Baumer

Passion for Sensors

Teach Manual

AlphaProx

Inductive distance measuring sensors with high sensitivity

Version: 1.0

General Information

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

- 1-point analog
- Factory reset

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

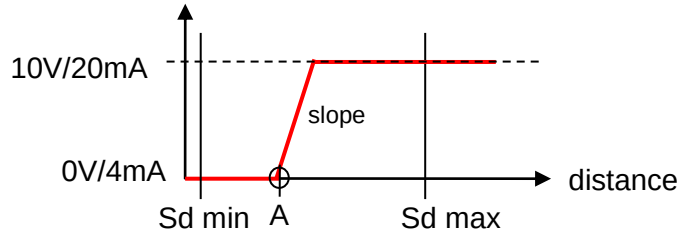
- Linear sensors with high sensitivity and teach input (IRxx.DxxK)

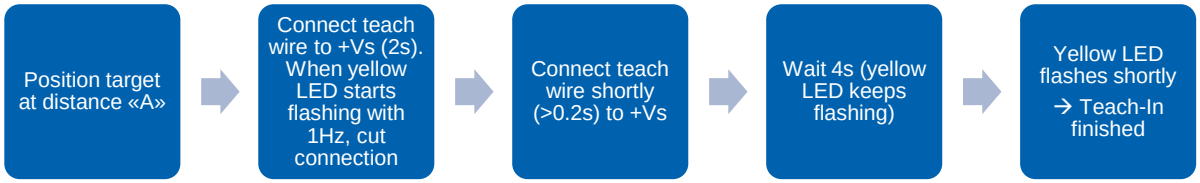
General procedure:
To teach the sensor, the teach wire must be connected to the positive supply voltage of the sensor (+Vs). Depending on the duration of the contact, different teach levels can be selected. A flashing LED indicates that the teach procedure has started.

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:

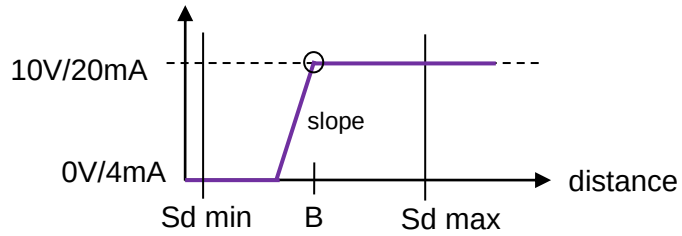
1) Minimum distance: During the teach procedure the target is positioned at the minimum distance relative to the sensor (position “A” in the lower graph). In the application the target moves away from the sensor. In this situation the sensor will be taught to provide an output signal of 0V (or 4mA) at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

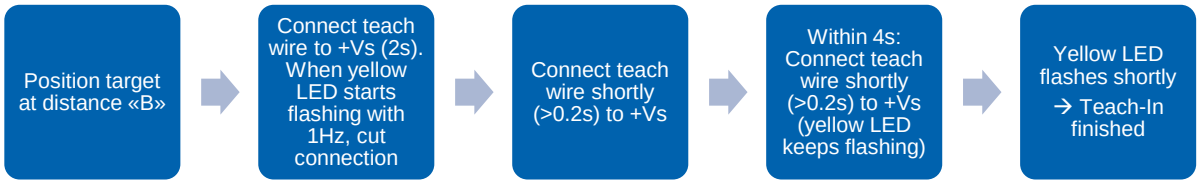




Teach procedure: 1-point teach analog (the target is close and moves away from sensor)

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”.





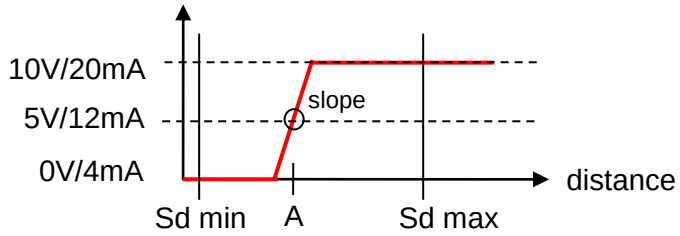
Teach procedure: 1-point teach analog (the target is far away and moves towards the sensor)

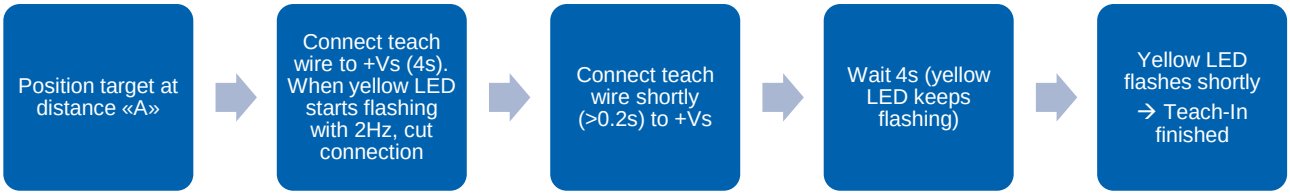
If position “A” is too close to Sd_max (case 1) or position “B” is too close to Sd_min (case 2), so that part of the curve exceeds the measuring range, the teach-in is invalid and the sensor keeps its previous settings. This is indicated by a fast flashing LED (8Hz) at the end of the teach procedure.

Teach Level 2 (1-Point Teach Analog “centered”)

This *1-point teach analog* is used in applications where symmetrical displacements around a centered rest position shall be measured (e.g. vibrations). By teaching the rest position, installation tolerances can be compensated.

During the teach procedure the target is positioned at the centered rest position (position “A” in the lower graph). In this situation the sensor will be taught to provide an output signal of 5V or 12mA (depending on the sensor type) at position “A”.



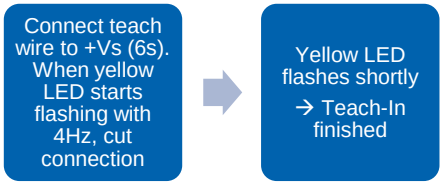


Teach procedure: 1-point teach analog (the target is centered and moves in both directions)

If position “A” is too close to the measurement range’s boundaries (Sd_min, Sd_max), so that part of the curve exceeds the measuring range, the teach-in is invalid and the sensor keeps its previous settings. This is indicated by a fast flashing LED (8Hz) at the end of the teach procedure.

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.