BPYBM12R / XUB9BPYBM12<br>XUB2BPYWM12R / XUB9BPYWM12<br>XUN2APYBM12R / XUN9APYBM12 |                                                               | Product ID                                         | The parameter Product ID contains the vendor specific product or type identification of the device.                                                                                                                                                                                              |
| 20 / 0x14                  |                       |                                                       |          | 0         | Thru Beam Receiver / Reflex 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 <sup>(1)</sup> | Data type                                             | Length   | Sub-index | Default value                                                                          | Value Range                                                   | Object Name                                        | Description                                                                                                                                                                                                                                                                                      |
| 2 / 0x02                   | W                     | UIntegerT                                             | 8 Bit    | 0         | -                                                                                      | 130                                                           | System command                                     | 130 = Restore factory settings                                                                                                                                                                                                                                                                   |
|                            |                       |                                                       |          |           |                                                                                        |                                                               |                                                    |                                                                                                                                                                                                                                                                                                  |
| DETECTION PARAMETERS       |                       |                                                       |          |           |                                                                                        |                                                               |                                                    |                                                                                                                                                                                                                                                                                                  |
| Index (dec/hex)            | Access <sup>(1)</sup> | Data type                                             | Length   | Sub-index | Default value                                                                          | Value Range                                                   | Object Name                                        | Description                                                                                                                                                                                                                                                                                      |
| Detection point            |                       |                                                       |          |           |                                                                                        |                                                               |                                                    |                                                                                                                                                                                                                                                                                                  |
| 81 / 0x51                  | R/W                   | UIntegerT                                             | 1 Byte   | 0         | 0                                                                                      | 0 = External<br>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                   | Record                                                | 2 Bytes  | 0         | -                                                                                      | -                                                             | Setpoints of BDC1                                  | The following 3 parameters define the detection point for BDC1                                                                                                                                                                                                                                   |
|                            |                       | UIntegerT                                             | 1 Bit    | 1         | 0                                                                                      | 0...100                                                       | Setpoint 1                                         | BDC1 Setpoint 1 (set in "IO-Link" first in Index 81)                                                                                                                                                                                                                                             |
|                            |                       | UIntegerT                                             | 1 Bit    | 2         | 0                                                                                      | 0...100                                                       | Setpoint 2                                         | BDC1 Setpoint 2 (Only for XU●8 BGS)                                                                                                                                                                                                                                                              |
| Detection signal           |                       |                                                       |          |           |                                                                                        |                                                               |                                                    |                                                                                                                                                                                                                                                                                                  |
| 100 / 0x64                 | R                     | Float32                                               | 4 Bytes  | 0         | -                                                                                      | 0 ... 100                                                     | Read energy quantity                               | Read the energy quantity received to ensure a reliable detection.                                                                                                                                                                                                                                |
| 101 / 0x65                 | R                     | StringT                                               | 1 Byte   | 0         | -                                                                                      | 0 = Not Enough<br>1 = Limit<br>2 = Accetable<br>3 = Excellent | Operating reserve result                           | Provides a feedback on the energy quantity received by levels:<br>• 0 = Not Enough (energy quantity between 0.0 and 1.5)<br>• 1 = Limit (energy quantity between 1.5 and 2.5)<br>• 2 = Acceptable (energy quantity between 2.5 and 5.0)<br>• 3 = Excellent (energy quantity between 5.0 and 100) |
| Potentiometer setting      |                       |                                                       |          |           |                                                                                        |                                                               |                                                    |                                                                                                                                                                                                                                                                                                  |
| 80 / 0x50                  | R/W                   | UIntegerT                                             | 1 Byte   | 0         | 255                                                                                    | 0 = Lock<br>255 = Unlock                                      | Product settings lock                              | Lock all the settings of the product (potentiometer value and the input wires value).                                                                                                                                                                                                            |
|                            |                       |                                                       |          |           |                                                                                        |                                                               |                                                    |                                                                                                                                                                                                                                                                                                  |
| (1) R = Read / W = Write   |                       |                                                       |          |           |                                                                                        |                                                               |                                                    |                                                                                                                                                                                                                                                                                                  |

| DATA PARAMETERS     |                       |           |         |           |               |                          |                                |                                                                                                  |
|---------------------|-----------------------|-----------|---------|-----------|---------------|--------------------------|--------------------------------|--------------------------------------------------------------------------------------------------|
| Index (dec/hex)     | Access <sup>(1)</sup> | Data type | Length  | Sub-index | Default value | Value Range              | Object Name                    | Description                                                                                      |
| Read operating data |                       |           |         |           |               |                          |                                |                                                                                                  |
| 103 / 0x67          | R                     | UIntegerT | 4 Bytes | 0         | -             | 0 ... 2 <sup>32</sup> -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 <sup>32</sup> -1 | Change State Number            | Number of output change status (On & Off).<br>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 <sup>(1)</sup> | 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<br>1 = On/Off Delay<br>2 = Rising Edge Delayed One Shot<br>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,                                                          | T1                           | Defines the value of T1 for Timer Function.                                                                                                                   |
| 92 / 0x5C           | R/W                   | UIntegerT | 2 Bytes                  | 0         | 0                | 1000ms, 2500ms, 5000ms, 10000ms, 25000ms                                                                  | T2                           | Defines the value of T2 for Timer Function.                                                                                                                   |
| Dirty lens warning  |                       |           |                          |           |                  |                                                                                                           |                              |                                                                                                                                                               |
| 104 / 0x68          | R/W                   | UIntegerT | 2 Bytes                  | 0         | 130 (130%)       | 100 ... 1000 = 100%<br>... 1000%                                                                          | Dirty Lens Warning Threshold | Threshold expressed in percentage of the excess gain in order to determine if the device lens is dirty or not.<br>Possible Values are between 100% and 1000%. |
| 105 / 0x69          | R                     | UIntegerT | 1 Byte                   | 0         | -                | 0 = OFF<br>255 = ON                                                                                       | Dirty Lens Warning           | Alarm used to know if the device lens is dirty or not. Equal to On when current excess gain is less than Dirty Lens Warning Threshold value.                  |
| Other function      |                       |           |                          |           |                  |                                                                                                           |                              |                                                                                                                                                               |
| 14 / 0x0E           | R                     | Variable  | ArrayT of Octet-StringT3 | 0         | 0x01, 0x01, 0x00 | -                                                                                                         | PDInput-Descriptor           | Mandatory for Common Profile, not implemented in diffuse sensor.                                                                                              |
| 106 / 0x6A          | W                     | UIntegerT | 1 Byte                   | 0         | -                | 0 = OFF<br>255 = ON                                                                                       | Light beam control           | Turn off or on the Transmission LED of the Sensor (Only for XU●9 Reflex).                                                                                     |

| OUTPUT PARAMETERS    |                       |              |         |               |               |                                                                                    |                                                                     |                                                                                                                                                                                                                                                                                                                                                                                                                                                                   |
|----------------------|-----------------------|--------------|---------|---------------|---------------|------------------------------------------------------------------------------------|---------------------------------------------------------------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Index<br>(dec/hex)   | Access <sup>(1)</sup> | Data<br>type | Length  | Sub-<br>index | Default value | Value Range                                                                        | Object Name                                                         | Description                                                                                                                                                                                                                                                                                                                                                                                                                                                       |
| Output behaviour     |                       |              |         |               |               |                                                                                    |                                                                     |                                                                                                                                                                                                                                                                                                                                                                                                                                                                   |
| 71 / 0x47            | R/W                   | UIntegerT    | 1 Byte  | 0             | 0             | 0 = External<br>255 = IO-Link                                                      | BDC1 Switchpoint<br>logic setting:<br>IO-Link/External<br>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<br>of BDC1                                        | The following 3 parameters define the switching behavior of a BDC1 (output 1)                                                                                                                                                                                                                                                                                                                                                                                     |
|                      |                       | UIntegerT    | 1 Byte  | 1             | 0             | 0 = Not inverted (NO)<br>1 = Inverted (NC)                                         | Switchpoint logic                                                   | The parameter "Switchpoint logic" defines whether the switching information is<br>transmitted in inverted or not inverted manner. Select the output function<br>between NO (Normally Open) and NC (Normally Closed). Select first Index<br>71=IO-link. Select first Index 71=IO-link.                                                                                                                                                                             |
|                      |                       | UIntegerT    | 1 Byte  | 2             | 1             | 0 = Deactivated<br>1 = Single point mode<br>2 = Window mode<br>3 = Two points mode | Switchpoint mode                                                    | Select the detection mode:<br>1= Single point mode is selected when one point of detection is needed<br>2 = Window mode is selected when detection isneeded between two detection<br>points called nearpoint and far point (Only for XU●8 BGS)<br>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<br>associated with the Setpoints SP1 and SP2. The layout of the hysteresis in<br>respect to SP1 and SP2, for example symmetrical, right-aligned, or left-aligned,<br>etc. is manufacturer / vendor specific. It cannot be defined in the FunctionClass.<br>The interpretation of the hysteresis values (relative or absolute) is also<br>manufacturer/vendor specific. (Only for XU●8 BGS) |
| Output configuration |                       |              |         |               |               |                                                                                    |                                                                     |                                                                                                                                                                                                                                                                                                                                                                                                                                                                   |
| 70 / 0x46            | R/W                   | UIntegerT    | 1 Byte  | 0             | 128           | 0 = NPN<br>128 = AUTODETECT<br>255 = PNP                                           | Output function type                                                | Define the output function type of the sensor (NPN / PNP).                                                                                                                                                                                                                                                                                                                                                                                                        |
| 40 / 0x28            | R                     | UIntegerT    | 1 Byte  | 0             | -             | 0 = OFF<br>1 = ON                                                                  | PD Input                                                            | Last valid process input data of the device.                                                                                                                                                                                                                                                                                                                                                                                                                      |

(1) R = Read / W = Write