



SHM40 Structural Humidity Measurement Kit



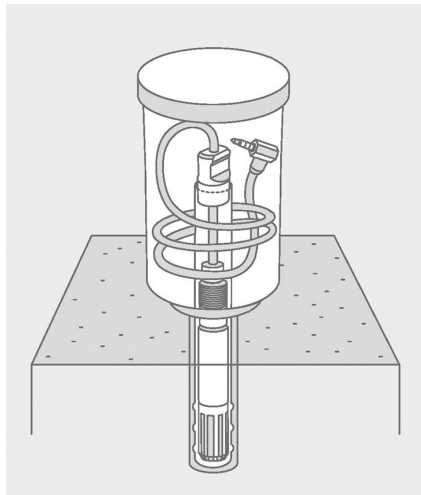
Features

- Truly interchangeable measurement probes
- Accurate measurement data in numeric, statistic, or graph views
- Conforms to ASTM standard F2170
- IP65-rated measurement probe and case
- Standard contents of SHM40:
 - HM40 indicator with adapter
 - 1 pc HMP40S RH&T probe with cable
 - 12 pcs plastic tubes
 - 12 pcs rubber plugs
 - 3 pcs protective covers with lid
 - Traceable calibration certificate
 - Weather-proof carrying case with shoulder strap

Vaisala HUMICAP® Structural Humidity Measurement Kit SHM40 offers an easy and reliable solution for humidity measurements in concrete and other structures.

Measuring Humidity Under the Surface

Concrete dries unevenly and is usually drier on the surface. Consequently, it is important to measure beneath the surface conditions. The borehole method provides information about the humidity profile under the surface. In this method, a humidity probe is left in the borehole until the humidity in the hole has reached an equilibrium state and the stabilized values can be read.



Borehole in concrete and an HMP40S measurement probe inserted in it.

SHM40 is All You Need for Borehole Humidity Measurement

The Vaisala HUMICAP® Structural Humidity Measurement Kit SHM40 is an ideal solution for the borehole method. The starter kit is comprised of an HMP40S probe, HM40 indicator, and accessories for the borehole method in a weather-proof case, optimized for use in harsh and humid construction sites.

Additional accessories for the SHM40 can be used to prepare a moisture measurement hole in fresh concrete. Pre-formed holes eliminate the need for drilling and the risk of damaging heating elements or tubing embedded in the concrete.

SHM40 Structural Humidity Measurement Kit

Easy Measurement with Multiple HMP40S Probes and Quick Connectors

HMP40S measurement probes are interchangeable. The probes connect easily to the HM40 indicator with a snap-on connector enabling convenient use of multiple probes with one indicator. The measurement data can be displayed in numeric, statistic, or graph views.



Snapping a connector to the HM40 indicator to read the measurement results.

Technical Data

HMP40S Probe Measurement Performance

Relative Humidity

Measurement range	0 ... 100 %RH
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Accuracy (incl. non-linearity, hysteresis, and repeatability) over temperature range:

0 ... +40 °C	0 ... 90 %RH: ±1.5 %RH 90 ... 100 %RH: ±2.5 %RH
-40 ... 0 °C and +40 ... +80 °C	0 ... 90 %RH: ±3.0 %RH 90 ... 100 %RH: ±4.0 %RH

Factory calibration uncertainty at +20 °C:

0 ... 90 %RH	±1.1 %RH
90 ... 100 %RH	±1.8 %RH

Humidity sensor HUMICAP® 180R

Stability ±2 %RH over 2 years

Temperature

Measurement range	-40 ... +80 °C
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Accuracy over temperature range:

0 ... +40 °C	±0.2 °C
-40 ... 0 °C, +40 ... +80 °C	±0.4 °C

Temperature sensor Pt1000 RTD Class F0.1 IEC 60751

HMP40S Probe Mechanical Specifications

Probe weight with standard cable 31 g

Probe housing material Stainless steel

Probe filter and sensor protection Membrane filter with chrome coated ABS plastic

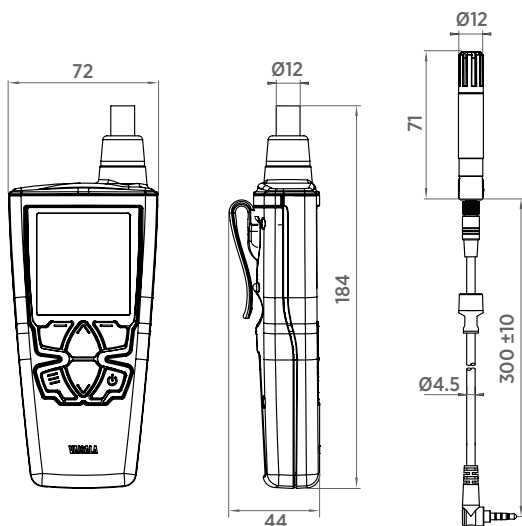
Cable material Wire PVC / Jacket PU

Cable connector TRRS male 3.5 mm

Probe housing IP rating IP65

Borehole diameter needed 16 mm

Measurement depth with standard accessories Min. 30 mm, max. 90 mm



Dimensions in mm

Operating Environment

Operating temperature range for probe -40 ... +80 °C

Operating temperature range for indicator -10 ... +60 °C

Storage temperature range -30 ... +70 °C

HM40 Indicator Mechanical Specifications

Weight

Indicator with adapter 240 g

SHM40 case with standard content 3.7 kg

Indicator materials PC/ABS blend, acrylic display lens

Indicator adapter materials Nickel plated brass and plastic overmolding

Indicator housing IP rating IP54

Mechanical drop endurance 1.0 m without the probe

HM40 Indicator General Specifications

Power-up time < 3 s

Alkaline batteries 2 × AA size, 1.5V (LR6)

Operation time (alkaline batteries) Typical 100 hours (without backlight)

Calculated variables Td, Tw, a, x, h

Menu languages English, German, French, Finnish, Spanish, Swedish, Chinese (simplified), Russian, Japanese

Display LCD (140 × 160 pixels)

Electromagnetic compatibility (EMC) EN 61326-1, Portable equipment

Spare Parts and Accessories

HM40 indicator with adapter and cable probe HM40S

RH&T probe with cable HMP40S

HM40 indicator with adapter HM40SINDI

Quick connection adapter HM40SADAPTER

Cable for RH&T probe HMP40SCABLE

Long cable (2.7 m) for RH&T probe HMP40SCABLE2

Plastic tube set (12 pcs) 19266HM

Long (200 mm) plastic tube set (12 pcs) 245789

Rubber plugs (12 pcs) 233976

Protective cover with lid (3 pcs) 19268HM

Weather-proof carrying case for SHM40 kit CASEFORSHM40SP

USB recharger for HM40 indicator batteries 229249SP

Plastic grid with membrane filter for HMP40S probe DRW010525SP

Accessories for Wet Concrete

Plastic flange set (12 pcs) 26529HM

Long rubber plug for wet concrete (12 pcs) 26530HM

