



MB2 – 5-digit digital panel meter in 96x96 (BxH) with Bargraph 270° Frequency 0,01 Hz to 999,99 kHz

- red display of -19999...99999 digits
- red 55 dots bargraph
- adjustable bars or dot operation or operation with permanent display of plate centre
- small installation depth: 56 mm without plug-in screw terminal
- multi voltage power supply unit 100-240 VAC, alternatively 10-40 VDC
- adjustment via factory setting or directly on the sensor signal
- min-/max-memory with adjustable permanent display
- 30 additional adjustable support points
- display flashing at threshold value exceedance / undercut
- Schmitt-Trigger-Input
- digital frequency filter for contact bounce suppression and interference suppression
- frequency filter with different pulse-duty factor
- zero-key for triggering of Hold, Tara, display change, setpoint setting, alarm actuator
- flexible alarm system with adjustable delay times
- volume measurement (Totaliser) for frequencies up to 1kHz (exact pulse)
- mathematical functions like reciprocal value, square root, square and rounding
- constant setting / setpoint setting
- sliding averaging
- brightness control via parameter or front keys
- programming interlock via access code
- protection class IP65 at the front
- plug-in screw terminal
- 2 relay outputs
- sensor supply
- digital input for the triggering of Hold, Tara, display change, setpoint setting, alarm actuator
- optional: 1 independently scalable analog output
- optional: interface RS232 or RS485
- accessories: pc-based configuration-kit PM-TOOL with CD & USB adapter
- on demand: devices for working temperatures of -25°C...60°C

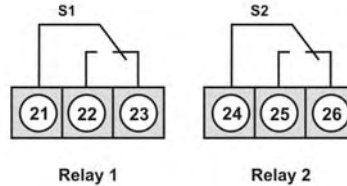
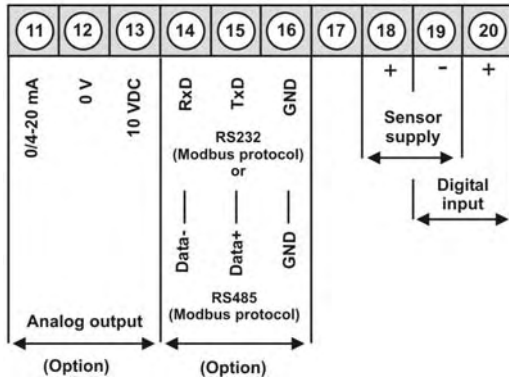
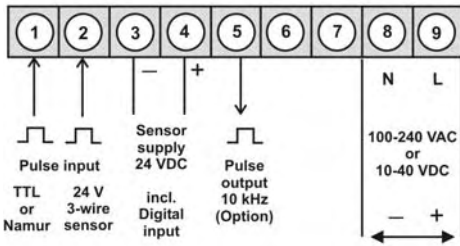
• Frequency (0.01 Hz to 999.99 kHz)

Supply 100-240 VAC, DC ± 10%

MB2-2FR5RR.0307.S72AD

Supply 10-40 VDC, 18-30 VAC

MB2-2FR5RR.0307.W72AD



Advice:

Using Namur sensors with a nominal voltage of approx. 8 V, a sensor supply of 12 VDC needs to be provided. For devices with sensor supply terminals 4 and 18 as well as 3 and 19 are galvanic connected in the device.

• Order key options

M	B	2-	2	F	R	5	R	R.	0	3	0	7.	S	7	2	A	D
M	B	2-	2	F	R	5	R	R.	0	3	0	7.	W	7	2	A	D

EUR

X	Analog output 0/4-20 mA, 0-10 VDC galv. insulated
6	Sensor supply 12 VDC / 50 mA incl. digital input
K	Pulse output
3	Interface RS232 galv. insulated
4	Interface RS485 galv. insulated
B	Blue display
G	Green display
Y	Orange display

For devices with sensor supply, terminal 4 and 18 as well as 3 and 19 are galvanic connected inside the device.

• Parameterisation software

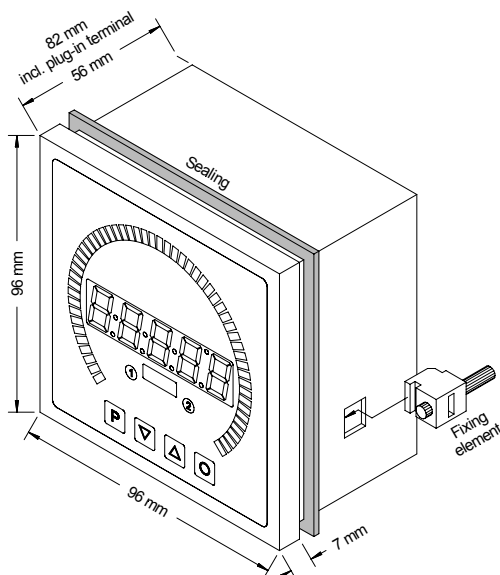
PC based configuration software PM-Tool for devices without keypad, for a simple adjustment of standard devices, incl. CD & USB-adapter. Programming is made via an interface on the back.

PM-TOOL-MUSB4

• Technical data

Dimensions	Housing Panel cut-out Fixing Housing material Sealing material Protection class Weight Connection	B96 x H96 x D56 mm, (incl. plug-in terminal D = 82 mm) 91.0 ^{+0.6} x 91.0 ^{+0.6} mm screw elements for a wall thickness up to 10 mm PC Polycarbonate, black EPDM, 65 Shore, black front side IP65 standard, back side IP00 approx. 330 g plug-in terminal; cable cross-section up to 2.5 mm ²
Display	Display Digit height Segment colour Display range Limit values Overflow Underflow Display time Bargraph Alignment Bargraph colour	5-digit 14 mm red (Standard), optional available in green, orange, blue and tricolour, too -19999 up to 99999 optical display flashing horizontal bars at the top horizontal bars at the bottom 0.1 to 10.0 seconds 55 dots 270° red
Measuring input	Signal Input resistance Input frequency Measuring error	Pulse input, TTL, Namur, 3-lead initiator PNP/NPN R _i with 24 V / 4 kΩ High/Low level >15 V / < 4 V High/Low TTL-level >4,6 V / <1,9 V 0.01 Hz selectable up to 999.99 kHz 0.05% of measuring range; ± 1 Digit
Output	Relay Switching cycles Pulse output Analog output Sensor supply	with change-over contact 250 V / 5 AAC, 30 V / 5 ADC 30 * 10 ³ at 5 AAC, 5 ADC ohm resistive burden, 10 * 10 ⁶ mechanically Division according to DIN EN50178 / Characteristics according to DIN EN 60255 max. 10 kHz (only with frequency metering) 0-10 VDC / burden ≥10 kΩ, 0/4-20 mA / burden ≤ 500 Ω, 16 Bit) 24 VDC / 50mA 10 VDC / 20 mA
Digital input	Input galv. insulated	< 2,4 V OFF; 10 V ON; max. 30 VDC, R _i ~ 5 kΩ
Interface	Protocol RS232 RS232	Modbus with ASCII or RTU-protocol 9.600 Baud, no parity, 8 Databit, 1 StopBit; cable length max. 3m 9.600 Baud, no parity, 8 Databit, 1 StopBit; cable length max. 1000m
Power pack	Supply	100-240 VAC 50/60 Hz / DC +/- 10 % (max. 15 VA) 10-40 VDC / 18-30 VAC 50/60 Hz (max. 15 VA)
Memory	EEPROM	Data life ≥ 100 years at 25°C
Ambient conditions	Working temperature Storing temperature Weathering resistance	0 to + 50 °C -20 to + 80°C relative humidity 0-85% on years average without dew
CE-sign	Conformity according to directive 2004/108/EG	
EMV	EN 61326, EN 55011	
Safety standard	According to low voltage directive 2006/95/EG, EN 61010; EN 60664-1	

Housing:



• Order key

	M	B	2-	2	F	R	5	R	R.	0	3	0	7.	W	7	2	A	D	
Basic type M-Line																			Dimension
																			D physical unit (free selectable)
Bargraph device	B																		Version
																			A A
Installation depth																			Setpoints
82 mm incl. plug-in terminal	2																		2 2 setpoints
Housing size																			Protection class
B96xH96xD56 mm	2																		7 IP65/plug-in terminal
Display type																			Volatge supply
Frequency	F																		S 100-240 VAC
Bargraph colour																			W 10-40 VDC, galvanic insulated
Red	R																		Measuring input
Resolution																			7 Pulse, Namur, 3-wire NPN/PNP
55 points	5																		Analog output
Design																			0 without
270° round	R																		X 0-10 VDC, 0/4-20 mA
Digital display																			Sensor supply
5-digit, 14 mm, red	R																		3 24 VDC / 50 mA, incl. digital input
Digital input																			6 12 VDC / 50 mA, incl. digital input
without	0																		K 24 VDC / 50 mA, incl. digital input and pulse output max. 10 kHz
Interface RS232	3	galv. insulated																	
Interface RS485	4	galv. insulated																	