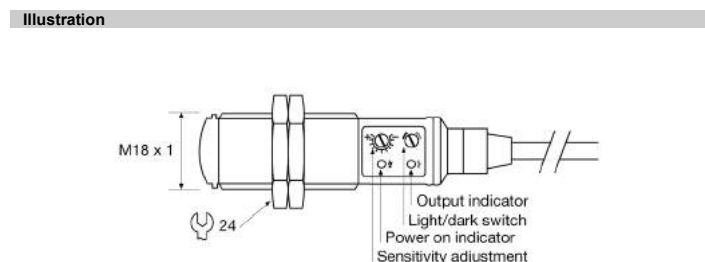


Product Data	
Electrical Data	
Supply Voltage	10 – 30 V dc
Voltage ripple	+/- 15%
Current consumption	30 mA
Max. output load	200 mA / 30 V dc
Reverse polarity protected	Yes
Short circuit protected	Yes
Environmental Data	
Temperature, operation	-20 to +60 °C
Sealing class	IP 67
Approvals	CE

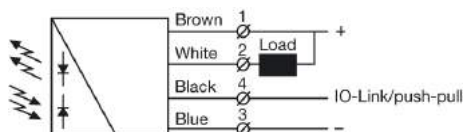
Available Models					
	Model	Supply Voltage	Output	Output Mode	Sensing Range
Diffuse Proximity	SMRR 7400 IO xx x	10-30 V dc	IO-Link/NPN	Light/dark	0 – 3m*
	SMRR 7500 IO xx x		IO-Link/PNP		

* Note: Measured against the Ø85 mm retro-reflector.

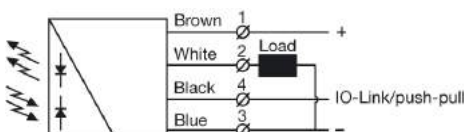


Connection

Wiring Diagrams



SMRR 7400 IO
Load as NPN



SMRR 7500 IO
Load as PNP

Connection Pins			
		4 pin, M8 plug	4 pin, M12 plug
Supply +	Brown	Pin 1	Pin 1
Supply -	Blue	Pin 3	Pin 3
IO-Link	Black	Pin 4	Pin 4
Control/Output	White	Pin 2	Pin 2

Mounting & Installation

Mounting & Installation	
1	Position the sensor pointing at the target object.
2	Align by moving sensor horizontally and vertically until the output changes when the target object is present (refer to Output Logic table).
3	Fasten the sensor securely using the enclosed locking nuts and/or a mounting bracket. Avoid acute angles on cable close to sensor.

Adjustments

General	
Sensitivity and output mode can be adjusted using the potentiometers or with the IO-Link. The IO-Link allows the user to setup and read several functions and parameters. Please refer to "SMRR and PC connection" on the following page.	

Output Mode Selection	
The output mode can be selected via an integral light/dark switch, or via IO-Link. Refer to Output Logic table for output mode reference. Note that the NPN output is closed when IO-Link/push-pull is low and the yellow output LED is off.	

Light Operated (N.C.)	Enables the output to be inactive when there is an object present.	Turn switch to full clockwise position, or set: - Overwrite light operated = <i>true</i> - Light operated = <i>true</i> in the Parameters tab.
Dark Operated (N.O.)	Enables the output to be active when there is an object present.	Turn switch to full counter clockwise position, or set: - Overwrite light operated = <i>true</i> - Light operated = <i>false</i> in the Parameters tab.

Output Logic					
Detection	Output mode	Output status			Yellow LED
		IO-Link	PNP	NPN	
Object present	Light operated (N.C.)	Low	Open	Closed	Off
	Dark operated (N.O.)	High	Closed	Open	On
Object absent	Light operated (N.C.)	High	Closed	Open	On
	Dark operated (N.O.)	Low	Open	Closed	Off

Sensitivity Adjustment	
Maximum sensitivity can be used for most applications and is advised for applications with contaminated environments. The sensitivity can be adjusted on the potentiometer (factory default active) or via IO-Link.	

Sensitivity adjustment may be required in applications where objects to be detected have highly reflective, dark or textured surfaces and/or applications where a background is present. This can be achieved manually or via IO-Link.

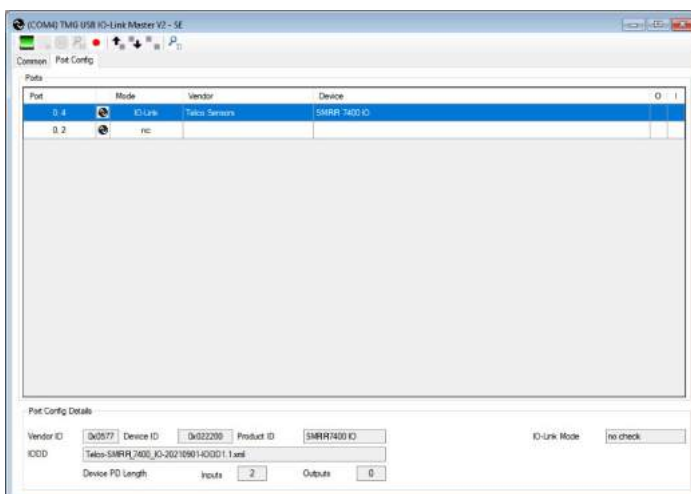
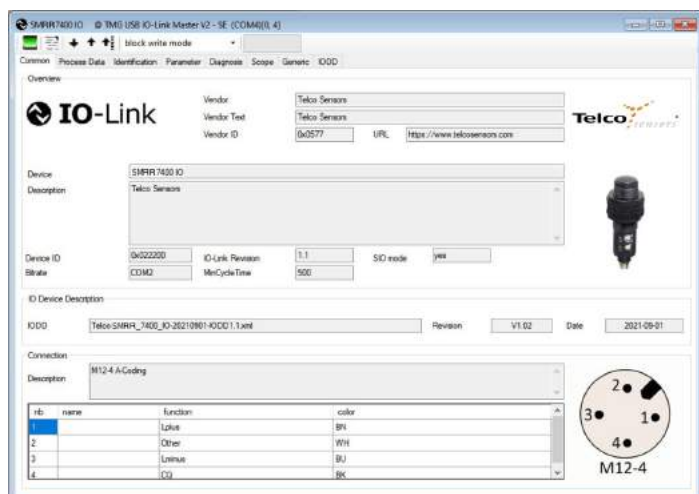
For sensitivity adjustment, proceed with the following steps:

1	Start with the sensitivity at minimum by turning the potentiometer to full counter clockwise position, or by setting the <i>Gain</i> value to 255.
2	Select target object with the smallest dimensions and most translucent surface.
3	Place target object between the sensor and retro-reflector. If the output status changes, adjustment is not required. If the output has not changed proceed to step 4.
4	Decrease the sensitivity by turning the potentiometer counter clockwise or decrease the <i>Gain</i> value to a lower value until the output changes. If the output has not changed, attempt to move the sensor and retro-reflector further apart or angle the sensor/retro-reflector. Then repeat procedure from step 1. Alternatively, remove any object and press teach-gain button using IO-link.
5	Remove target object. Check the output status has changed.



SMRR and PC connection

To setup or adjust a SMRR, it is required to use TMG IO-Link Device Tool together with TMG-USB IO-Link Master, or another IO-Link PC application.




How to connect

Connect the TMG-USB IO-Link Master USB-adapter to the USB-port of the PC and to the cable of the SMRR.

Download the IO-Link Device Tool software and the SMRR-IODD file from the Telco Sensors website in <https://www.telcosensors.com/downloads> selecting Software in Document type section. Install the TMG IO-Link Device Tool V5.1.1-5122 SE – Setup file and run the program.

Import the SMRR-IODD by selecting "Import IODD" in the Options menu, previously downloaded.

Click on "Search Master" and select the Master in the popup window.

Click on "Go Online" .

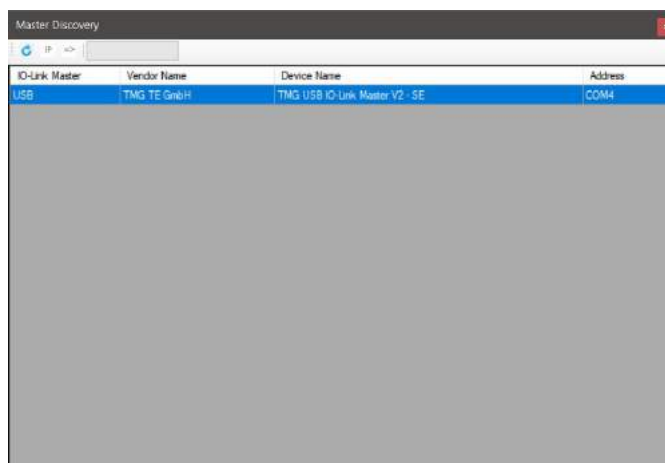
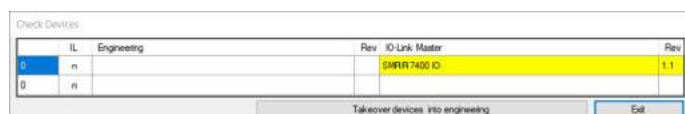
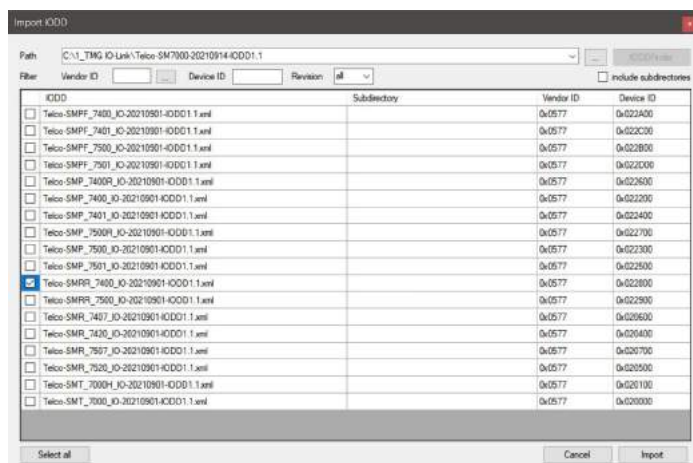
Click on "Check Devices" .

Click on "Takeover devices into engineering" to the SMRR device. Double click on the row with the SMRR, to open the Device menu.

Click on "Upload from Device"  to upload the SMRR settings.

For more information see TMG's User Manual for the IO-Link Device Tool.

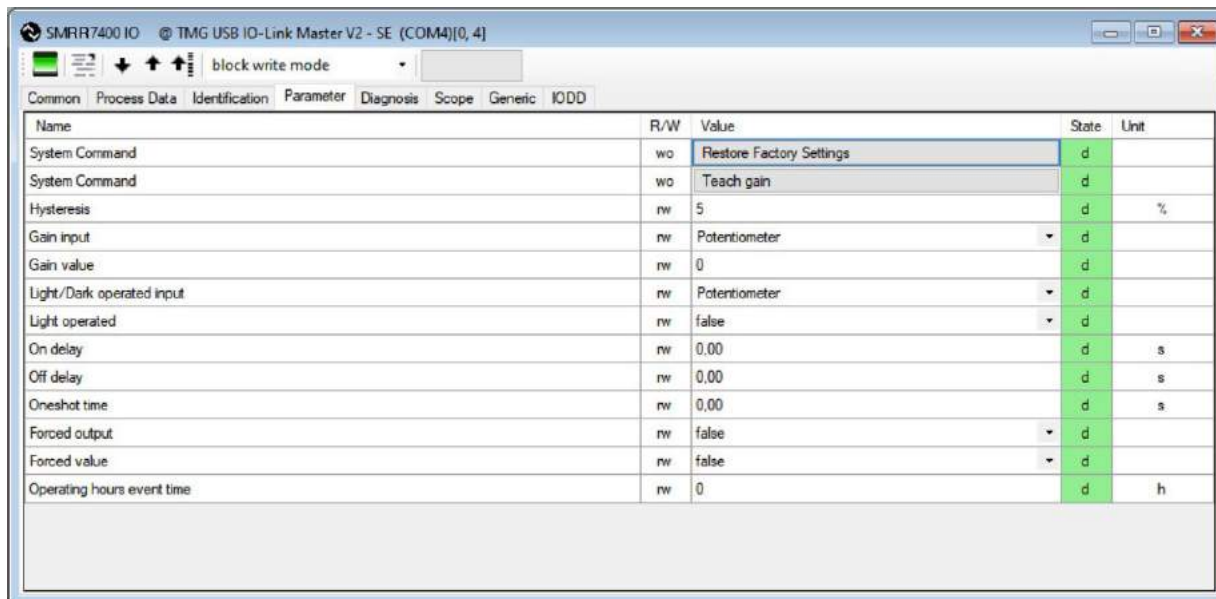
Popup windows:



Parameters

On the Parameter tab, the parameters of the sensor can be set up or modified.

General settings SMRR:



Name	R/W	Value	State	Unit
System Command	wo	Restore Factory Settings	d	
System Command	wo	Teach gain	d	
Hysteresis	rw	5	d	%
Gain input	rw	Potentiometer	d	
Gain value	rw	0	d	
Light/Dark operated input	rw	Potentiometer	d	
Light operated	rw	false	d	
On delay	rw	0,00	d	s
Off delay	rw	0,00	d	s
Oneshot time	rw	0,00	d	s
Forced output	rw	false	d	
Forced value	rw	false	d	
Operating hours event time	rw	0	d	h

System Command - Restore Factory Settings

Restores all user-settings to default values.

System Command – Teach Gain

Determines the lowest possible gain to turn on.

Hysteresis

The relative difference between on and off threshold. In both IO-Link and Potentiometer gain input it is possible to set the Hysteresis level. It can be set from 0 to 10%.

Gain input

Select how the gain should be controlled. Select between Potentiometer or IO-Link. IO-Link is set by the Gain value setting. Keep objects out of the detection area when switching to teach-in mode, because the initial setting of the beam requires information about signal strength for an unbroken beam. Excess gain is adjusted to about 2.

Gain value

Select a fixed gain when IO-Link is selected for Gain input. It can be set from 0 to 255.

Light/Dark operated input.

How the light/dark operated should be determined. Select between Potentiometer or IO-Link. IO-Link is set by the "Light operated" value setting. Potentiometer is set by the potentiometer on the sensor.

Light operated

Select between true or false.

Changing the selection will invert the outputs, if the Overwrite light operated is true.

On delay

Select the delay of the output when an object appears, i.e. becomes present. It can be set from 0,00 to 600,00 seconds.

Off delay

Select delay of the output when an object disappears, i.e. becomes absent. It can be set from 0,00 to 600,00 seconds.

Oneshot time

Select how long time the outputs will be active when going from not active to active. It can be set from 0,00 to 600,00 seconds.

Forced output.

Select if the output should be forced to the value in Forced value or decided from the sensor input.

Forced value

Select the output state if the Forced output is true.

Operating Hours Event Time

Starts an event message when operating hours reaches the value. It can be set from 0 to 4294967295. If 0 is selected there will be no operating hours event.

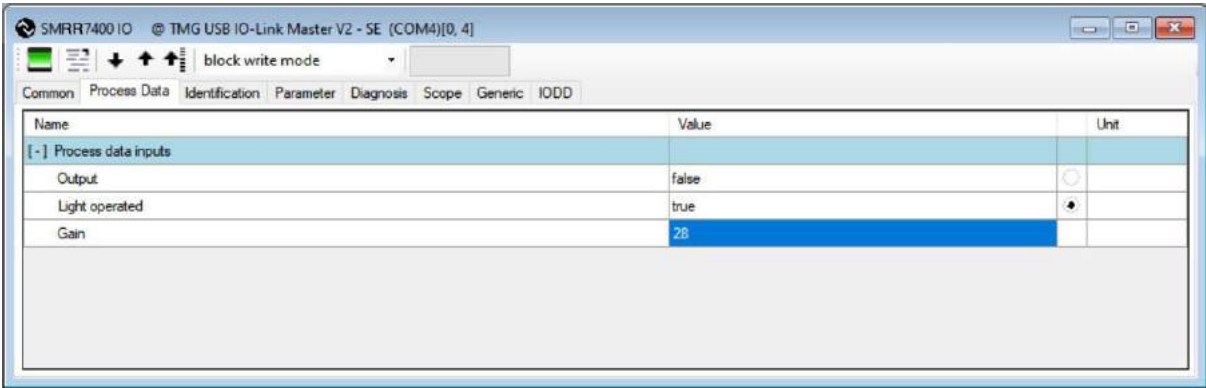


Warning

This device is not to be used for Personnel Protection in Machine Guarding Safety applications. This device does not include the self-checking redundant circuitry necessary to allow its use in personnel machine guarding stand-alone safety applications.

Process Data

Process data SMRR:



Name	Value	Unit
[-] Process data inputs		
Output	false	
Light operated	true	
Gain	28	

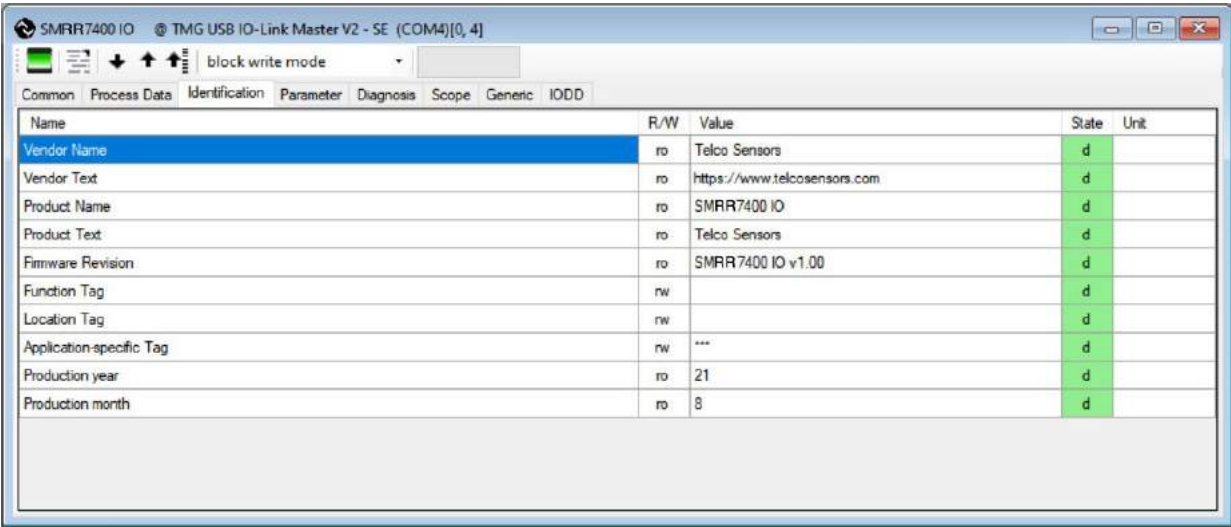
Output
Status on the output.

Light Operated
Status on the light operated selection.

Gain
Status on the gain value.

Identification

On the identification tab, general information about the sensor is displayed.



Name	R/W	Value	State	Unit
Vendor Name	ro	Telco Sensors	d	
Vendor Text	ro	https://www.telcosensors.com	d	
Product Name	ro	SMRR7400 IO	d	
Product Text	ro	Telco Sensors	d	
Firmware Revision	ro	SMRR7400 IO v1.00	d	
Function Tag	rw		d	
Location Tag	rw		d	
Application-specific Tag	rw	---	d	
Production year	ro	21	d	
Production month	ro	8	d	

Function Tag, Location Tag and Application-specific Tag
Enter user specific descriptions for identification.

