

Properties

The optical proximity switch for glass fiber wave guides type OPD is the basic electronics for all fiber-optic cables of the types FOY (scanner) and FOI (barriers) of SNT Sensortechnik AG. It can also be operated stand alone as an optical proximity switch. It reaches very high detection distances and is suited therefore also for long and thin wave guides. Thanks to clocked infrared light, it is non sensitive to ambient light.

The electronics is built in a very robust metal housing. The OPD together with the SNT glass fiber wave guides is a very robust detection device for smallest parts under difficult conditions. The switching distance can be taught by teach-in keys or by an external signal. Moreover it can be readjusted manually by the same keys if necessary. The setting as NO or NC is done by keys as well.

Function

Optical wave guide sensors are ideally suited when objects have to be detected in confine conditions. The (bigger) sensor is separated from the small scanner head. Glass-fiber wave guides are more robust and have longer service life compared to plastic guides. The proximity switch OPD is a sensor which fits to the glass fiber wave guides of SNT Sensortechnik AG. The guide is mounted with an appropriate nut on the thread of the sensor. The O-ring seal makes it a fully tight connection.

Scanner:

Together with an FOY glass fiber wave guide a reflection scanner can be realized. When an object enters the invisible light beam within the preselected distance, the sensor switches.

Barrier:

The sensor works as light barrier together with an FOI glass fiber wave guide. When the invisible light beam is interrupted by an object, the sensor switches.

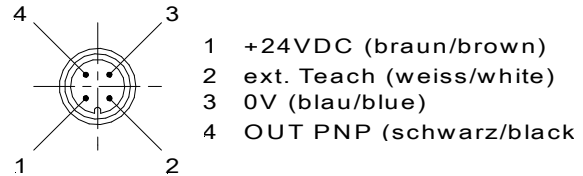
The output function can be selected between NO or NC. The output status is indicated by the yellow LED in the front panel of the sensor. The LED is on when the output is active.

Mounting

The sensor can be mounted with 2 M4 screws through 2 long holes in the metal housing.

Electrical connection

The electrical connection is done with a 3-wire cable (without external teach-in function) or with a 4-wire cable (with external teach-in function). The connector is an M12 sensor type connector.



View to the connector on the sensor

When a 4-wire cable is used, the teach-in wire has always to be connected to ground. An open wire can cause interference.

Teach-In

External teach input

The teaching can be controlled e.g. by a PLC with the external teach input .

Teach input	Teach mode
>2s → U _B (+24VDC)	Active
GND	Inactive

The procedure is the same as with manual teach-in with the **Teach** key.

Teaching of operating distance:

Teaching has to be done under original application conditions in the following sequence:

- | | |
|---------------------------|-------------------------|
| Scanner: | Barrier: |
| 1. Background (no object) | 1. interrupted (object) |
| 2. Teach the object | 2. open (no object) |

After switching the power on, the sensor works in normal mode (detection mode). The green LED **Run** is on.

- Teach the background or the closed barrier
- Remove the object from the detection zone (scanner) or place object in the barrier
- Press the **Teach** key for min. 2s

After pressing the **Teach** key, the green LED switches off and the sensor goes after 2s into the teach mode. The red LED **Teach/Error** lights on. The background value has been stored.

- Teach the object (scanner) or the open barrier
- Place the object in the detection zone (scanner) or remove it from the barrier
- Press again the **Teach** key for a short moment

