

The AMPCON converts a photocurrent into an output current between 4 and 20mA. The module is designed for integration into 4-20mA databusses.

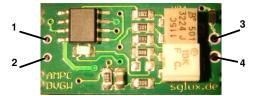
The present module works with a high gain factor and converts a photocurrent of 18nA (adjustable +/-35%) to an output of 20mA. This means, a current higher than 18nA will cause saturation.



Other modules with medium gain (AMPCON\_MED, up to 2,5 $\mu$ A) and low gain (AMPCON\_LO, up to 250 $\mu$ A) are available. Alternatively, please refer to the below instruction for changing the gain.

Input solder points	Photodiode Anode = positive terminal of the photodiode
	Photodiode Cathode = negative terminal of the photodiode
Power supply = output	A voltage of 24V is to be applied between V+ and GND. The resulting
terminal solder points	current between 4 and 20mA is the signal, which is proportional to the
	photocurrent.
Dimensions	W x L x H = 13 x 26 x 8mm
Operating temperature	-2080 ℃
Storage temperature	-4080 ℃
The signal offset and the amplification factor are adjustable with potentiometers. (see description)	
RoHS-compliant to 2002/95/EG.	

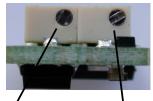
## **Connection:**



Input solder points 1 Photodiode anode 2 Photodiode cathode **Power supply solder points** 3 V+ power supply

4 GND power supply

## Offset and gain fine adjustment:



gain adjustment turn left to raise the gain turn right to lower the gain offset adjustment turn right to raise the offset turn left to lower the offset

## How to change the gain:



 $R_{\text{F}}$  and  $C_{\text{F}}$  might have another appearance than in the picture.

To change the gain (measurement range) in a larger scale, please change the feedback resistor  $R_{\rm F}$  (the present value is 120 M $\Omega$ ). To calculate  $R_{\rm Fnew}$  for the new resistor, please use this formula:

## R<sub>Fnew</sub>(in MΩ)=2160/I<sub>max</sub>(in nA)

I<sub>max</sub> is the max. measurable photocurrent. It is adjustable +/- 35% with the potentiometer. The capacitor C<sub>F</sub> (the default value is 820pF) is influencing the time constant *τ* of the measurement system. The present time constant is approx. 10ms. It is calculated with the formula:  $\tau$ (*in* ms)=C<sub>F</sub>(*in* nF)\* R<sub>F</sub> (*in* MΩ)

maximum ratings  $5k\Omega < R_{Fnew} < 3G\Omega$  and  $\tau > 1ms$ 

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