

Ventilated weather and radiation shield



Installation instructions

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1. Introduction

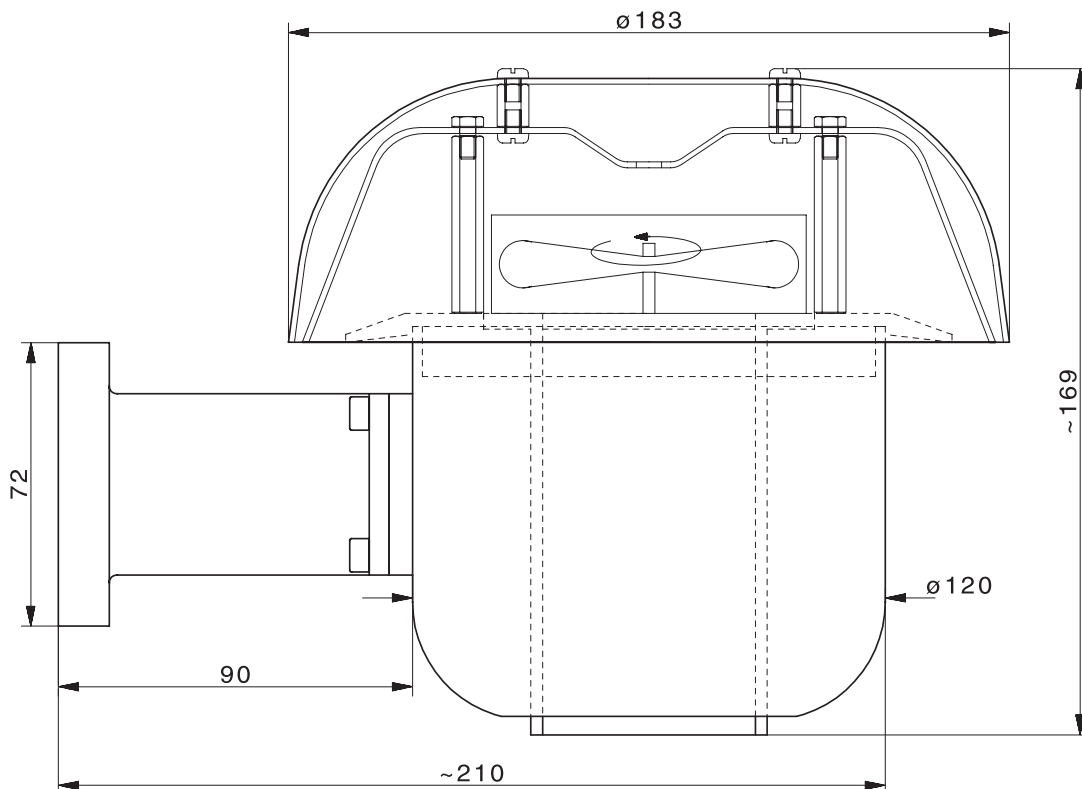
The new ventilated weather and radiation shields RS12T with 12 VDC fans and RS24T with 24 VDC fans were developed in close cooperation with MeteoSwiss, the Swiss National Meteorological Organisation. The instruments reduce the influence of thermal radiation on the measurements of temperature and humidity to a minimum and represent state-of-the-art technology. The shield also offers optimum protection in stormy weather, even against horizontally driven rain and snow. The values measured by the combination of the weather shields and a ROTRONIC meteorological probe are practically identical to the ones measured by much more expensive dew point mirrors used as reference instruments by many meteorological organisations. The fan is supplied by a separate cable. Compared to former products, the new shield offers a remarkably increased accuracy of measurement. All ROTRONIC Meteorology-probes may be used with the new shield.

2. Models

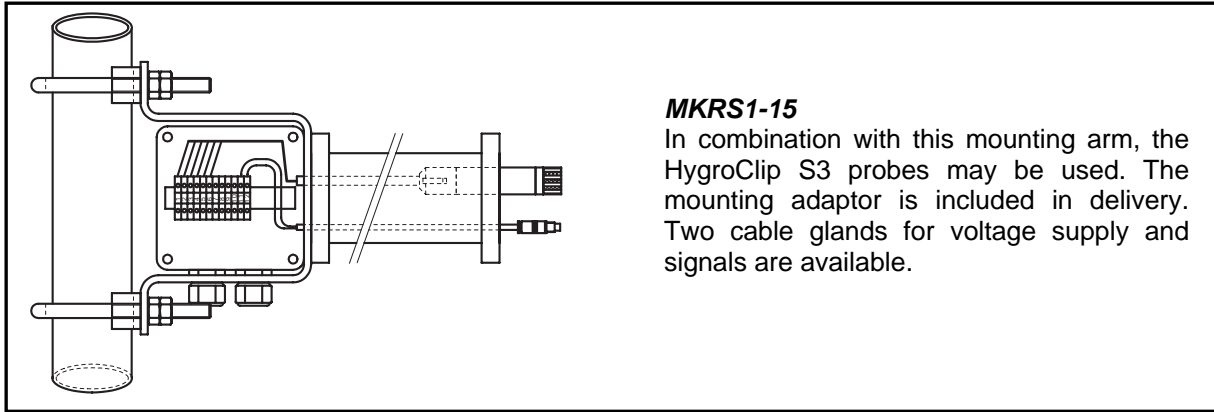
Apart from the different fan and its supply voltage, RS12T and RS24T are absolutely identical. The shields offer protection against precipitation and radiation. This means that the temperature- and humidity values are almost 100% identical with the effective conditions. This is achieved by a divided flow of air: the main stream intersects the probe rectangular, which means an optimal incoming flow. The shield features two shells, which are mounted one over the other. The air between these shells is constantly exchanged, and hence the temperature inside the measuring tube is equal to the prevailing conditions.

The shield and mounting arms are two separate units. While the shield is the same for all probes, (except fan and voltage), the mounting arms allow the use of all different ROTRONIC meteorology-probes.

3. Weather and Radiation Shields RS12T / RS24T

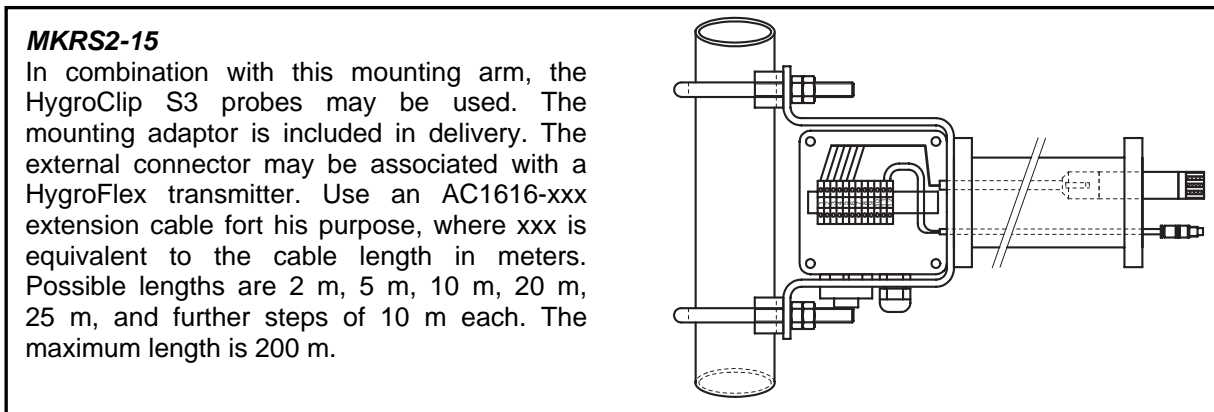


4. Mounting arms for RS12T / RS24T



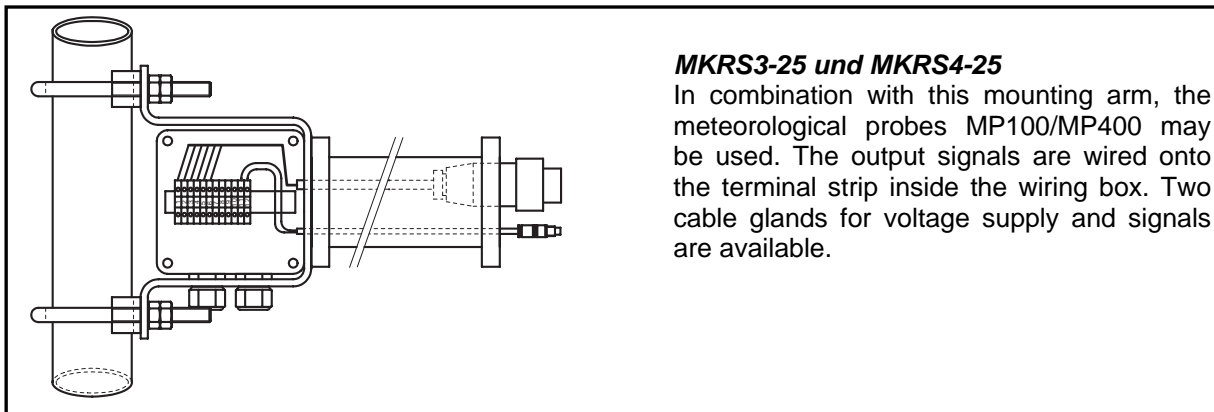
MKRS1-15

In combination with this mounting arm, the HygroClip S3 probes may be used. The mounting adaptor is included in delivery. Two cable glands for voltage supply and signals are available.



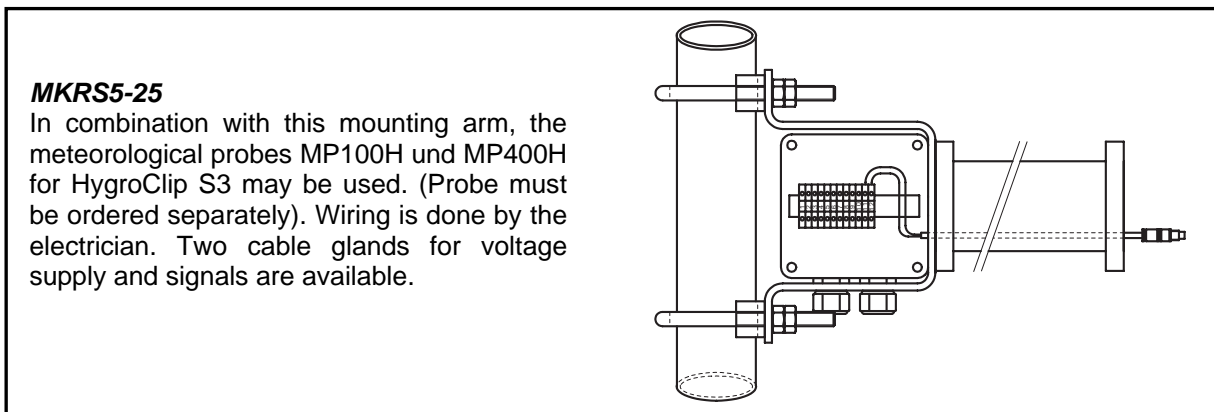
MKRS2-15

In combination with this mounting arm, the HygroClip S3 probes may be used. The mounting adaptor is included in delivery. The external connector may be associated with a HygroFlex transmitter. Use an AC1616-xxx extension cable for this purpose, where xxx is equivalent to the cable length in meters. Possible lengths are 2 m, 5 m, 10 m, 20 m, 25 m, and further steps of 10 m each. The maximum length is 200 m.



MKRS3-25 und MKRS4-25

In combination with this mounting arm, the meteorological probes MP100/MP400 may be used. The output signals are wired onto the terminal strip inside the wiring box. Two cable glands for voltage supply and signals are available.



MKRS5-25

In combination with this mounting arm, the meteorological probes MP100H und MP400H for HygroClip S3 may be used. (Probe must be ordered separately). Wiring is done by the electrician. Two cable glands for voltage supply and signals are available.

The mounting arms can be mounted onto poles of \varnothing 30...65 mm.

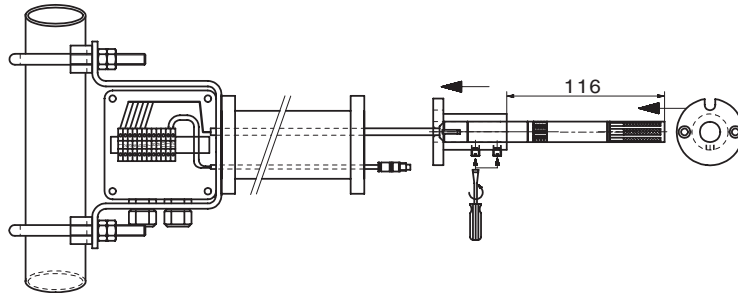
5. Mounting and removal

The protection shields, probes and mounting arms are always delivered separately. Assemble the parts as follows:

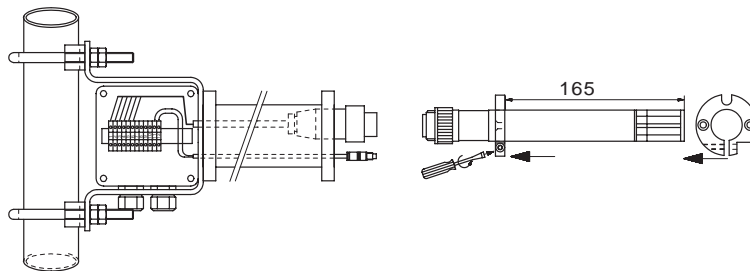
- 5.1 Put the probe into the respective probe adaptor according to the design. Tighten either the Hex screw of the adaptor ring or the set screws on the probe tube. (Depending on probe used). Tighten the screws only as hard as necessary to hold the probe firmly. Set the distance from the probe tip according to the design below.

Note: Depending on the probe, different adaptors are used.

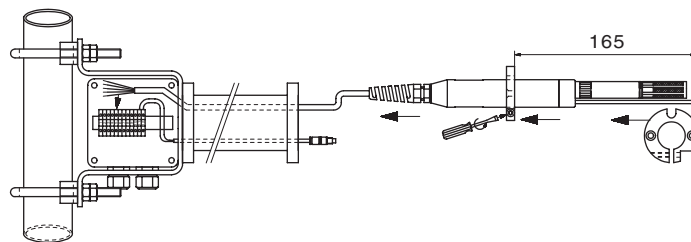
a. HygroClip with MOK- Adaptor



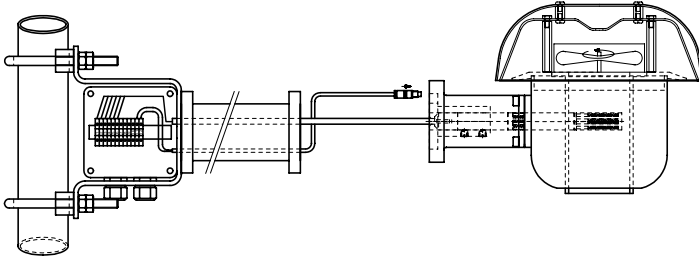
b. MP-series probes



c. MPH-series probes



5.2 Assemble the adaptor, probe and weather protection shield. Make sure to position the slot for the fan connector correctly. If positioned correctly, adaptor and flange form an even surface. The adaptor must not be fixed by screws. Two ball-type locks fix the adaptor in its position.

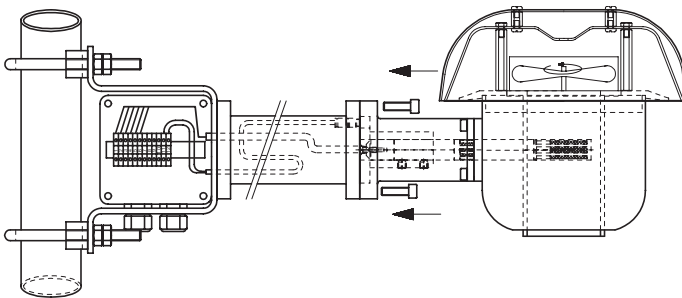


5.3 Join the connectors of the probe and mounting arm.

Important: If you use a HygroClip S3 probe, make sure the probe is aligned correctly. The four white dots on probe and connector must be in a line. Insert the probe with very slight axial pressure. Rotate the bayonet ring to secure the probe. (Only possible in one direction). The small two-pin connector serves for the fan supply. For probes without plugs: Loop the cable into the connection box and wire according to the schematics. The wire colours are mentioned on every schematic accompanying the probes. Push a surplus length of cable back into the tube.

5.4 Align the two sub-assemblies and tighten the screws. Mounting onto the pole may be done at any time; either before or after assembly.

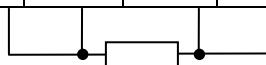
5.5 When disassembling, make sure that a cable probe (MP100H or MP400H) is disconnected in the junction box before the screws between shield and mounting arms are removed.



6. Terminal assignment (all Models)

1	2	3	4	5	6	7	8	9	10	11	12
VCC	RH	T	0	GND	DIO	Pt +I	Pt +U	Pt -U	Pt -I	+V	GND
Probe supply (according to probe type)	Humidity signal	Temperature signal	Cable compensation	GND	Digital signal Humidity & Temperature	Pt100 +I	Pt100 +U	Pt100 -U	Pt100 -I	Fan supply (according to fan type)	GND FanVentilator

Note: Some terminals may not be used, depending on the probes.



6. Maintenance and calibration

The weather protection shields are maintenance-free to the greatest possible extent. The mean life expectancy of the fans is 70.000 hours at ambient conditions (40 °C). This equals to ca. eight years.

We recommend calibrating the probes once per year. Hints regarding the calibration may be found in the manuals accompanying the probes.

Order code:	Probe used / Adaptor / Cable connection
RS12T	Ventilated shield with 12 V fan
RS24T	Ventilated shield with 24 V fan
MKRS-1-15	Mounting arm for HygroClip S3 / terminals / 2 cable glands
MKRS-2-15	Mounting arm for HygroClip S3 with HygroFlex connection / terminals / 1 x Tuchel 7-pin connector, 1 cable gland
MKRS-3-25	Mounting arm for MP100/MP400 with T7 Tuchel connector / terminals / 1 cable gland
MKRS-4-25	Mounting arm for MP100/MP400 with T4 Tuchel connector / terminals / 1 cable gland
MKRS-5-25	Mounting arm for MP100H /MP400H / terminals / 2 cable glands

7. Spare Parts

The weather protection shields are maintenance-free to the greatest possible extent. They do not – with the exception of the fans- contain wear parts.

The probes are equipped with filters, which should be replaced periodically. The point in time for their replacement is mainly determined by the prevailing ambient conditions. Therefore, a recommendation regarding the replacement interval cannot be given. However, we recommend calibrating respectively adjusting of the probes at least once per year. This is a good opportunity to replace the filters. These may be cleaned in soapy water. The use of ultrasonic cleaners is also possible.

Part no.	Description
SP-WH3-15	Filter for probes with 15 mm diameter
SP-W3-25	Filter for probes with 25 mm diameter
24.8412.1203	Fan 12 V
24.8424.1203	Fan 24 V
25.7251.0100	Flange sealing
20.2003.0800	Adaptor ring for probes with 25 mm diameter
20.2003.0900	Adaptor ring for probes with 15 mm diameter