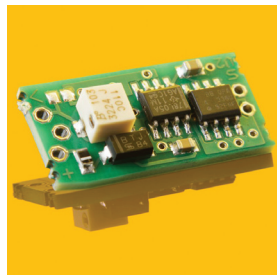


VOLTCON series

Transmitter of photocurrent to 0 - 5 V signal

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GENERAL FEATURES



Properties of the VOLTCON

The VOLTCON converts a photocurrent into an output voltage between 0 and 5 V and can be connected to any PLC system.

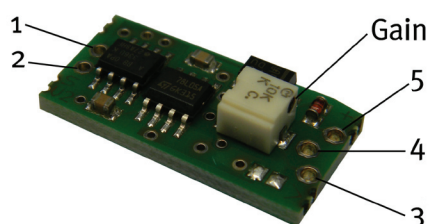
Three models with different measurement ranges are available. The amplification factor (gain) can be adjusted by a potentiometer. The measurement range can also be customized by replacing passive components (see description on page 2).

SPECIFICATIONS

Parameter	Value
Photocurrent measurement range	VOLTCON_low 500 μ A
	VOLTCON_med 5 μ A
	VOLTCON_high 50 nA
Supply voltage	7* ... 24 V (*usable down to 5V, but this is not recommended)
Gain adjustment range	\pm 35%
Dark output voltage	< 1 mV
Dimensions	13 x 26 x 8 mm (WxLxH)
Operating temperature	-20 ... +80 $^{\circ}$ C
Storage temperature	-40 ... +80 $^{\circ}$ C
Standards	RoHS 2 2011/65/EU, DIN IEC 60381-2

We strongly recommend to process this product on ESD protected workplaces.

CONNECTION



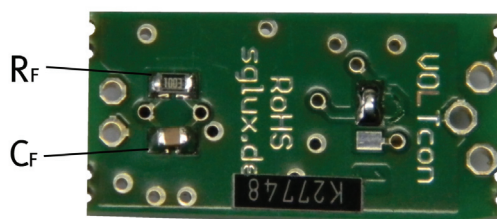
- 1 - Photodiode anode
- 2 - Photodiode cathode
- 3 - Signal output (connect to current input)
- 4 - GND power supply
- 5 - V+ power supply
- Gain - turn left to increase the gain

VOLTCON series

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CUSTOMIZATION OF MEASUREMENT RANGE

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To modify the measurement range beyond the available adjustment range the feedback resistor R_f must be replaced. The adjustment range remains unaffected by this change. I_{\max} is the designated maximum photocurrent to be measured.

$$R_{f,\text{new}} \text{ (in } \text{M}\Omega) = 5 / I_{\max} \text{ (in } \mu\text{A)}$$

The capacitor C_f defines the time constant τ of the measurement and may need modification too. By default τ is 10 ms for all models. The required value of C_f can be calculated from $R_{f,\text{new}}$ and the intended time constant:

$$C_f \text{ (in nF)} = \tau_{\text{new}} \text{ (in ms)} / R_{f,\text{new}} \text{ (in } \text{M}\Omega)$$

Recommended values:

$10 \text{ k}\Omega \leq R_{f,\text{new}} \leq 3 \text{ G}\Omega$ and $1 \text{ ms} \leq \tau \leq 200 \text{ ms}$, $C_{f,\text{new}} \geq 33 \text{ pF}$,
components package size 0805 (2.0 x 1.25 mm)

Default component values:

Model	R_f	C_f
VOLTCON_low	10 k Ω	1 μ F
VOLTCON_med	1 M Ω	10 nF
VOLTCON_high	100 M Ω	100 pF