

TR 102 S/R

Two wire humidity measurement transmitter

General :

TR 102 transmitters are accurate, easy-to-install instruments which measure relative humidity over a wide range. The measuring method is based on a principle of impedance measurement of an electrolyte liquid substance in a high accurate cell. The cell CK-4 has a range from 6...95% r.H. and is protected via an electronic circuit against saturation by an integrated resistance heating. Therefore the output signal is linear up to 96% r.H. If the moisture exceeds 96% r.H., the current instantaneously increases to about 40 mA.

All transmitters are factory-calibrated at 75% r.H.. With a humidity standard, the NOVASINA SENSOR-CHECK, the user can easily check and recalibrate the transmitter at any time.

The transmitters are available in two versions :

TR 102 S : for wall mounting application

TR 102 R : for duct mounting application.

Aggressive media such as ammonia, alcohol, or nitrogen oxides can falsify the measurement. If the concentration of such substance exceeds MAC thresholds (maximum allowable concentration) for extended periods of time, this will reduce the life time of a cell. Two filters are available for such applications. All sensors are equipped with a coarse dust filter as standard.

TR 102 S :



TR 102 R :

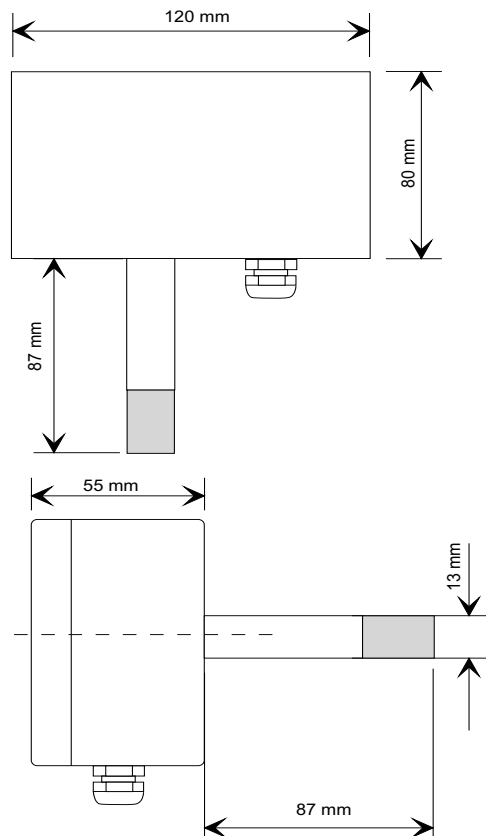


Applications :

- ☑ Monitoring local humidity in production areas
- ☑ Control the humidity in an air inlet duct HVAC
- ☑ Control and monitor room humidity in storage areas
- ☑ Measure humidity in museums or office to control the air handling units.

Main Features :

- ☞ Easy to install
- ☞ Two wire 4...20 mA system
- ☞ Cell protected against saturation
- ☞ Life time observation over the two wire
- ☞ Industrial device with small size
- ☞ Checking the output via Salt standards
- ☞ Factory calibrated at 75% r.H.
- ☞ Recalibration at any time by the user.



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Technical data :

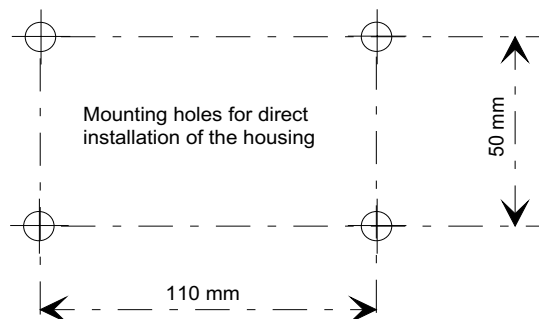
Measurement principle	electrolytic impedance
Humidity cell type	CK - 4
Measuring range	6....95%
Accuracy of transmitter	+/- 2 % r.h. from 10...80%r.H.
Hysteresis	not measurable
Calibration	1 point calibration at 53%, 75% or 90% r.H.

Additional specifications :

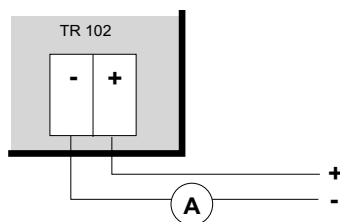
Power supply Vcc	15.....30 V DC
External wiring	two wires
Load	RL= 50x(Vcc-14) Ohms
Output signal (0...100%).....	4...20 mA
Ambient temp.	-10.....50°C
Long term stab.	depending on the quality of the air
Calibration interval	approx. once a year
Housing material	ABS and POM
Protection class	IP 65
Sensor protection	replace filter caps

Installation :

When installing a transmitter, please make sure that the measuring cell is protected against direct heat radiation or solar light. The result of measurement of the transmitter depends on the best placement for each application.



Electrical wiring :



Inspection :

It is not possible to provide any general rules with respect to the frequency of inspections or calibrations because this depends on several factors (frequency of operation, medium to be measured, etc.) However, experience with a particular application will quickly enable you to determine how often the instrument must be recalibrated. If you have calibration-related problems, please contact Novasina distributor in your country or call Novasina Switzerland (mail : novasina@axair.ch)

Accessories :

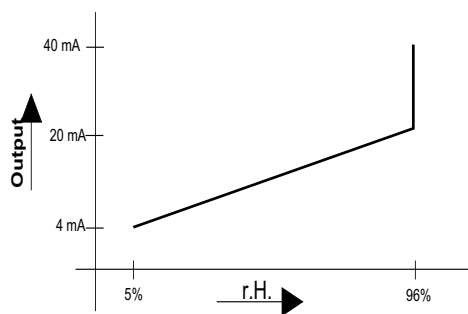
Humidity standards :

SC-53	Sensor Check 53% r.H.	1110857
SC-75	Sensor Check 75% r.H.	1110859
SC-90	Sensor Check 90% r.H.	1110896
Adapter	Sensor Check	1107345

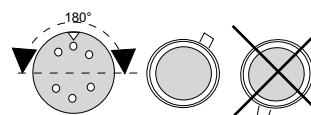
Filter :

Filter cap with Metalwebfilter	1116329
Filter cap with activated carbon	1116330

Output characteristics :



Replacement of button - cell CK-4 :



Attention :

Never press in with finger or mech. instruments

calibration :

- Choose the SENSOR CHECK which corresponds to the principal working range :
30....60% = SC-53 / 50..80% = SC-75,
80....96%= SC-90.
- Place SENSOR CHECK incl. the adapter on a sensor and wait at least 30 min.
(with filter cap !)
- Unscrew transmitter cover and connect supply voltage with „mA“ Meter.
- Check the output signal against the enclosed table
- If the measured value is not within the tolerance range, the correct value can be set with a potentiometer (P2)
(leave sensor-check in position)

