GANN

ELECTRONIC MOISTURE METERS

LOCATION

OUR EXPERTISE ...
... FOR YOUR SUCCESS

Our family-owned company was founded in 1931 and is located in the core area of Baden-Württemberg, Germany. For more than 70 years, we have gathered expertise in moisture measurement and provide our customers with various products that are based on this knowledge. Already in 1948, GANN created and produced the first Hydromette unit.

We are committed to our company philosophy **»Quality has a name«**. Therefore we design and manufacture our products only in Germany.

We are focusing on two main business activities – **handheld meters** as well as **measuring and control systems** for timber dryers.
Within our handheld meter range, we manufacture units for measuring applications such as wood, construction materials, bulk materials, air humidity, and temperature. Tailored to the needs of our customers, our units provide various combinations of these application options ranging from simple test units to customised professional solutions and complex high-end all-in-one equipment. Our control systems cover a large variety of different process control systems for timber dryers as well as cycle measuring systems for the glued laminated timber industry – from simple control systems to convenient, nearly fully automated systems that hardly require user intervention.

This catalogue provides an overview of our products and solutions for electronic moisture meter applications. On the first few pages, the latest meter generation of our **blue Hydromette units** is shown. In addition to our **Compact and Classic Series Hydromette** units, the second part of the catalogue presents a summary of the accessories available for our meters, including a large number of figures showing real-world applications. At the end of our catalogue, you will find some information on the topic of **»Measuring accuracy«** that is relevant to real-world implementations.

Enjoy reading our catalogue – your GANN team!

LEGEND

Wood Moisture | Bulk Materials | Structural Moisture | Air Humidity | Temperature: Air | Temperature: Surface | Temperature: Material | Grain Humidity* | Air velocity | Accessories | Package

WOOD MOISTURE Products and accessories that are identified by this icon are used to measure moisture in wood. For this, our Hydromette units use two measuring techniques: **electrical resistance measurement** or **capacitive radio frequency measurement.**

BULK MATERIALS Products and accessories that are identified by this icon are used to measure moisture of bulk materials, e.g. saw dust, wood chips, etc. For these purposes, our HS or HST electrodes are used. They use the electrical **resistance measuring principle.**

STRUCTURAL MOISTURE Products and accessories that are identified by this icon are used to measure moisture in building materials. Four measuring techniques are used: **electrical resistance measurement, capacitive radio frequency field, sorption isotherms,** and the **Calcium Carbide Method** (CM).

AIR HUMIDITY Products and accessories that are identified by this icon are used to measure air relative humidity. For measuring, **capacitive sensors** are used that operate rapidly and precisely.

TEMPERATURE: AIR Products and accessories that are identified by this icon are used to measure the air temperature.

TEMPERATURE: SURFACE Products and accessories designed for measuring surface temperatures use **resistance-based Pt100** and **infrared sensors**.

TEMPERATURE: MATERIAL Products and accessories that are marked with this symbol are used for measuring material or core temperatures.

GRAIN HUMIDITY Products and accessories that are identified by this icon are used to measure humidity of various grain types and cereals, e.g. wheat, rye, green coffee, pepper. For this purpose, **electrical resistance measurement** is used.

AIR VELOCITY Products and accessories that are identified by this icon are used to measure air velocity.

ACCESSORIES For products that are identified by this icon, additional accessories are available which are detailed in the second part of the catalogue.

PACKAGE For products that are identified by this icon, packages of different contents (different product accessory combinations) are offered.

At the bottom of a product page, an **info box** is used to show the accessory available, arranged according to the particular measuring task. Similarly, we provide an overview on each accessory page by means of an **info box** showing the products to which the respective accessory may be connected. +-

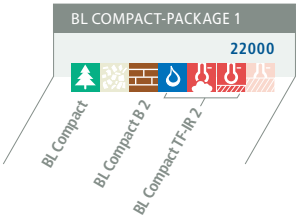
* = Special catalogue available on request

CONTENTS

OUR BLUE PRODUCT SERIES COMPACT UNITS

- Handy units for quick moisture measurement
- 3-line LCD display
- MIN, MAX, and HOLD feature
- Automatic unit shutdown
- 9V block battery or rechargeable battery
- Housing: 175 [L] x 50 [W] x 30 mm [H]

HYDROMETTE
BL COMPACT



see page 18

The BL Compact unit is an electronic **moisture meter** for **various types of wood** as well as for **soft building and insulating materials.**
The sensor pins are driven into the material to be measured and allow the measurement of moisture in sawn timber, chipboard, veneers and wood fibre materials up to 25 mm in thickness as well as of regular gypsum and mixed plaster.
After measuring, the construction material specific minimum and maximum values can be retrieved.

MEASURING RANGES

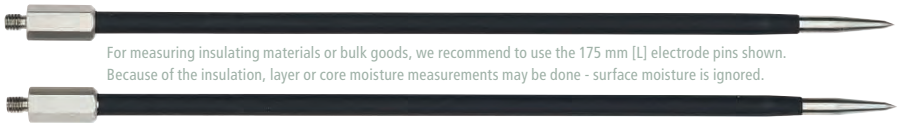
- **WOOD MOISTURE**
  6 to 25% (dry mass)
- **STRUCTURAL MOISTURE**
  0.4 to 6.0 wt.-%

PROPERTIES

- 4-level wood species correction
- Characteristic curves for 3 types of building materials and 2 types of insulating materials
- Unit temperature display
- 195 mm [L]

APPLICATION

The **BL Compact** unit may also be used to measure plaster.



For measuring insulating materials or bulk goods, we recommend to use the 175 mm [L] electrode pins shown.
Because of the insulation, layer or core moisture measurements may be done - surface moisture is ignored.

COMPACT BI 175 STICK-IN ELECTRODE PINS **14352**

HYDROMETTE
BL COMPACT S

ORDER CODE **12011**

The BL Compact S is an electronic **moisture meter** for various **wood fuels,** suited for measuring **various types of hardwood or softwood.**

BENEFITS

- Environmental protection (lower emission)
- Oven and chimney protection (better combustion)
- High energy yield, since the wood is burned in its optimum moisture state

MEASURING RANGE

- **WOOD MOISTURE**
  10 to 50% (dry mass)
  10 to 34% water content

PROPERTIES

- 2-level wood species correction
- Unit temperature display
- 195 mm [L]

APPLICATION

Measuring the moisture of firewood using the **BL Compact S** unit – the best energy balance and lowest emission values are obtained at approx. 20% wood moisture

The **BL Compact** and **BL Compact S** units come with a **protective cap** fitted.

For measuring insulating materials or bulk goods, we recommend to use the 175 mm [L] electrode pins shown. They are not insulated and therefore show the most humid spot of a cross section.

COMPACT HW 175 STICK-IN ELECTRODE PINS **14351**

HYDROMETTE
BL COMPACT B 2

BL COMPACT-PACKAGE 1
22000
BL Compact
BL Compact B 2
BL Compact TF-IR 2

see page 18

The BL Compact B 2 unit is an electronic **structural moisture meter** for non-destructive building material moisture measurement. The Hydromette unit uses the dielectric constant/ radio frequency principle of measurement. The versatile ball sensor is used to sense moisture in building materials of any kind as well as to determine the **moisture distribution** in walls, ceilings, and floors.
For each building material, an individual limit may be set the violation of which will be indicated by an **audible alert**.

An ideal **pre-tester** for all CM measurements.

MEASURING RANGE

- **STRUCTURAL MOISTURE**
  0 to 199.9 digits (scanning range)
  0.3 to 6.0 wt.-% or
  0.3 to 4.0 CM-%

PROPERTIES

- Characteristic curves for 7 types of building materials and 2 types of insulating materials as well as trend display for hardwood and softwood
- Audible alarm feature
- Automatic calibration
- Unit temperature display
- 200 mm [L]

APPLICATION It is of importance **how the unit is held** while measuring: The **BL Compact B** 2 unit should be held at the rear part of the unit and applied to the material to be measured in a 90° angle.

ORDER CODE **12032**

HYDROMETTE
BL COMPACT TF 3

The BL Compact TF 3 unit is a **precise thermo hygrometer** for measuring the temperature and air relative humidity **in many applications** (e.g. residential space, air conditioning, printing shops, warehouses, museums).
The measuring sensor is exchangeable. Several of these sensors (plug-in TF sticks) can be put in different places (environments). Thus, successive measurements in those places can be carried out more quickly, for long adaption times can be avoided (compared to a meter with a fixed sensor).

MEASURING RANGES

- **AIR HUMIDITY**
  0 to 100% R.H.
  ±3% R.H. (20 to 80% R.H.) (*)
- **TEMPERATURE**
  -20 to +80 °C
  ±0.5 °C (0 to +60 °C) (*)

(*) = sensor accuracy

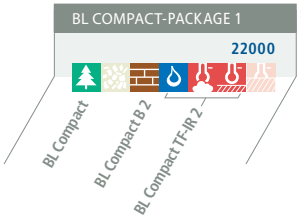
PROPERTIES

- Automatic calculation of dew point temperature and equilibrium wood moisture content (EMC)
- Display of absolute air humidity in g/m³
- USB interface for transferring the measured values to a PC on which the DIALOG BL+ optional software is executed (for long-term measurements or process monitoring)
- Storage of the 5 most recent measured values
- 210 mm [L] - total lenght incl. the TF stick
- for special requirements, other TF sticks with different filter types are optionally available

Further information on the TF sticks is available on our respective leaflet.

ORDER CODE **19830**

HYDROMETTE
BL COMPACT TF-IR 2



see page 18

The BL Compact TF-IR 2 unit has sensors for surface temperature infrared measurements as well as for measuring air temperature, and air relative humidity.

This combination **of the different measuring techniques** enables the TF-IR 2 unit to be used for quickly and reliably **assessing dew point undershoots** or determining borderline conditions on **surfaces** such as walls, ceilings, floors as well as on window or door lintels. In addition to displaying the measured value, the unit creates an **audible signal when a critical surface temperature is detected**. When using the unit in due time mould formation (fungal growth) may be prevented and occurrence of moistening caused by condensation may be assessed reliably.

The TF stick is exchangeable.

MEASURING RANGES

- **AIR HUMIDITY**
  0 to 100% R.H.
  ± 1.8% R.H. (10 to 90% R.H.) (*)
- **TEMPERATURE**
  Air temperature:
  -20 to +80 °C
  ± 0.2 °C (10 to +60 °C) (*)
- **Infrared measuring range**
  -40 to +240 °C
  ± 0.5 °C (0 to 60 °C),
  at 0 to 50 °C ambient temperature (*)

(*) = sensor accuracy

PROPERTIES

- Built-in audible interval signal:
  The more the surface temperature is approaching the dew point temperature, the more the signal will change from intermittent to continuous sound.
- Laser pointer for identifying the measuring spot
- 6:1 optical system
- Including dew point temperature and equilibrium wood moisture content (EMC)
- Emissivity adjustable from 20 to 100%
- USB interface for transferring measured values
- Storage of the 5 most recent measured values
- 185 mm [L]

ORDER CODE **12072**

TF Sticks
16 K-21 | 16 K-25

With the different TF Sticks it is possible to measure the temperature and air relative humidity **in many applications** (e.g. residential space, air conditioning, printing shops, warehouses, museums).

3260

MEASURING RANGES TF STICK 16 K-21 **3260**

- **AIR HUMIDITY**
  0 to 100 % R.H.
  ± 3 % R.H. (20 to 80 % R.H.) (*)
- **TEMPERATURE**
  -20 to +80 °C
  ± 0.5 °C (0 to +60 °C) (*)

(*) = sensor accuracy

PROPERTIES

- Standard stick for Hydromette BL Compact TF 3 and TF-IR 2
- PTFE filter cap for protection in case of wet conditions

MEASURING RANGES TF STICK 16 K-25 **3262**

- **AIR HUMIDITY**
  0 to 100 % R.H.
  ± 1.8 % R.H. (10 to 90 % R.H.) (*)
- **TEMPERATURE**
  -20 to +80 °C
  ± 0.2 °C (10 to +60 °C) (*)

(*) = sensor accuracy

PROPERTIES

- without filter
- adapts quickly to ambient conditions
- suitable for use in air with low pollutant content

3262

TF Sticks

16 K-25 M | 16 K-25 P

MEASURING RANGES TF STICK 16 K-25 M **3264**

- **AIR HUMIDITY**
  0 to 100 % R.H.
  ± 1.8 % R.H. (10 to 90 % R.H.) (*)
- **TEMPERATURE**
  -20 to +80 °C
  ± 0.2 °C (10 to +60 °C) (*)

(*) = sensor accuracy

PROPERTIES

- metal grid filter for protection against coarse dust
- suitable for use in air currents (HVAC technology)

3264

MEASURING RANGES TF STICK 16 K-25 P **3266**

- **AIR HUMIDITY**
  0 to 100 % R.H.
  ± 1.8 % R.H. (10 to 90 % R.H.) (*)
- **TEMPERATURE**
  -20 to +80 °C
  ± 0.2 °C (10 to +60 °C) (*)

(*) = sensor accuracy

PROPERTIES

- PTFE filter membrane for protection in case of wet and dusty conditions
- suitable for use in dust-laden air as well as in damp locations

3266

HYDROMETTE
BL COMPACT RH-T FLEX 250/350

The BL Compact RH-T FLEX 250/350 unit is a **precise thermo hygrometer** designed to be used for quickly measuring the relative **humidity** and **temperature of the air**. Using programmed **sorption isotherms**, the weight and mass percentages can be determined for various building and insulation materials, as well as for hardwood and softwood.
The unit has a **slim and flexible sensor pipe** (**gooseneck**) and is therefore particularly suited to be used for **humidity analyses**, e.g. for damage survey or while the building is drying. Additional applications include **checking whether** flooring or wall covering may be laid.

MEASURING RANGES

- **AIR HUMIDITY**
  0 to 100% R.H.
  ±1.8% R.H. (10 to 90% R.H.) (*)
- **TEMPERATURE**
  -20 to +70 °C
  ±0.5 °C (-10 to +70 °C) (*)

(*) = sensor accuracy

PROPERTIES

- Automatic calculation of dew point temperature, equilibrium wood moisture content, absolute humidity in g/m³, enthalpy in kJ/K, wet-bulb temperature in °C, and water activity (a_W)
- Sorption isotherms for hardwood and softwood as well as for 10 different types of building materials
- Storage of the 5 most recent measured values
- 440/545 mm [L]

SENSOR PIPE LENGTHS

250 x 6.5 mm [Ø] 12045 | **350** x 6.5 mm [Ø] 12046

ORDER CODE 12045/12046

APPLICATION The flexible sensor pipe can be used to easily and conveniently carry out measurements in places that are difficult to access.

DELIVERY The packaging prevents damage.

SINTERED FILTER 60 [L] x 10 mm [Ø] 14602
Sintered filter cap for protection against dusty air as well as for measurement at high air velocities

Sensor with sintered filter

14602

HYDROMETTE
BL COMPACT RH-T 165/320

APPLICATION Moisture measurement using **sorption isotherms** for quantitatively assessing damage caused by moisture

The BL Compact RH-T 165/320 unit is a **precise thermo hygrometer** designed to be used for quickly measuring the relative **humidity** and **temperature of the air**.
Using programmed **sorption isotherms**, the weight and mass percentages can be determined for various building and insulation materials, as well as for hardwood and softwood. The meter has a **slim sensor pipe** and is therefore suited to be used for a large variety of applications, e.g. humidity analyses in cases of damage, while the building is drying as well as for checking whether flooring or wall covering may be laid.

MEASURING RANGES

- **AIR HUMIDITY**
  0 to 100% R.H.
  ±1.8% R.H. (10 to 90% R.H.) (*)
- **TEMPERATURE**
  -20 to +70 °C
  ±0.5 °C (-10 to +70 °C) (*)

(*) = sensor accuracy

PROPERTIES

- Automatic calculation of dew point temperature, equilibrium wood moisture content, absolute humidity in g/m³, enthalpy in kJ/K, wet-bulb temperature in °C, and water activity (a_W)
- Sorption isotherms for hardwood and softwood as well as for 10 different types of building materials
- Storage of the 5 most recent measured values
- 355/510 mm [L]

SENSOR PIPE LENGTHS

165 x 5.5 mm [Ø] 12040 | **320** x 5.5 mm [Ø] 12041

SINTERED FILTER 60 [L] x 10 mm [Ø] 14601
Sintered filter cap for protection against dusty air as well as for measurement at high air velocities

TAILORED – TO YOUR SPECIFIC APPLICATION

ORDER CODE **22000**

BL COMPACT PACKAGE

The BL Compact package contains the Hydromettes BL Compact B 2, BL Compact & BL Compact TF-IR 2. Therefore, the set covers the measuring areas of building moisture, wood moisture and the climate (air temperature, air humidity & infrared surface temperature).

MEASURING RANGE

BL Compact see page 7

- **WOOD MOISTUREOLZFEUCHTE**
  6 – 25 % (atro)
- **BAUFEUCHTE**
  0.4 – 6.0 Gew.-%

BL Compact B 2 see page 9

- **STRUCTURAL MOISTURE**
  0 – 199.9 Digits (Scanbereich)
  0.3 – 6.0 Gew.-% bzw.
  0.3 – 4.0 CM-%

BL Compact TF-IR 2 see page11

- **AIR HUMIDITY**
  0 to 100% R.H.
  ± 1.8% R.H. (10 to 90% R.H.) (*)
- **TEMPERATURE**
  Air temperature:
  -20 to +80 °C
  ± 0.2 °C (10 to +60 °C) (*)
  Infrared measuring range:
  -40 to +240 °C
  ± 0.5 °C (0 to 60 °C),
  at 0 to 50 °C ambient temperature (*)

(*) = sensor accuracy

PROPERTIES

- Handy combination meter
- **Complete overfiew of the conditions** due to the coverage of all relevant measuring ranges
- **Deep penetration** into the construction material due to the strong high frequency measuring field of the BL Compact B 2
- A quick **overview of the moisture content** of various types of wood, soft building and insulating materials due to the BL Compact
- Complete **overview of the climate** with the BL Compact TF-IR 2 (incl. dewpoint temperature and equilibrium wood moisture content (EMC)

Structual moisture, wood moisture & climate

HYDROMETTE
BL H 40

The BL H 40 unit is an electronic **wood moisture meter** that uses the resistance principle of measurement for precisely measuring **sawn timber** (up to 180 mm in thickness), **chipboards, and veneers**. The unit is used for individual measurements before and after processing. Additionally, the adjustable **wood temperature compensation** allows for optimisation of the measured value.
This meter is particularly suited to be used in joiner's workshops, by parquet reclining or painting contractors.

MEASURING RANGE

- **WOOD MOISTURE**
  5 to 40% (dry mass)

PROPERTIES

- 7-level wood species correction (more than 300 types)
- Wood temperature compensation is done manually or automatically in the range from -10 to +40 °C through the unit temperature
- Storage of the 5 most recent measured values
- Optional: 2 customer-specific characteristic curves may be programmed in factory
- 185 mm [L]

APPLICATION Moisture measurement perpendicular to the wood fibre direction using an **M 20 electrode**

Various resistance-based electrodes may be connected to the **BNC socket**

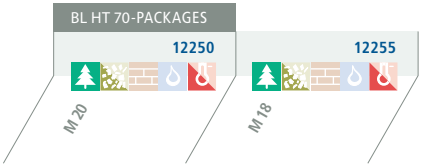
ORDER CODE **11100**

ACCESSORIES INFO BOX

For packages, please refer to page 32.

M 18 | M 20 | M 20-OF 15 | M 20-HW 200/300

HYDROMETTE
BL HT 70



The BL HT 70 unit is an electronic **wood moisture and temperature meter** that uses the resistance principle of measurement for precisely measuring **sawn timber** (up to 180 mm in thickness), **chipboards, veneers, wood chips** and similar bulk materials. The unit is used for individual measurements before and after processing. Additionally, the adjustable **wood temperature compensation** allows for optimisation of the measured value.
Particularly suited for saw mills, parquet factories, and wood-processing companies.

DETAIL VIEW In addition to a **BNC socket**, the **BL HT 70** has a **jack connector** to which different temperature sensors may be connected

MEASURING RANGES

- **WOOD MOISTURE**
  5 to 70% (dry mass)
  3.1 to 41% water content
- **TEMPERATURE**
  -50 to +250 °C using ET 10 BL
  Infrared measuring range:
  -40 to +380 °C using IR 40 BL

PROPERTIES

- 7-level wood species correction (more than 300 types)
- Wood temperature compensation is done manually or automatically in the range from -10 to +50 °C through the unit temperature or by means of an external temperature sensor
- Storage of the 10 most recent measured values
- Optional: 5 customer-specific characteristic curves may be programmed in factory
- 185 mm [L]

For packages, please refer to page 32.

	M 18	M 20	M 20-OF 15	M 20-HW 200/300
	HS 500	HS-i 500	HS 1000	HS-i 1000
	ET 10 BL			

HYDROMETTE
BL H 41

In co-operation with:

VHD Verband Holzfaser Dämmstoffe

The Hydromette BL H 41 is a measuring device for determining the moisture content of wood and, in particular, of wood fibre insulants. The meter features **6 new characteristic curves for wood fibre insulants**, grouped according to the gross density of the material (in kg/m³) and the board manufacturing process (wet/dry).

This device is suited for everyone who processes or assesses wood fibre insulants. With the BL H 41 a facade can be checked prior to plastering to ensure that future moisture-induced damage - e.g. flaking of plastering or lignin exudation - is avoided.

The sets contain special insulated electrode nuts that reduce the impact of surface moisture.

MEASURING RANGE

- **WOOD MOISTURE**
  5 – 70 % (dry mass)
- **WOOD FIBRE INSULATING BOARDS**
  4.5 to 45 % (dry mass)
- **TEMPERATURE COMPENSATION**
  -10 to +40°C

The new characteristic curves are based on products by these manufacturers:

STEICO – natürlich besser dämmen

GUTEX – DAMMPLATTEN AUS SCHWARZWALDHOLZ

best wood SCHNEIDER

pavatex – Bauen. Dämmen. Wohlfühlen.

AGEPAN SYSTEM – macht's fester!

In co-operation with:

VHD Verband Holzfaser Dämmstoffe

PROPERTIES

- 7-level wood species correction (more than 300 types)
- Wood temperature compensation is done manually or automatically in the range from 10 to +40 °C through the unit temperature
- Storage of the 5 most recent measured values
- Optional: 2 customer-specific characteristic curves may be programmed in factory
- 185 mm [L]

M 20 drive-in electrode with special insulated electrode nuts that reduce the impact of surface moisture

SET 1 econtains the M 20 drive-in elecrode

M 19 push-in electrode with insulated electrode pins (60 mm) for measuring in finished thermal indulation composite systems

For packages, please refer to page 32.

HYDROMETTE
BL E

The BL E is a **triple measuring instrument** for wood moisture, structural moisture and temperature.
The device allows accurate measurements of wood, building and insulation materials according to the electrical resistance measuring method.
The wood moisture measuring circuit enables the measurement of lumber (up to 180 mm thick), chipboard and hardwood flooring.
The Hydromette is equipped with **material specific settings** for an automatic correction of readings for 23 building materials and insulants, for instance, screed, mortar, renders, concrete, brick and several insulants.
The connection of an **B 55 BL active electrode** enables the **non-destructive moisture measurement** and indication-in ceilings, walls, floors, and other building materials.

MEASURING RANGES

- **WOOD MOISTURE**
  5,5 - 58 % (dry mass)
- **STRUCTURAL MOISTURE**
  0 – 200 Digits (scanning range)
  0.1 to 42.2 wt.-%, or 0.2 to 0.9 CM-%, depending on the material to be measured
- **TEMPERATURE**
  -50 to +350 °C, depending on the Pt100 temperature sensor

APPLICATION
Measurement of **structural moisture in bricks** using an M 25-100 brush electrode pair

ORDER CODE **11300**

PROPERTIES

- Direct readout of the structural moisture in wt.-% or CM-% on the 3-line LCD display, resolution: 0.1% or 0.1 °C
- When connecting a B 55 BL the scan mode returns values between 1-200 digits
- 2-level wood species correction (characteristic curve groups 2 and 3) for automatic measurement value correction
- Rapid measurement of hardened building materials by the high-frequency capacitive measurement method using a B 55 BL active electrode
- The temperature measurement precision is achieved by Pt100 measuring resistors connected in 4-wire technology
- Storage of the 5 most recent measured values
- Optional: 5 customer-specific characteristic curves may be programmed in factory
- 185 mm [L]

APPLICATION Measurement of plaster moisture using an M 20 electrode

ACCESSORIES INFO BOX

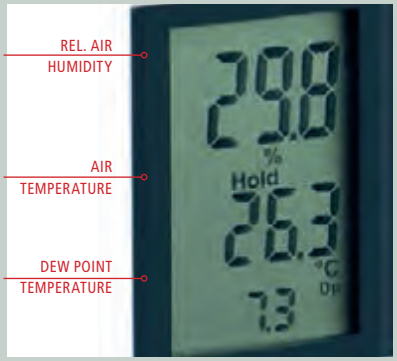
For packages, please refer to page 33.

	M 18	M 20	M 20-OF 15	M 20-HW 200/300								
	B 55 BL	M 6	M 6-150/250	M 6-Bi 200/300	M 20	M 20-OF 15	M 20-Bi 200/300	M 21-100/250	M 25-100/300			
	OT 100 BL											
	ET 10 BL	TT 40 BL										

HYDROMETTE
BL UNI 11

The BL UNI 11 unit is an electronic multi-purpose meter for three measured values to which a number of blue product series electrodes and TF sticks can be connected. Electrodes for measuring structural moisture, air humidity, and temperature may be connected.

The **Auto Sensor Technology** used enables the BL UNI 11 to automatically detect the electrode or TF stick connected and to adapt the measured value readout to the respective sensor type. If a TF stick (either directly or using the measuring cable MK 18) and another electrode (e.g. B 55 BL) are connected at the same time, the meter will always show the measuring values obtained with the TF stick.



DETAILAN VIEW
Display of three different measurement values

MEASURING RANGES

The Hydromette is able cover the measuring ranges of the electrode/TF stick connected.

PROPERTIES

- Simultaneous readout of three measured values as well as direct readout of the structural moisture in wt.-% or CM-% on the 3-line LCD display, resolution: 0.1% or 0.1 °C
- Quick measurement of moisture in set building materials using the capacitive radio-frequency measuring technique
- The high temperature measurement precision is achieved by Pt100 platinum measuring resistors connected in 4-wire technology
- Audible alarm in case a user-defined limit is exceeded (using B 55 BL) or intermitent alert signal in case case dew point threshold regions are reached (using TF-IR BL)

ELECTRODE B 55 BL 13755

Non-destructive measurement and display of moisture in ceilings, walls, floors, other building materials, or solid materials

MEASURING RANGES

- **STRUCTURAL MOISTURE**
  0 to 199 digits (scan range)
  0.3 to 8.5 wt.-% or
  0.3 to 6.5 CM-%

ELECTRODE RF-T 28 BL 13155

Probe for measuring the climate (air humidity and temperature) within seconds. Fast response speed of the sensor allows for detecting leakages (e.g. clearance between doorframe and door leaf or window)

MEASURING RANGES

- **AIR HUMIDITY**
  0 to 100% R.H.
  ±1.8% R.H. (10 to 90% R.H.) (*)
- **TEMPERATURE**
  -20 to +70 °C
  ±0.5 °C (-10 to +70 °C) (*)

ELECTRODE TF-IR BL 13100

Combined electrode that can be used to simultaneously perform climate measurements (air humidity and temperature) and infrared surface temperature measurements.

- The combination of the different measuring techniques allows dew point undershoots to be quickly and reliably assessed.
- Built-in audible interval signal

MEASURING RANGES

- **AIR HUMIDITY**
  0 to 100% R.H.
  ±2% R.H. (20 to 80% R.H.) (*)
- **TEMPERATURE**
  -20 to +70 °C, ± 0.5 °C (0 to 60 °C),
- **INFRAROTMESSBEREICH**
  -40 to +380 °C for 0 to 50 °C ambient temperature (*)

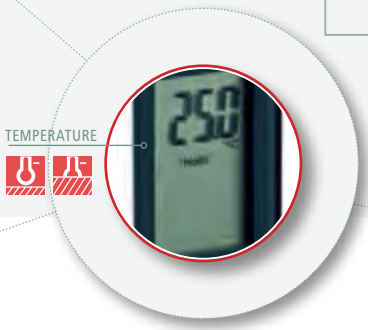
HYDROMETTE
BL UNI 11

PT100 SENSORS BL TEMPERATURE PROBES
in 4-wire technology with built-in microprocessor

SURFACE TEMPERATURE SENSORS OT 100 BL 13170
Suspended sensor tip with thermal separation, resulting in optimised measured value collection, e.g. on solid wall surfaces
Sensor pipe: 110mm [L], 5mm [Ø]
MEASURING RANGES
- **TEMPERATUR**
  –50 to +250 °C

PUSH-IN ELECTRODE ET 10 BL 13165
For measurements in solids, bulk materials, fluids
Sensor pipe: 100mm [L], 3mm [Ø]
MEASURING RANGES
- **TEMPERATURE**
  –50 to +250 °C

IMMERSION AND FLUE GAS TEMPERATURE SENSOR TT 40 BL 13180
Rugged immersion and flue gas sensor for temperature measurement in fluids or highly viscous materials
Sensor pipe: 380mm [L], 5mm [Ø]
MEASURING RANGES
- **TEMPERATURE**
  –50 to +350 °C



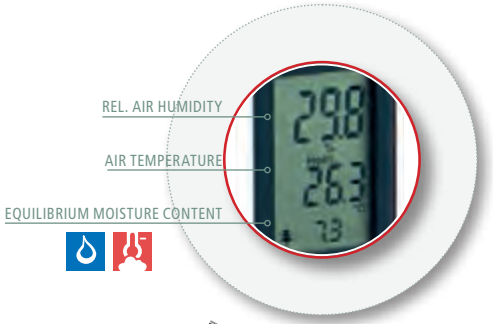
TF STICKS

The TF sticks are used to measure the temperature and air relative humidity in many applications (e.g. residential space, air conditioning, printing shops, warehouses, museums). There are 4 differet types of TF sticks. difference between the sticks are the various filters to protect against dust and moisture.

MEASURING RANGES

- **AIR HUMIDITY**
  0 – 100 % R.H.
  ± 1.8 / 3.0 % R.H. (10 – 90 % R.H.) (*)
- **TEMPERATURE**
  –20 to +80 °C
  ± 0.2 / 0.5 °C (0 to +60 °C)(*)

further information on pages 10 + 11 of the catalogue



SPECIAL PROBES OF THE RH-T 37 FAMILY

For air humidity and temperature measurement, particularly suited for measurements in bulk materials and solid materials (e.g. brickwork or screeds)

MEASURING RANGES

- **STRUCTURAL MOISTURE**
  0 – 100 % R.H.
  ± 1.8 % R.H. (10 – 90 % R.H.) (*)
- **TEMPERATURE**
  –20 to +70 °C
  ± 0.5 °C (-10 to +70 °C) (*)

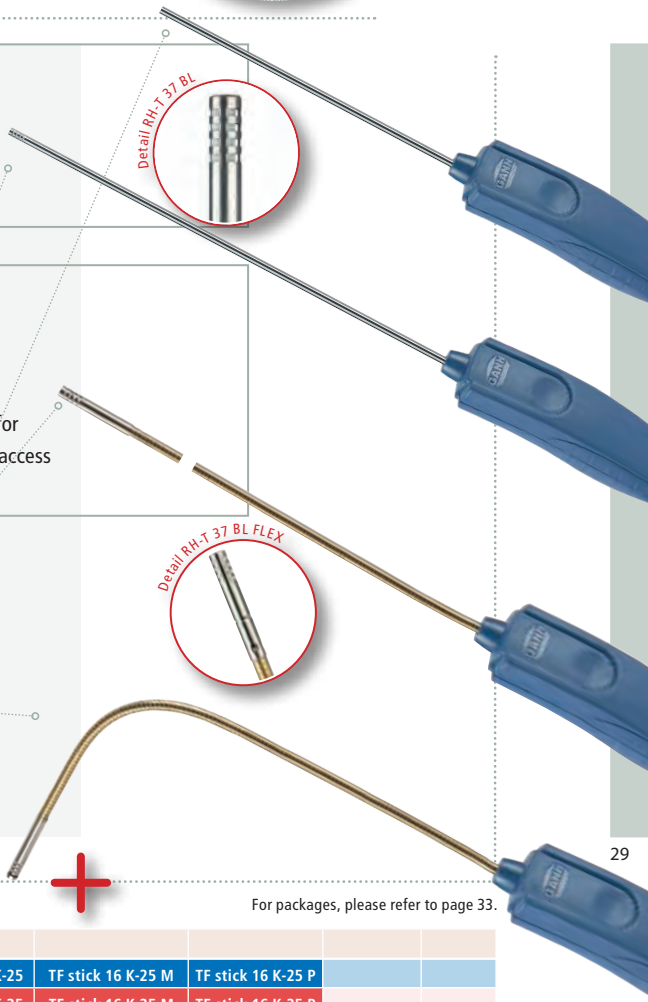
(*) = sensor accuracy

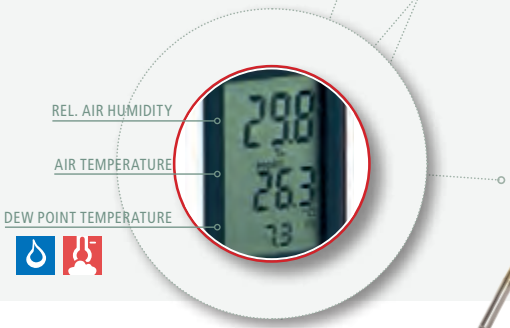
RH-T 37 BL 160 13140
Sensor pipe: 165 [L] x 5,5 mm [Ø]

RH-T 37 BL 320 13141
Sensor pipe: 320 [L] x 5,5 mm [Ø]

RH-T 37 BL FLEX 250 13142
Sensor pipe: 250 [L] x 6,5 mm [Ø]

RH-T 37 BL FLEX 350 13143
Slim flexible sensor pipe (»gooseneck«) for measuring locations that are difficult to access
Sensor pipe: 350 [L] x 6,5 mm [Ø]





For packages, please refer to page 33.

	B 55 BL									
	TF-IR BL	RF-T 28 BL	RH-T 37 BL 160/320	RH-T 37 BL flex 250/350	TF stick 16 K-21	TF stick 16 K-25	TF stick 16 K-25 M	TF stick 16 K-25 P		
	TF-IR BL	RF-T 28 BL	RH-T 37 BL 160/320	RH-T 37 BL flex 250/350	TF stick 16 K-21	TF stick 16 K-25	TF stick 16 K-25 M	TF stick 16 K-25 P		
	TT-IR BL	OT 100 BL								
	ET 10 BL	TT 40 BL								

Air flow measurement
Air velocity measurement

BASIC UNIT
BL LG 17

The BL LG 17 is a **high-precision anemometer**. Even very low air flow can be measured, and the instrument can be used in a variety of applications such as monitoring of rooms, HVAC, blower door tests, laminar air flow control (clean-room technology), etc. The LG 17 basic unit will be delivered with the **LG-25 BL air velocity electrode**. This electrode features a **telescopic handle**, which makes it easy to reach spots that are difficult to access. The sensor can also be screwed onto standard camera tripods, e.g. for carrying out long-term measurements. The OLED display indicates air velocity and barometric pressure simultaneously. Line or bar charts can be shown as alternative display modes.
The LG-25 BL air velocity sensor is designed for use in enclosed spaces.

MEASURING RANGES

- **AIR VELOCITY**
  -2.50 to +2.50 m/s
  ±3 % of the measured value
  +2 % of lower and upper range limits;
  min. ± 0.05 m/s (*)
- **BAROMETIC PRESSURE**
  300 to 1100 mbar
  ±1 mbar (*)

(*) = sensor accuracy

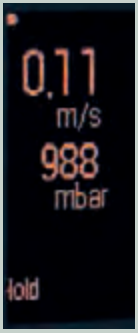
DETAILAN VIEW

Luftgeschwindigkeitselektrode LG-25 BL

PROPERTIES

- Indicates air velocity in m/s
- Indicates absolute barometric pressure in mbar
- Measurement of volume flow rate: circular or rectangular profiles
- Alternative display modes for air velocity: line or bar chart
- Convenient telescopic handle included
- Storage of the 5 most recent measured values
- Total sensor length: 200 mm [L]
- Total length (handle fully extended): 1100 mm [L]
- Will be delivered as a full set, including carrying case **12121**

12121



DETAILAN VIEW OF THE DISPLAY

Different display modes of air velocity in m/s

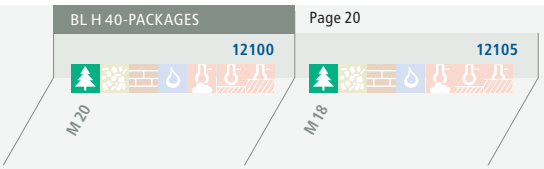
For packages, please refer to page 33.

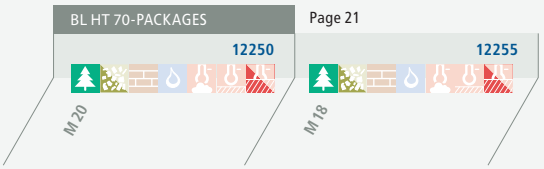
PACKAGES
BL H 40 | HT 70 | BL H 41

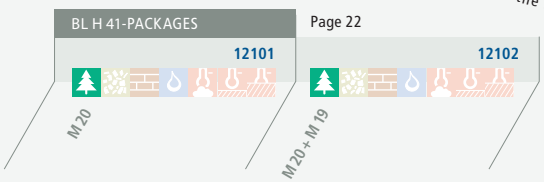
Measuring task is supported by the Hydromette unit – the respective accessories are included in the package (short name below the symbol)

Measuring task is supported by the Hydromette unit – but this package does not include the respective accessories

Measuring task is not supported by the Hydromette unit





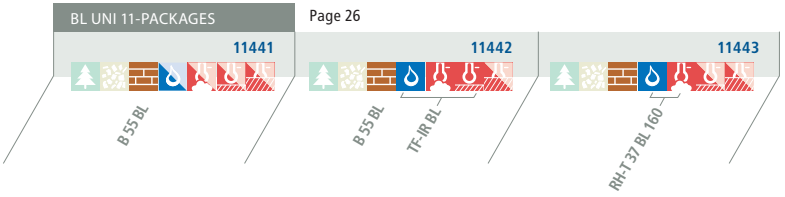


incl. the measurement of wood fibre insulating boards

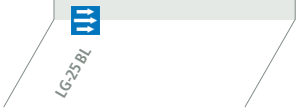
PACKAGES
BL UNI 10 | BL E | BL LG 17

BL E-PACKAGES Page 24

BL UNI 11-PACKAGES Page 26



BL LG 17-PACKAGES Page 30



OUR HANDY COMPACT SERIES UNITS

- Handy units for quick moisture measurement
- Fully automated adjustment of the meter
- No separate electrodes or cables required
- 9V block battery or rechargeable battery


086


06.5

HYDROMETTE
COMPACT

The Compact unit is an electronic **wood and plaster moisture meter** that uses the resistance principle of measurement.

The ergonomically designed housing is enclosed by the entire palm so that the measuring pins at the top of the unit can be pressed into the material to be measured. The slim pins allow the moisture in **sawn timber**, **chipboard**, **veneers**, and **wood fibre materials** (up to 25 mm in thickness) as well as in regular gypsum or mixed plasters to be measured.

Ideal secondary meter for painting or interior fitting contractors or experienced do-it-yourselfers.

MEASURING RANGES

- **WOOD MOISTURE**
  5 to 20% (dry mass)
- **STRUCTURAL MOISTURE**
  0.3 to 3.5 wt.-% (plaster moisture)

PROPERTIES

- 2-level wood species correction
- Plaster moisture measurement including direct readout in wt.-% on large 3-digit LCD display
- Comes with protective cap
- Housing: 200 [L] x 35 [W] x 35 mm [H]

APPLICATION

Measuring a wooden board using the **Compact**

HYDROMETTE
COMPACT S

The Compact S unit is an electronic **moisture meter for wood fuels** featuring average value calibration for **softwood and hardwood** as well as a large 3-digit LCD display.
The sensor pins at the top of the meter allow for moisture measurements to be carried out in wood of up to 30 mm in thickness.

BENEFITS

- Environmental protection due to lower emission
- Protection of oven and chimney due to better combustion
- Higher energy yield, since the wood is burned in its optimum moisture state

APPLICATION

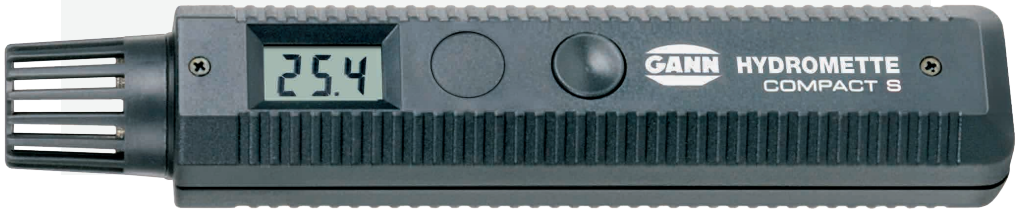
The Compact S unit is particularly suited for checking firewood

MEASURING RANGE

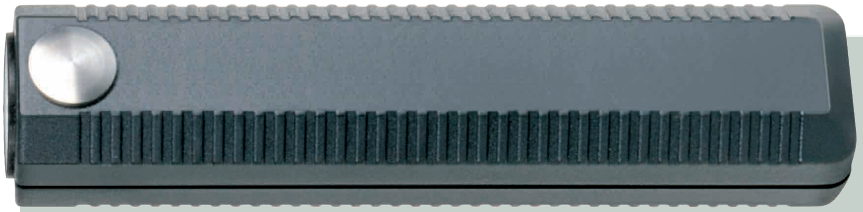
- **WOOD MOISTURE**
  10 to 50% (dry mass)

PROPERTIES

- Direct readout of wood moisture in %
- Comes with protective cap
- Housing: 200 [L] x 35 [W] x 35 mm [H]



HYDROMETTE
COMPACT A



VIEW showing the point-shaped surface at the bottom side of the **Compact A unit**

The Compact A unit uses the **non-destructive** dielectric constant or **radio frequency** principle of measurement and is simply placed onto the material to be measured. Thus many measurements can be performed within a short period of time. The moisture content can be read immediately. There are no electrodes to be tapped in. The moisture values can be measured in wood of up to 40 mm in thickness.

Particularly suited for painting, interior fitting, parquet reclining, or cabinet making contractors.

MEASURING RANGE

- **WOOD MOISTURE**
  5 to 45% (dry mass)

PROPERTIES

- Direct readout of wood moisture in wt.-%
- Measured value correction according to type of wood or wood material from 1 to 10 using the **wood type selector**
- Housing: 170 [L] x 35 [W] x 35 mm [H]

APPLICATION

Non-destructive wood moisture measurement using the **Compact A** unit

HYDROMETTE
COMPACT B

APPLICATION

The **Compact B** unit should be held at the rear part of the unit to prevent the measured value from being affected by the hand.

The Compact B unit is an electronic **structural moisture meter** that uses the **non-destructive measuring technique** that is based on the dielectric constant/radio frequency principle of measurement.

Fitted with LCD display and versatile ball sensor that is used to **sense moisture in building materials of any kind** as well as to **determine the humidity distribution** in walls, ceilings, screeds, and other set building materials.

Particularly suited for parquet reclining and floor tiling contractors in conjunction with a CM meter.

MEASURING RANGE

- **STRUCTURAL MOISTURE**
  0 to 100 digits (scanning range)

PROPERTIES

- Ideal pre-tester for all CM measurements
- Housing: 200 [L] x 35 [W] x 35 mm [H]

ORDER CODE **2030**

OUR CLASSIC SERIES METERS

- Handy units for quick moisture measurement
- LCD display, resolution: 0.1%
- Fully automated adjustment of the meter
- 9V block battery or rechargeable battery

FOR EACH MEASURING APPLICATION – THE APPROPRIATE UNIT FOR YOU

HYDROMETTE
H 35

The H 35 unit is an electronic **wood moisture meter** that uses the resistance principle of measurement for precisely measuring **sawn timber** (up to 180 mm in thickness), **chipboards, and veneers**. The unit is used for individual measurements before and after processing.
Particularly suited to be used in joiner's workshops, by parquet reclining or painting contractors.

MEASURING RANGE

- **WOOD MOISTURE**
  4 to 30% (dry mass)

PROPERTIES

- Direct readout of wood moisture in % on the large LCD display, resolution: 0.1%
- 4-level wood species correction for more than 300 types of wood
- Housing: 140 [L] x 90 [W] x 42/50 mm [H]

APPLICATION

Moisture measurement on a wood billet using the **H 35** unit and an **M 20 electrode**

ACCESSORIES INFO BOX

For packages, please refer to page 45.

M 18 | M 20 | M 20-OF 15 | M 20-HW 200/300

ORDER CODE 1250

HYDROMETTE
HT 65

The HT 65 unit is an electronic **wood moisture meter** that uses the resistance principle of measurement for precisely measuring **sawn timber** (up to 180 mm in thickness), **chipboards, veneers, wood chips**, and similar bulk materials. The unit is used for individual measurements before and after processing.
Additionally, the adjustable **wood temperature compensation** allows for optimisation of the measured value.
Particularly suited for saw mills, parquet factories, and wood-processing companies.

MEASURING RANGE

- **WOOD MOISTURE**
  4 to 60% (dry mass)

PROPERTIES

- Direct readout of wood moisture in % on the large LCD display, resolution: 0.1%
- 4-level wood species correction for more than 300 types of wood
- Automatic wood temperature compensation from -10 to +40 °C
- Housing: 140 [L] x 90 [W] x 42/50 mm [H]

APPLICATION

Hydromette **HT 65** unit in conjunction with an **M 20 electrode**

ACCESSORIES INFO BOX

For packages, please refer to page 45.

	M 18	M 20	M 20-OF 15	M 20-HW 200/300
	HS 500	HS-i 500	HS 1000	HS-i 1000

HYDROMETTE
HT 85 T

APPLICATION Hydromette **HT 85 T** unit together with an **M 18 ram-in electrode**

The HT 85 T unit is an electronic **multipurpose meter** for sensing three values: wood moisture, structural moisture, and temperature. It allows for precisely measuring **sawn timber** (up to 180 mm in thickness), **chipboards, veneers, wood chips,** and similar bulk materials as well as **set building materials**. Thanks to the **large wood moisture measuring range**, the unit is very well suited for individual measurements on the timber yard as well as in the operations before and after processing.

It can be combined with any number of wood moisture, equilibrium wood moisture (EMC), or temperature measuring points to monitor current drying processes. Particularly suited for interior fitting or parquet reclining contractors, wood-processing companies, industrial wood drying processes, construction companies or architects.

MEASURING RANGES

- **WOOD MOISTURE**
  4 to 100% (dry mass)
- **STRUCTURAL MOISTURE**
  – Refer to the overview on page 49 –
- **TEMPERATURE**
  -50 to +199.9 °C
  depending on the Pt100 temperature sensor

PROPERTIES

- 4-level wood species correction for more than 300 types of wood
- Automatic wood temperature compensation from -10 to +90 °C
- Quick measurement of moisture in set building materials using the resistance-based measuring technique
- The temperature measurement precision is achieved by Pt100 measuring resistors connected in 4-wire technology
- Housing: 180 [L] x 115 [W] x 53 mm [H]

ORDER CODE **1370**

For packages, please refer to page 45.

	M 18	M 20	M 20-OF 15	M 20-HW 200/300								
	HS 500	HS-i 500	HS 1000	HS-i 1000	HST 1000	HST-i 1000	HST-i 1000/S 250					
	M 6	M 6-150/250	M 6-Bi 200/300	M 20	M 20-OF 15	M 20-Bi 200/300	M 21-100/250	M 25-100/300				
	LT 20											
	OTW 90	OT 100										
	ET 10	TT 40	TT 30	ET 50	FT 2-30							

HYDROMETTE
M 2050

The M 2050 unit is an electronic **wood moisture and temperature meter** that is based on microprocessor technology and provides **measured data storage** as well as connectivity to a PC or printer.

It allows for precisely measuring the moisture of **sawn timber** (up to 180 mm in thickness), **veneers, wood chips,** and similar bulk materials. **Material temperatures** may be measured as well.

The measured values may be stored individually or as a lot. The meter has a **dialogue feature** which displays error messages if applicable, so that the user may take appropriate measures.

This unit is particularly suited for saw mills, timber dealers, industrial wood drying, surveyors, or **licensed glued laminated timber companies** (DIN 1052).

MEASURING RANGES

- **WOOD MOISTURE**
  4 to 100% (dry mass)
- **TEMPERATURE**
  -30 to +170 °C
  depending on the Pt100 temperature sensor

PROPERTIES

- Measured value storage of 3,000 wood moisture and temperature values including date and time
- Fixed stored individual wood characteristic curves for 250 types of wood
- Fully automated temperature compensation of the wood moisture measured values by means of a connected wood temperature sensor or keyboard input
- PC or printer may be directly connected for further processing the data or printing them
- Statistical evaluation of the measured values for minimum, maximum, mean values as well as standard deviation
- Special calibration for the licensed glued laminated timber industry; EN 14080:2013 (glued laminated timber, glued solid timber, and EN 15497:2014 (linger jointed lumber)
- Housing: 190 [L] x 115 [W] x 56 mm [H]

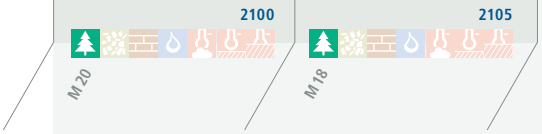
ACCESSORIES INFO BOX

For packages, please refer to page 45.

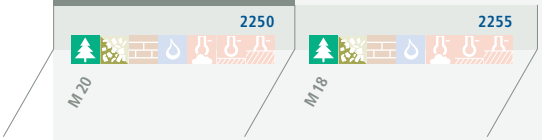
	M 18	M 20	M 20-OF 15	M 20-HW 200/300								
	HS 500	HS-i 500	HS 1000	HS-i 1000	HST 1000	HST-i 1000	HST-i 1000/S 250					
	LT 20											
	OTW 90	OT 100										
	ET 10	TT 40	TT 30	ET 50	FT 2-30							

PACKAGES
H 35 | HT 65 | HT 85 T | M 2050

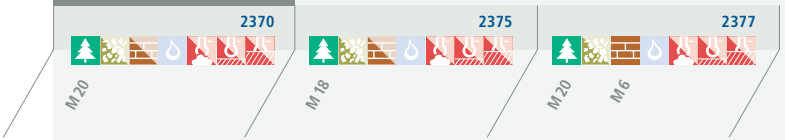
H 35-PACKAGES Page 41



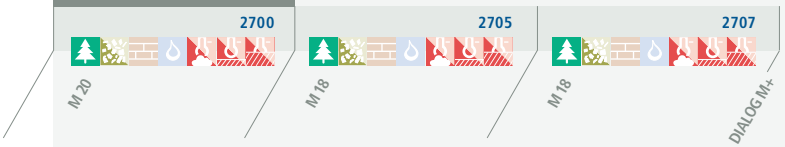
HT 65-PACKAGES Page 42



HT 85 T-PACKAGES Page 43



M 2050-PACKAGES Page 44



Measuring task is supported by the Hydromette unit – the respective accessories are included in the package (short name below the symbol)

Measuring task is supported by the Hydromette unit – but this package does not include the respective accessories

Measuring task is not supported by the Hydromette unit

HYDROMETTE
HB 30

ORDER CODE **1510**

The HB 30 unit is an electronic **wood and structural moisture meter** that uses the resistance principle of measurement for precisely measuring **sawn timber** (up to 180 mm in thickness), **chipboards, parquet, and set building materials**.

Thanks to its **connectivity for a large variety of (active) electrodes** that are used for structural moisture measurement, the unit is highly flexible and allows non-destructive measurements to be performed.

Moreover, the surface temperature can be measured using an infrared sensor.

Particularly suited for interior fitting or parquet reclining contractors, or joiners.

MEASURING RANGES

- **WOOD MOISTURE**
  4 to 30% (dry mass)
- **STRUCTURAL MOISTURE**
  – Refer to the overview on page 49 –
- **TEMPERATURE**
  Infrared measuring range:
  -20 to +199.9 °C using IR 40 EL

APPLICATION HB 30 together with an **M 25-100 brush electrode pair**

PROPERTIES

- Direct readout of wood moisture in % on the large LCD display, resolution: 0.1%
- 2-level wood species correction for more than 300 types of wood
- Housing: 140 [L] x 90 [W] x 42/50 mm [H]

ACCESSORIES INFO BOX

For packages, please refer to page 52.

	M 18	M 20	M 20-OF 15	M 20-HW 200/300								
	M 6	M 6-150/250	M 6-Bi 200/300	M 20	M 20-OF 15	M 20-Bi 200/300	M 21-100/250	M 25-100/300	MB 35	B 50	B 60	LB 71
	IR 40 EL											

HYDROMETTE
UNI 1

The UNI 1 is an electronic **multipurpose meter** for three measured values to which active electrodes for measuring structural moisture, air humidity, and temperature may be connected.

The following (active) electrodes may be connected:

- **B 50, B 60, LB 70** for non-destructive measurement and display of moisture in ceilings, walls, floors, or other building materials
- **MB 35** for concrete surface moisture measurement only
- **MH 34** for measuring *high moisture values* (40 to 200%) in coniferous wood only
- **IR 40 EL** for sensing surface temperature, thermal bridges, and dew point temperature
- **RF-T 28 EL, RH-T 37 EL, RH-T 37 EL flex** for air humidity and air temperature measurement and
- all of our Pt100 temperature sensors

Particularly suited for air conditioning technicians, surveyors who evaluate damage caused by water, insurance companies, and as a supplement for a wood moisture meter.

MEASURING RANGES

- **STRUCTURAL MOISTURE**
  – Refer to the overview on page 49 –
- **AIR HUMIDITY**
  0 to 100% R.H. using RF-T 28 EL, RH-T 37 EL, RH-T 37 EL flex
- **TEMPERATURE**
  -50 to +600 °C
  depending on the Pt100 temperature sensor
  Infrared measuring range:
  -20 to +199.9 °C using IR 40 EL

PROPERTIES

- Quick measurement of moisture in set building materials using the capacitive radio frequency measuring technique
- The temperature measurement precision is achieved by Pt100 measuring resistors connected in 4-wire technology
- Housing: 140 [L] x 90 [W] x 42/50 mm [H]

For packages, please refer to page 52.

	MB 35	B 50	B 60	LB 71								
	RF-T 28 EL	RH-T 37 EL 165/320	RH-T 37 EL flex 250/350									
	RF-T 28 EL	RH-T 37 EL 165/320	RH-T 37 EL flex 250/350	LT 20								
	OTW 90	OT 100	OTW 480	IR 40 EL								
	ET 10	TT 40	TT 30	ET 50	TT 480	TT 600	FT 2-30					

HYDROMETTE
UNI 2

APPLICATION Measuring the structural moisture using the **UNI 2** unit and an **M 21-250 deep measuring electrode pair** [left] and measuring the relative humidity in the boring using **RH-T 37 active electrode** [right]

The UNI 2 is an electronic and **multipurpose meter** for three measured values to which active electrodes for measuring structural moisture, air humidity, and temperature may be connected. Additionally, all **structural moisture measuring electrodes** may be connected to the UNI 2 unit that are based on the **resistance principle of measurement**.

The following (active) electrodes may be connected: Refer to page 47 »UNI 1«.

MEASURING RANGES

- **STRUCTURAL MOISTURE**
  – Refer to the overview on page 49 –
- **AIR HUMIDITY**
  0 to 100% R.H. (RF-T 28 EL, RH-T 37 EL, RH-T 37 EL flex)
- **TEMPERATURE**
  -50 to +600 °C depending on Pt100 temperature sensor
  Infrared measuring range:
  -20 to +199.9 °C using IR 40 EL

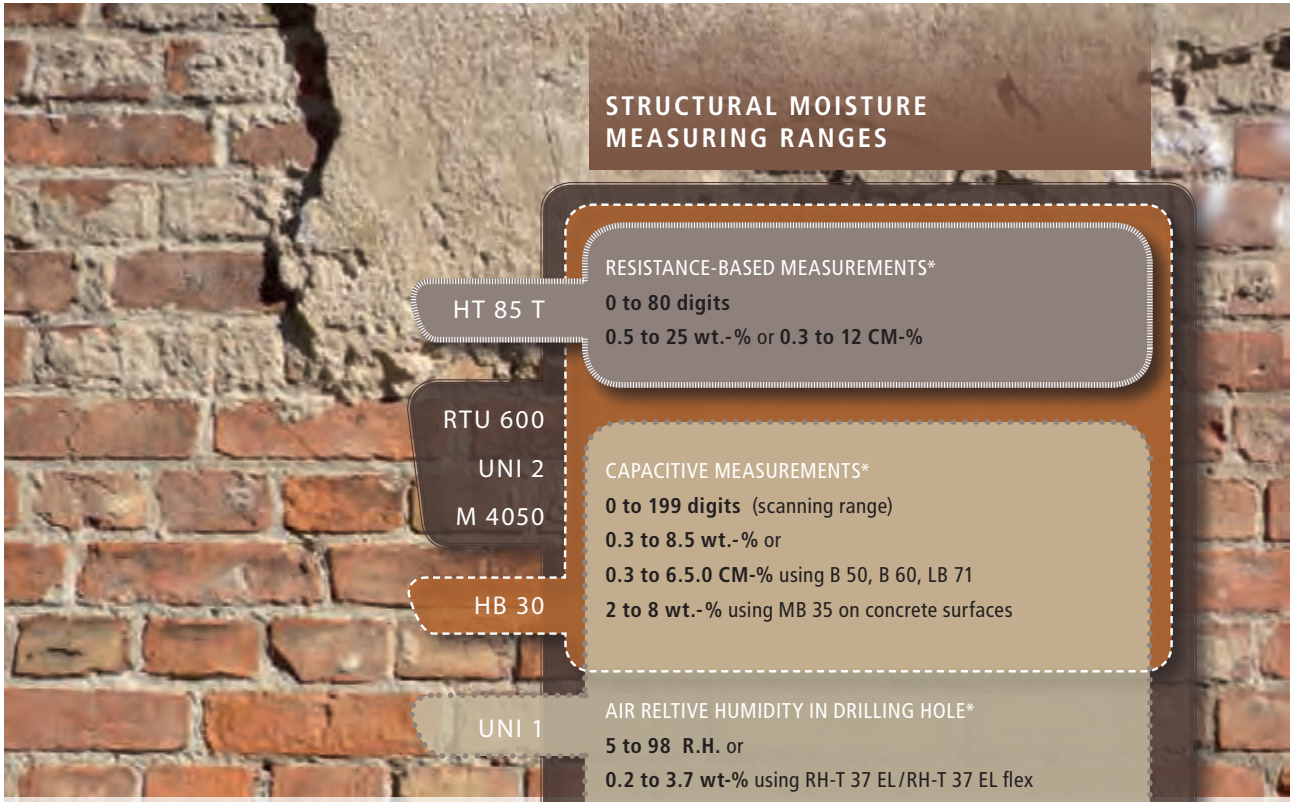
PROPERTIES

- Quick measurement of moisture in set building materials using the resistance-based and capacitive radio frequency measuring techniques
- The temperature measurement precision is achieved by Pt100 measuring resistors connected in 4-wire technology
- Housing: 140 [L] x 90 [W] x 42/50 mm [H]

ACCESSORIES INFO BOX

For packages, please refer to page 52.

	M 6	M 6-150/250	M 6-Bi 200/300	M 20	M 20-OF 15	M 20-Bi 200/300	M 21-100/250	M 25-100/300	MB 35	B 50	B 60	LB 71
	RF-T 28 EL	RH-T 37 EL 165/320	RH-T 37 EL flex 250/350									
	RF-T 28 EL	RH-T 37 EL 165/320	RH-T 37 EL flex 250/350	LT 20								
	OTW 90	OT 100	OTW 480	IR 40 EL								
	ET 10	TT 40	TT 30	ET 50	TT 480	TT 480	TT 480					



STRUCTURAL MOISTURE MEASURING RANGES

HT 85 T

RESISTANCE-BASED MEASUREMENTS*

0 to 80 digits

0.5 to 25 wt.-% or **0.3 to 12 CM-%**

RTU 600
UNI 2
M 4050

CAPACITIVE MEASUREMENTS*

0 to 199 digits (scanning range)

0.3 to 8.5 wt.-% or

0.3 to 6.5.0 CM-% using B 50, B 60, LB 71

HB 30

2 to 8 wt.-% using MB 35 on concrete surfaces

UNI 1

AIR RELTIVE HUMIDITY IN DRILLING HOLE*

5 to 98 R.H. or

0.2 to 3.7 wt-% using RH-T 37 EL/RH-T 37 EL flex

* **for HB 30, HT 85 T, UNI 1, UNI 2, RTU 600:** moisture conversion in % according to the building material using the conversion table in the operating manual

for M 4050: direct readout of the moisture values in % according to the building material

HYDROMETTE
RTU 600

APPLICATION Measuring the structural moisture using the RTU 600 unit and an M 21-100 deep measuring electrode pair

The RTU 600 unit is a **combined** electronic **multipurpose meter** for sensing four values (wood moisture, structural moisture, air humidity, and temperature) that is equipped with **universal wood species correction** for each type of wood and with automatic **temperature compensation**. The **versatile** Hydromette unit allows a large number of (active) electrodes (refer to page 47 »UNI 1«) to be connected as well as all resistance-based wood or structural moisture electrodes to be used with the unit. Particularly suited for painting, interior fitting or parquet reclining contractors, parquet factories, wood-processing companies, industrial wood drying processes, construction companies, architects, surveyors, residential building construction companies, and municipal building departments.

MEASURING RANGES

- **WOOD MOISTURE**
  4 – 100% (dry mass) for resistance-based measuring techniques
  40 – 200% (dry mass) using MH 34 in coniferous wood
- **STRUCTURAL MOISTURE**
  – Refer to the overview on page 49 –
- **AIR HUMIDITY**
  0 to 100% R.H. using RF-T 28 EL, RH-T 37 EL, RH-T 37 EL flex
- **TEMPERATURE**
  -50 to +600 °C
  depending on the Pt100 temperature sensor
  Infrared measuring range:
  -20 to +199.9 °C using IR 40 EL

PROPERTIES

- 81-level wood species correction
- Automatic wood temperature compensation from -10 to +90 °C
- Quick moisture measurement in set building materials
- The temperature measurement precision is achieved by Pt100 measuring resistors connected in 4-wire technology
- Housing: 180 [L] x 115 [W] x 53 mm [H]

ACCESSORIES INFO BOX

For packages, please refer to page 53.

	M 18	M 20	M 20-OF 15	M 20-HW 200/300	MH 34							
	HS 500	HS-i 500	HS 1000	HS-i 1000	HST 1000	HST-i 1000	HST-i 1000/S 250					
	M 6	M 6-150/250	M 6-Bi 200/300	M 20	M 20-OF 15	M 20-Bi 200/300	M 21-100/250	M 25-100/300	MB 35	B 50	B 60	LB 71
	RF-T 28 EL	RH-T 37 EL 165/320	RH-T 37 EL flex 250/350									
	RF-T 28 EL	RH-T 37 EL 165/320	RH-T 37 EL flex 250/350	LT 20								
	OTW 90	OT 100	OTW 480	IR 40 EL								
	ET 10	TT 40	TT 30	ET 50	TT 480	TT 600	FT 2-30					

HYDROMETTE
M 4050

The M 4050 unit is an electronic **structural and wood moisture, air humidity, and temperature meter** that is based on microprocessor technology and provides **data storage** as well as connectivity to a PC or printer. The Hydromette unit may be used to quickly and precisely perform resistance or dielectric constant based measurements. Thanks to the stored characteristic curves, the **measured values** are directly displayed **in wt.-% or CM-%**. The **versatile unit** allows a large number of (active) electrodes (refer to page 47 »UNI 1«) to be connected as well as all resistance-based wood or structural moisture electrodes to be used with the unit.

MEASURING RANGES

- **WOOD MOISTURE**
  4 to 100% (dry mass) for resistance-based measuring techniques
  40 – 200% (dry mass) using MH 34 in coniferous wood
- **STRUCTURAL MOISTURE**
  – Refer to the overview on page 49 –
- **AIR HUMIDITY**
  0 to 100% R.H. using RF-T 28 EL, RH-T 37 EL/flex
- **TEMPERATURE**
  -30 to +170 °C
  depending on the Pt100 temperature sensor
  Infrared measuring range:
  0 to +169.9 °C using IR 40 EL

PROPERTIES

- Measured value storage of 3000 wood moisture and temperature values including date and time
- Statistical evaluation of the measured values for minimum, maximum, mean values as well as standard deviation
- Individual characteristic curves for 250 types of wood and for more than 20 types of building material
- Fully automated temperature compensation of the wood moisture measured values
- Special calibration for the licensed glued laminated timber industry; EN 14080:2013 (glued laminated timber, glued solid timber, and EN 15497:2014 (linger jointed lumber)
- Housing: 190 [L] x 115 [W] x 56 mm [H]

For packages, please refer to page 53.

	M 18	M 20	M 20-OF 15	M 20-HW 200/300	MH 34							
	HS 500	HS-i 500	HS 1000	HS-i 1000	HST 1000	HST-i 1000	HST-i 1000/S 250					
	M 6	M 6-150/250	M 6-Bi 200/300	M 20	M 20-OF 15	M 20-Bi 200/300	M 21-100/250	M 25-100/300	MB 35	B 50	B 60	LB 71
	RF-T 28 EL	RH-T 37 EL 165/320	RH-T 37 EL flex 250/350									
	RF-T 28 EL	RH-T 37 EL 165/320	RH-T 37 EL flex 250/350	LT 20								
	OTW 90	OT 100	OTW 480	IR 40 EL								
	ET 10	TT 40	TT 30	ET 50	TT 480	TT 600	FT 2-30					

PACKAGES
HB 30 | UNI 1 | UNI 2

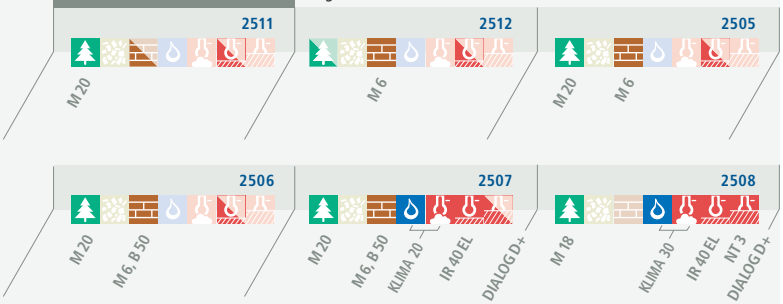
Measuring task is supported by the Hydromette unit – the respective accessories are included in the package (short name below the symbol)

Measuring task is supported by the Hydromette unit – but this package does not include the respective accessories

Measuring task is not supported by the Hydromette unit

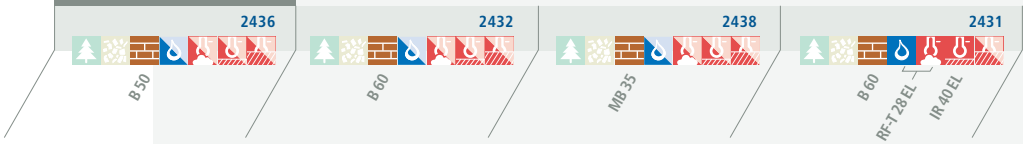
HB 30-PACKAGES

Page 46



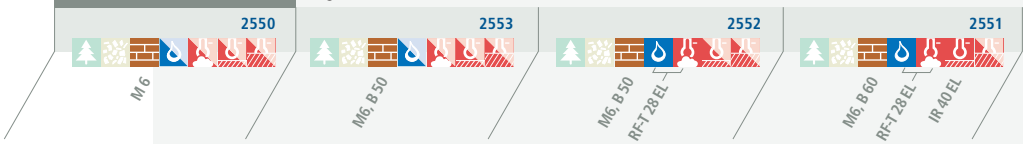
UNI 1-PACKAGES

Page 47



UNI 2-PACKAGES

Page 48



PACKAGES
RTU 600 | M 4050

RTU 600-PACKAGES Page 50

2670


2675


2680


2685


2681


2678


2679


M 4050-PACKAGES Page 51

2400


2401


2402


2403


2404


OUR PRACTICAL CM SERIES METERS

- Particularly compact pressure cylinder
- Specially shaped cylinder bottom
- Variable sealing system
- Small sample quantity (e.g. 20/50 g)

The CM-B Pro (order code 2910) and CM-P Pro units (order code 2920) are compatible with DIN standard.

Compliant with DIN 18560-4:2012-06 standard

HYDROMAT
CM-B STANDARD | CM-B PRO

Compliant with DIN 18560-4:2012-06 standard

The CM-B-Standard and CM-B Pro case sets include meters for determining **moisture in set building materials** and several other materials using the **Calcium Carbide Method**. Beyond electrical measurements, this measuring technique has been known in the industry for years and several professional associations recommend using it for a number of measuring tasks. Using the case sets is easy. All measurements can be performed directly on the object using the tools included in the case and thus quickly allow to obtain information on the particular moisture condition. The decision on whether screed may be laid or a wall may be finished can immediately be made.
Particularly suited for parquet reclining or floor tiling contractors, construction companies, architects, or surveyors.

MEASURING RANGE

- **STRUCTURAL MOISTURE**
  0.30 to 7.50 CM-% using gauge readout
  0.14 to 22.90 CM-% using conversion table

The information on the contents of the case sets is found on our website or in the price list.

ORDER CODE **2900** CM-B Standard **2910** CM-B Pro

HYDROMAT
CM-P PRO

Compliant with DIN 18560-4:2012-06 standard

ORDER CODE **2920**

The Hydromat CM-P unit is a meter that is designed for determining **moisture in set building materials** and several other materials using the **Calcium Carbide Method**. All measurements can be performed directly on the object using the tools included in the case and thus quickly allow to obtain information on the particular moisture condition.

The CM-P case set includes comprehensive equipment. Among others, it contains the **Hydromette Compact B structural moisture meter** (refer to page 39) that is designed to reduce the number of individual measurements required, to scan larger surfaces quickly and efficiently and to obtain significantly higher test reliability. The pre-tester operates non-destructively using a radio frequency field.

The practical **manual pestle** is designed to crush the test material directly in the pressure cylinder and to prepare it quickly while keeping the moisture content.

The decision on whether screed may be laid or a wall may be finished can immediately be made.

Particularly suited for parquet reclining or floor tiling contractors, construction companies, architects, or surveyors.

MEASURING RANGE

- **STRUCTURAL MOISTURE**
  0.30 to 7.50 CM-% using gauge readout
  0.14 to 22.90 CM-% using conversion table

The detailed contents of the case set is found on our website or in the price list.


3603


3604

BASE GAUGE 3603
- Measuring range 0 to 2.5 bar, class 1.6
- Bourdon gauge, housing: Plastic

PREMIUM GAUGE 3604
- Measuring range 0 to 2.5 bar, class 1.0
- Bourdon gauge, housing: Stainless steel

DIGITAL TIMER (not shown) 3648
- For time recording during CM measurements

ELECTRONIC SCALES 3642
- LCD display and battery operation
- Weighing range up to 500 g, resolution 0.1 g

MANUAL PESTLE 3630
- For quick and moisture content keeping sample preparation in the CM bottle, including sealing

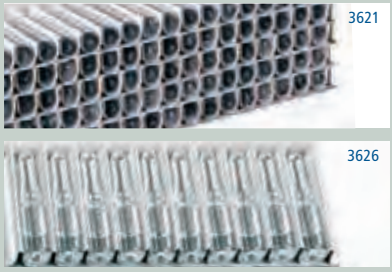
TEST WEIGHTS (not shown)
- For testing our scales
- **Test weight M 1–20** (20 g) 3645
- **Test weight M 2–100** (100 g) 3643

STAINLESS STEEL BALLS 3615
- Replacement ball pack containing **3 balls**

CALCIUM CARBIDE CA 7 VIALS
- Refill pack containing **20 vials** 3620
- Refill pack containing **100 vials** 3621

TEST WATER VIALS 3626
- 10 vials of 0.7 ml test water each
- For testing tightness of the pressure cylinder and operability of the gauge

PE BAGS (not shown) 3649
- Refill pack of 100 bags


3621

3626


Pressure cylinder with manual pestle fitted

OUR DATA LOGGERS

- Portable, handy storage units
- With USB interface for data exchange with a PC and the programming of the data logger
- Min, max threshold function
- Memory capacity: measurement data (both air temperature and humidity) with date and time for each record
- USB interface
- Power supply: 3 V lithium battery
- Optional: software package DIALOG D+
- 81 [L] x 57 [W] x 21 mm [H]

KLIMA 20
DATA LOGGER

The Klima 20 data logger is a **mobile storage unit** for recording air temperature and air humidity data and is specifically designed to be used for long-term monitoring.
The measured values are saved in **user-defined time intervals** (between 5 sec and 6 h) along with the **date and time.** They are stored in the internal memory of the device.
The programming and reading out of the data logger is done via the user-friendly **software DIALOG D+.** Among other things, the stored values can be displayed and printed as a table or as graphic.
The data logger is ideally suited for tracking the climate in residential or working rooms, museums, or warehouses.
The logger is not designed for outdoor use or constantly high air humidity and thus, it is not recommended to do so.
The device is delivered completely with a battery and packaging; however, the software is not included.

APPLICATION

KLIMA 20 fixed with the wall bracket

MEASURING RANGE

- **AIR HUMIDITY**
  0 to 100 % R.H.
  ± 1.8 % R.H. (10 to 90 % R.H.) (*)
- **TEMPERATURE**
  -30 to +70 °C
  ± 0.3 °C (+10 to +40 °C) (*)

(*) = sensor accuracy

PROPERTIES

- Memory capacity:
  20.000 sets of measurement data

ORDER CODE **9630**

KLIMA 30
DATA LOGGER

ORDER CODE **9640**

The Klima 30 data logger is a **mobile storage** unit for recording air temperature and air humidity data and is specifically designed to be used for **long-term monitoring.**

The measured values are saved in **user-defined time intervals** (between 5 sec and 6 h) along with the date and time. They are stored in the internal memory of the device.

Additionally, an **external temperature probe** can also be connected to the Klima 30, so **material or core temperature** measurements can be carried out.

The programming and reading out of the data logger is done via the user-friendly **software DIALOG D+.** Among other things, the stored values can be displayed and printed as a table or as graphic.

The data logger is ideally suited for tracking the climate in residential or working rooms, museums, or warehouses.

The logger is not designed for outdoor use or constantly high air humidity and thus, it is not recommended to do so.

The device is delivered completely with a battery and packaging; however, the software is not included.

MEASURING RANGE

- **AIR HUMIDITY**
  0 to 100 % R.H.
  ± 1.8 % R.H. (10 to 90 % R.H.) (*)
- **TEMPERATURE**
  -30 to +70 °C
  ± 0.3 °C (+10 to +40 °C) (*)

(*) = sensor accuracy

PROPERTIES

- Connection of an external temperature sensor
- Memory capacity:
  50,000 sets of measurement data

APPLICATION

KLIMA 30 fixed with the wall bracket


3901

EXTERNAL TEMPERATURE PROBES
The external temperature probe NT 3 and NT 8 can be connected via the USB port to the data logger Klima 30. They are used to detect the material or the core temperature in, for example, masonry and are automatically detected when connected to the data logger.

MEASURING RANGE

- **TEMPERATURE**
  -50 to +125 °C
  ± 0.5 °C (0 to +40 °C) (*)

(*) = sensor accuracy

- For Data logger Klima 30

EXTERNAL TEMPERATURE PROBE NT 3 3901
- 3 m [L]

EXTERNAL TEMPERATURE PROBE NT 8 3902
- 8 m [L]


3902

WALL BRACKET FOR KLIMA 20 / 30 3900
The wall bracket is used to carry out the measurements at a representative point in the room. By attaching the 20/30 to a wall bracket it can be ensured that the data logger is always exposed to the same conditions, such as to the same air flow.
The wall bracket is magnetic on the back and can be screwed in or attached by a double-sided tape.


3900

ACCESSORIES FOR WOOD MOISTURE

Electrode pairs to be used in conjunction with an M 20 electrode only

DRIVE-IN ELECTRODE
M 20

M 20 drive-in electrode with M 20-DS 16-i conversion kit

M 20 DRIVE-IN ELECTRODE 3300

- For resistance-based wood moisture measurement
- Material: Impact-proof plastic
- Including 10 electrode pins each, 16/23 mm [L]
- For moisture measurement in wood of up to 50 mm in thickness

M 20-DS 16 CONVERSION KIT 4310

- For moisture measurement in wood of up to 30 mm in thickness using particularly slim pins (1.6 mm [Ø])
- Hardly visible punctures in the material (e.g. in mopboards or veneer)

M 20-OF 15 SURFACE MEASURING CAP PAIR 4315

- Moisture measurements on surfaces and veneers without damaging the material to be measured
- Operating depth approx. 2 to 5 mm

M 20-DS 16-i CONVERSION KIT 4311

- For measuring wood fibre insulants
- The impact of surface moisture is reduced due to insulated electrode nuts
- Is used in combination with the Hydromette BL H 41

PRODUCT INFO BOX

H 35	BL H 40	HT 65	BL HT 70	HT 85 T	M 2050	HB 30
BL E	UNI 1	UNI 2	BL UNI 11	RTU 600	M 4050	BL H 41

M 18 V2 Electrode support

3509

RAM-IN ELECTRODE

M 18

M 18 RAM-IN ELECTRODE 3500

- For resistance-based wood moisture measurement
- Material: Corrosion-resistant stainless steel as well as special plastic
- Including 10 electrode pins each, 40/60 mm [L]
- For moisture measurement in thick wood (up to 180 mm) and in hardwood

M 18 V2 ELECTRODE SUPPORT 3509

- without cap nuts, without electrode pins

ELECTRODE PINS WITH TEFLON INSULATION (see page 97)

- For layer or core humidity measurements
- For layer or core humidity measurements
- 2.5 mm [Ø]
- Quantity per pack: 10 pcs.

- **45 mm** [L], max. penetration depth: 25 mm 4550
- **60 mm** [L], max. penetration depth: 40 mm 4500

PRODUCT INFO BOX

H 35	BL H 40	HT 65	BL HT 70	HT 85 T	M 2050	HB 30
BL E	UNI 1	UNI 2	BL UNI 11	RTU 600	M 4050	

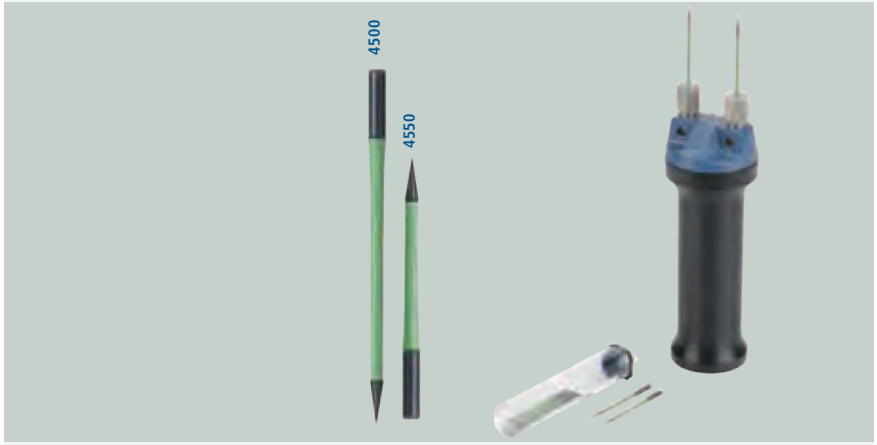
PUSH-IN ELECTRODE
M 19

M 19 PUSH-IN ELECTRODE 3400

- For measuring in finished thermal insulation composite systems
- It is equipped with teflon insulated electrode pins; 10 pieces à 60 mm
- Material: Impact-proof plastic
- For the determination of the moisture content in wood fibre insulants

ELECTRODE PINS WITH TEFLON INSULATION (see page 97)

- Available in the following lengths:
- **45 mm** [L], max. penetration depth: 25 mm 4550
- **60 mm** [L], max. penetration depth: 40 mm 4500



PRODUCT INFO BOX

BL H 41	HB 30	BL E	UNI 2	RTU 600	M 4050	

M 20-HW STICK-IN ELECTRODE PIN PAIR
MH 34 ACTIVE ELECTRODE

VIEW of **M 20-HW** electrode pin pair of 200 mm or 300 mm in length ORDER CODE **4350/4355**

M 20-HW 200/300 STICK-IN ELECTRODE PIN PAIR

- For measurement in chips, wood wool, veneer stacks, and bulk materials
- Non-isolated pins
- 200 mm [L] x 4 mm [Ø] **4350**
  300 mm [L] x 4 mm [Ø] **4355**
- To be used only in conjunction with an M 20 electrode

MH 34 ACTIVE ELECTRODE **3370**

Special probe for high moisture values, suited for forestry and saw mill industry

- Built-in electronics for sensing high wood moisture values in coniferous wood
- Specifically designed to be used for wet storage and for pre-sorting freshly sawn timber for industrial wood drying
- Wood moisture: 40 to 200% (dry mass)
- Not suited for hardwood

PRODUCT INFO BOX

MH 34 active electrode to be used in conjunction with the following units:

H 35	BL H 40	HT 65	BL HT 70	HT 85 T	M 2050	HB 30
BL E	**UNI 1**	**UNI 2**	BL UNI 11	**RTU 600**	**M 4050**	

PUSH-IN ELECTRODES
HS

HS PUSH-IN ELECTRODES

- For measuring the material moisture in bulk materials (wood chips, planing chips etc.)
- Including compression plate
- For connection to a Hydromette a MK 8 measuring cable is required

HS 500 4375

- Penetration depth approx. 500 mm

HS-i 500 4385

- Including 100 mm long insulating sleeves to prevent surface moisture from skewing the measuring result
- Penetration depth approx. 500 mm

HS 1000 4390

- Penetration depth approx. 870 mm

HS-i 1000 4395

- Including 150 mm long insulating sleeves to prevent surface moisture from skewing the measuring result
- Penetration depth approx. 870 mm

ORDER CODE **4375**

ORDER CODE **4385**

ORDER CODE **4390**

ORDER CODE **4395**

DRAWING TO SCALE

– Special lengths available on request –

PRODUCT INFO BOX

H 35	BL H 40	HT 65	BL HT 70	HT 85 T	M 2050	HB 30
BL E	UNI 1	UNI 2	BL UNI 11	RTU 600	M 4050	

PUSH-IN ELECTRODES
HST

HST PUSH-IN ELECTRODES
- For measuring the material moisture in bulk materials (wood chips, planing chips etc.)
- Including compression plate
- Penetration depth approx. 830 mm
- For connection to a Hydromette a MK 8 and MK 15 measuring cable are required

HST 1000 4370
- Temperature measurement using built-in Pt100 sensor from -20 to +80 °C

HST-i 1000 4380
- Including 150 mm long insulating sleeves to prevent surface moisture from skewing the measuring result
- Temperature measurement using built-in Pt100 sensor from -20 to +80 °C

HST-i 1000/S 250 4381
- Including 250 mm long insulating sleeves to prevent surface moisture from skewing the measuring result
- Temperature measurement using built-in Pt100 sensor from -20 to +80 °C


ORDER CODE **4370**


ORDER CODE **4380**


ORDER CODE **4381**

PRODUCT INFO BOX

H 35	BL H 40	HT 65	BL HT 70	**HT 85 T**	**M 2050**	HB 30
BL E	UNI 1	UNI 2	BL UNI 11	**RTU 600**	**M 4050**	


YOUR SUCCESS THROUGH OUR PRECISION

ACTIVE ELECTRODES
B 50 | B 60 | LB 71

B 50 ACTIVE ELECTRODE 3750

- For capacitive radio frequency based structural moisture measurement
- Built-in electronics for **non-destructively sensing** moisture in all types of building materials
- For detecting the **moisture distribution** in ceilings, walls, screeds, and other set building materials
- High penetration of up to 120 mm (depending on material density)

B 60 ACTIVE ELECTRODE 3760

- Same as B 50, except for additional built-in **limit adjuster** from 20 to 140 digits and beeper

LB 71 ACTIVE ELECTRODE 3765

- Same as B 50, except for additional **extendable telescopic probe:**
  - > Hardly accessible locations can be reached without ladder or stooping down
  - > Quick and convenient scanning of large surfaces and components
- Stagelessly extended up to 1.50 m

MEASURING RANGES

- 0 to 199 digits (scanning mode), moisture qualification using the table
- 0.3 to 8.5 wt.-%,
  Depending on the building material, conversion by means of the table
- 0.3 to 6.5 CM-%
  Depending on the building material, conversion by means of the table

PRODUCT INFO BOX

H 35	BL H 40	HT 65	BL HT 70	HT 85 T	M 2050	**HB 30**
BL E	**UNI 1**	**UNI 2**	BL UNI 11	**RTU 600**	**M 4050**	

ORDER CODE **13755**

B 55 BL
ACTIVE ELECTRODE

B 55 BL ACTIVE ELECTRODE 13755

The B 55 BL is a probe designed for the field of **structural moisture** using the **capacitive high frequency measuring principle.** The electrode is applicable for all blue Hydromettes that are using this kind of measuring principle.

MEASURING RANGES

- 0 to 199 digits (scanning mode), moisture qualification using the table
- 0.3 - 8.5 wt.-%, direct readout of the moisture values in % according to the building material
- 0.3 - 6.5 CM-%, direct readout of the moisture values in % according to the building material

PROPERTIES

- Built-in electronics for non-destructively sensing moisture in all types of building materials
- For detecting the moisture distribution in ceilings, walls, screeds, and other set builing materials or hard materials
- The Auto Sensor Technology used auto-matically detects the electrode connected and enables the Hydromette to adapt the measured value readout to the respective sensor type
- Audible alarm in case a user-defined limit is exceeded. The limit can be set from 0.1 to 199 digits by using the Hydromette

APPLICATION

The B 55 BL active electrode in combination with the Hydromette BL E

PRODUCT INFO BOX

H 35	BL H 40	HT 65	BL HT 70	HT 85 T	M 2050	HB 30
BL E	UNI 1	UNI 2	**BL UNI 11**	RTU 600	M 4050	

M 20 DRIVE-INELECTRODE
MB 35 ACTIVE ELECTRODE

M 20 DRIVE-IN ELECTRODE 3300

- For resistance-based structural material moisture measurement
- Material: Impact-proof plastic
- Including 10 electrode pins each, 16/23 mm [L]
- For moisture measurements in soft, set building materials (e.g. plaster, gypsum, or aerated concrete)
- For deep measurements in aerated concrete etc. up to 70 mm, also electrode pins of 60 mm length (order code 4660) may be used

M 20-OF 15 SURFACE MEASURING CAP PAIR 4315

- For moisture measurements on surfaces without damaging the material to be measured, to be used in conjunction with the M 20 electrode
- Operating depth approx. 2 to 5 mm

MB 35 ACTIVE ELECTRODE 3770

- Special probe with built-in electronics for sensing near-surface moisture in *concrete*
- For pre-testing before applying coatings or adhesives
- Depth of penetration approx. 2 to 5 mm
- To be used in the moisture range from 2 to 8 wt.-% (oven-dry test)

3300

4315

Electrodes to be used in conjunction with the following units:

M 20	H 35	BL H 40	HT 65	BL HT 70	**HT 85 T**	M 2050	**HB 30**
	BL E	UNI 1	**UNI 2**	BL UNI 11	**RTU 600**	**M 4050**	
MB 35	H 35	BL H 40	HT 65	BL HT 70	HT 85 T	M 2050	**HB 30**
	BL E	**UNI 1**	**UNI 2**	BL UNI 11	**RTU 600**	**M 4050**	

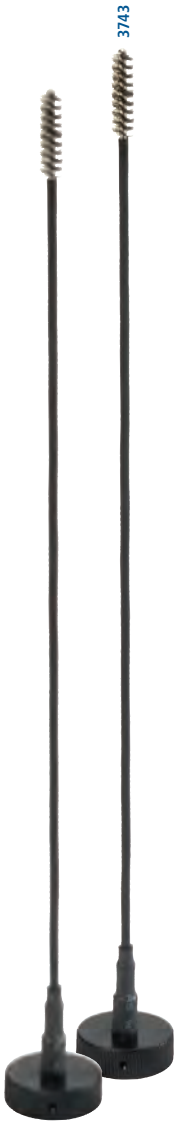
M 25
BRUSH ELECTRODE PAIR

APPLICATION The **brush electrodes** are put into the pre-drilled hole

- For structural moisture measurement in hard or soft building materials
- Easily create moisture profiles by performing measurements in layers
- Including convenient turning aid for inserting and removing
- No additional contact agent required
- Insulated stem to prevent surface moisture from skewing the measuring result

M 25-100 BRUSH ELECTRODE PAIR 3740
- To be used up to 100 mm [D], sampling holes to be drilled with Ø 6 mm drill bit

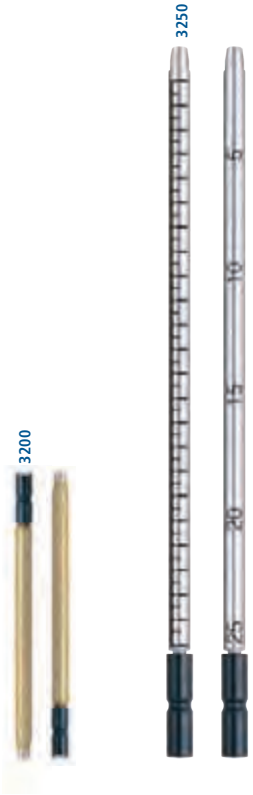
M 25-300 BRUSH ELECTRODE PAIR 3743
- To be used up to 300 mm [D], sampling holes to be drilled with Ø 6 mm drill bit



PRODUCT INFO BOX

H 35	BL H 40	HT 65	BL HT 70	HT 85 T	M 2050	HB 30
BL E	UNI 1	UNI 2	BL UNI 11	RTU 600	M 4050	

M 21
ELECTRODE PAIR FOR DEEP MEASUREMENT



- For structural moisture measurements, especially for deep measurements in building materials together with contact paste [5400]
- Create moisture profiles by performing measurements in layers
- Including scale for indicating the measuring depth
- Insulated stem to prevent surface moisture from skewing the measuring result

M 21-100 ELECTRODE PAIR FOR DEEP MEASUREMENT 3200

- To be used up to 100 mm [D], sampling holes to be drilled with Ø 8 mm drill bit

M 21-250 ELECTRODE PAIR FOR DEEP MEASUREMENT 3250

- To be used up to 250 mm [D], sampling holes to be drilled with Ø 10 mm drill bit

DETAIL Both **electrode pairs are equipped** with one-centimetre **division** scale

PRODUCT INFO BOX

H 35	BL H 40	HT 65	BL HT 70	HT 85 T	M 2050	HB 30
BL E	UNI 1	UNI 2	BL UNI 11	RTU 600	M 4050	

M 6 STICK-IN ELECTRODE PAIR
M 6-Bi 200/300 FLAT ELECTRODE PAIR

APPLICATION TIP Ideal electrode clearance: 10 cm

Flat electrodes to be used in conjunction with M 6 electrodes

M 6 STICK-IN ELECTRODE PAIR 3700

- For measuring hard, set building materials (concrete, screeds etc.) together with contact paste [5400]
- Including 10 replacement pins each, 40/60 mm [L]
- Electrode heads are used as carrier system for various other electrode pairs:
  > M 6-Bi 200/300
  > M 20-Bi 200/300 (p. 74)
  > M 6-150/250 (p. 74)

M 6-Bi 200/300 FLAT ELECTRODE PAIR

- For moisture measurement in screed or insulating materials, particularly in edge or floating joints
- Insulated stem to prevent surface moisture from skewing the measuring result
- 10 [L] x 0.8 [W] x 200 mm [H] 3702
  10 [L] x 0.8 [W] x 300 mm [H] 3703
- For use, one M 6 electrode pair is required

M 6 stick-in electrodes to be used in conjunction with the following units:

H 35	BL H 40	HT 65	BL HT 70	HT 85 T	M 2050	HB 30
BL E	UNI 1	UNI 2	BL UNI 11	RTU 600	M 4050	

M 6-150/250 | M 20-Bi
STICK-IN ELECTRODE PIN PAIRS

M 6-150/250 STICK-IN ELECTRODE PINS

- Extra slim probes for moisture measurement in building or insulating materials using floating joint/spacer cross
- Non-insulated
- For use, one M 6 electrode pair or one M 20 electrode is required
- **150 mm** [L] x 3 mm [Ø] 3706
  250 mm [L] x 2 mm [Ø] 3707

M 20-BI 200/300 STICK-IN ELECTRODE PINS

- For deep measurement in insulations, roofs, and soft set building materials
- Insulated stem to prevent surface moisture from skewing the measuring result
- **200 mm** [L] x 4 mm [Ø] 4360
  300 mm [L] x 4 mm [Ø] 4365
- For use, one M 6 electrode pair or one M 20 electrode is required

APPLICATION

Measurements in the spacer cross using the **M 6-150/250** stick-in electrode tip pair

M 6 stick-in electrodes or M 20 drive-in electrode to be used in conjunction with the following units:

H 35	BL H 40	HT 65	BL HT 70	**HT 85 T**	M 2050	**HB 30**
BL E	UNI 1	**UNI 2**	BL UNI 11	**RTU 600**	**M 4050**	

DESIGNED FOR REAL-WORLD APPLICATIONS

RF-T 28 EL/BL
ACTIVE ELECTRODE

RF-T 28 ACTIVE ELECTRODE

- Probe for measuring the climate (air humidity and temperature) within seconds
- Fast response speed of the sensor allows for detecting leakages (e.g. clearance between doorframe and door leaf or window)
- Excellent long-term stability of the sensor

MEASURING RANGES

- **AIR HUMIDITY**
  0 to 100% R.H.
  ±1,8% R.H. (10 to 85% R.H.) (*)
- **TEMPERATURE**
  -10 to +70 °C
  ±0.75 °C (10 to +55 °C) (*)

(*) = sensor accuracy

RF-T 28 EL 3155
RF-T 28 BL 13155

DETAIL VIEW

Probe head **RF-T 28 EL/BL**

RF-T 28 EL		H 35	BL H 40	HT 65	BL HT 70	HT 85 T	M 2050	HB 30
		BL E	**UNI 1**	**UNI 2**	BL UNI 11	**RTU 600**	**M 4050**	
RF-T 28 BL		H 35	BL H 40	HT 65	BL HT 70	HT 85 T	M 2050	HB 30
		BL E	UNI 1	UNI 2	**BL UNI 11**	RTU 600	M 4050	

RH-T 37 EL/BL 160/320
ACTIVE ELECTRODE

VIEW of the ergonomically shaped handle of the **RH-T 37** (side view) ORDER CODE **3140**

RH-T 37 ACTIVE ELECTRODE

- Special probe for air humidity and temperature measurement, particularly suited for measurements in bulk materials and solid materials (e.g. brickwork or screeds)
- Slim sensor pipe
- For humidity analyses, damage survey, drying of buildings, checking whether floor or wall covers may be laid, measurements in joints
- Diaphragm filter (for air containing dust, pollution, or high air flow velocity) is standard equipment

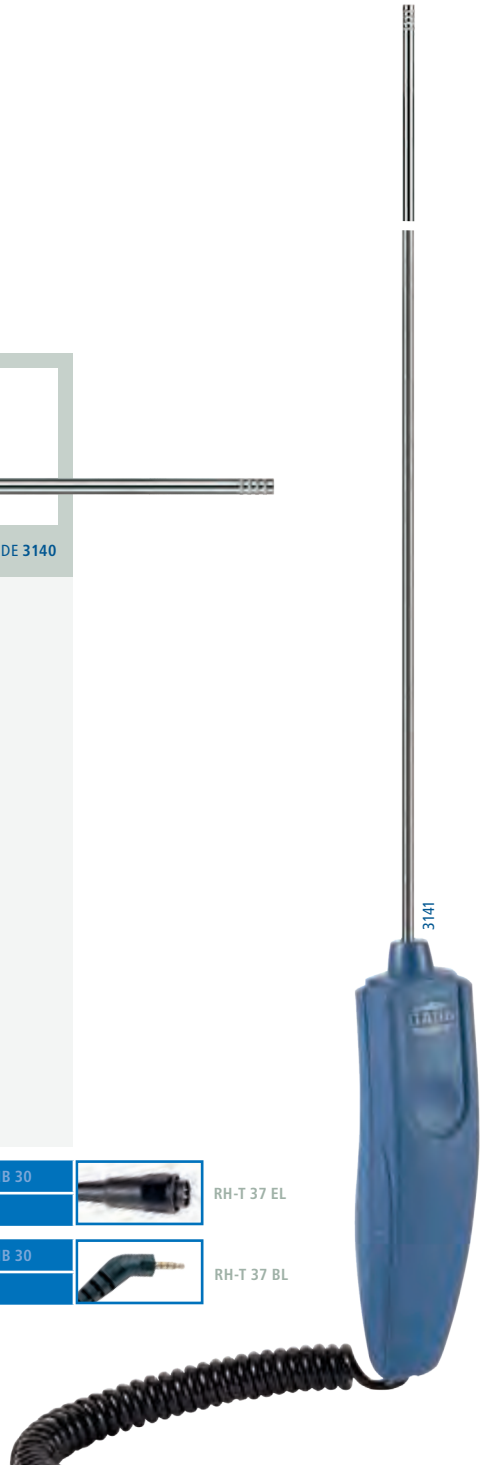
MEASURING RANGES

- **AIR HUMIDITY**
  0 to 100% R.H.
  ±1.8% R.H. (10 to 90% R.H.) (*)
- **TEMPERATURE**
  -20 to +70 °C
  ±0.5 °C (-10 to +70 °C) (*)

(*) = sensor accuracy

RH-T 37 EL 160 3140
RH-T 37 BL 160 13140
- Sensor pipe: 165 [L] x 5.5 mm [Ø]

RH-T 37 EL 320 3141
RH-T 37 BL 320 13141
- Sensor pipe: 320 [L] x 5.5 mm [Ø]



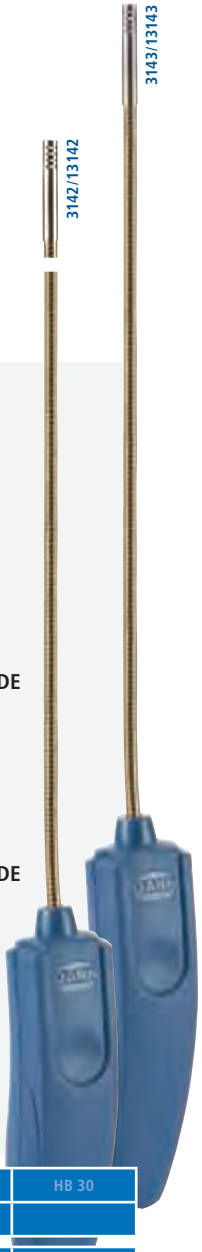
H 35	BL H 40	HT 65	BL HT 70	HT 85 T	M 2050	HB 30
BL E	**UNI 1**	**UNI 2**	BL UNI 11	**RTU 600**	**M 4050**	

RH-T 37 EL

H 35	BL H 40	HT 65	BL HT 70	HT 85 T	M 2050	HB 30
BL E	UNI 1	UNI 2	**BL UNI 11**	RTU 600	M 4050	

RH-T 37 BL

RH-T 37 EL FLEX 250/350
ACTIVE ELECTRODE



RH-T 37 EL FLEX ACTIVE ELECTRODE

- Special probe for air humidity and temperature measurement, particularly suited for measurements in bulk materials and solid materials (e.g. brickwork or screeds)
- Slim flexible sensor pipe (»gooseneck«) for measuring locations that are difficult to access
- For humidity analyses, damage survey, drying of buildings, checking whether floor or wall covers may be laid, measurements in joints
- The Hydromette *M 4050* can be used to measure air humidity in a drill hole and *sorption isotherms* can be used to determine the moisture content of certain set building materials or whether coatings can be applied to these building materials
- Diaphragm filter (for air containing dust, pollution, or high air flow velocity) is standard equipment

MEASURING RANGES

- **AIR HUMIDITY**
  0 to 100% R.H.
  ±1.8% R.H. (10 to 90% R.H.) (*)
- **TEMPERATURE**
  -20 to +70 °C
  ±0.5 °C (-10 to +70 °C) (*)
  (*) = sensor accuracy

RH-T 37 FLEX 250 ACTIVE ELECTRODE

- Sensor pipe (gooseneck):
  250 [L] x 6.5 mm [Ø]

RH-T 37 EL FLEX 250 3142
RH-T 37 BL FLEX 250 13142

RH-T 37 FLEX 350 ACTIVE ELECTRODE

- Sensor pipe (gooseneck):
  350 [L] x 6.5 mm [Ø]

RH-T 37 EL FLEX 350 3143
RH-T 37 BL FLEX 350 13143

RH-T 37 EL FLEX		H 35	BL H 40	HT 65	BL HT 70	HT 85 T	M 2050	HB 30
		BL E	**UNI 1**	**UNI 2**	BL UNI 11	**RTU 600**	**M 4050**	
RH-T 37 BL FLEX		H 35	BL H 40	HT 65	BL HT 70	HT 85 T	M 2050	HB 30
		BL E	UNI 1	UNI 2	**BL UNI 11**	RTU 600	M 4050	


3
4

ORDER CODE **3150**

IR 40 EL
ACTIVE ELECTRODE

DETAIL VIEW

Built-in **laser pointer of the IR 40 EL unit**

INFRARED SURFACE TEMPERATURE SENSOR

- Infrared sensor for non-contact surface temperature measurements
- Particularly suited for objects having a low thermal capacity (wood, glass, insulating materials)
- Ideal sensor for detecting thermal bridges, determining the dew point temperature, measuring live, moving or vibrating parts as well as for locating heating pipes or coils
- Built-in laser pointer for identifying the measuring spot
- 6:1 optical system
- Fixed emissivity: 0.95

- **TEMPERATURE**

Infrared measuring range:
-20 to +199.9 °C
(when using the Hydromette M 4050 unit:
0 to +169.9 °C
±0.5 °C (0 to 60 °C), at ambient temperature
0 to 50 °C (*)

(*) = sensor accuracy

IR 40 EL 3150

H 35	BL H 40	HT 65	BL HT 70	HT 85 T	M 2050	**HB 30**
BL E	**UNI 1**	**UNI 2**	BL UNI 11	**RTU 600**	**M 4050**	

TF-IR BL
ACTIVE ELECTRODE

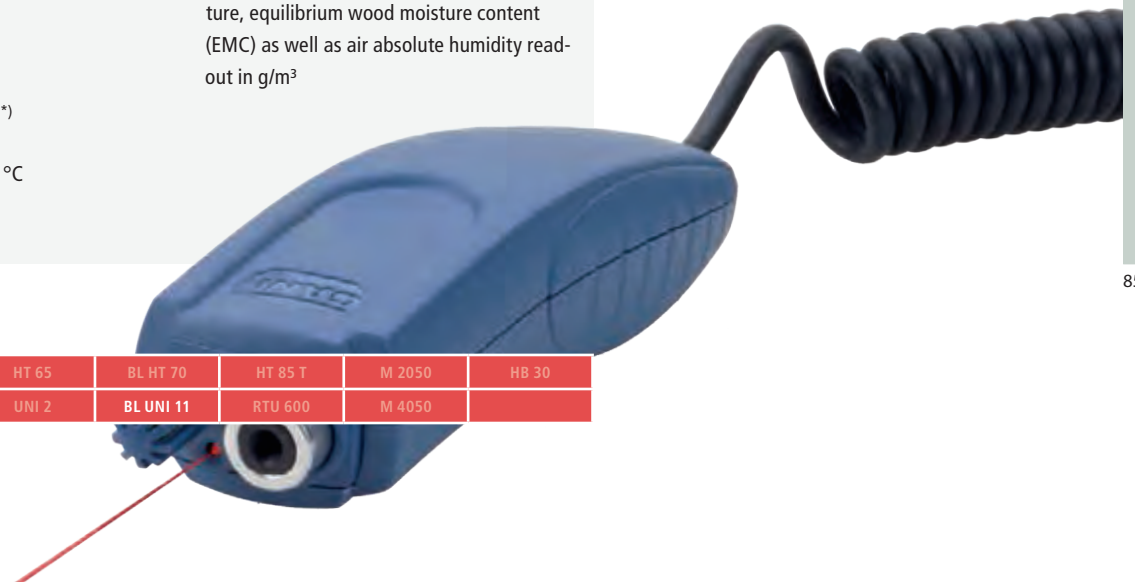
The **TF-IR BL active electrode** is a combined electrode that can be used to simultaneously perform climate measurements (air humidity and temperature) and infrared surface temperature measurements.
This combination of the different measuring techniques enables the TF-IR BL unit to be used for quickly and reliably assessing dew point undershoots or determining borderline conditions on surfaces such as walls, ceilings, floors as well as on window or door lintels.
When using the unit in due time mould formation (fungal growth) may be prevented and occurrence of moistening caused by condensation may be assessed reliably.

MEASURING RANGES

- **AIR HUMIDITY**
  0 to 100% R.H.
  ±2% R.H. (20 to 80% R.H.) (*)
- **TEMPERATURE**
  Air temperature: –20 to +70 °C
  ±0.5 °C (-10 to +60 °C) (*)
  Infrared measuring range:
  -40 to +380 °C
  ± 0.5 °C (0 to +60 °C), at
  0 to 50 °C ambient temperature (*)

  (*) = sensor accuracy

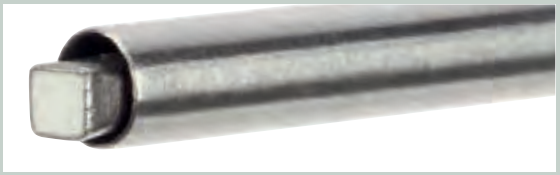
- **Built-in audible interval signal:**
  The more the surface temperature is approaching the dew point temperature, the more the signal will change from intermittent to continuous sound.
- Built-in laser pointer for identifying the measuring spot
- Fixed emissivity: 0.95
- Automatic calculation of dew point temperature, equilibrium wood moisture content (EMC) as well as air absolute humidity readout in g/m³



H 35	BL H 40	HT 65	BL HT 70	HT 85 T	M 2050	HB 30
BL E	UNI 1	UNI 2	**BL UNI 11**	RTU 600	M 4050	

ORDER CODE **13100**

PT100 SENSORS
BL TEMPERATURE SENSORS



DETAIL VIEW

The **ceramic tip** of the OT 100 BL sensor is **suspended**

ORDER CODE **13170**

- Pt100 sensor in 4-wire technology
- Built-in microprocessor

ET 10 BL PUSH-IN TEMPERATURE SENSOR 13165

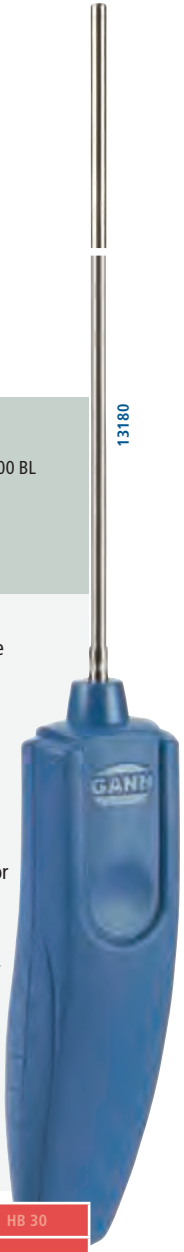
- Rugged push-in sensor for measurements in solids, bulk materials, liquids
- Sensor pipe: 100 mm [L], 3 mm [Ø]
- MEASURING RANGE -50 to +250 °C

OT 100 BL SURFACE TEMPERATURE SENSORS 13170

- Suspended sensor tip with thermal separation and resulting optimised measured value collection, e.g. on wall surfaces
- Optional: thermally conductive paste [refer to page 94]
- Sensor pipe: 110 mm [L], 5 mm [Ø]
- MEASURING RANGE -50 to +250 °C

TT 40 BL IMMERSION AND FLUE GAS TEMPERATURE SENSOR 13180

- Rugged immersion and flue gas sensor for temperature measurement in liquids or pasty materials, e.g. glue, hot-melt adhesive or in asphalt or tar
- Sensor pipe: 380 mm [L], 5 mm [Ø]
- MEASURING RANGE -50 to +350 °C



ET 10 BL	H 35	BL H 40	HT 65	**BL HT 70**	HT 85 T	M 2050	HB 30
	BL E	UNI 1	UNI 2	**BL UNI 11**	RTU 600	M 4050	
OT 100 BL	H 35	BL H 40	HT 65	BL HT 70	HT 85 T	M 2050	HB 30
	BL E	UNI 1	UNI 2	**BL UNI 11**	RTU 600	M 4050	
TT 40 BL	H 35	BL H 40	HT 65	BL HT 70	HT 85 T	M 2050	HB 30
	BL E	UNI 1	UNI 2	**BL UNI 11**	RTU 600	M 4050	

PT100 SENSORS
CLASSIC TEMPERATURE SENSORS

- Pt100 sensor in 4-wire technology

ET 10 PUSH-IN TEMPERATURE SENSOR
3165

- Rugged push-in sensor for measurements in solids, bulk materials, liquids
- Sensor pipe: 100 mm [L], 3 mm [Ø]
- MEASURING RANGE -50 to +250 °C

OT 100 SURFACE TEMPERATURE SENSOR
3170

- Suspended sensor tip with thermal separation and resulting optimised measured value collection, e.g. on wall surfaces
- Optional: thermally conductive paste [refer to page 94]
- Sensor pipe: 110 mm [L], 5 mm [Ø]
- MEASURING RANGE -50 to +250 °C

LT 20 AIR/GAS TEMPERATURE SENSOR 3190

- Fast air/flue gas sensor with slotted openings in the sensing area which allow the sensor to quickly respond to changes of the ambient conditions
- Sensor pipe: 480 mm [L], 5 mm [Ø]
- MEASURING RANGE -20 to +200 °C

ET 50 PUSH-IN TEMPERATURE SENSOR 3160

- For fast measurements in soft solids, bulk materials, liquids
- Sensor pipe: 120 mm [L], 3.0/2.3 mm [Ø] (tip)
- MEASURING RANGE -50 to +300 °C

PT100 SENSORS
CLASSIC TEMPERATURE SENSORS

- Pt100 sensor in 4-wire technology

SURFACE TEMPERATURE SENSORS

- Angled special surface sensor, e.g. for veneer presses

OTW 90 3175

- Sensor pipe: 100 mm [L], 5 mm [Ø]
- MEASURING RANGE -50 to +250 °C

OTW 480 3176

- Sensor pipe: 480 mm [L], 5 mm [Ø]
- MEASURING RANGE -50 to +600 °C

IMMERSION AND FLUE GAS TEMPERATURE SENSORS

- Rugged immersion and flue gas sensor for temperature measurement in liquids or pasty materials, e.g. glue, hot-melt adhesive or in asphalt or tar

TT 30 3185

- Sensor pipe: 230 mm [L], 3 mm [Ø]
- MEASURING RANGE -50 to +350 °C

TT 40 3180

- Sensor pipe: 480 mm [L], 5 mm [Ø]
- MEASURING RANGE -50 to +350 °C

TT 480 3181

- Sensor pipe: 480 mm [L], 5 mm [Ø]
- MEASURING RANGE -50 to +600 °C

TT 600 3182

- Sensor pipe: 600 mm [L], 5 mm [Ø]
- MEASURING RANGE -50 to +600 °C

DETAIL VIEW

Different **geometries of the measuring heads**

H 35	BL H 40	HT 65	BL HT 70	HT 85 T*	M 2050 *	HB 30
BL E	UNI 1	UNI 2	BL UNI 11	RTU 600	M 4050	

* = only up to +200 °C

FLEXIBLE
TEMPERATURE SENSORS

For measuring the core temperature of various materials e.g. wood, building materials, and bulk materials. The measuring cable is Teflon sheathed and thus resistant to high temperatures. Additionally, the different cable lengths available increase versatility. So measurements in wood drying kilns (Sirex or ISPM-15 drying) are easily done.

- The 7-pin connector can be used to connect the sensor to different Hydromette units
- Sensor approx. 5.2 mm [Ø]

- MEASURING RANGE -20 to +120 °C

FT 2 3195
- Including 2 m Teflon cable

FT 5 3196
- Including 5 m Teflon cable

FT 10 3197
- Including 10 m Teflon cable

FT 20 3198
- Including 20 m Teflon cable

FT 30 3199
- Including 30 m Teflon cable

VIEW

FT 2 **temperature sensor**

ORDER CODE **3195**

PRODUCT INFO BOX

H 35	BL H 40	HT 65	BL HT 70	**HT 85 T**	**M 2050**	HB 30
BL E	**UNI 1**	**UNI 2**	BL UNI 11	**RTU 600**	**M 4050**	

CABLE & ADAPTER
MEASURING & CONNECTING


16710


6210

MK 8 MEASURING CABLE 6210
- For connecting a resistance-based electrode to a meter
- 1 m [L]

MK 15 MEASURING CABLE 6710
- 7-pin connecting/extension cable
- 1 m [L]

MK 25 CONNECTING CABLE 6935
- For connecting a Hydromette M 2050 /M 4050 with the USB port of a PC or notebook
- Connectors: 9-pin. Sub D to USB
- 1,8 m [L]

MK 26 CONNECTING CABLE 16920
- For connecting a data logger KLIMA 20/30 or a Hydromette BL Compact TF 3, RH-T 165/320, RH-T flex 250/350, TF-IR 2 and BL UNI 11 with the USB port of a PC or notebook
- Mini USB–USB
- 1,8 m [L]

MK 16 CONNECTING CABLE 16710
- For the connection of a BL active electrode to a Hydromette BL E OR BL UNI 11
- 2,0 m [L]

MK 18 CONNECTING CABLE 16720
- For the connection of a TF stick to a Hydromette BL Compact TF 3, TF-IR 2 and BL UNI 11
- 1,8 m [L]

BNC ADAPTER 6050
- For connecting an electrode cable to a Hydromette unit
- Direct verification of the wood moisture measuring points in a drying kiln

USB/SERIAL CONVERTER CABLE 6088
- To be used in conjunction with MK 19 or MK 24 for connecting to the USB interface of a PC


6710


6935


16920


6050


6088


16720

TEST ADAPTER FOR
HYDROMETTE UNITS

6072

6070

VIEW Test adapter for wood moisture

6071

Test adapter for structural moisture

WOOD MOISTURE TEST ADAPTER 6070

- For checking the wood moisture measuring circuit of our Hydromette units

TEMPERATURE TEST ADAPTER 6072

- For checking the temperature measuring circuit of our Hydromette units

STRUCTURAL MOISTURE TEST ADAPTER 6071

- For checking the structural moisture measuring circuit of our Hydromette units

	H 35	BL H 40	HT 65	BL HT 70	HT 85 T	M 2050	HB 30	BL E	UNI 1	UNI 2	RTU 600	M 4050	
Test adapter	•	•	•	•	•	•	•				•	•	6070
Test adapter					•		•	•		•	•	•	6071
Test adapter					•	•			•	•	•	•	6072

CARRYING **CASES**

- Used to store/transport GANN Hydromette units and Hydromat CM units
- Equipped with specific inlays and paddings

CARRYING CASE I 5051
- For H 35/HT 65 Hydromette units with M 20 electrode
- 255 [L] x 210 [W] x 72 mm [H]

CARRYING CASE VI 15052
- For BL H 40/BL HT 70/BL H41 Hydromette units with M 20 electrode
- 255 [L] x 210 [W] x 48 mm [H]

PLASTIC BOX 15099
- For 1 blue Hydromette unit without accessories
- 82 [L] x 270 [W] x 57 mm [H]

PLASTIC BOX II 15058
- For 2 blue Hydromette units without accessories
- 156 [L] x 270 [W] x 57 mm [H]

CARRYING CASE P 5086
- For CM-B/CM-P Hydromat
- 500 [L] x 420 [W] x 125 mm [H]

COMBO CASE I 15091
- For Hydromettes BL Compact, BL Compact B 2 and BL Compact TF-IR 2
- 255 [L] x 210 [W] x 72 mm [H]

CARRYING CASE BK 14-I 5061
- For all Classic or BL Hydromettes
- Designed for one active electrode and various passive electrodes
- 437 [L] x 379 [W] x 100 mm [H]

CARRYING CASE BK 14-II 5062
- For all Classic or BL Hydromettes
- Designed for up to three active electrodes and various passive electrodes
- 497 [L] x 411 [W] x 120 mm [H]

PLASTIC BOX D 5095
- For data loggers KLIMA 20/30
- 156 [L] x 270 [W] x 57 mm [H]

CARRYING CASE BK LG 15092
- For BL LG 17 incl. LG-25 BL Air speed probe
- 255 [L] x 210 [W] x 72 mm [H]

SOFTWARE
DIALOG

DIALOG M+ SOFTWARE PACKAGE 6081
- Program for transferring the measured values from the M 2050/M 4050 Hydromette units to a PC
- For evaluation and printing
- Including manual, CD, and MK 25 connecting cable
- Compatible with MS Windows XP, Vista, 7, 8

UPDATE FOR DIALOG M+ SOFTWARE 6086
- Update to the respective latest release
- Including manual and CD

DIALOG D+ SOFTWARE PACKAGE 6082
- Program for transferring the measured values from our data loggers to a PC
- Including manual, CD, and MK 26 connecting cable
- Compatible with MS Windows XP, Vista, 7, 8

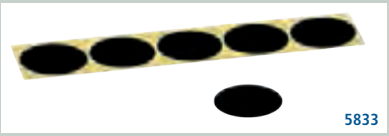
UPDATE FOR DIALOG D+ SOFTWARE 6087
- Update to the respective latest release
- Including manual and CD

DIALOG BL+ SOFTWARE PACKAGE 16083
- Application program for controlling various BL units
- Graphic and/or tabular measured value recording from up to four different sources
- Data export to MS Excel available
- To be used in conjunction with BL Compact IR/RH-T/TF 3/TF-IR 2
- Including manual, CD, and MK 26 connecting cable
- Compatible with MS Windows XP, Vista, 7, 8, 10

DATA LOGGERS

For associated **data loggers,** refer to page 59

OTHER
ACCESSORIES



5833

VIEW The **measuring points** are particularly recommended for use with metallic or glossy surfaces

5150

5100

– Similar unit shown –

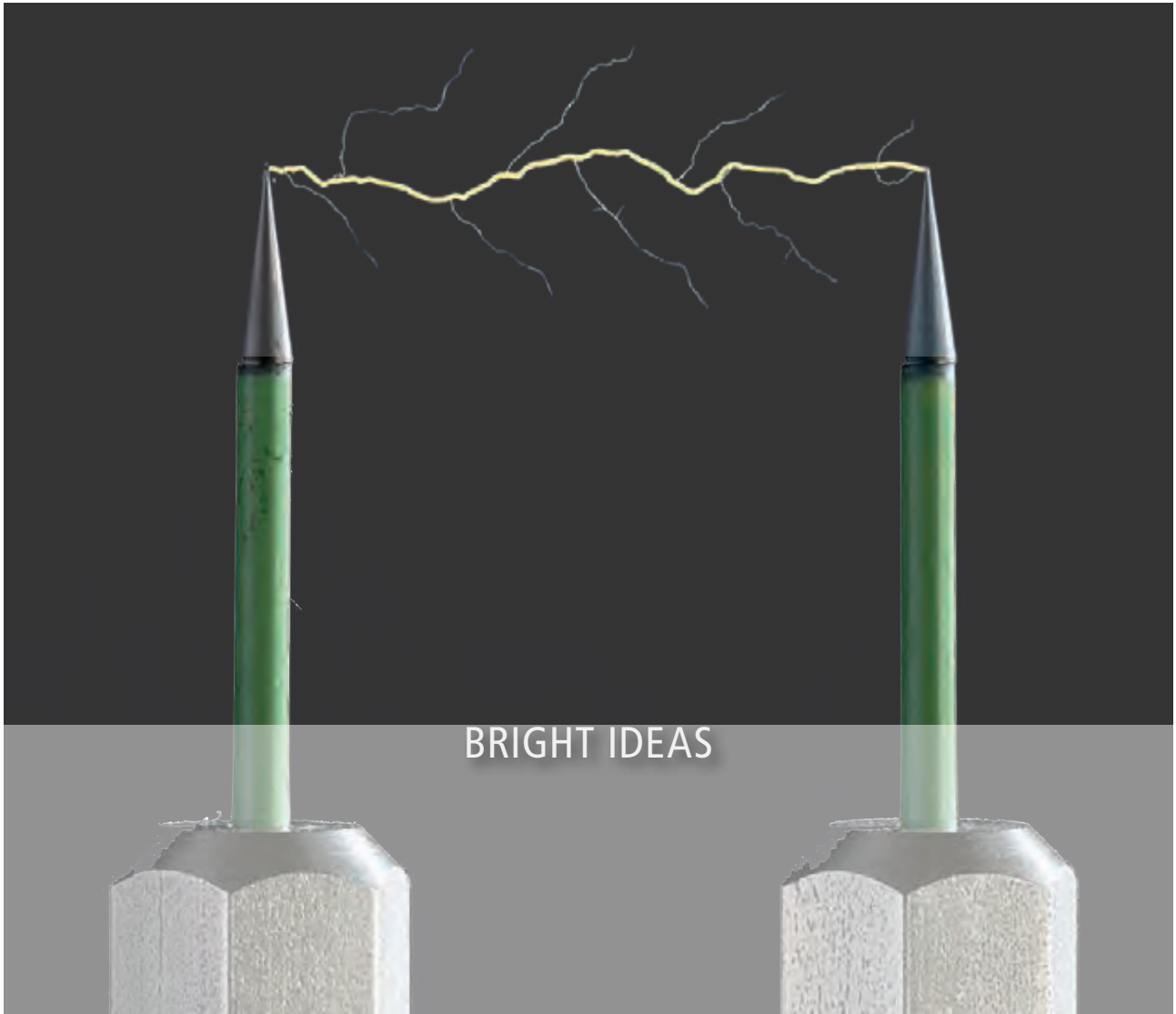
IR 30/E 95 MATTE BLACK LABEL 5833
- For all infrared-based measurements
- 30 mm [Ø]
- Emissivity of 95, for measuring e.g. metallic surfaces
- Quantity per pack: 50 pcs.

POWER SUPPLY 12 5150
- 230 V, 12 V = stabilised
- For M 2050 / M 4050 Hydromette, recomended for longer data transfers to PC/printer

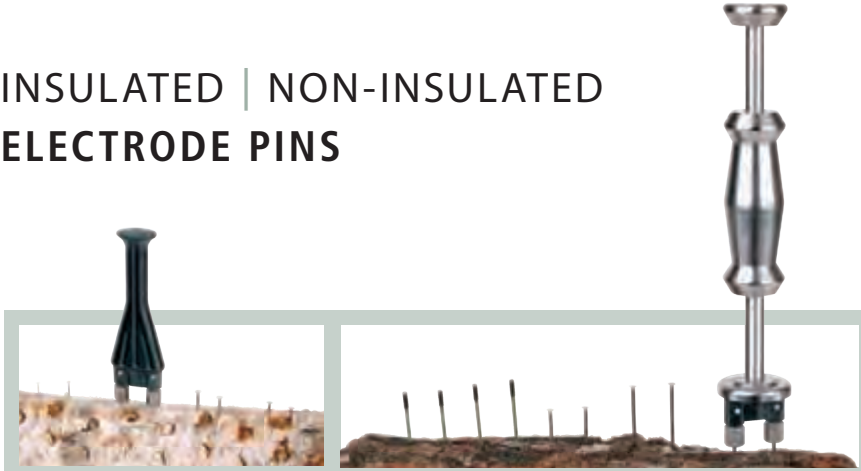
BATTERY CHARGER 5100
- Incl. battery
- Including charging indicator and reverse-polarity protection
- For all unit types

TELESCOPIC EXTENTION FOR EL-BL ELECTRODES 6040

TELESCOPIC EXTENTION with hinge for LG-25 BL 6030


BRIGHT IDEAS

INSULATED | NON-INSULATED
ELECTRODE PINS



APPLICATION Overview over various pin length: Use in conjunction with M 20 [left-hand side] and M 18 [right-hand side] electrodes

ELECTRODE PINS WITH TEFLON INSULATION

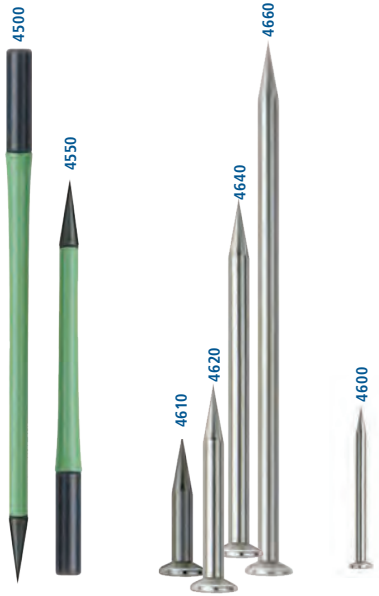
- For layer or core humidity measurements
- The insulation prevents the measurement from being affected by surface moisture
- Since only the foremost part of the pins has no insulation, layer measurements may be performed as well.
- 2.5 mm [Ø]
- For M 18
- Quantity per pack: 10 pcs.

- **45 mm** [L], max. penetration depth: 25 mm **4550**
- **60 mm** [L], max. penetration depth: 40 mm **4500**

ELECTRODE PINS WITHOUT INSULATION

- Non-isolated electrode pins show the most humid location in the material cross-section.
- 2.5 mm [Ø]
- For M 6, M 18, and M 20
- Quantity per pack: 100 pcs.
- **16 mm** [L], max. penetration depth: 10 mm **4610**
- **23 mm** [L], max. penetration depth: 17 mm **4620**
- **40 mm** [L], max. penetration depth: 34 mm **4640**
- **60 mm** [L], max. penetration depth: 54 mm **4660**

- **20 mm** [L], max. penetration depth: 8 mm **4600**
- 1.6 mm [Ø]
- For (BL) Compact, (BL) Compact S, and M 20-DS 16 conversion kit
- Quantity per pack: 100 pcs.



OTHER
CONSUMABLES

CONTACT PASTE 5400

- For measuring **hard and set building materials** (e.g. screed, concrete) which have to be drilled
- In conjunction with **M 6** and **M 21** electrodes

THERMALLY CONDUCTIVE PASTE 5500

- For **improving heat transfer** on rough surfaces or in case of contact problems
- Recommended to be used for all contact-based temperature measurements, particularly for OT 100 (BL) and OTW 90/480

ABOUT
MEASURING ACCURACY

Assessing the accuracy of a meter or of a measuring process requires considerable knowledge and expertise. The following description and information is to assist you as the user in practice.
It is intended to help you to better get through the maze of terms and to better assess your measurements. For this, it is necessary to subdivide the term of "accuracy" into the individual portions.

The accuracy/precision of the measurement essentially depends on the following elements:

MEASURING CIRCUIT/BOARD AND COMPONENTS USED

The quality design of the electrical circuit and the board layout are some of the most important prerequisites to achieve the highest possible basic accuracy.

Shielding against external impact (electrostatics, radio-frequency irradiation etc) as well as a reliable temperature compensation are indispensable requirements.

High-quality and narrow-tolerance components are indispensable as well, e.g. an A/D converter (for converting analogue to digital signals) having 16 bit resolution is 256 times better than a comparable 8 bit resolution A/D converter.

BASIC ACCURACY OF THE METER

It is based on the circuit, precision of the components used as well as on the exact calibration/adjustment to one fixed value or several values of a calibration curve.

For given % values (e.g. ±2%), it is important to know whether these refer to the currently shown value or to the upper value of the measuring range.

The term "digit(s)" refers to a so-called "numerical step" (digital scale divisions) of a digital display.

For analogue gauges (pointer devices), the accuracy is commonly identified by "classes" (e.g. class 1 or class 1.6).

RESOLUTION OF THE ANALOGUE/DIGITAL DISPLAY

The term of "resolution" is often mixed up with accuracy or used as a synonym. This is wrong. High resolution does not automatically result in high accuracy.

The term of "resolution" that refers to an analogue or digital display only describes the number of readable digits (e.g. 000.00 = 5 digits) or more often the number of decimal places, commonly referred to as "reading accuracy". In this context, resolution is described using values (1 or 0.1 or 0.01) or digits (referring to the least significant digit).

REFERENCE/CALIBRATION STANDARD

In Germany, the supreme authority for calibration standards is the Physikalisch-Technische Bundesanstalt (PTB) in Brunswick. The PTB calibrates "standards" which are used by the DKD (Deutscher Kalibrierdienst) for calibrating meters and standards for factory calibrations. These in turn are used by the meter manufacturers for calibrating their units.

Such calibration standards/meters exist for the meters designed and manufactured by us for temperature measurement (for both mechanical sensors and for the units using infrared surface temperature measurement, also referred to as "pyrometer") and for air humidity measurement.

Thus, fixed specifications exist for these two application ranges which means that the accuracy is therefore based on the grade of the sensors used and their exact adjustment.

For wood moisture measurement, there are no standard or other values specified by an officially recognised institution (exception: the calibration curve, based on the DIN 1052 standard, for spruce wood specified by the Materials Testing Institute of the University of Stuttgart (MPA Stuttgart, Otto-Graf-Institut (FMPA)) for the recognised glued laminated timber industry.

This also applies to measuring set building materials and a number of bulk materials (exception: certain types of grain, as far as these are commercially used for accounting purposes).

The term of "gauging" is actually reserved for the Gauging Office. "Gauging" refers to the calibration procedure performed by the Gauging Office. Basically, this only refers to equipment that is used for trading purposes, e.g. scales.

The calibration curves for the individual types of wood or building and insulating materials are created by reliable equipment manufacturers themselves. These curves are created using a complex procedure involving numerous series of measurement for each type of wood or each building or insulating material, based on the oven-dry test procedure. The calibration curves created that way are business secrets of a manufacturer.

QUALITY RATING OF THE SENSORS USED

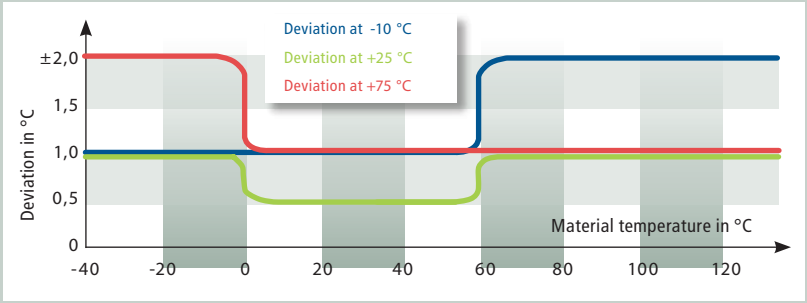
SENSORS FOR MEASURING THE TEMPERATURE

Temperatures are measured using a large variety

Temp.	Class A	Class B
-100 °C	0,35 °C	0,80 °C
0 °C	0,15 °C	0,30 °C
+100 °C	0,35 °C	0,80 °C
+200 °C	0,55 °C	1,30 °C

GRAPHIC A

Measuring accuracy for Pt100 sensors



GRAPHIC B

Measuring accuracy of infrared sensors at different ambient temperatures

of sensors. For measurement equipment of higher quality, temperature measurement of gas/air, liquids, bulk materials, and solids using platinum measuring resistors (e.g. Pt100 in 4-wire technology) has gained precedence. Of course, there are also different classes of accuracy (refer to graphic A).

More information on accuracy of Pt sensors is found on the web. For achieving acceptable measuring accuracy, at least class B sensors are required to be used.

For measuring surface temperatures on objects having high heat content and good thermal conductivity, also thermocouple sensors (cross- or dual-band sensors) are used. However, accuracy in the range that is relevant to dew point measurements is not always sufficient.

All mechanical temperature sensors (contact thermometers) are reasonably used only in cases where the media to be measured have sufficiently high heat content and corresponding good thermal conductivity.

Insulating materials consisting of foamed plastics, wood or wooden materials, compound materials having different thermal conductivity (e.g. bonded wallpapers etc.) or materials having a rough or uneven surface, moving, or vibrating parts either cannot be measured using mechanical sensors or the accuracy achieved is not sufficient.

For this purpose, infrared surface temperature measuring equipment providing good sensor accuracy is available today. Our equipment that is used in the classic application of climate monitoring in residential or business rooms includes such sensors. In particular, this applies to the assessment of damage caused by humidity (e.g. mould formation (fungal growth) by undershooting the dew point temperature). An accuracy of ±0.5 °C is very important for determining the dew point on wall surfaces (refer to graphic B). The higher the inaccuracy in this range, the higher the inaccuracy span for establishing the dew point undershoot temperature. Furthermore, entering the correct emissivity for the surface material to be measured is of high importance.

SENSORS FOR GATHERING THE AIR RELATIVE HUMIDITY

Accuracy and long-term stability of the sensors for gathering the air relative humidity have been significantly improved within recent years. This is also true for measurements in contaminated air where the sensors have to be protected by appropriate filter systems. Sometimes, filters significantly extend response times which contributes to inducing measuring errors if values are read too early. Also, adapting the temperature of the sensor to the ambient/air temperature is very important. Measuring systems of higher quality (e.g. for surveyors) have a typical accuracy of ±1.8% R.H and ±0.3 °C temperature (or better) (refer to graphic C).

ABOUT
MEASURING ACCURACY

To maintain this precision, such equipment should be checked for accuracy at the manufacturer or by an appropriate calibration laboratory every 12 to 24 months, depending on its application purpose and frequency.

When air humidity sensors are used for the determining humidity by means of sorption isotherms in solids (e.g. concrete, screed, brickwork, etc) the sensor or the sensor assembly must have sufficient accuracy even when used to measure air humidity values of 95% R.H.

SENSORS FOR GATHERING THE WOOD MOISTURE

Precise wood moisture measurements are mostly based on the resistance measuring technique. For measuring, two steel pins are pushed or tapped into the wood to be measured. For our meters, the pins should be driven in perpendicularly to the fibre direction. Particularly for wet wood, this heavily affects accuracy.

Another aspect that concerns accuracy, is setting/entering/selecting the correct type of wood. Implementation of this aspect depends on the respective equipment manufacturer.

Medium-class equipment should have 4 or 7 wood species correction levels – high-class equipment should provide at least 75 options for wood species correction levels, if not even individual code numbers for each type of wood (from 250 numbers on). In the dry range, accuracy values of ±0.5% can be obtained.

For the different wood thicknesses, pins of 16, 23, 40, or 60 mm in length are available. For accurate measurement, these are to be driven in up to a third of the entire wood thickness. Moreover, Teflon insulated pins of 45 or 60 mm in length are available. Using these pins, individual layers or wood surfaces wetted by rain or dew can reliably be measured.

Another popular option is measuring the wood moisture using a capacitive sensor. These units are also referred to as put-on units. Most of them have area or spring sensors. Area sensors require a relatively large and in any case plane contact area (planed surface). This also applies to units having wide spring structures. Compared to these, the ball-shaped sensor used in our units has application benefits. With regard to accuracy, larger measured value deviations are to be expected from put-on units. Wood types such as beech the moisture of which is evenly distributed between surface and core and which have no branches or spiral growth and have a constant volume weight (specific gravity, gross density) can be measured very well and quickly. Pieces of wood showing heavily varying gross density, different wood thickness, or irregularly distributed humidity can be measured with sufficient accuracy only when using additional tools. When you consider purchasing a put-on unit we recommend to consult our experts.

SENSORS FOR GATHERING STRUCTURAL MOISTURE (SET BUILDING MATERIALS)

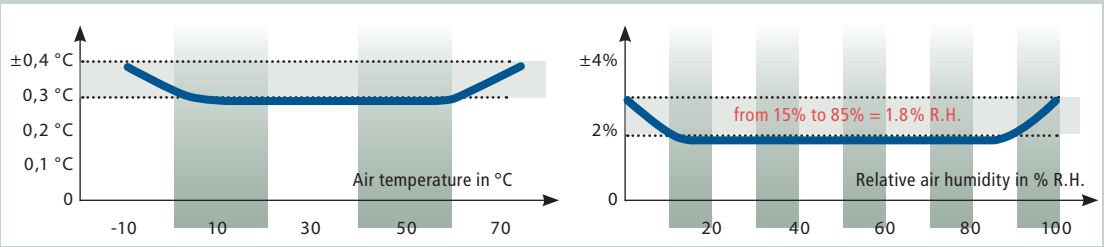
RESISTANCE/CONDUCTIVITY MEASURING TECHNIQUE

This value is measured using two steel pins, pipe probes (using contact paste), or brush probes. For the designs that are adapted to the different measuring tasks, please refer to our catalogue. Optimum contact between sensor and material is crucial to obtain high reproducibility.

Here, a general statement on accuracy of weight

GRAPHIC C

Typical characteristic curve using the example of our RH-T sensors



or mass percentage is hardly possible. Unmixed building materials with the latest calibration curves can be measured with good accuracy as opposed to mixed brickwork. But exact percentage values are often not necessary and so-called comparing measurements are absolutely sufficient.

CAPACITIVE RADIO FREQUENCY MEASUREMENT

The so-called "ball probe" invented by us is a sensor for detecting moisture in many different materials (e.g. damage caused by moisture in rooms and buildings, mobile homes, caravans, boats, concrete, or plastics as well as in many other solids). Also, unmixed building materials having the latest calibration curves can be measured with good accuracy using this measuring technique. However, the accuracy obtained is less when measuring mixed brickwork or layered compounds consisting of different materials. As mentioned before, exact percentage values are often not necessary and so-called comparing measurements are absolutely sufficient.

MEASURING THE AIR RELATIVE HUMIDITY IN HOLE

For this purpose, high-quality air humidity sensors suited for high humidity values must be used to determine moisture in solids (e.g. concrete, screed, brickwork). For measuring, the sensor is inserted into a prepared hole. The sensors should have good long-term stability in high air humidity (80 to 95% R.H.) as well as ±3% accuracy or better. The air humidity values are converted into weight percentage values for building materials using sorption isotherms by means of automatic processor-supported conversion within the units or using tables provided in the operating manual.

CALCIUM CARBIDE METHOD

The humidity content of screeds is determined by means of a CM unit using a mechanical-chemical process. Accuracy essentially depends on correct sampling (across the entire cross-section, low humidity loss during sample preparation) and tightness of the pressure system.

■ PROPER MEASUREMENTS

The headline already tells what is meant. An "ideal" unit should be self-explaining, self-learning and work as independently as possible. Our Hydromette units have been designed and engineered following these considerations. However, there will always be situations in which you will have to look into the operating instructions. Reading the operating instructions is one of the less pleasant and time-consuming things. But you will find that many problems will virtually settle on their own. Even if you have never worked with one of our units, reading the instructions that contain many pins on the particular topic and performing a small trial session will enable you to carry out your measuring task like a professional.

Your knowledge, your eyes, your technical skills, and our meters are parts of a successful top team.

It might be quite embarrassing "to be eaten up" by the lawyer of the opposing side, when the surveyor reads the instructions to you, or to be made to pay up for a damage, although you have the best meter on hand. You will find a lot of sticking points in connection with moisture measurement which you have not taken into account and which could have easily and quickly been avoided by means of properly performed measurement. Spare the second visit on site, the faulty survey report, the damage that could have been avoided in most cases.

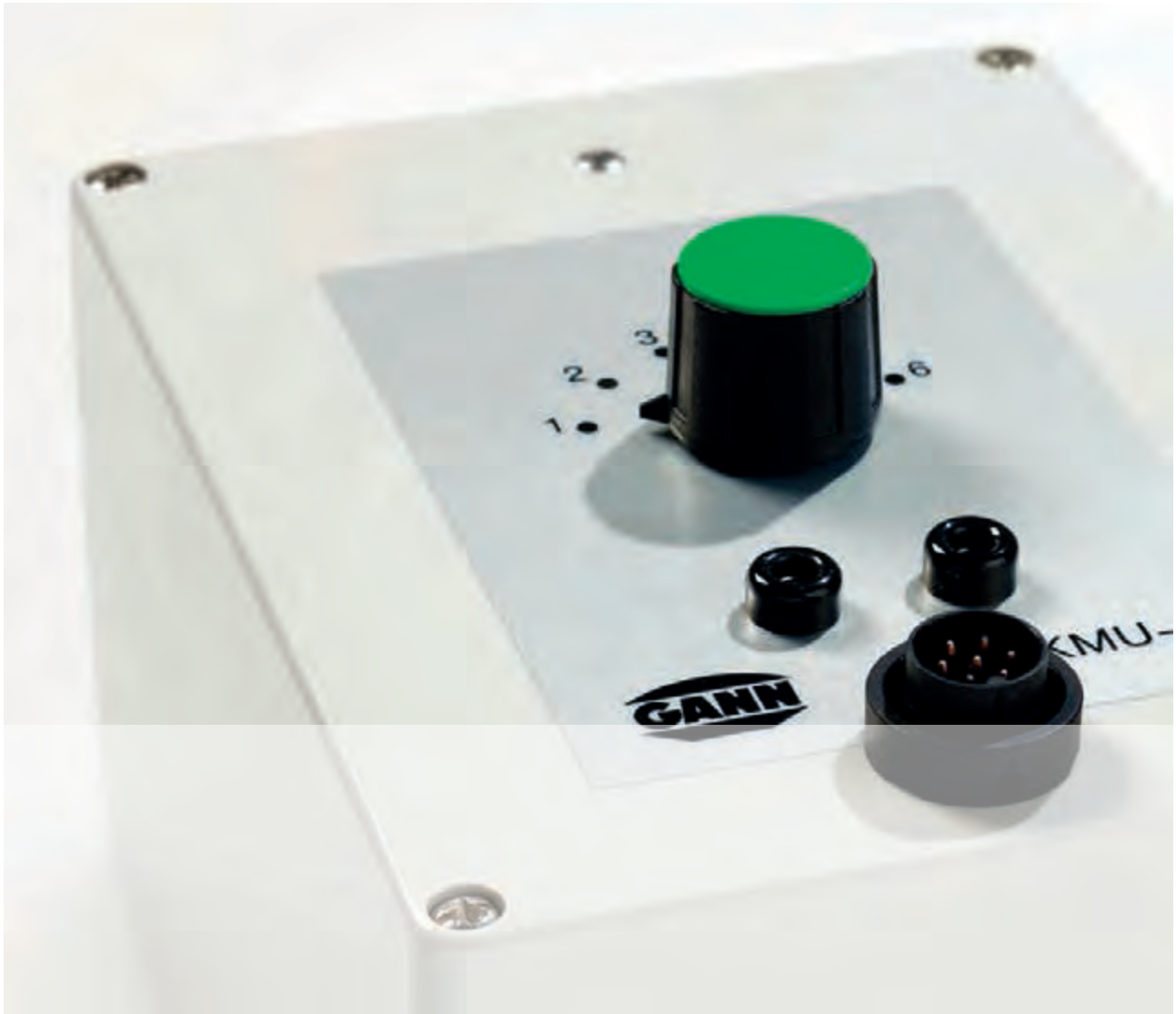
We are here for you – when there are problems with moisture measurement or when you have no answer to your question, irrespective of the comprehensive operating instructions.

MEASURED VALUE ASSESSMENT

Professional assessment of the measured value indicated is the task of the expert – e.g. the decision on whether the 95 digits measured are still sufficient or too much considering a specified value of 90 digits. To assess e.g. an air humidity measured value, it is important to know whether the measurement was made in the more humid northern area or in the Alps region that is more dry and in which season it was made. Or whether the measurement was made in a humid vaulted cellar or in the hobby room of a newly erected building. Are there many flowers or hydroponics with fountains in the living room? All these and other factors have an impact on the "natural" humidity in the household. And in the end, only you as the expert can assess these different conditions. Similarly, this applies to structural moisture and to the moisture of other materials. In addition to the pins in our operating instructions, you may find other tips given by the manufacturer of the material or on the web, or you may consult our expert consultants.

We are your competent partner.

MANUAL MONITORING OF THE DRYING PROCESS



MEASURING POINT
SELECTOR

VIEW MEASURING POINTS Kiln temperature sensor **7500** and mounting brackets of a wood moisture measuring point **7200** [left-hand side] – Wood temperature measuring point **7550** [centre] – EMC measuring point **7400** [right-hand side]

- Central retrieval station for different wood or structural moisture measuring points that are based on the resistance principle of measurement.
- Depending on the particular type, additional measuring points for retrieving the temperature (on Pt100 basis) may be connected
- The measured values may be retrieved by means of a Gann Hydromette (refer to the bottom of the page)
- Applications include: manual wood drying or manual long-term measurements of the drying condition of buildings (in newly erected or refurbished buildings)

TKMU-6 MEASURING POINT SELECTOR **7100**

- Up to 6 wood/EMC or structural moisture measuring points

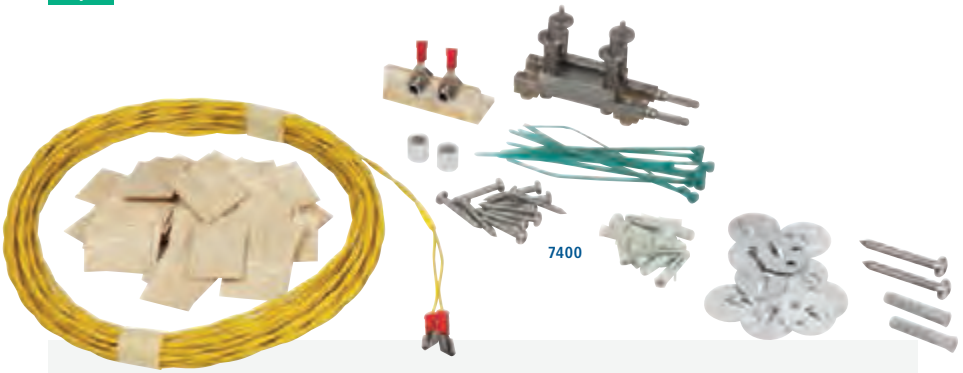
TKMU-6/1 MEASURING POINT SELECTOR **7101**

- Up to 6 wood/EMC or structural moisture measuring points
- 1 additional temperature measuring point may be connected

TKMU-6/2 MEASURING POINT SELECTOR **7102**

- Up to 6 wood/EMC or structural moisture measuring points
- 2 additional temperature measuring points may be connected

	H 35	BL H 40	HT 65	BL HT 70	HT 85 T	M 2050	HB 30	BL E	UNI 1	UNI 2	RTU 600	M 4050	
TKMU-6		•	•	•	• •	•		•		•	• •	• •	7100
TKMU-6/1					• •	•				•	• •	• •	7101
TKMU-6/2					• •	•				•	• •	• •	7102



WOOD MOISTURE MEASURING POINT 7200

- For measuring the wood moisture in a wood drying kiln

EQUILIBRIUM WOOD MOISTURE CONTENT MEASURING POINT 7400

- For measuring the equilibrium wood moisture content (EMC) in a wood drying kiln

KILN TEMPERATURE MEASURING POINT 7500

- For measuring the air temperature in a wood drying kiln

WOOD TEMPERATURE MEASURING POINT 7550

- For measuring the wood temperature in a wood drying kiln

System overview of a wood drying kiln, please find more on our website

MEASURING POINT **ACCESSORIES**

SOCKET WRENCH 7250
- For driving into and extracting the measuring electrodes from the wood

MOUNTING BRACKET 7354
- Including mounting hardware for connecting the wood moisture or EMC measuring points

ELECTRODE LEAD
- Teflon insulated cable
- For connecting the wood moisture electrodes to a mounting bracket

e.g. **4 m** [L] 7304, **5 m** [L] 7305, **6 m** [L] 7306

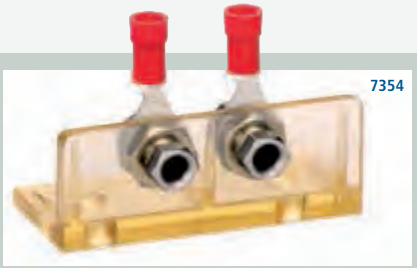
ELECTRODE SILICON LEAD
- Teflon insulated cable
- With additional silicone sheathing for increased resilience

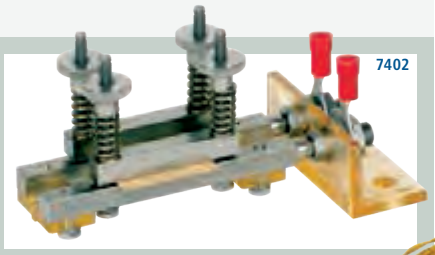
e.g. **4 m** [L] 7284, **5 m** [L] 7285, **6 m** [L] 7286

MEASURING POINT LEAD
- For connecting the mounting bracket to a TKMU measuring point selector

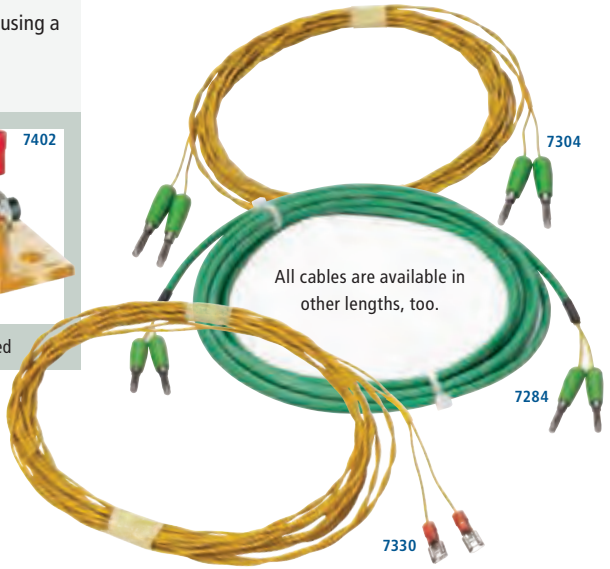
e.g. **10 m** [L] 7330, **20 m** [L] 7340

EMC ELECTRODE HOLDER 7402
- For measuring the equilibrium wood moisture content (EMC) in the drying kiln using a EMC sensor

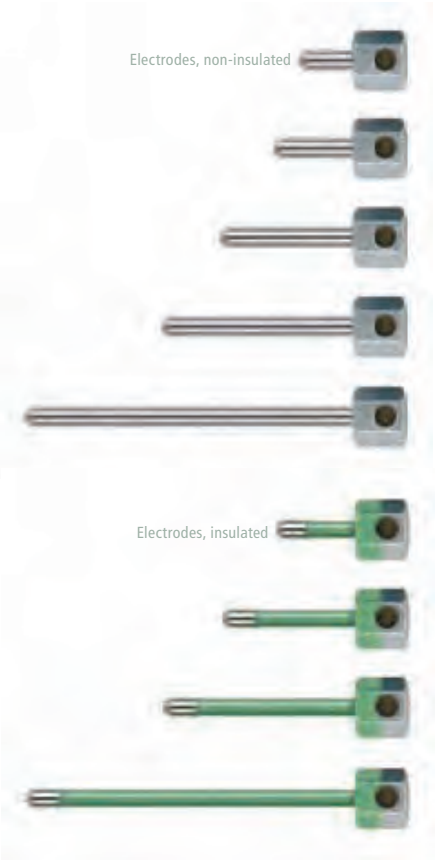




VIEW Mounting bracket [left-hand side] with EMC electrode holder and **EMC sensor** [right-hand side] inserted



REPLACEMENT PARTS FOR DRYING PROCESS MONITORING



STAINLESS STEEL DRIVE-IN ELECTRODES

- Stainless
- Without insulation
- For drying kiln use
- **10 mm** [L] 7201
- **15 mm** [L] 7202
- **25 mm** [L] 7203
- **40 mm** [L] 7204
- **70 mm** [L] 7205

STAINLESS STEEL DRIVE-IN ELECTRODES, TEFLON INSULATED

- Stainless
- For drying kiln use
- Thanks to this insulation, only the core humidity is measured, while surface humidity is ignored
- **15 mm** [L] 7207
- **25 mm** [L] 7208
- **40 mm** [L] 7209
- **70 mm** [L] 7210

APPLICATION Connecting **non-insulated** [above] and **insulated** drive-in electrodes [below]

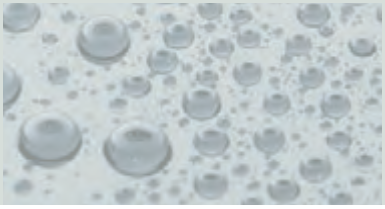
EMC SENSORS

- For sensing the equilibrium wood moisture content in a drying kiln using a EMC electrode holder
- **Pack of 50 EMC sensors** 7403
- **Pack of 100 EMC sensors** 7404

BLUE PRODUCT SERIES

COMPACT SERIES

CLASSIC SERIES



OVERVIEW

Blue product series

COMPACT

BL COMPACT	BL COMPACT S	BL COMPACT B 2	BL COMPACT TF 3	BL COMPACT TF-IR 2	BL COM. RH-T 250/350	BL COM. RH-T 165/320	BL H 40	BL HT 70	BL H 41	BL E	BL UNI 11	BL LG	COMPACT	COMPACT S
7	8	9	10	11	14	16	20	21	22	24	26	30	36	37

1931 ■ Company foundation in Stuttgart →

1948 ■ Development of the first „Hydromette" moisture meter →

1960 ■ Launch of the first fully automatic controlling system for

CLASSIC

DATALOGGER

COMPACT A	COMPACT B	H 35	HT 65	HT 85 T	M 2050	HB 30	UNI 1	UNI 2	RTU 600	M 4050	DATA-LOGGER KLIMA 20	DATA-LOGGER KLIMA 30
38	39	41	42	43	44	46	47	48	50	51	59	60
●		●	●	●	●	●			●	●		
			●	●	●				●	●		
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		●	●	●	●	●	●	●	●	●		
		●	●	●	●	●	●	●	●	●		

timber drying kilns → **1983** ■ The capacitive measuring method is patented »ball sensor« → **2009** ■ Introduction of the blue products series

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