

Moisture Meter PCE-MWM 220



PCE-MWM 220 VHF-Band Moisture Measurement Sensor Liquid Materials (pipe installation)

The frequent and important peculiarity which should be considered in any kind of industry and production is that the material used in the production process has got a certain amount of moisture in it. It goes not only about bulk materials (such as sand, rubble, ore, gravel etc), but about liquids as well (oil, fuel oil, coal-water slurry fuel (CWSF), petroleum etc). Though all the versions of the moisture meter have got similar structure each versions performs its own function.

The device consists of an electronic unit and a sensor.

The flanges of the sensor which is made as a pipe section are made of stainless steel. A probe which is inside the pipe is made as a flat-topped stick of stainless steel of the same grade. Because of the probe being equipped with a thermocouple, it is possible to carry out temperature control. The length of the pipe section with the flanges is 400 mm. The moisture meter is available in several versions with different nominal bore: DN 50, DN 80 and DN 125 mm, and different allowable pressure: PN 1.6 (16 atm); PN 2.5 (25 atm); PN 4.0 (40 atm); PN 6.3 (63 atm) and PN 10.0 (100 atm).

All the parameters can be adjusted depending on the needs of the customer. Due to the material the moisture meter is made of the device is resistant to corrosion, abrasive materials, mechanical stress. It also allow suing the sensor for measurements at very high temperatures (145° C). On request it is also possible to provide the device operating at the temperatures of 350° C. The temperatures range can be even higher, due to the use of ceramic plates and high-temperature alloys.

The electronic unit can have an explosion-proof enclosure as well as the general purpose version.

Moisture meters for liquid materials are used in boiler installations, water-dosing and diesel oil emulsion dispersion systems. The scope of supply can include the control cabinet to operate the valves regulating water feed. The moisture meter for liquid materials has a processing unit with RS232/RS485 interfaces (can be easily included into ACS-automatic control systems); and its supply package includes software suitable for Windows, as well as the control cabinet to operate the valves regulating water feed.

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Specifications

Technical specifications:

Measurement range	0 ... 100 %
Limits of permissible absolute error of the measurements results $\Delta = 0,035 + 0,05 \cdot W$ of the mass fraction of water	
Temperature measurement range	-40 ... +150 °C
Range of working temperatures	-20 ... +120 °C -20 ... +145 °C
Operation mode	continuous operation
Measurement period	1 s
Voltage supply - Rated / - Allowable	24 (18 ... 36) VDC
Consumption current, not more than	200 mA
Warm-up time at start-up	90 min
Output	RS 485 Modbus RTU, 4-20 mA [RS485: max. cable length 1,000 m; 4-20 mA: max. cable length 100 m (max. cable length to SPS unit)]
Pressure	PN 6 ... PN 40 (... 100 bar \cong 10 MPa) DN 50, DN 80, DN 100 or DN 125
Dimension of the sensor	(depending on the variant) / length allways 400 mm
Overall dimension of the electric unit	255 x 170 x 60 mm
Protection class (sensor)	IP67
Protection class (electric unit)	IP66 (explosion-proof)
mass Sensor	9 ... x kg (depending on wall thickness, pressure range)
mass Electric unit	2 kg
mass Electric unit (explosion-proof)	8 kg

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