RS Series

Shields developed with MeteoSwiss

HYGROCLIP®

Humidity goes Digital

Ventilated Weather Shield for Meteorology Probes

- High accuracy in humidity and temperature measurement
- Protects even from horizontally driving rain and snow
- Suitable for all ROTRONIC meteorology probes
- Fast and easy installation
- 12 VDC or 24 VDC fan supply
- Long life fans
- Virtually maintenance-free
- SWISS MADE

rotronic®

LEADING IN HUMIDITY MEASUREMENT

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Meteorology Applications

In Meteorology, the accuracy of climatic measurement data is essential for accurate forecasting and decision-making. ROTRONIC humidity probes have an excellent reputation for providing reliable results, even in the most demanding conditions where high humidity and extreme temperatures can prevail. Our current product range offers high performance, a wide range of configurations, and price levels that are compatible with any application's demands.

However, the probe accuracy is only a part of the story. Even the most accurate probe cannot measure precisely when the environmental conditions under which the measurements take place do not represent the real climatic conditions.

Why is correct temperature essential?
In the past, combined temperature and humidity probes have been integrated into weather shields, or screens (such as the Stevenson type), usually made of wood and painted white. Despite the white colour, the screens tended to heat up as a result of solar radiation, and the internal deviation from actual temperature could be quite high. Such a deviation obviously leads to incorrect measurement of the humidity, because relative humidity is so temperature dependent.

The radiation and weather protection shields that ROTRONIC has developed in cooperation with MeteoSwiss feature optimal properties in regard of protection against rain, snow, wind and radiation. The combination of the shields with the Meteorology probes from ROTRONIC provides extremely precise measurement of the relative humidity and temperature. The accuracy is highly improved. In fact, the values are as precise as the ones that are obtained by much more expensive Dew Point Mirrors. The experts even ask themselves, which measurement is more accurate!

Applications throughout the whole economy

Ventilated shields can be used not only in the domain of meteorology, but also in the whole economy.

Typical applications are:

- Snow guns
- Building automation
- Agronomical applications
- Road maintenance
- Snow and ice warning systems
- Climatic research in remote places

Easy on-site maintenance without calibration

When using digital ROTRONIC HygroClip probes, on-site calibration is not required. Thanks to digital signal transmission, it is absolutely sufficient to exchange the probes in regular intervals. Afterwards, the probes can be easily calibrated in the workshop or laboratory.

The estimated life time of the fans is around 8 years, which makes them virtually maintenance-free.

HYGROCLIP®
Humidity goes Digital



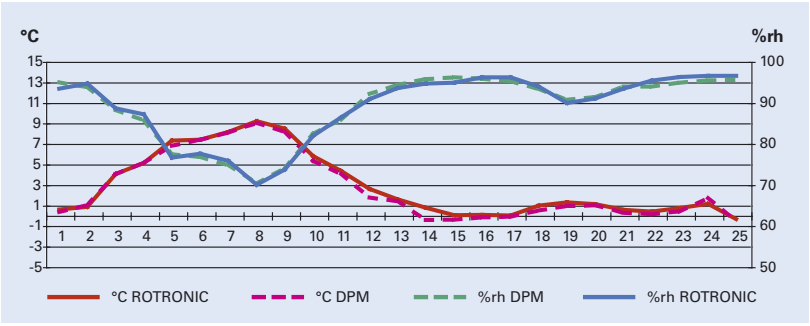
Product Summary & Technical Data

Main Features:

- Easy to install with integrated fan
- Special white coating against thermal radiation
- Simple probe mounting
- Papst fan IP54, 12 VDC or 24 VDC
- Fan power consumption: ca. 2 W
- Aspiration rate: 3.5 m/s /900 l/min
- MTBF of fan @ 40 °C: 70'000 h / 8 years
- Operating range: -30…60 °C
- Material: Aluminium, POM
- Colour: white, RAL 9010
- Mounting on masts from 30…65 mm Ø

Suitable for any humidity probe

The RS12 and RS24 shields have been developed primarily for ROTRONIC probes. They may however be adapted for third party probes. Contact your ROTRONIC partner for a solution to suit your specific probe.



Comparison data ROTRONIC / Dew Point Mirror

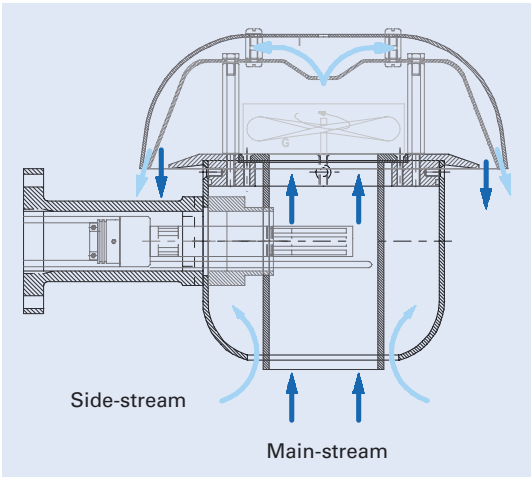
Huge price advantage

The graph shows that the values measured by the dew point mirror are practically identical to the ones measured by the ROTRONIC instrument. Hence, precise measurements of humidity and temperature may be achieved at a fraction of the price compared to dew point mirror measurements. Well known meteorological organisations already use the RS shield with great success.

Ideal Measurement conditions

The RS shield features a double shell construction, with active ventilation to create two separate air streams.

The probe is positioned perpendicular to the main air stream to provide optimum measurement conditions. The side stream insulates the shield to help maintain the correct temperature at the point of measurement.



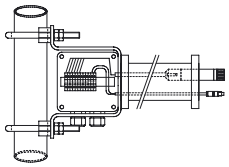
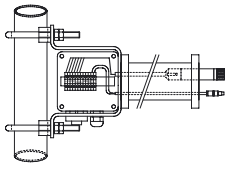
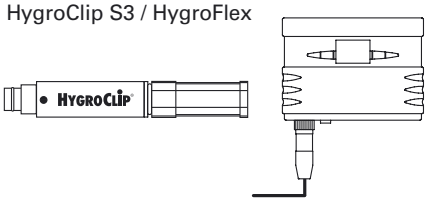
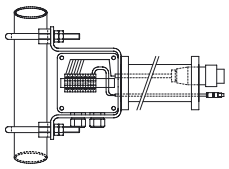
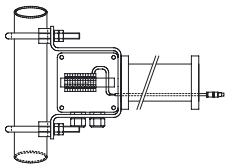
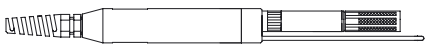
Temperature measurement with passive Pt100 element

Temperature measurement using a passive Pt100 probe is also possible. It is placed underneath the humidity probe in the moving air flow, which ensures optimal conditions for measurement.

Order Information for RS Weather Protection Shields

ORDER CODE:	DESCRIPTION
RS Weather Protection Shields	
RS12T	Shield with 12 VDC fan
RS24T	Shield with 24 VDC fan
Suitable standard probes	
HygroClip S3	Probe for MP100H / MP400 H or for individual mounting
MP100H-030100	Meteo-probe for HygroClip w/o ext. Pt100, 0...1 V = 0...100 %rh / -40...60 °C, 1 m cable, unterminated
MP400H-080100	Meteo-probe for HygroClip w/o ext. Pt100, 4...20 mA = 0...100 %rh / -40...60 °C, cable, unterminated
	For further probes see ROTRONIC catalogue (www.rotronic-humidity.com)

Mounting Kits for RS Shields

		Probe used	Terminal box and output signals
MKRS-1-15		HygroClip S3 	Connection by terminal block, 2 x M12 cable glands Output signals: 0...1 V = 0...100 %rh 0...1 V = -40...60 °C
MKRS-2-15		HygroClip S3 / HygroFlex 	Connection to HygroFlex 1 x Tuchel 7, 1 x M12 cable gland requires cable AC1616-xxx xxx = cable length 002 / 005 / 010/ 020 / 025 / 030 /050/ 060/ 080 / 100...200 m in steps of 10 meters
MKRS-3-25 MKRS-4-25		MKRS-3-25: e.g. MP101A-T7-W4W Probe with Tuchel 7 pin connector  MKRS-4-25: e.g. MP408A-T4-W4W Probe with Tuchel 4 pin connector	Connection by terminal block 2 x M12 cable glands Output signals: MP100: 0...1 V = 0...100 %rh -0.4...0.6 V = -40...60 °C MP400: 0(4)...20 mA = 0...100 %rh and -40...60 / -30...70 /0...100 °C , depending on probe config.
MKRS-5-25		Meteorology probe MP100H and MP400 H, cable unterminated  HygroClip S3 must be ordered separately!	Connection by terminal block 2 x M12 cable glands Output signals: MP100H: 0...1 V = 0...100 %rh -0.4...0.6 V = -40...60 °C MP400H: 0(4)...20 mA = 0...100 %rh / -40...60 / -30...70 / 0...100 °C , depending on probe config.

DIMENSIONAL DIAGRAM: