

## Manual & Data sheet

### Rain / moisture evaluation instrument AR-1 with Rain / condensation sensor FR-1

The rain and moisture evaluation instrument AR-1 with rain and condensation sensor FR-1 is a universal measuring system to detect rain, snow, condensation, moisture, strong dew to control illumination, light, jalousies, marquees, blinds, shutters, air conditioning, heaters, ventilation, flaps, roof hatches and build-ups.

Rain / moisture etc. (yes/no) is indicated by LED (no value over time).

As output is a relay, with potential-free changeover contact (no/nc).

The maintenance-free and weather-proofed (IP67) rain sensor FR-1 has an integrated heating. It is powered by the rain evaluation instrument AR-1.

During no indication of rain / condensation, the sensor heating is in stand-by mode, to save energy and extend life time.



#### **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 rain evaluation instrument AR-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 green LED indicated that the instrument is ready for operation.

The maintenance free and weather-proofed (IP67) rain sensor FR-1 is boxed in a weather-resistant plastic enclosure (IP67). It is powered by the evaluation instrument AR-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.

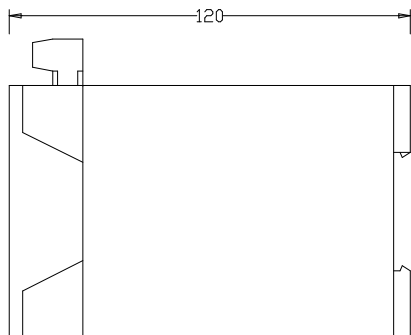
#### **Technical data AR-1:**

Operating voltage typ.:	230 V AC / 50 Hz ±5 %
Input signal:	24 V DC ±10 %
Output:	change-over contact, potential-free, 230 V / 5 A (AC1)
Display:	2x LED: for power supply and indication of rain, snow, condensation, moisture, strong dew
Size housing:	55 x 75 x 120 mm (WxHxD)
Ambient temperature:	0...+70 °C

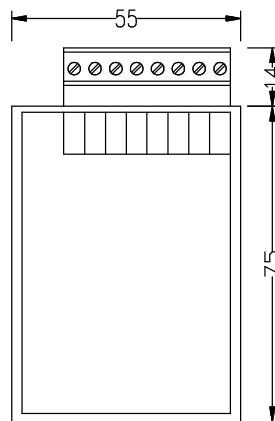
#### **Technical data FR-1:**

Operating voltage typ.:	24 VDC ±10 %, 0.4 A (incl. heating), (power supply via control instrument AR-1)
Measuring range:	rain / snow / condensation / moisture / dew: yes / no (no value over time)
Ambient temperature:	-30...+80 °C
Protection degree:	IP 67
Output signal:	max. 24 VDC, open-collector, short circuit protection
Connection:	3 screw clamps, max. 3x 2.5 mm <sup>2</sup>
Dimensions:	75 x 110 x 45 mm (WxHxD)

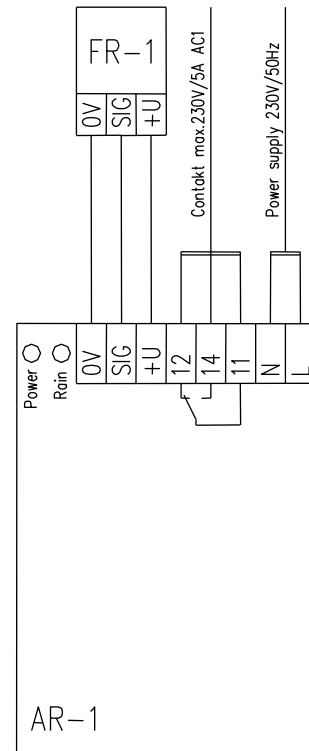
Size / Connecting plan AR-1:  
Side view AR-1



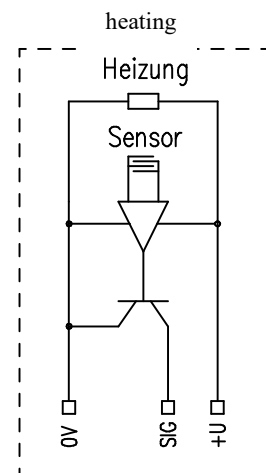
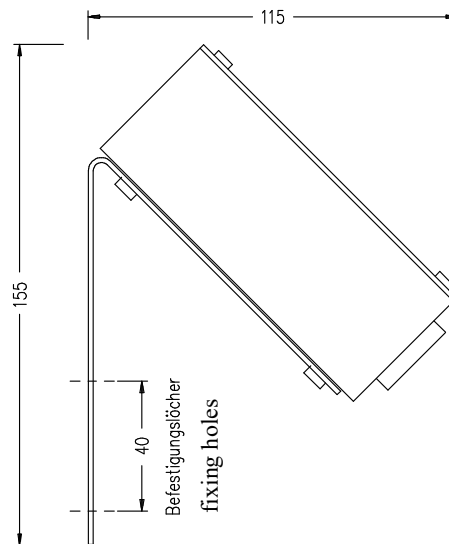
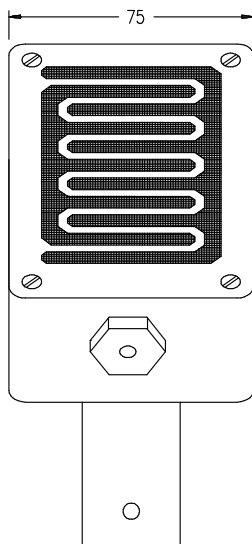
Front view AR-1



Connecting plan AR-1



Size / Connecting plan FR-1:



**Installation and mounting:**

Mounting in upright / vertical direction at ca. 45° grade / inclination (see picture above,) and cable connection from bottom side.

Select mounting place for rain / snow / condensation / moisture without surrounding obstacles (e.g. trees, buildings...) on a rod or wall or roof top, and that water can easily flow off.