GREISINGER electronic

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Handheld wood - & material moisture instruments

	GMH 3850	GMH 3830	GMH 3810	GMR 100	GMI 15	GMK 100	GMK 110
Who am I ?	Resistive material moist. instrument for ext. Sensor and Temp.-Probe		Resistive material moist. instrument with integrated measuring needles		Cap. moisture indicator	Capacitive material moist. instrument	Capacitive material moist. instrument
Application	Wood, fire wood, timber, construction, agriculture, industry		Wood, fire wood, timber, construction, agriculture, industry		construction, building moisture, industry	Plaster, Screed, building moisture, industry	Caravan & boat
Measuring principle	Resistive		Resistive	Resistive	capacitive	capacitive	capacitive
Measuring probes	via BNC/ via TC jack for type K temperature		Integrated pins Int. Temperature	Integrated pins	Meas. surface at bottom side	2 measuring surfaces at bottom	2 measuring surfaces at bottom
Measuring range	0.0 .. 100.0% U *)		0.0 .. 100.0 % U *)	0.0 .. 100.0 % U *)	0.0 .. 15.0 Digit *2)	depending on char. curves *)	depending on char. curves *)
Temperature comp. - automatic	External temperature probe or Internal temperature measuring		Internal temperature measuring	-	-	-	-
-manually	Via keys		Via keys	Via keys	-	-	-
Serial interface	X	X	-	-	-	-	-
Analogue output	0 ... 1 V, scalable		-	-	-	-	-
Logger	10000 auto / 99 man	-	-	-	-	-	-
Characteristic curves/ Groups	466 wood 28 construction materials		466 wood 28 construction mat.	4 wood groups, plaster curve, Table for Wood +construct. mat.	-/-	Div. wood & construction materials and relative measuring	Div characteristics of wood, GFK, insulation and relative measuring
User char. curves	4 (programmable)	-	-	-	-	-	-
Battery / -power	9V / ca. 75 h		9V / ca. 80 h	9V / ca. 100 h	9V / ca. 40 h	9V / ca. 2400 h	9V / ca. 2400 h
Auto Power Off /hold function	X		X	X	-	X	X
Features	Auto hold		Auto hold	Auto hold	-	backlight, 2 meas. depths	backlight, 2 meas. depths

*) depending on chosen curve. wetbasis moisture w can be displayed, too (choice between w and u via menu)
*2) „Digit“: Indication value, no direct display in percent, estimation via table printed on upper side of instrument.

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Comparison of several measurement methods

		GMH 3850/30	GMH 3810	GMR 100	GMI 15	GMK 100	GMK 210
Meas. method		**Resistance method**			**Capacitive method**		
Application		Wood, firewood, handcraft, site, agriculture	Wood, firewood, handcraft		Building moisture, handcraft	Home- & handcraft, screed, readiness, site, wood, stone	Caravan & boat
WOOD	Precision	**Good**			Satisfactory		
	Procedure	- Insert steel pins - Read value			- Lay on - Read value		
	Duration	Short			Short		
SITE	Precision	Restricted	Not recommended		**Good**		
	Procedure	Drill 2 holes (8 mm), insert brushes, read	-		Lay on, read		
	Duration	Average	-		Short		
Meas. input		Via external BNC: e.g. for impact electrodes	Integrated steel pins		Meas. spot at lower surface	2 meas. spots at lower surface of device	
Temp.compensation - automatically		External type K-probe or internal temperature measurement	Internal temp. meas-urement	-	-	-	-
- manual		Input via buttons			-	-	-
Material characteristics / material groups		466 wood types 28 building materials		4 wood types, plaster charac., table for wood+ building materials	Relative measurement	Characteristics for wood and building materials and relative measurement	Charac. for wood, GRP, isolation material and rel. measurement
Specifics		Auto hold, logger (GMH 3850)		Auto hold	-	Display illumination, 2 meas. depths	

Comparison of several measurement methods

	GMH 3850/30	GMH 3810	GMR 100	GMI 15	GMK 100	GMK 210
Meas. method	**Resistance method**			**Capacitive method**		
What can be measured?	All materials, for which a characteristics is saved: wood and several building materials			Only indicator: Wood, building materials	All materials, for which a characteristics is saved: wood and several building materials	
What cannot be measured?	Compost (varying too much and too low resistance) Soil (varying too much and too low resistance) Synthetic granules (electric isolator and very low value, max 2%) Styrofoam, PU-foams (electric isolators!) Slat (or highly ion-containing) materials			Compost (too much variation density and consistency) Soil (too much variation density and consistency) Synthetic granules (density problems and very low value, max 2%) Styrofoam, PU-foams (electric isolators!) Bumpy surfaces!!		
What can additionally be estimated?	All materials, for which the electric resistance depends on their water content and the electric resistance is within the measuring range of the device. Humidity detection in mineral wool and other isolation materials possible			All materials, for which the dielectric constant (epsilon) depends on their water content and the dielectric constant is within the permitted range of the device. e.g. natural stones, …		