

STM

8020021

V8AP/V8BP/V8FP
V8AN/V8BN/V8FN
(-01/-02/-03/-10/-11)

max. frequency response **V8A:** 5kHz
V8B: 500Hz
V8F: 3kHz

functional principle **V8A:** non-pulsed light,
V8B/V8F: pulsed light
LED green (PWR)

power supply indicator
function indicator/
adjustment aid
alarm indicator
alarm output
operating voltage
output current
current consumption
(Ø / peak)

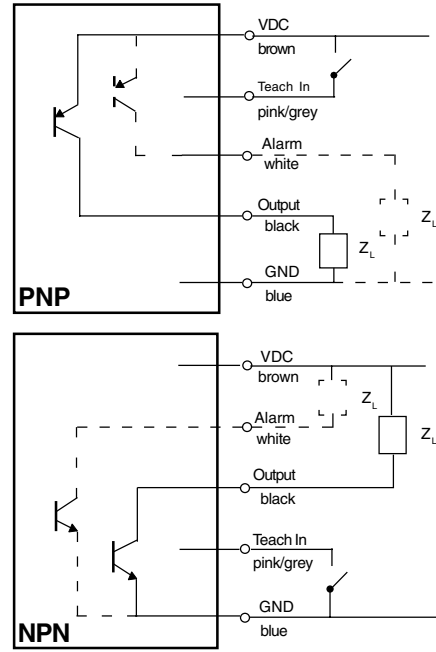
weight
casing material
operating temperature
protection class

LED yellow (3x)
LED red (AL)
50mA, 50ms pulse length
10 ... 30VDC (max.)
100mA
V8A: 50mA / 50mA
V8B: 45mA / 180mA
V8F: 45mA / 90mA

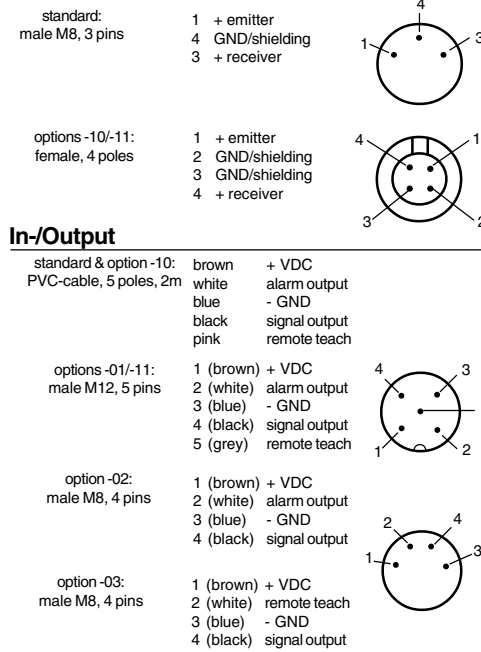
55g
ABS
-10°C to +55°C
IP65

info@stmsensors.de www.stmsensors.de

Wiring and Connection



Sensor



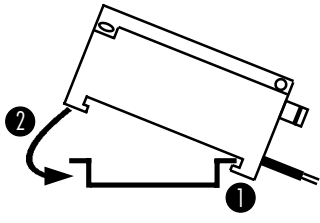
Attention!

Connect amplifier to 10-30 VDC only!
Do not lay amplifier cable parallel to a power line!
If the red LED (alarm indicator) lights up when the amplifier is in operation (RUN), it indicates an unstable signal. In this case, check whether the sensor is dirty or out of alignment.

Caution!

Sensor and amplifier are only authorized to detect objects. Do not use amplifier and sensor for personnel safety applications!

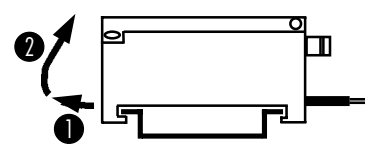
Assembly



Put device onto DIN rail clip as shown. Then, connect sensor cable.

Disassembly

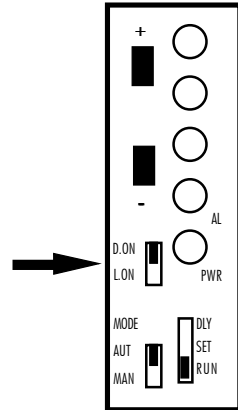
First unplug sensor cable connector. Then take amplifier off the DIN rail clip as shown.



Light-On/Dark-On Switching

Choose on the amplifier whether output should occur when

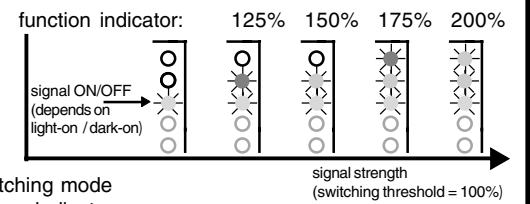
- light reaches the receiver (light-on): L.ON
- light does not reach the receiver (dark-on): D.ON



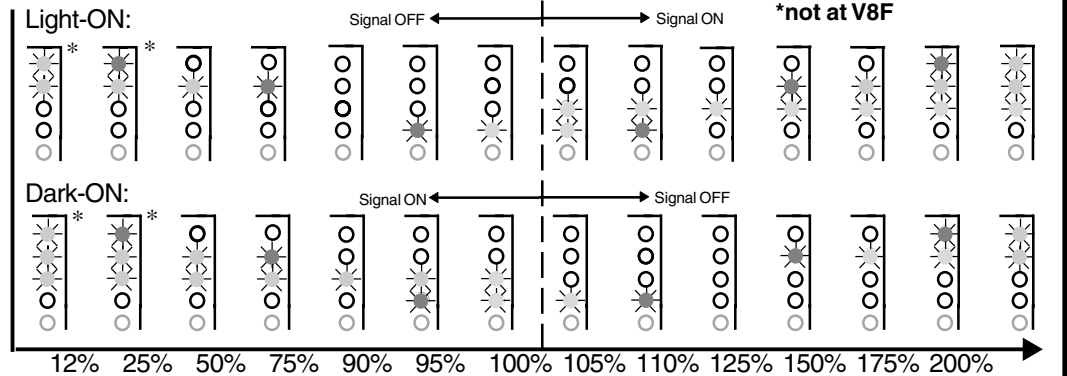
Function Indicator / Adjustment Aid

The three-step mode switch (DLY-SET-RUN) determines, whether the five LEDs function as function indicator (RUN) or as Adjustment Aid (SET).

* = bright
* = dim

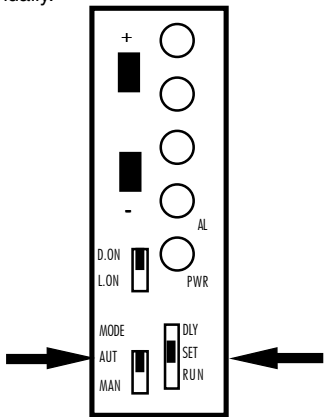


In the RUN mode the top two yellow LED show the signal strength. The third yellow LED works as a switching mode indicator (signal ON/OFF). The red LED works as an alarm indicator.
In the SET mode the red as well as the three yellow LEDs work as an adjustment aid and show the respective signal strength. If the red LED lights up at this point, there is no safety reserve.



Sensitivity Setting

You can set the sensitivity (switching threshold) manually (MAN) like a potentiometer or with the aid of the amplifier in Automatic (AUT). It is recommended to use the amplifier in Automatic for setting the switching threshold and, if needed, to carry out a fine setting manually.



I.) Use of the Amplifier in Automatic

To set the switching threshold with the amplifier in Automatic, set the MODE switch to AUT and the Function switch to SET.

- One touch „on the fly“ dynamic teach,
- Two-Set-Point method or
- Setting the switching threshold to a certain value

a.) One touch „on the fly dynamic teach“

Press either the „+“ or „-“ button for 3 to 60 seconds and hold. During this time the amplifier sets itself and generates the optimal switching threshold. When you press the „+“ or „-“ button, the green LED flashes quickly for about 3 seconds and then goes out. After letting the button go, the green LED flashes slowly for 2 seconds signaling a successful teach process. The setting process will be finished and the actual result saved as soon as you move the function switch from SET to RUN.

b.) Setting of switching threshold with the Two-Set-Point method

Press the „+“ button, when the object is in the light beam and press the „-“ button, when no object is in the light beam. With this operation two measurements are generated. The amplifier puts the switching threshold at mid-point. During the setting process the green LED flashes quickly. If the setting process was successful, the LED flashes slowly for about two seconds. The setting process will be finished and the actual result saved as soon as you move the function switch from SET to RUN.

c.) Setting of the switching threshold to a certain value

Bring the object to the desired switching distance. Press the „+“ and the „-“ button one after the other. The amplifier puts the switching threshold exactly at this switching point. During this setting process the green LED flashes quickly. If the setting process was successful, the LED flashes slowly for about two seconds. The setting process will be finished and the result saved as soon as you move the function switch from SET to RUN.

II.) Manual Setting or Fine Tuning

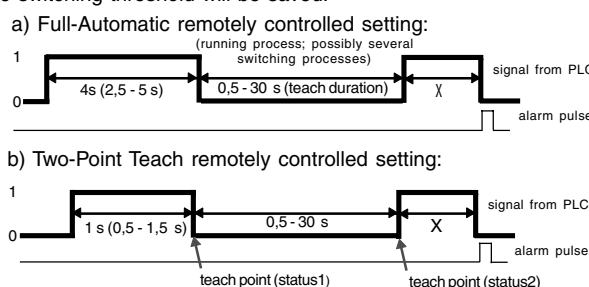
You can set the switching threshold manually or fine tune it. The starting point for the setting is the last saved setting (factory default: maximum gain). For manual setting, move the MODE switch to MAN and the function switch to SET. To increase the excess gain, press the „+“ button, if necessary several times, until the desired signal safety is reached. To decrease the excess gain, press the „-“ button, if necessary several times. The manual setting will be finished and the result saved as soon as you move the function switch from SET to RUN.

Setting Switching Threshold Remotely

The switching threshold of the amplifier can be remotely set from machine control (PLC) via the teach wire (pink/grey). To do so, the function switch has to be moved to the RUN position and the MODE switch to AUT (see graphic).

Required Voltage/Current	PNP	NPN
input voltage signal „1“:	>9V	<3V
input voltage signal „0“:	<5V	>6V
input current:	<3mA	<3mA

The remotely controlled (external) teach process is controlled by two PLC impulses sent to the amplifier. The duration of the first pulse is determined by the teach variant (Full Automatic or Two-Point Teach). The duration of the second pulse determines how the value for the switching threshold will be saved.



- X = 4s (2,5 - 5s): Permanent storage (max. 100,000 times); the successful process will be confirmed at the alarm output with a signal of 200ms duration.
- X = 1s (0,5 - 1,5s): Non-permanent storage (until the next power off); the successful process will be confirmed at the alarm output with a signal of 100ms duration.

Setting of Pulse Stretching Function

If desired, you can stretch the switching pulses produced by the amplifier in five steps. The switching pulse is released by the switching event. To set the pulse stretching, move the function switch to DLY (see graphic).

To stretch the pulse by one step, press the „+“ button once.
To shorten the pulse by one step, press the „-“ button once.

The LEDs indicate the amount of pulse stretching.
The setting will be saved by moving the function switch to RUN.

