

# Teach Manual

## *AlphaProx*

### **Inductive distance measuring sensors with linear characteristic, teach input and digital output**

Version: 1.0

#### **General Information**

This manual applies to AlphaProx sensors featuring the following teach modes (according to the datasheet):

- 1-point analog
- Window digital
- Factory reset

The assembly instruction also states the available teach modes (on page 3) and the sensor type (on page 2):

- Sensors with linear characteristic, teach input and digital output (IRxx.DxxL-xxx.xxME)

General procedure:

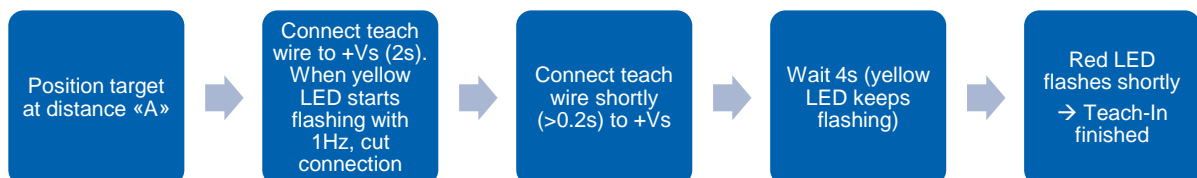
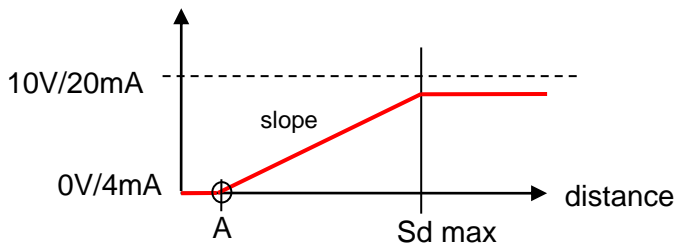
To teach the sensor, the teach wire must be connected to the positive supply voltage of the sensor (+Vs).

Depending on the duration of the contact, different teach levels can be selected. A flashing LED indicates that the teach procedure has started.

## Teach Level 1 (1-Point Teach Analog)

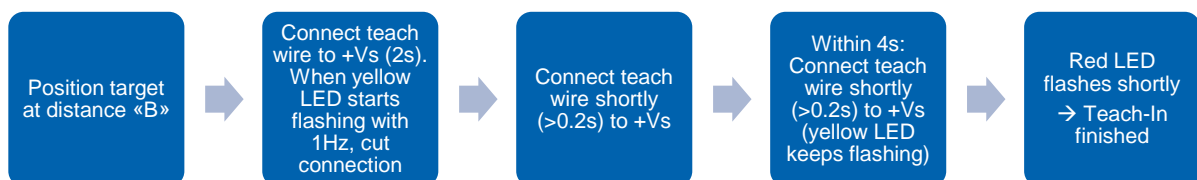
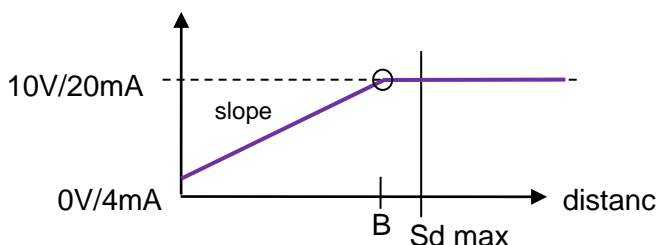
The *1-point teach analog* is typically used in applications where a short setup time are desired and the installation tolerances shall be compensated. Two situations can be distinguished:

- 1) Minimum distance: During the teach procedure the target is positioned at the minimum distance relative to the sensor (position "A" in the lower graph). In the application the target moves away from the sensor. In this situation the sensor will be taught to provide an output signal of 0V (or 4mA) at position "A".



*Teach procedure: 1-point teach analog (the target is close and moves away from sensor)*

- 2) Maximum distance: During the teach procedure the target is positioned at the maximum distance relative to the sensor (position "B" in the lower graph). In the application the target moves towards the sensor. In this situation the sensor will be taught to provide an output signal of 10V (or 20mA) at position "B".

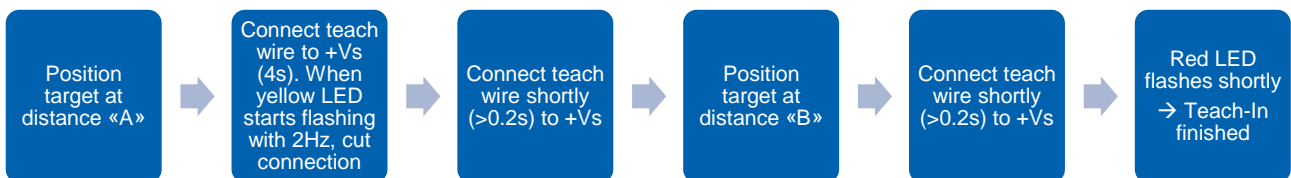
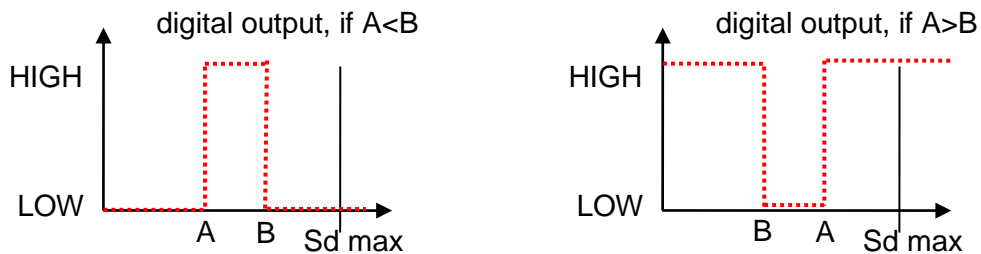


*Teach procedure: 1-point teach analog (the target is far away and moves towards the sensor)*

When using the *1-point teach analog* the sensor will either never reach the maximum output value (case 1) or the minimum output value (case 2).

## Teach Level 2 (Window Teach Digital)

The *window teach* of the digital output is used to define a valid or invalid range within the measuring distance. Therefor the target has to be placed at position A and B successively. Depending on whether position A or B is closer to sensor the output signal behaves as follows:

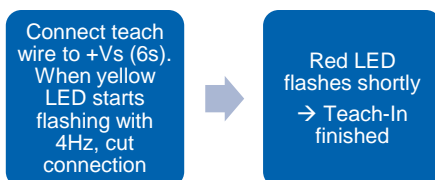


*Teach procedure: Window teach digital*

Teach level 1 (for the analog output) and teach level 2 (for the digital output) don't interfere with each other. Both teach levels can be executed one after the other in order to teach both outputs independently.

## Teach Level 3 (Factory Reset)

This will restore the default settings the sensor had when leaving the factory. The default settings are stated in the mounting instructions which are delivered with the sensor.



*Teach procedure: Factory reset*

If the teach wire is connected to +Vs for more than 10s, the teach procedure is aborted and the sensor keeps its previous settings. This is indicated by an LED flashing frequency of 8Hz.