8020023

STM

V8C/V8D

(-01/-02)

max. frequency response	500Hz
power supply indicator	LED green
function indicator/ adjustment aid	LED yellow (3x)
alarm indicator	LED red (AL)
current consumption (Ø / peak)	**V8C:** 50mA / 200mA **V8D:** 50mA / 200mA
operating voltage	15 ... 30 VDC max.
output signal	**V8C:** 0 - 10V (Load min. 2k Ohm) **V8D:** 4 - 20mA short-circuit-proof (Load max. 300 Ohm) (Load max. 600 Ohm with VDC > 20V)
response time	≤ 1ms
weight	60 g
casing material	ABS/PC
operating temperature	-10°C to +50°C (**C**) / +45C° (**D**)
protection class	IP65

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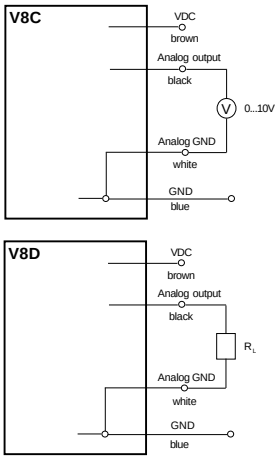
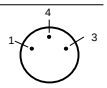
Wiring



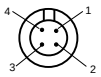
Connection

Sensor

standard: male M8, 3 pins
1 + emitter
4 GND/shielding
3 + receiver



options -10/-11: female, 4 poles
1 + emitter
2 GND/shielding
3 GND/shielding
4 + receiver



In-/Output

standard: 2m cable; PVC-coated 4 x 0,14mm²

brown	+ VDC
white	analog GND
blue	GND
black	analog output

option -01: M12 5-Pin-connector, male

1 (brown)	+ VDC
2 (white)	analog GND
3 (blue)	GND
4 (black)	analog out
5 --	not connected

option -02: M8 4-Pin-connector, male

1 (brown)	+ VDC
2 (white)	alarm output
3 (blue)	GND
4 (black)	signal output

Attention!

Connect amplifier to 10-30 VDC only!

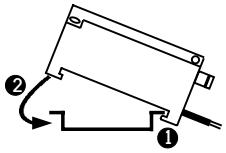
Do not lay amplifier cable parallel to a power line!

Analog output is not protected against reverse polarity!

Caution!

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

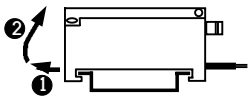
Assembly

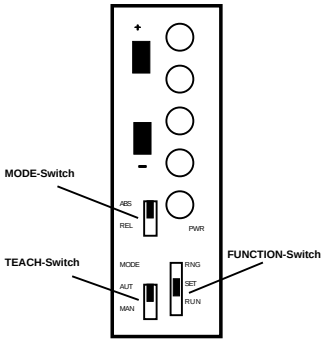


Put device onto DIN rail clip as shown.
Then, connect sensor cable.

Disassembly

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





Both amplifiers are designed to be operated only in combination with a Through Beam Sensor or a Diffuse Reflective Sensor positioned in parallel to the surface of the object to be detected.

The results being achievable with not accurately positioned Diffuse Reflective Sensors or V-Sensors are not suitable for accurate measuring.

Both amplifiers offer two different modes of operation, the

ABSOLUTE MODE (ABS)
and the
RELATIVE MODE (REL).

For operation on STM Web steering:

In ABS-Mode and in high resoltion single saturation may reduce the useable measuring range.

ABSOLUTE MODE (ABS):

Selection:

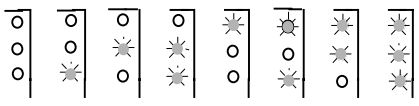
This mode is selected by switching the MODE-switch to „ABS“.

Working principle:

The pre-processed and digitalized analog sensor signal (10 Bit) is given directly to the analog-digital-converter of the output (10 Bit). Therefore this mode offers the maximum accuracy.

Adjustment:

Due to the variety of possible sensing distances the amplifier has to cover a large dynamic area of signal levels provided by the sensor. Therefore the amplifier offers 8 different ranges of amplification. These differ one to another by the factor 2.
The most suitable range with the specific application can be selected by pushing the „+“ or „-“ button while having selected RNG (Range) with the three position FUNCTION-switch. Please select the range so the maximum output signal lies between 4 and 8 V. This offers enough tolerance in both directions.
The ranges can only be selected infixed steps, there is no fine tune.
The selected range of amplification is indicated by the three yellow LEDs using the binary system.



„0“ = 0.8%	„1“ = 1.6%	„2“ = 3.1%	„3“ = 6.3%	„4“ = 12.5%	„5“ = 25%	„6“ = 50%	„7“ = 100%

☼ = LED illuminated ○ = LED is dark

The selected range of amplification is stored by switching the FUNCTION switch to **RUN**.

RELATIVE MODE (REL):

Selection:

This mode is selected by switching the MODE-switch to „REL“.

Working principle:

This mode offers an output signal relatively to a specific teached comparative value.
The comparative value is automatically set at 5V (V8C) respectively 12mA (V8D).
A sensor signal of „0“ equals 0V respectively 4mA.

Adjustment:

1. Setting the comparative output signal:

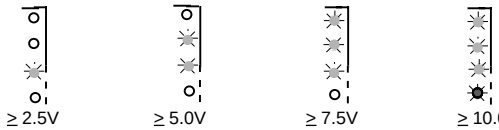
Put the FUNCTION-switch to „SET“ -and the TEACH-switch to „AUT“. Now the current value of the Sensor can be automatically teached to the amplifier by pushing the „+“ button and holding for approx. The amplifier adjusts itself so the sensor signal is set as 5V respectively 12mA on the output. The successful teach is confirmed by multiple blinking of the green LED. By switching the FUNCTION-switch to „RUN“ this set up is stored.

2. Fine Tune:

If necessary, the comparative output signal can be tuned by pushing the „+“ or „-“ button. To do so, the FUNCTION-switch has to be put on „SET“ -and the TEACH-switch on „MAN“. By switching the FUNCTION-switch to „RUN“ this set up is stored.

Indication of output level:

While the FUNCTION-switch is put to „SET“ or „RUN“ the output signal is indicated in steps of 2.5V (4mA) by the 3 yellow LEDs and the red LED.



≥ 2.5V or ≥ 8mA	≥ 5.0V or ≥ 12mA	≥ 7.5V or ≥ 16mA	≥ 10.0V or ≥ 20mA

overflow (saturation)