



### **M3 – 5-digit digital panel meter in 96x24 mm (BxH) Frequency (0.01 Hz to 999.99 kHz) or position survey via incremental encoder with HTL- or TTL-output**

- red display from -19999...99999 digits (optional green, orange, blue or tricolour display)
- installation depth: 120 mm without plug-in screw terminal
- multi voltage power supply unit 100-240 VAC, alternatively 10-40 VDC galvanic isolated
- 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
- navigation keys for the triggering of Hold, Tara, display change, setpoint setting, alarm actuation
- flexible alarm system with adjustable delay times
- volume measurement (Totaliser) for frequencies up to 1 kHz (pulse exact)
- 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
- optional: 1 or 2 relay outputs
- 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 -20°C...60°C or -40°C...70°C

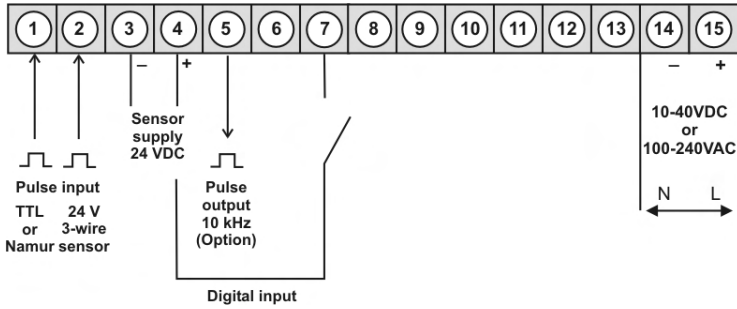
• Frequency (0.01 Hz to 999.99 kHz)

Supply 100-240 VAC, DC ± 10%

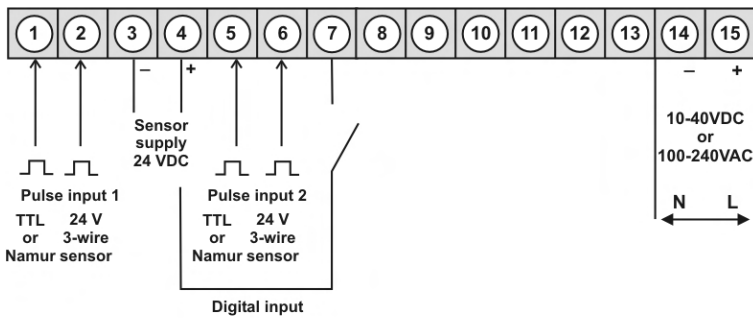
M3-3FR5B.0307.S70BD

Supply 10-40 VDC, 18-30 VAC

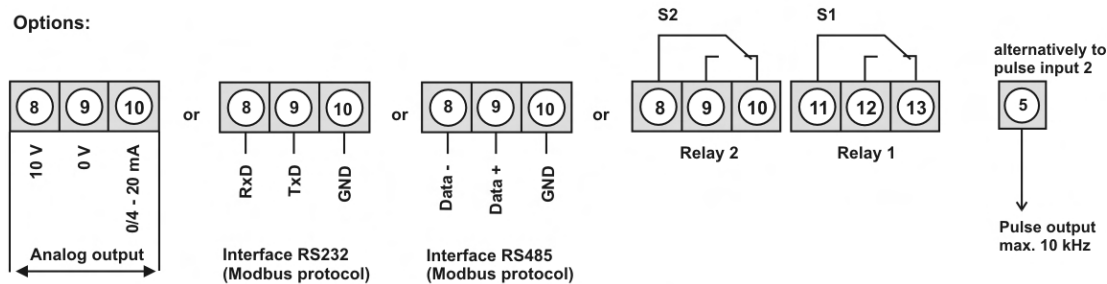
M3-3FR5B.0307.W70BD



• Frequency (0.01 Hz to 999.99 kHz) for incremental encoders S420



Options:



Alternatively to analog output

Advice:

Using Namur sensors with a nominal voltage of approx. 8 V, a sensor supply of 12 VDC needs to be provided.

• Product key options

M	3-	3	F	R	5	B.	0	3	0	7.	S	7	0	B	D
M	3-	3	F	R	5	B.	0	3	0	7.	6	7	0	B	D

EUR

	S420 Pulse inputs for incremental encoders
1	1 relay output (with option analog output only 1 switching point is possible)
2	2 relay outputs
1	without keypad, operation on the back side
X	Analog output 0/4-20 mA, 0-10 VDC
6	Sensor supply 12 VDC / 50 mA incl. digital input
K	Pulse output
3	Interface RS232 galv. isolated
4	Interface RS485 galv. isolated
B	Blue
G	Green
Y	Orange
T	Tricolour (Red-Green-Orange)

On demand state dimension unit on order, e.g. U/min.

## • 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

<b>Dimensions</b>	Housing	B96 x H24 x D120 mm, (incl. plug-in terminal D= 145 mm cable outlet at the back)
	Panel cut-out	92.0 <sup>+0.8</sup> x 22.2 <sup>+0.3</sup> mm
	Fixing	Screw elements for a wall thickness up to 3 mm
	Housing material	PC Polycarbonate, black
	Sealing material	EPDM, 65 Shore, black
	Protection class	at the front IP65 Standard, at the back IP00
	Weight	approx. 250 g
	Connection	plug-in terminal; wire cross section up to 2.5 mm <sup>2</sup>
<b>Display</b>	Display	5-digit
	Digit height	14 mm
	Segment colour	red (Standard), optional in green, orange, blue or tricolour (red/green/orange)
	Range of display	-19999 to 99999
	Threshold value	optical display flashing
	Overflow	horizontal bars at the top
	Underflow	horizontal bars at the bottom
	Display time	0.1 to 10.0 seconds
<b>Measuring input</b>	Signal	Pulse input, TTL, Namur, 3-wire initiator PNP/NPN
	Input resistance	Ri at 24 V / 4 kΩ High/Low level >15 V / < 4 V High/Low TTL-level >4.6 V / <1.9 V
	Input frequency	0.01 Hz selectable up to 999.99 kHz 0.01 Hz to 9.9999 kHz for speed transmitter, 0 to 2.5000 kHz for position survey
	Measuring fault	0.05% of measuring range
<b>Output</b>	Relay	with change-over contact 250 V / 5 AAC, 30 V / 5 ADC
	Switching cycle	30 * 10 <sup>3</sup> at 5 AAC, 5 ADC ohm resistive burden, 10 * 10 <sup>6</sup> mechanically Separation according to DIN EN50178 / Specific values according to DIN EN 60255
	Pulse output	max. 10 kHz
	Analog output	0-10 VDC / burden ≥ 10 kΩ, 0/4-20 mA / burden ≤ 500 Ω, 16 Bit
	Sensor supply	24 VDC / 50 mA 10 VDC / 50 mA
<b>Digital input</b>	Input galv. insulated	< 2.4 V OFF; >10 V ON; max. 30 VDC, R <sub>i</sub> ~ 5 kΩ
<b>Interface</b>	Protocol	Modbus with ASCII or RTU-protocol
	RS232	9.600 Baud, no parity, 8 DataBit, 1 StopBit, pipeline length max. 3 m
	RS485	9.600 Baud, no parity, 8 DataBit, 1 StopBit, pipeline length max. 1000 m
<b>Power pack</b>	Supply	100-240 VAC 50/60 Hz, DC ± 10 % (max. 10 VA) 10-40 VDC galv. isolated, 18-30 VAC (max. 10 VA)
<b>Memory</b>	EEPROM	Data preservation ≥ 100 years at 25°C
<b>Ambient condition</b>	Working temperature	0 to + 50 °C
	Storing temperature	-20 to + 80 °C
	Climatic density	relative humidity 0-85% on years average without dew
<b>CE-sign</b>	Conformity to directive 2004/108/EG	
<b>EMV</b>	EN 61326, EN 55011	
<b>Safety standard</b>	According to low voltage directive 2006/95/EG, EN 61010; EN 60664-1	
<b>Housing:</b>		

