JSC PROMPRIBOR

RUSSIAN HOLDING COMPANY, PRODUCING EQUIPMENT FOR TANK FARMS, PETROL STATONS AND REFNERIES

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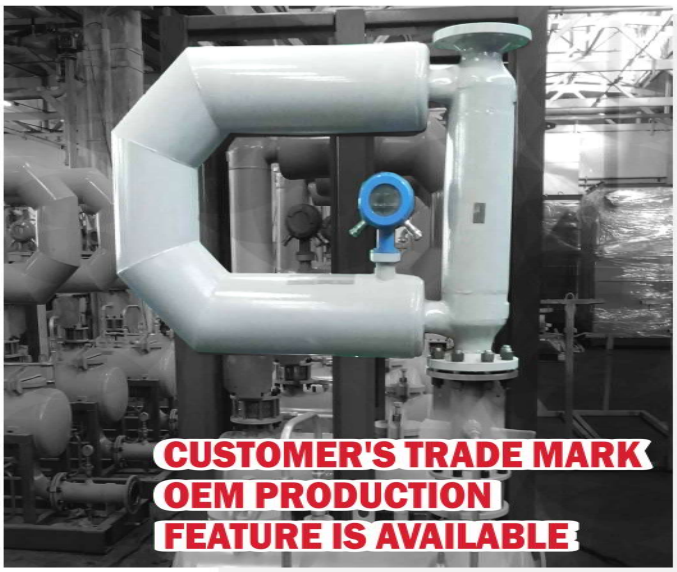
ML-80 MASS FLOWMETER

Measured parameters by mass flowmeter:

- Mass flow rate;
- Volume flow rate;
- Product temperature, density;
- Oscillation frequency, period;
- Initial phase of periodic oscillation (zero);
- Adapter voltage.



Communication parameters:

1) RS-485 Interface
2) Modbus-RTU protocol
3) Data transfer rate: 9600 baud

Register map – is provided according to the customer's request

Technical features

Parameter	Value
Nominal inside diameter (DN), mm	80
Measuring range of fluid mass flow rate (t/h) (volume flow rate (m³/h))	20÷200
Density measuring range, kg/m³	650÷1100
Liquid product temperature measuring range, °C	from 60 to +100
Relative measurement error permissible limits: in relation to mass flow rate and liquid mass, % in relation to volume flow rate and liquid volume, %	 ±0.15; (±0.2)* ±0.2; (±0.25)*
Density measuring absolute error tolerance, kg/m³	±0.5
Absolute measuring error permissible /tolerance with regard to the metered product temperature, °C	±(0.5+0.005xT)**
Process fluid pressure range, MPa	from 0 to 4.0
Power supply parameters: - direct current supply voltage, V - alternating current network voltage, V - alternating current frequency, Hz	 24 from 187 to 244 50±1
Power demand, W, no more than	15
Overall dimensions, mm, no more than (height×width×length)	250×1200×820
Weight, kg, no more than	100
Flanges (key parameter – nominal inside diameter)	DN80; DN100
Operation conditions: Ambient temperature, °C Relative humidity, % Atmospheric pressure, kPa	 from 40 to +60 up to 90 from 90 to 105
Average service life, years, not less than	10
Explosion proof mark sensing element electronic unit	 1ExibIIBT4 1Exd[ib]IIBT6
Output signals: current, mA digital	 4…20 Modbus RS 485

Notes:

*These results are received when implementing on site calibration procedure according MI 3151 2008 or MI 3272 2010;

**T – metered product temperature, °C.

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ML-15...ML-50 MASS FLOWMETER

HIGH ACCURACY OF PRODUCT DISPENSED AMOUNT WITHIN THE ENTIRE RANGE OF OPERATING TEMPERATURE AND FLOW RATE VALUES

'Livenka-M' fuel dispensers, characterizing with a low cost with regard to such type of equipment, are completed with Coriolis-type flow meters of JSC 'Prompribor' own production with the principle of primary signal digital processing.

In comparison with the widely used volume flow meters with oval gears, screw, paddle, piston and worm (spiral)-type meters, **mass flow meters have significant advantages:**

- ☑ *no environmental exposure, consistently measurement high accuracy and objectivity (neutrality) within a wide range of flow rate and temperature values, regardless of the time of year and throughout the entire service life;*
- ☑ *mass flow rate direct determination, taking into account the effect of product density and temperature variability during the measurement process;*
- ☑ *there are no complicated moving parts and mechanisms in mass flow meter simple design, the operation of which could affect the measuring accuracy and is in strong dependence on the temperature, the metered product flow rate and its cleanliness.*

Technical parameters of mass flow meters, constituting a complete unit of Fuel dispensers

Type of sensing element	DN, mm	Mass flow rate measu ring range, kg/h	Product density measuring range, kg/mi	Product temperature measuring range, °C	Operation product allowable pressure range, MPa	Sensing element mate rial, stainless steel grade	Ingress protection rating
ML 15	15	260...5 200	600...3000	60...+50	0...2.5	12X18H9	IP65
ML 25	25	1000...20000	600...3000	60...+50	0...2.5	12X18H9	IP65
ML 50	50	3000...60000	600...3000	60...+50	0...2.5	12X18H9	IP65
Relative measurement error in relation to mass and volume: ±0.15%; ±0.25%							