

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

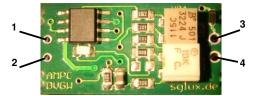
The present module works with a high gain factor and converts a photocurrent of 18nA (adjustable +/-35%) to an output of 20mA. This means, a current higher than 18nA will cause saturation.



Other modules with medium gain (AMPCON_MED, up to 2,5 μ A) and low gain (AMPCON_LO, up to 250 μ 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.	

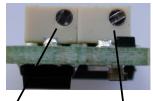
Connection:



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_{F} and C_{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 Ω). To calculate $R_{\rm Fnew}$ for the new resistor, please use this formula:

R_{Fnew}(in MΩ)=2160/I_{max}(in nA)

I_{max} is the max. measurable photocurrent. It is adjustable +/- 35% with the potentiometer. The capacitor C_F (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: τ (*in* ms)=C_F(*in* nF)* R_F (*in* MΩ)

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

Rev 1.1

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