

STM

8020107

V9N-BP / V9N-BN (-20/-21)

amplifier for nanoSPOT - sensors

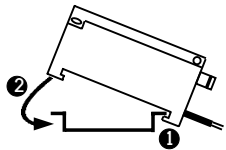
nano • SPOT®

max. frequency response:	500Hz
functional principle:	modulated light
power supply indicator:	LED green (STAB)
function indicator:	LED yellow
operating voltage:	10 ... 30 VDC (max.)
output current:	100mA
current consumption: (Ø / peak)	25mA / 70mA
weight:	55g
casing material:	ABS
operating temperature:	-10°C ... +55° C
protection class:	IP65

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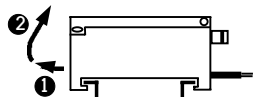
Assembly



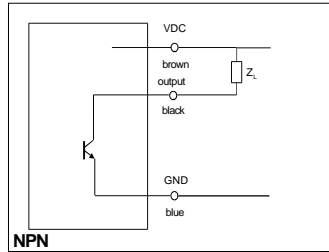
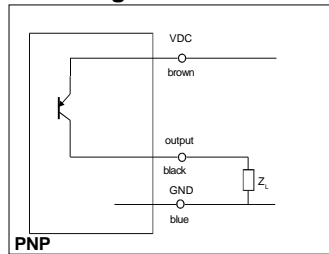
Put device onto DIN rail clip as shown. Then, connect sensor cable.

Disassembly

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



Wiring and Connection



Sensor

Option -20/-21: socket 719, 3pin

- 1 + emitter
- 2 GND/shielding
- 3 + receiver



In-/Output

Option -20: PVC-cable 3wires, 2m

- | | |
|-------|---------------|
| brown | +VDC |
| blue | -GND |
| black | signal output |

Option -21: connector M8, 4pin

- | | |
|-----------|---------------|
| 1 (brown) | + VDC |
| 2 (white) | not connected |
| 3 (blue) | - GND |
| 4 (black) | signal output |



Attention!

Connect amplifier to 10-30 VDC only!

Do not lay amplifier cable parallel to a power line!

If the green LED does not shine, then the signal is unstable.

Caution!

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

Light-On/Dark-On Switching and Setting of Pulse Stretching Function

To Choose whether output should occur when light reaches the receiver (LIGHT ON) or light does not reach the receiver (DARK ON). To activate the pulse stretching function, which stretches the output signal about 50ms.

- Set 3 position function switch to the top position, L/D. ON & DLY
- With (+) button activate Light-On (LED shines) or Dark-On (LED is out).
- With (+) button switch on the pulse stretching function (DLY)

Function indicator

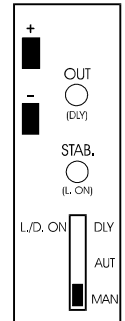
The amplifier can be run in the AUT or MAN mode.

The green LED indicates a stable signal.

The yellow LED indicates the state of the output (on/off).

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 initial setting of the switching threshold and, if needed, carry out a fine setting, manually, afterward.



Use of the Amplifier in Automatic Mode

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

Then decide which method you want to use to set the switching threshold:

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

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

With the target present 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 is now finished and the result saved.

b.) Setting of switching threshold with the TwoSet-Point method:

Press the (+) button, when the target 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 is now finished and the actual result saved.

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

Bring the object to the desired switching distance. Press the (+) and the (-) buttons 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 is now finished and the result saved.

Use of the Amplifier in Manual

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 Function switch to MAN.

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 result will be saved 2 seconds after the last touch of the button.

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