

- English -

# Teaching of Laser Distance Sensors

## SA-DISTxxx

## Revision History

Revision	Description	Release Date	Author
0	Initial Release	2021-03-29	TS

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# 1 Notes and symbols used in this Manual



These paragraphs contain tips and practical advice for working with the DTS System



In the paragraphs highlighted with this symbol, you will find additional information and it is very important that you follow the instructions given.



Documentation reference

➤ A user manual reference number is provided so the user can seek further assistance

“Software Parameter”      Monospaced text in quotation marks designates a software parameter, pages, tabs or tables in the 2D Software

“#Channel1”      Monospaced text in quotation marks with a leading hash mark designates a channel in the 2D Software

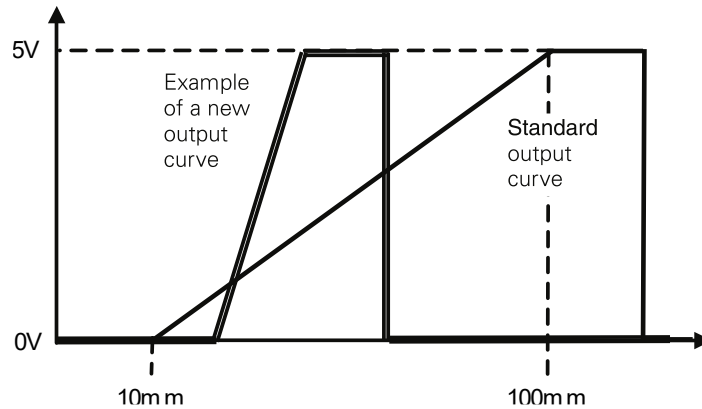
*- cross-reference -*      Italic, dotted underlined text designates a cross-reference to a different chapter of the manual

## 2 Introduction

This feature was designed to choose a smaller range within the nominal measuring range to increase the resolution of the analog signal. of the sensor. The output voltage adapts to the new range.

Two positions must be taught: First, the distance that will be 0V than the distance that will be 5V. These teach positions are always just the border of the new range

The sensor is taught using the cable connected to the teach input of the sensor.



The LED on top side of the sensor normally indicates if an object is within the measuring range. During the teach function, the red LED indicates the various steps during the teaching procedure.

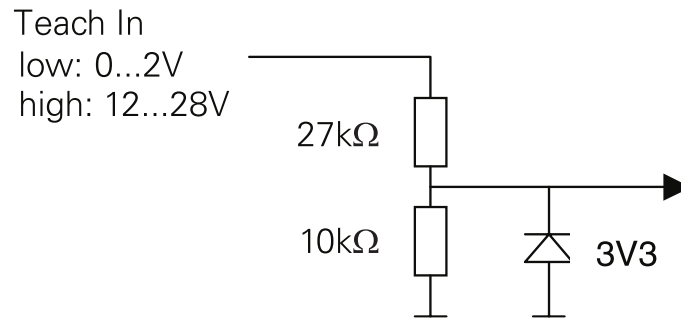


### Factory Reset

The sensor can always be reset back to the factory settings

### 3 Wiring the teach input

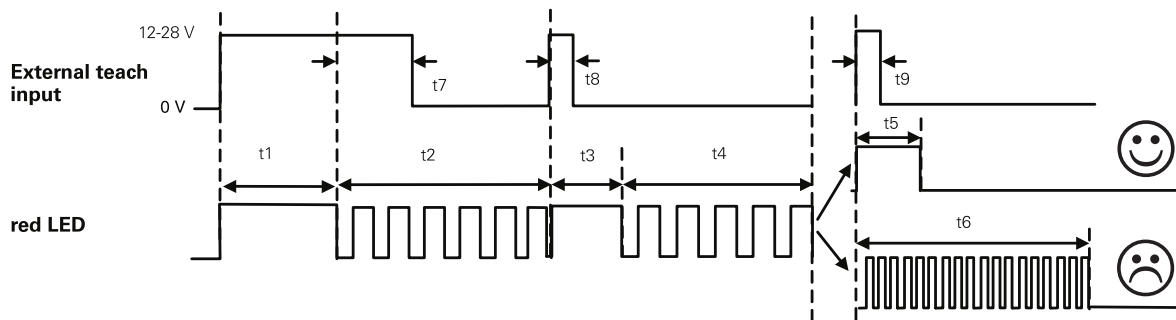
Connect the blue teach input wire of the sensor according to the following diagram:



## 4 Teaching the new input range

Use the following procedure to teach a new range

1. Put the high signal to the teach input for > 5s to put the sensor into teach mode. The LED will start to blink
2. Release the high signal from the teach input.
3. Place a target at the first new position of the measuring range. This is the position, that will later produce 0V.
4. Put the high signal to the teach input. The LED will stop blinking and will stay on for about 3 sec to indicate that the first position has been stored. Then the LED will blink again.
5. Place the target at the second position (the other end of the new range) which will produce 5V.
6. Put the high signal to the teach input. The LED will stop blinking and will stay on for about 3 sec to indicate that the second position has been stored. The LED will then turn off and blink once more. Now the sensor is ready to measure. The new operating range is now set. The LED now indicates whether an object is within the new range (LED off) or not (LED ON)

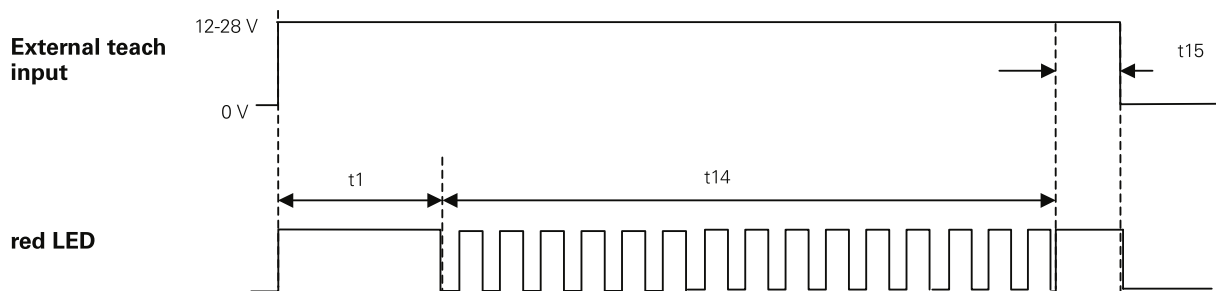


Time	Description	Value	Comment
t1	Minimum hold time to enter the teach mode	5s	
t2	Maximum wait time after teaching the first position	60s	If the sensor doesn't get a high signal during this interval, it will leave the teach mode without any changes
t3	LED on as response for the first position	3s	
t4	Maximum wait time after teaching the second position	60s	If the sensor doesn't get a high signal during this interval, it will leave the teach mode without any changes
t5	LED on and "OK response" after the second position	3s	
t6	LED blinking for "NOT OK response" after teaching the second position	5s	
t7	Maximum hold time after the LED starts blinking for teaching a new range	8s	
t8	Minimum pulse length for first position	30ms	
t9	Minimum pulse length for second position	30ms	

## 5 Factory Reset

The sensor can be reset if you want to discard the teached input range:

1. Put the high signal to the teach input for > 5s to put the sensor into teach mode. The LED will start to blink
2. Leave the high signal on the teach input for additional > 10s. The LED is ON without blinking, the sensor is reset to the factory settings.
3. Release the high signal from the teach input.



Time	Description	Value	Comment
t1	Minimum hold time to enter the teach mode	5s	
t14	Minimum hold time for entering the factory reset	10s	
t15	Minimum hold time after the LED Stops blinking	0.2s	



## 6 Laser Warning

