

Sensore di diametro ad ultrasuoni

Ultrasonic diameter sensor



Manuale di montaggio e istruzioni d'uso
Assembly manual and operating instructions

ITA | ENG

introduction	page 13
warnings	page 13
assistance	page 13
description	page 14
model with IO-Link	page 15
alignment aid	page 15
assembly procedures	page 16
wiring diagram	page 17
Teach-In instruction for use	page 18
index of manual revision	page 20

introduction

The following manual is intended for installers and users of the product and provides descriptions and explanations on the diameter sensor (installation and instruction for use)

Inside the manual you will find:

- Assembly instructions: how to mount and where it is better to do it
- Instruction on how to use them

Since the product and Renova itself are constantly changing in order to improve the quality and performance of our products, Renova reserves the right to update the manuals without obligation to update the products already marketed and / or any previous manuals.

warning

READ THE INSTRUCTIONS AND WARNINGS PRESENT IN THIS MANUAL CAREFULLY AND KEEP THEM FOR FURTHER REFERENCES FOR THE DURATION OF THE PRODUCT. IN THIS MANUAL THERE ARE IMPORTANT INSTRUCTIONS CONCERNING OPERATIONS AND SAFETY FOR INSTALLATION, USE AND MAINTENANCE OF THE PRODUCT

WE STRONGLY RECOMMEND THAT THE DEVICE IS ASSEMBLED AND CHECKED BY A QUALIFIED TECHNICAL STAFF IN ORDER TO AVOID ANY RISK OF DAMAGE TO PERSONS OR THE PRODUCT ITSELF.

IN THE EVENT OF ANY PRODUCT BREAK, THE OPERATOR SHOULD KNOW THIS MANUAL AND THE INFORMATION INSIDE IT, KNOWING HOW TO AVOID ANY RISKS AND / OR DANGERS, BEFORE AN INTERVENTION BY OUR SPECIALIZED TECHNICIAN.

assistance

Renova is present worldwide with its agents and distributors.

To contact the Renova support service write to:

support@renova-srl.it

description

The Renova USX500-01 sensor, with its robustness and reading accuracy, is the best alternative in the field of diameter measurement.

Our product offers the customer a large number of benefits:

- Maximum reliability and longevity of the process: robust and resistant thanks to the fact that the sensor is hermetically sealed with PEEK film
- Flexible and application-specific parameterization: Various setting options with IO-Link
- Measurement almost on the sensor surface: extremely short blind field of 20 mm with a radius of up to 1000 mm
- Consistent operation thanks to resistance to interference: detection of transparent, shiny and multicolored objects with maximum resistance to dirt, water drops or chemicals such as rinsing and antifreeze agents or isopropyl alcohol
- Quick and easy commissioning: adjustment of the sensor characteristics directly on the sensor via qTeach and centrally via IO-Link
- IO-Link standardized communication interface
- Hybrid operation: analysis of additional process data parallel to operation. Read the process data while the analog measurement signal is being output at the same time

Model with IO-Link

IO-Link Process Data Input									
32	8	0							
IntegerT(32)	IntegerT(8)	8 bit							
Measurement Data Channel (MDC)	Scale	Renova specific							
		7	6	5	4	3	2	1	0
				SSC4		Alarm	Quality	SSC2	SSC1

- SSC1 / 2/4: switching of signal channels
- MDC: distance value or counter switch (selectable)
- Quality: the quality bit signals a weak echo signal
- Alarm: the alarm bit signals a problem with sensor configuration or functionality
- Scale: power factor of ten, applicable to the Measurement Data Channel (MDC) value

Available commands: learning commands, activation / deactivation of the sensor element, Find Me (Sensor location) and more.

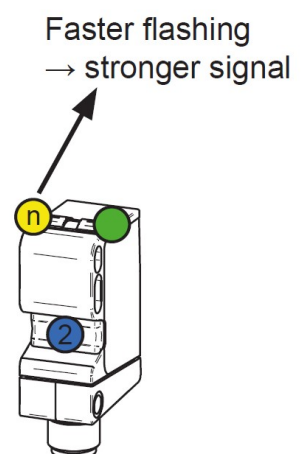
Available parameters: switching point, switching hysteresis, output function, time filters, beam formation, measured value filter, analog output characteristic, pin 5 function, LED status indicators and more.

Additional data available: Counter, start cycles, operating hours, device temperature, operating voltage, histograms.

alignement aid

The retroreflective and barrier version is equipped with an indication of correct alignment integrated in the Teach-In at level 1. This function indicates the intensity of the signal received.

Sensor alignment: the faster the flashing, the stronger the signal

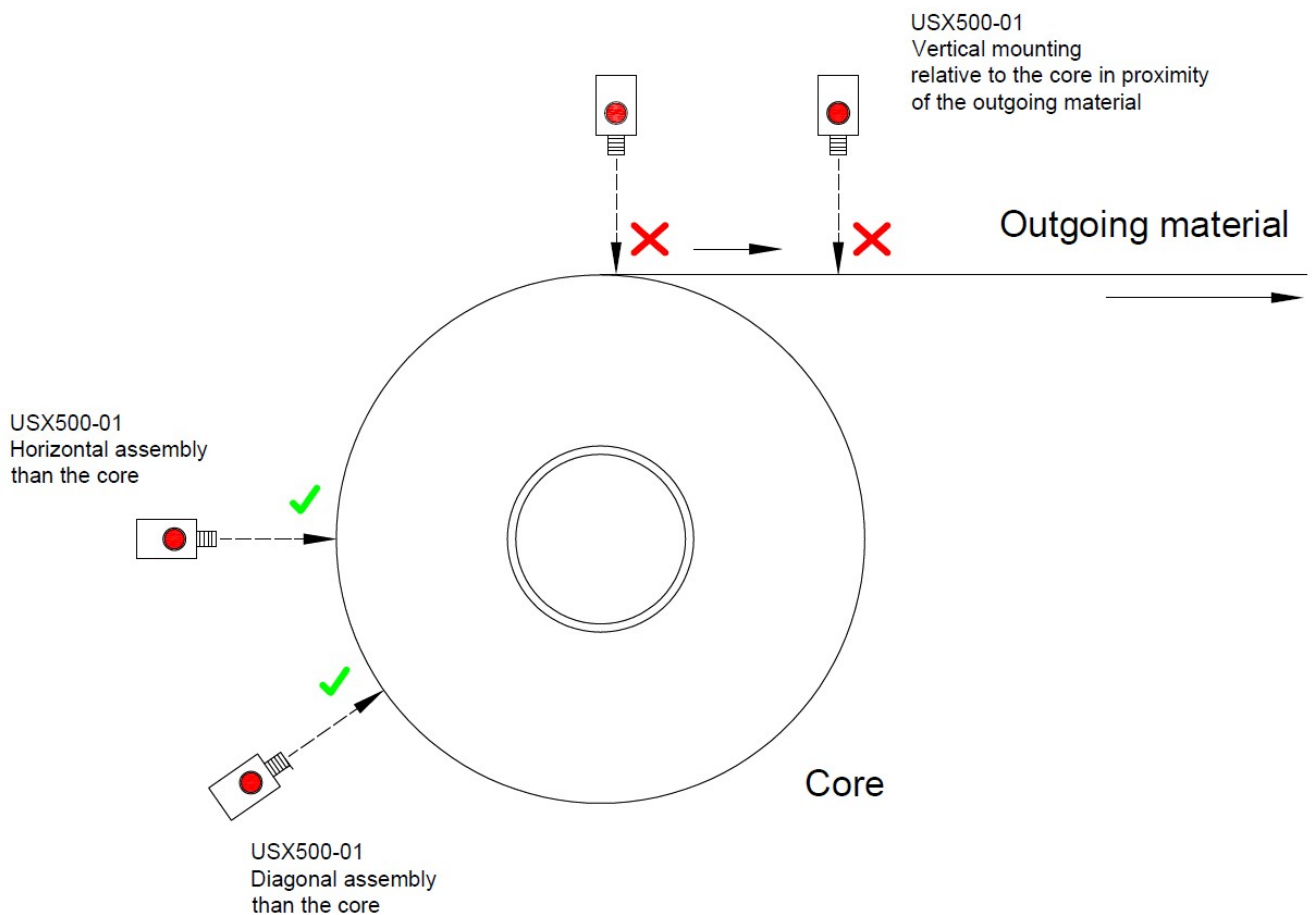


assembly procedures

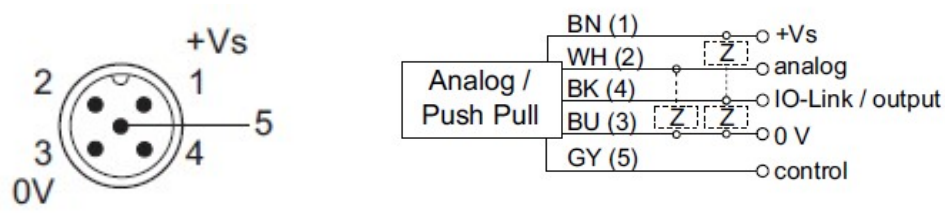
The assembly of the USX500-01 sensor does not require any passage. The operator is free to mount the sensor wherever he wants to have a reading.



ATTENTION: In order to avoid staggered readings of the diameter, we do not recommend installing it vertically near the "exit" area of the coil material. The oscillation of the material could cause staggered and / or incorrect readings



connection diagram



	1-Point switch	2-Point switch	Reflex Barrier	Analogue measurement out	Through Beam Sensor	Analogue measurement out
	.P	.P	.R	.D	.E or .T	.D (retro)
1 - Brown BN	+Vs					
2 - White WH	n.c.	Push-Pull out 2	n.c.	U or I	n.c.	Teach-in
3 - Blue BU	0 V					
4 - Black BK	IO-Link / Push-Pull out 1					U or I
5 - Grey GY	Teach-in / Sync / Mux selectable via IO-Link					n.c.



ATTENTION:

Disconnect the power supply before mounting the sensor. Voltage supply according to UL 1310, Class 2

or the device must be protected by an external R / C or by a listed fuse, max. nominal value 30 VAC / 3A or 24VDC / 4A

Teach-In instruction for use

LED Indication



● Only sensors with 2 outputs do have a red LED

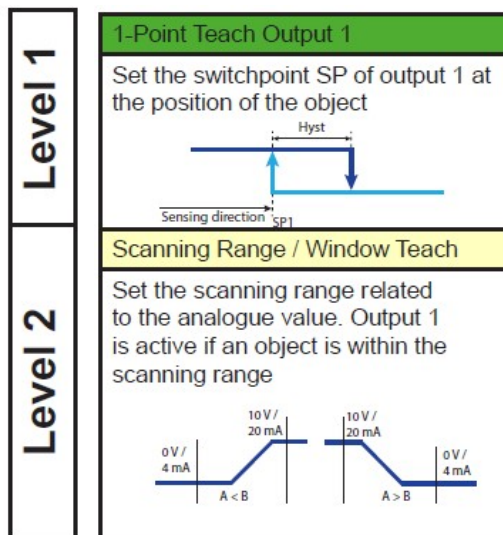
Legend

- LED on
- ① LED flashing 1 Hz
- ② LED flashing 2 Hz
- ⑧ LED flashing 8 Hz

Operating Mode

LED Indicators	Green	Yellow	Red	Blue
Power on	●			
Short circuit	①			
Output 1 active		●		
Output 1 signal close to threshold		⑧		
Output 2 active			●	
Output 2 signal close to threshold			⑧	
qTeach not locked				●
Teach-in mode	see Teach-in Instruction			

description Teach-in level 1 and 2



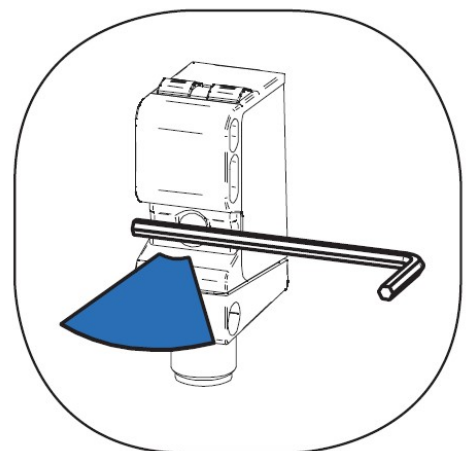
general information:

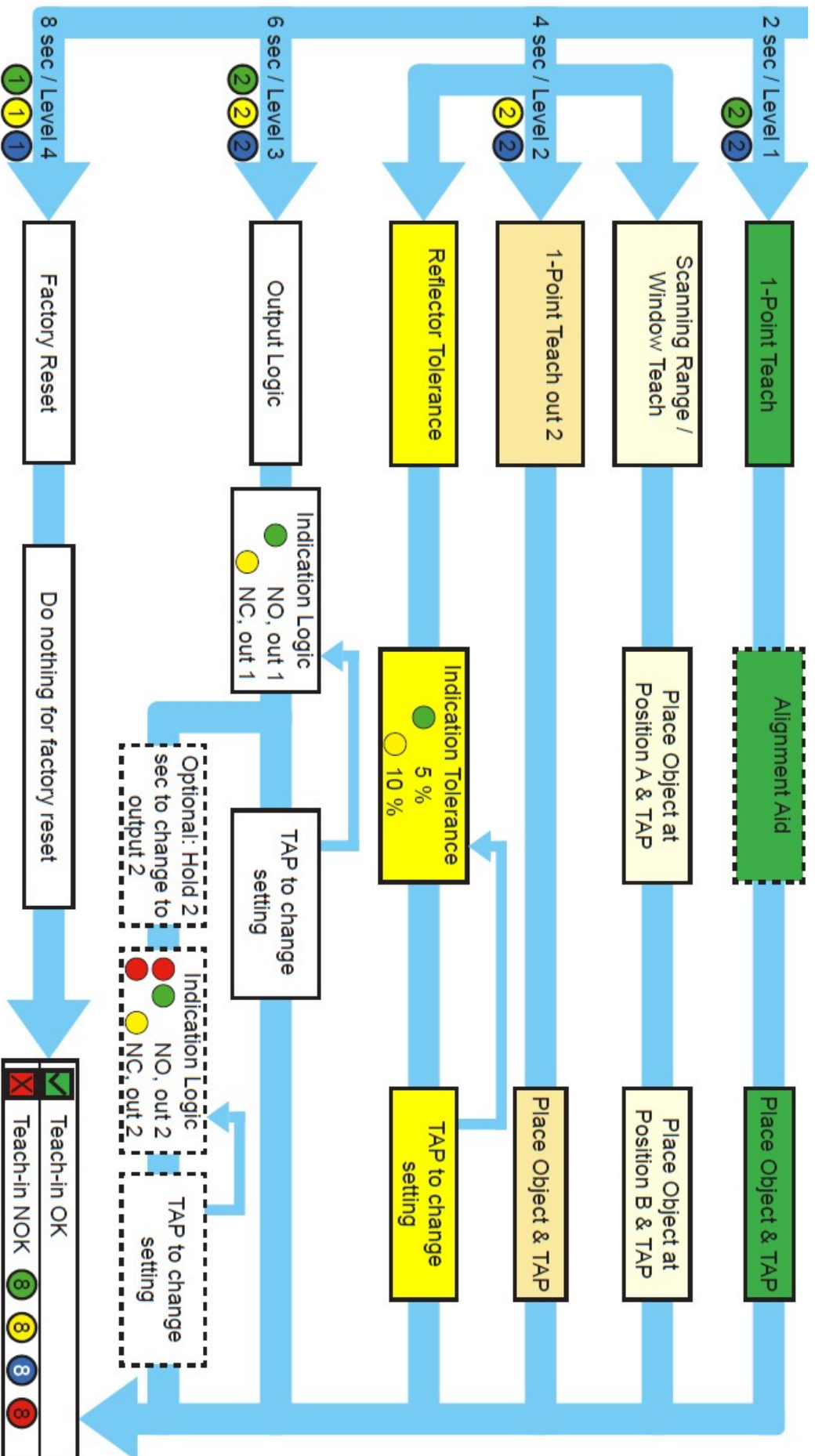
- The qTeach function is deactivated 5min after the sensor is turned on. The blue LED goes out.
- During the teach the output assumes a value equal to 0V.
- During standard sensor operation, the remote Teach-in cable is at 0V
- For remote Teach-In, connect the teach cable to +VS
- Remote Teach-In is always possible (does not deactivate after 5 min)
- If the metal tool remains for more than 12 seconds, Teach-in does not suffer variations

How to perform the calibration:

- Place a metal tool on the teach point as shown on the right or connect the cable teach-in to + Vs
- The blue LED illumination increases in intensity if the tool / teach-in is recognized correctly
- Release once the seconds indicated in the drawing below have elapsed according to the level of desired configuration.

TAP indicates a short touch with the tool on the teach point





Index of manual revision

Rev. n.	Rev. Date	Description of the changes made

note



Renova srl – viale Rimembranze 93 – 20099 Sesto San Giovanni (MI) Italy
tel.: +39.02.2700.7394 – fax: +39.02.2570.8635
www.renova-srl.com – email: support@renova-srl.it