

## Manual & Data sheet

### Light evaluation + control instrument AD-1 with light / dim light / twilight sensor FD-1

The light evaluation+control instrument AD-1 with light / dim light / twilight sensor FD-1 is a universal light measuring system to gather and evaluate ambient, indoor, outdoor, diffuse light, dusk, twilight, dim light.

Individual and convenient adjustable switching thresholds and delay times are set to control illumination, light, жалюзи, marquees, blinds, shutters, air conditioning, heaters, ventilation, flaps, roof hatches and build-ups.

The display at the control instrument shows the individual switching on/off thresholds and corresponding delay times. The actual light intensity is also displayed.

The output relay, with potential-free changeover contact (no/nc), is operated, if adjusted threshold values are reached.

The maintenance-free and weather-proofed (IP67) light sensor FD-1 detects ambient and diffuse light intensity. It emits a frequency signal, proportional to the measured value, to the control instrument AD-1.



#### reference values / Referenzwerte:

sunlight / Sonnenlicht	ca. 40.000 lx (= lm/m <sup>2</sup> )
office / Büro	ca. 300...500 lx
living room / Wohnraum	ca. 50...200 lx

#### Connection – Installation – Commissioning:

! Connection, installation and commissioning only by qualified and skilled person with electrical education !

! Mount devices at the provided positions and wire according to the schematics !

**Caution: Wrong connecting may cause damage of the instrument and sensor !**

**Check for correct wiring before switching on the power supply !**

The light evaluation + control instrument AD-1 enclosure can be fixed on a standard DIN-rail as well as on a mounting plate in a switch cabinet. The screw-terminal strip is pluggable.

After switching on the power supply, the display will show the device name for 2 seconds. Hereafter the instrument is ready for operation.

The maintenance free and weather-proofed (IP67) light / dim light / twilight sensor FD-1 is boxed in a weather-resistant plastic enclosure (IP67). It is powered by the control instrument AD-1.

The cable connection (recommended: LiY(ST)Y 4x 0.8Lg) between sensor ↔ control instrument should not be longer than 250 m. In case of high disturbing environment, the cable shield is recommended to connect one-sided to Ground (0 V) at the control instrument.

#### Adjustments and readouts:

##### Push-button 'S/t' not pressed

Display	Description / Readout		Adjustments	
line 1	current light intensity	Dämmer XX lx	none	
line 2	turn-on threshold	S <sub>ein</sub> XX lx	Potentiometer S <sub>ein</sub>	260...890 lx (= lm/m <sup>2</sup> )
line 3	turn-off threshold	S <sub>aus</sub> XX lx	Potentiometer S <sub>aus</sub>	50...260 lx (= lm/m <sup>2</sup> )

##### Push-button 'S/t' pressed

Display	Description / Readout		Adjustments	
line 1	current light intensity	Dämmer XX lx	none	
line 2	turn-on delay time	t <sub>ein</sub> XX min.	Potentiometer t <sub>ein</sub>	0...25 minutes
line 3	turn-off delay time	t <sub>aus</sub> XX min.	Potentiometer t <sub>aus</sub>	0...25 minutes

##### Readout for special cases

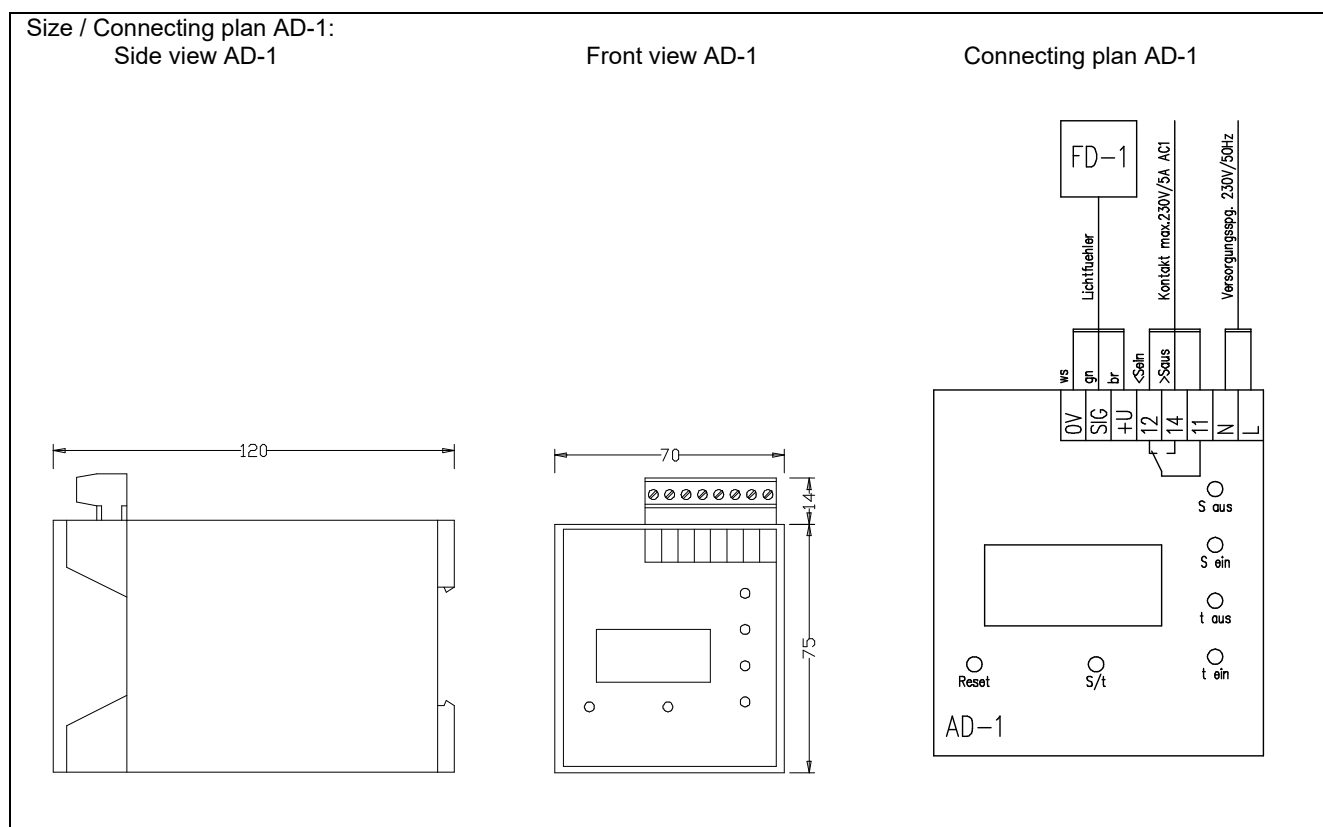
Display	Description / Readout		Comments
line 1	sensor error	Dämmer ? 0 lx	check connection of sensor
line 1	light intensity less than 50 lx	Dämmer < 50 lx	value out of range
line 1	light intensity more than 890 lx	Dämmer >890 lx	value out of range
line 2	after power-on for 2 sec.	device name	none
line 3	relay activated / turned on	AKTIV	

### Technical data light evaluation + control instrument AD-1:

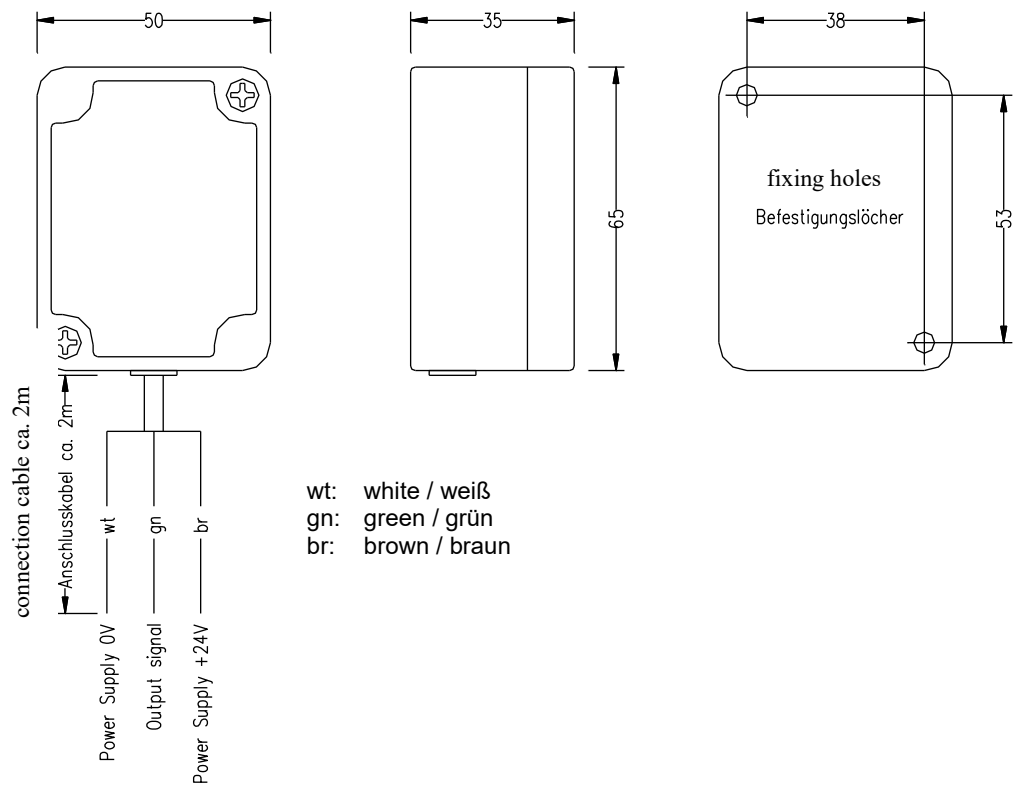
Operating voltage typ.: 230 V AC / 50 Hz  $\pm 5$  %  
 Input signal: 24V square-wave signal, 70...2000 Hz  
 Output: change-over contact (no/nc), potential-free, 230 V / 5 A (AC1)  
 Display: LC-Display, 3x 12 characters, character height 5 mm  
 Size housing: 70 x 75 x 120 mm (WxHxD)  
 Ambient temperature: 0...+70 °C

### Technical data sunlight sensor FD-1:

Operating voltage typ.: 24 V DC  $\pm 10$  % (powered by control instrument AD-1)  
 Measurement range: 50...1000 lx (= lm/m<sup>2</sup>)  
 Ambient temperature: -30...+80 °C  
 Protection degree: IP 67  
 Output signal: 24V square-wave signal: 70...2000 Hz, (open-collector, with protecting resistor)  
 Connection: ca. 2 m wired-ready cable, 3-wire, 3x 0.25 mm<sup>2</sup>  
 Size housing: 50 x 65 x 35 mm (WxHxD)



Size / Connecting plan FD-1:



**Installation and mounting:**

Mounting of FD-1 in upright / vertical direction with max. grade / inclination of 30° (see picture above) and cable connection from bottom side.

Select mounting place northwards (in northern direction). Diffused light, extraneous light, scattered or stray light falsify the measured values and have to be avoided.