



HD2021T... TRANSMITTERS FOR ILLUMINANCE AND IRRADIANCE MEASUREMENTS

The series of transmitters HD2021T... allow to convert photometric and radiometric quantities, such as illuminance (Lux) and irradiance (W/m²) in the UVA, UVB, UVC spectral regions and in the 400...1050 nm band, into a 0...10 Vdc voltage signal.

The 0...10 V output voltage (0...1 V, 0...5 V, 4...20 mA available upon request for orders of minimum 5 units) is factory calibrated according to the full scale range specified at the time of order.

The wide range of applications of the HD2012T... transmitters include:

- Control of illuminance (HD2021T) in offices, manufacturing, plants and production areas, commercial sites, theatres, museums, sports facilities, roadway lighting, tunnels and nursery-gardening systems
- Control of solar radiation in the 400 nm...1050 nm spectral band (HD2021T1).
- Control of the irradiance emitted by the tanning lamps in the UVA (HD2021T2) and UVB (HD2021T3) spectral regions, as well as control of the efficiency of filters in devices using high pressure lamps.
- Control of efficiency of the lamps used in sewage treatment plants, where UVC (HD2021T4) band irradiance has to be constantly monitored.

The series of transmitters HD2021T... is suitable to be installed either indoor and outdoor (Protection: IP66). In case of measurements of extremely intense light sources, the transmitter sensitivity can be reduced upon request. The HD2021T... series use filters and photodiodes especially studied to adjust spectral response to a specific region of interest.

INSTALLATION OF THE TRANSMITTERS

Once identified the installation location, provide the electric connections inside the transmitter. Unscrew the four screws on the transmitter cover, lift the cover, the inside of the transmitter will appear as in figure 1 or 2.

The models with voltage output (Fig. 1) are equipped with three terminals with the following letters:

GND > is the ground to which the power supply and the output signal are referred

+Vdc > is the terminal connected to the positive pole (if a DC power supply is used)

Vlux (output) > is the output of the system to be connected to the positive pole of a multimeter or to a data acquisition system.

The models with current output (Fig. 2) are equipped with two terminals with the following letters:

+Vcc > is the terminal connected to the positive pole

I_{out} > is the current output to be connected to a multimeter or to a data acquisition system.

Fig. 3 shows the installation of illuminance HD2021T transmitter for monitoring lamps intensity. For this kind of applications, the HD2021T transmitters are generally installed on ceilings, close to the area where illuminance needs to be monitored.

By means of a reference luxmeter (ex. HD2102.1 or HD2102.2 with the probe LP471PHOT) previously placed in the operating area, act on the HD2021T potentiometer up to obtain the reference value desired. The output of the HD2021T is suitable to control several adjustable power supply units at the same time.

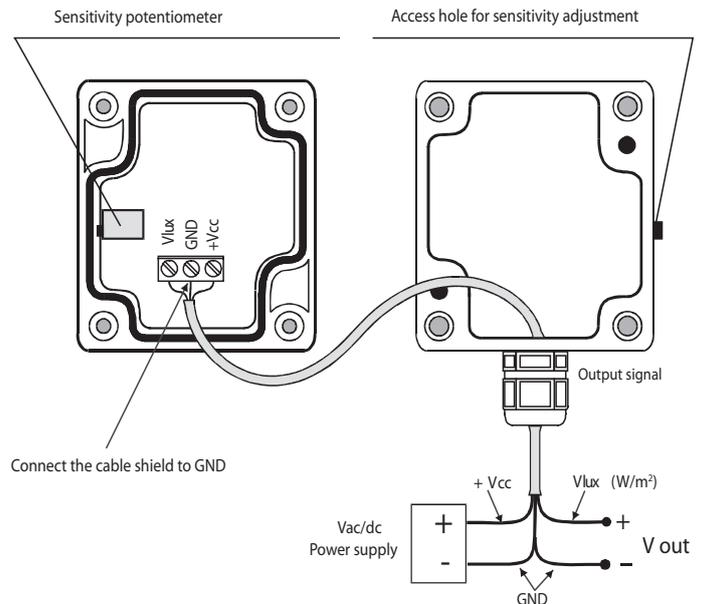


Fig. 1 - Connecting diagram with voltage output

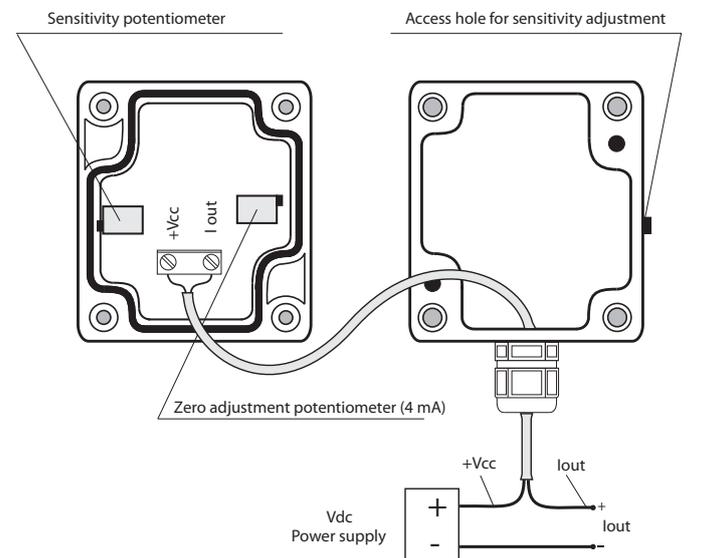
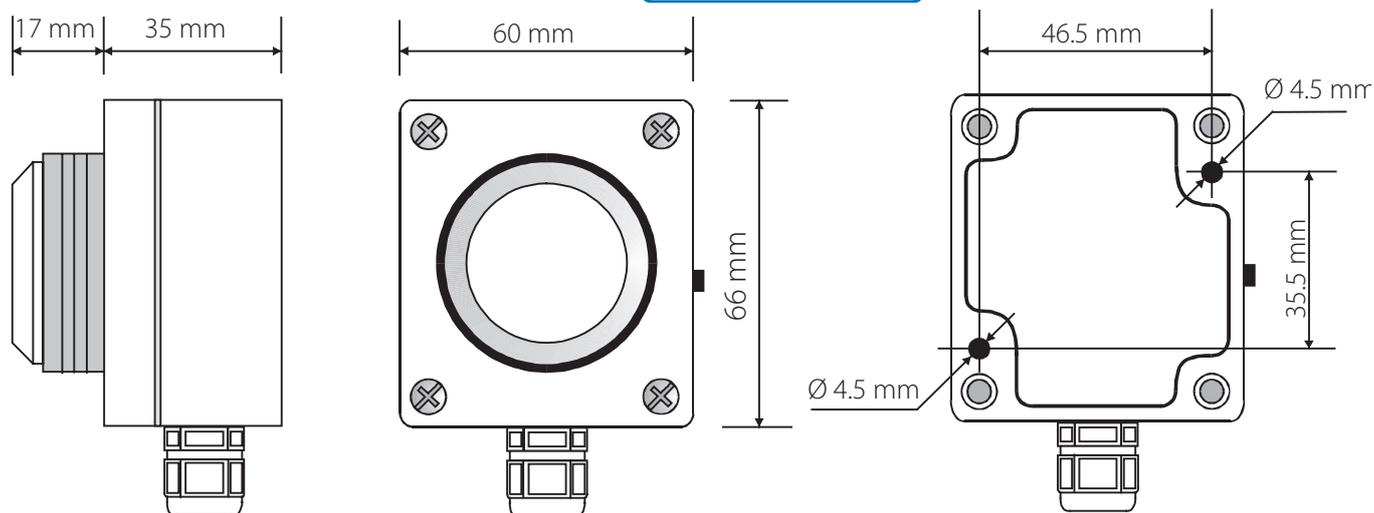


Fig. 2 - Connecting diagram with current output

DIMENSIONS:
HD2021T, HD2021T1, HD2021T2, HD2021T3, HD2021T4

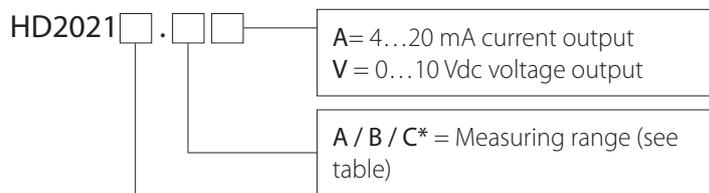
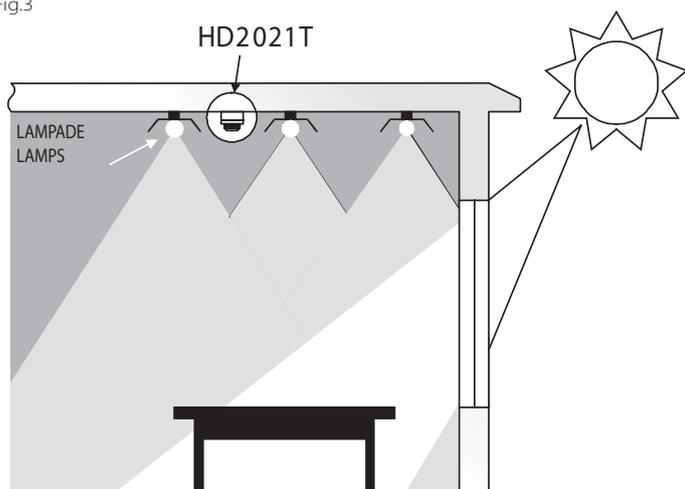


TECHNICAL SPECIFICATIONS

| | HD2021T | HD2021T1 | HD2021T2 | HD2021T3 | HD2021T4 |
|-----------------------|--|-------------------------|-------------------------------------|-------------------------------------|-------------------------------------|
| Sensor | Photodiode Si | Photodiode Si | Photodiode GaP | Photodiode SiC | Photodiode SiC |
| Spectral range | Curve V(λ) | 400...1050 nm | UVA | UVB | UVC |
| Measure | Photometric | Radiometric | | | |
| Viewing angle | Corrected in accordance with the cosine law | | | | |
| Measurement range | see table A - B - C | | | | |
| | mV/lux | mV/(mW/m ²) | mV/(mW/m ²) peak 360 nm | mV/(mW/m ²) peak 305 nm | mV/(mW/m ²) peak 260 nm |
| Output signal | 0...10 V (0...1 V, 0...5 V minimum order 5 pcs) 4...20 mA | | | | |
| Power supply | 16...40 Vdc or 24 Vac for 0...10 V output; 10...40 Vdc or 24 Vac for 0...1 V or 0...5 V output 10...40 Vdc for 4...20 mA output | | | | |
| Power consumption | 10 mA | | | | |
| Working Temperature | -20...+60 °C | | | | |
| Electrical protection | Protected against polarity inversions | | | | |
| Protection degree | IP 66 | | | | |
| Maximum cable length | 150 m with output 4...20 mA - 10 m with voltage outputs | | | | |



Fig.3



- T = for measuring illuminance (lux)
- T1 = for measuring VIS-NIR irradiance
- T2 = for measuring UVA irradiance
- T3 = for measuring UVB irradiance
- T4 = for measuring UVC irradiance

| * Measuring range | | | |
|---|---------------------------|----------------------------|----------------------------|
| MODEL | A | B | C |
| HD2021T | 0.02...2 klux | 0.2...20 klux | 2...200 klux |
| HD2021T1 | 0.2...20 W/m ² | 2...200 W/m ² | 20...2000 W/m ² |
| HD2021T2 | 0.2...20 W/m ² | 2...200 W/m ² | 20...2000 W/m ² |
| HD2021T3 | 2...200 W/m ² | 20...2000 W/m ² | |
| HD2021T4 | 2...200 W/m ² | 20...2000 W/m ² | |
| Other ranges on request for at least 5 pcs per order. | | | |