

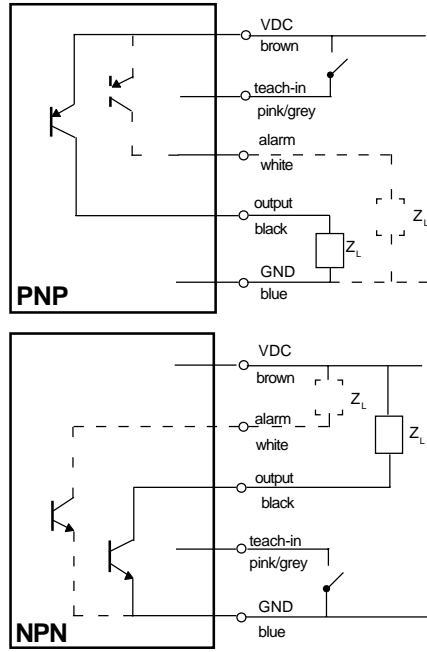
**V10-HP  
V10-HN**  
(-00 / -01 / -02 / -03)

Sampling rate	2000Hz
Functional principle	pulsed
Power supply indicator	LED green (PWR)
Function indicator	LED yellow (OUT)
Alarm indicator	LED green (PWR) blinking
Alarm output	200mA
Operating voltage	10 ... 30VDC (max.)
Output current	200mA
Current consumption (Ø / peak)	45mA / 180mA
Weight	55g
Casing material	ABS
Operating temperature	-10°C bis +55°C
Protection class	IP65

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**Wiring**

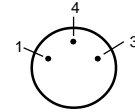


**Connection**

**Sensor**

Standard: -0  
M8, 3pole

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



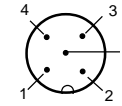
**In-/Output**

Standard -00:  
PVC-cable, 5pole, 2m

- brown + VDC
- white alarm output
- blue - GND
- black signal output
- pink remote teach

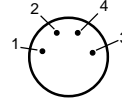
option-01:  
M12, 5pole

- 1 (brown) + VDC
- 2 (white) alarm output
- 3 (blue) - GND
- 4 (black) signal output
- 5 (grey) remote teach



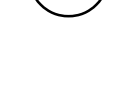
option-02:  
M8, 4pole

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



option-03:  
M8, 4pole

- 1 (brown) + VDC
- 2 (white) remote teach
- 3 (blue) - GND
- 4 (black) signal output



**Attention!**

Connect amplifier to 10-30 VDC only!

Do not mount amplifier cable parallel to a power line!

If the green LED is blinking (alarm indicator) 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.

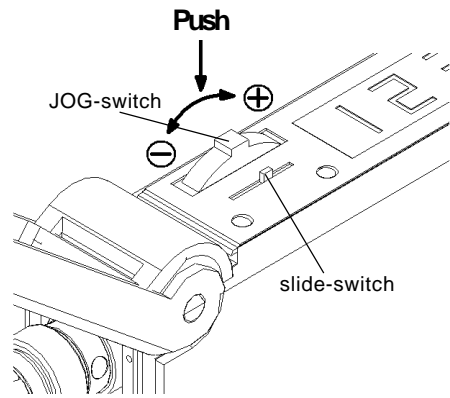
**Caution!**

Sensor and amplifier are only intended for object detection. Do not use amplifier and sensor for personnel safety applications!

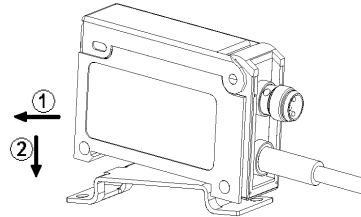
**Operation**

The different operation modes and parameters are set by a 4-position slide-switch and a JOG-switch with push-button functionality.

	inscription	function
JOG-switch	+	increment
	•	push-button (confirmation of selection)
	-	decrement
slide-switch	OUT	- light-on/dark-on select; - pulse stretching
	OPT	- operation modes
	TEA	- teach-modes
	RUN	- signal strength display; - selected parameters: (⊕ = tHi, ⊖ = tLo) - external TEACH

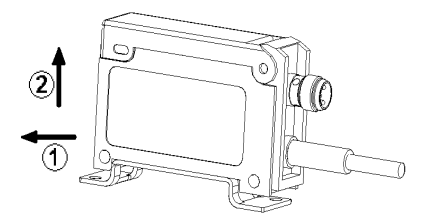


**Mount**



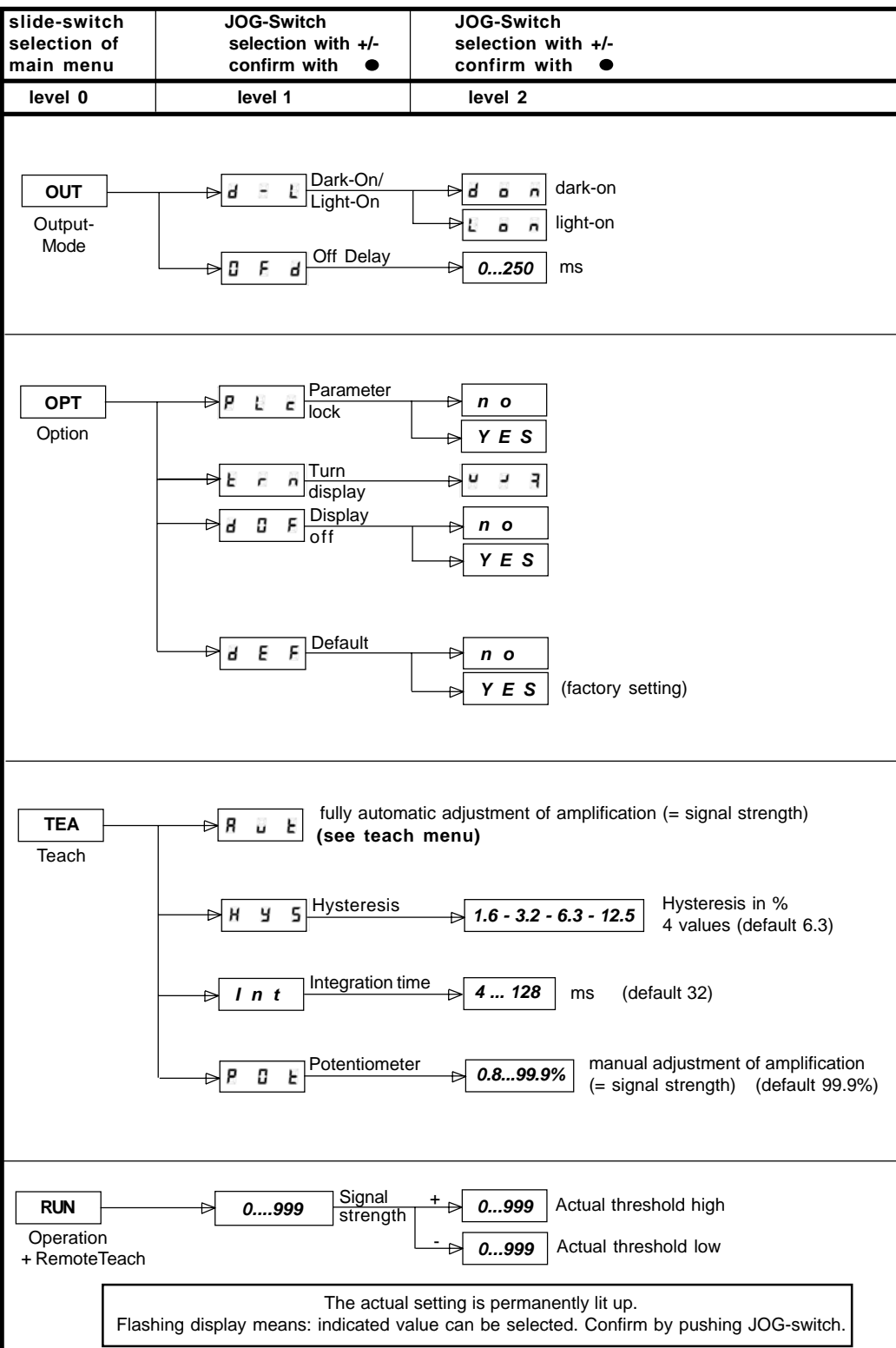
Put device onto DIN rail clip as shown. Then, connect sensor cable.

**Dismount**



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

**V10 menu navigation**



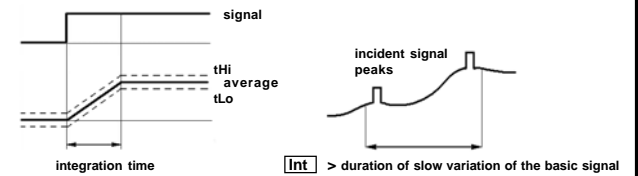
**teach menu and teach instruction**

The dynamic amplifier V10-H disposes of an automatic setpoint tracing for the switching thresholds (tHi, tLo). Thereby slow changes in the signal value e.g. from dust on the optics or changes of the object position are compensated. Otherwise fast incidents, superimposing the basic signal as e.g. defects or sharp changes can be detected reliably even if they just generate small signal variations.

The switching thresholds result as:

tHi = signal average + HYS  
tLo = signal average - HYS

The amplifier output switches upon the passing of these values.



An alarm function monitors the supply voltage (VDC > 10V) respectively indicates leaving of the safe range of operation (200 < signal < 800 display units) → alarm output.

	Manipulation	Action	Notice
<b>R u t</b>	The object is placed statically in the switching position. • Push the JOG-Switch to start the teach procedure. Display flashes during the process. <b>r d y</b> confirms the successful execution of teach. • Pushing of the JOG-Switch terminates the procedure.	The signal amplification is automatically adjusted to the middle of the usable range of values (app. 500...600). This allows a setpoint tracing of the switching thresholds in both directions during operation.	When the automatic setpoint tracing exceeds the limits of the safe operation range (200...800 display units), the alarm output switches to „ON“.
<b>H y s</b>	Choose submenu by • pushing the JOG-Switch. Select adjustment by shifting in ⊕ / ⊖ direction. • Pushing of the JOG-switch confirms selected value.	Defined in % of the actual signal value.  Determines the span between switching thresholds (tHi, tLo) and calculated signal average.	Guide value: The smaller respectively the faster an object, the lower the hysteresis should be chosen.
<b>I n t</b>	Choose submenu by • pushing the JOG-Switch. Select adjustment by shifting in ⊕ / ⊖ direction. • Pushing of the JOG-switch confirms selected value.	Defined in milliseconds.  Determines the time interval for the averaging procedure of the automatic setpoint tracing.	The chosen integration time should not be less than 3 times the signal duration of the incident itself (e.g. knot in a fast spooling thread).
<b>P o t</b>	Choose submenu by • pushing the JOG-Switch. Select adjustment by shifting in ⊕ / ⊖ direction. • Pushing of the JOG-switch confirms selected value.	Signal amplification is increased manually in steps.  The amplification factor corresponds to the percentage shown on the display.	Choose a signal level which allows sufficient gain for the automatic setpoint tracing of the switching thresholds.

**Remote teach procedure**

The switching threshold of the amplifier can be adjusted remotely through the PLC via the teach-input (pink/grey). (N.B.: only in RUN model!)

The remote teach procedure is actuated by a pulse from the PLC to the amplifier.

The determined value for the switching threshold is stored.

The successful teach procedure is confirmed by a signal of 50ms duration on the alarm output.

Required voltages	PNP	NPN
Input voltage Signal „1“:	>9V	<3V
Input voltage Signal „0“:	<5V	>6V
Input current:	<3mA	<3mA

Fully automatic remote teach:

