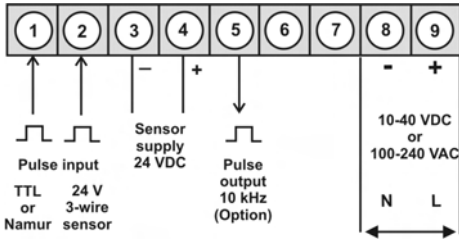




### **M3 – 5-digit digital panel meter in 96x48 mm (BxH) Frequency (0.01 Hz to 999.99 kHz) or position survey via incremental encoder with HTL- or TTL-output**

- red display of -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
- 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 the triggering of Hold, Tara, display change, setpoint setting, alarm actuation
- flexible alarm system with adjustable delay times
- volume measuring (totaliser) for frequencies up to 1 kHz (pulse precisely)
- 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: 2 or 4 relay outputs or 8 PhotoMos-outputs
- optional: 1 or 2 independently scalable analog outputs
- 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)



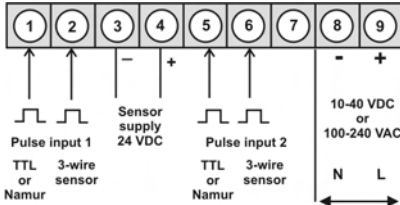
Supply 100-240 VAC, DC ± 10%

M3-1FR5B.0307.S70BD

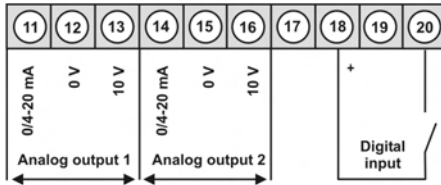
Supply 10-40 VDC, 18-30 VAC

M3-1FR5B.0307.W70BD

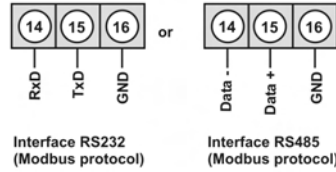
• Frequency (0.01 Hz to 999.99 kHz) for incremental encoder S420



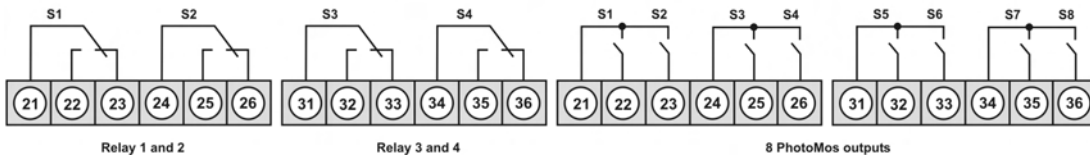
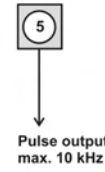
Options:



alternative to analog output



alternative to pulse input 2



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

• Order key options

M	3-	1	F	R	5	B.	0	3	0	7.	S	7	0	B	D
M	3-	1	F	R	5	B.	0	3	0	7.	W	7	0	B	D

EUR

	S420 pulse inputs for incremental encoder
2	2 relay outputs
4	4 relay outputs
8	8 PhotoMos-outputs
1	without keypad, operation on the back
X	Analog output 0/4-20 mA, 0-10 VDC galv. isolated
Y	2 analog outputs galv. isolated
6	Sensor supply 12 VDC/50 mA incl. digital input
K	Pulse output max. 10 kHz
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.

ORDER NUMBER

EUR

• Parameterisation software

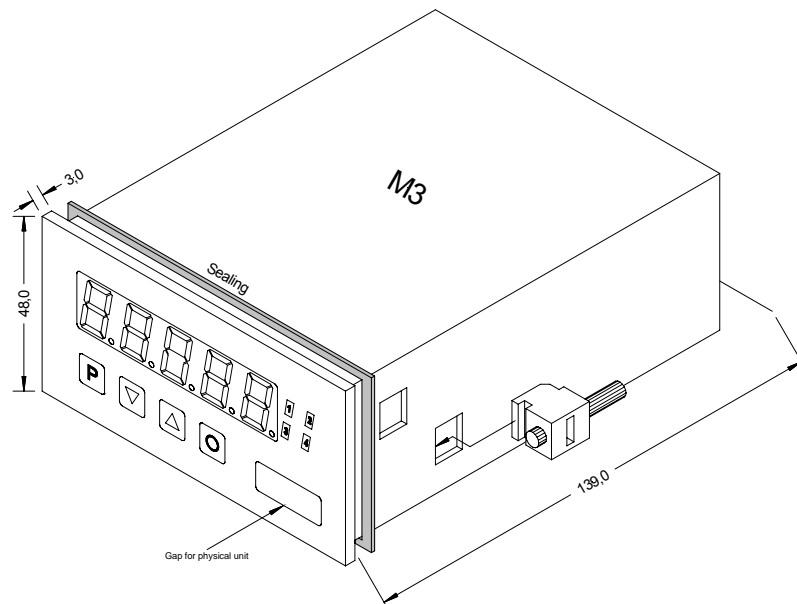
PC based configuration software PM-Tool for devices without keypad, for a simple adjustment of standard devices, incl. CD & USB-adapter. Programming is made via an interface on the back.

PM-TOOL-MUSB4

• **Technical data**

<b>Dimensions</b>	Housing Panel cut-out Fixing Housing material Sealing material Protection type Weight Connection	B96 x H48 x D120 mm, (incl. plug-in terminal D = 139 mm) 92.0 <sup>+0.8</sup> x 45.0 <sup>+0.6</sup> mm screw elements for insulation thickness up to 3 mm PC Polycarbonate, black EPDM, 65 Shore, black front side IP65 standard, back side IP00 approx. 350 g plug-in terminal; line cross-section up to 2.5 mm <sup>2</sup>
<b>Display</b>	Display Digit height Segment colour Range of display Threshold Overflow Underflow Display time	5-digit 14 mm red (standard), optional available in green, blue, orange or tricolour (red/green/orange) -19999 to 99999 optical display flashing horizontal bars at the top horizontal bars at the bottom 0.1 to 10.0 seconds
<b>Measuring input</b>	Signal Input resistance  Input frequency  Measuring fault	Pulse input, TTL, Namur, 3-wire initiator PNP/NPN Ri at 24 V / 4 kΩ High/Low level >15 V / < 4 V High/Low TTL level >4.6 V / <1.9 V 0.01 Hz to 999.99 kHz, 0.01 Hz to 9.9999 kHz for speed sensor, 0 to 2.5000 kHz at position survey 0.05% of measuring range, ± 1 digit
<b>Output</b>	Relays Switching cycles  PhotoMos output Analog output Sensor supply	with change-over contact 250 V / 5 AAC, 30 V / 5 ADC 10 * 10 <sup>5</sup> at 5 AAC, 5 ADC contact rate, 10 * 10 <sup>6</sup> mechanically Separation in accordance with DIN EN50178 / Specifications in accordance with DIN EN 60255 NOC contacts: 30 VDC/AC, 4 A 0-10 VDC / burden ≥ 10 kΩ, 0/4-20 mA / burden ≤ 500 Ω, 16 Bit 24 VDC / 50 mA 10 VDC / 20 mA
<b>Digital input</b>	Input galv. isolated	< 2.4 V OFF; 10 V ON; max. 30 VDC, Ri ~ 5 kΩ
<b>Interface</b>	Protocol RS232 RS485	manufacturer's specifics ASCII 9.600 Baud, no parity, 8 DataBit, 1 StopBit, wire length max. 3 m 9.600 Baud, no parity, 8 DataBit, 1 StopBit, wire length max. 1000 m
<b>Power pack</b>	Supply	100-240 VAC 50/60 Hz ± 10 % (max. 15 VA) 10-40 VDC, galvanic isolated, 18-30 VAC 50/60 Hz (max. 15 VA)
<b>Memory</b>	EEPROM	Data life ≥ 100 years at 25°C
<b>Ambient conditions</b>	Working temperature Storing temperature Climatic density	0 to + 60 °C -20 to + 80 °C 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	

**Housing:**



• Order key

		M	3-	1	F	R	5	B.	0	3	0	7.	S	7	0	B	D			
<b>Standard type M-Line</b>																		<b>Dimension</b>		
																		<input type="checkbox"/> D	physical unit (at buyer's option)	
<b>Einbautiefe</b> 139 mm (incl. plug-in terminal) <input type="checkbox"/> 3																		<b>Version</b>		
																		<input type="checkbox"/> B	B	
<b>Housing size</b> 96x48x120 mm (BxHxD) <input type="checkbox"/> 1																		<b>Switching points</b>		
																		<input type="checkbox"/> 0	no switching points	
																		<input type="checkbox"/> 2	2 relay outputs	
																		<input type="checkbox"/> 4	4 relay outputs	
																		<input type="checkbox"/> 8	8 PhotoMos-outputs	
<b>Display type</b> Frequency <input type="checkbox"/> F																		<b>Protection class</b>		
																		<input type="checkbox"/> 1	Without keypad, operation via PM-TOOL	
																		<input type="checkbox"/> 7	IP65 / plug-in terminal	
<b>Display colour</b>																		<b>Voltage supply</b>		
Blue <input type="checkbox"/> B																		<input type="checkbox"/> S	100-240 VAC	
Green <input type="checkbox"/> G																		<input type="checkbox"/> W	10-40 VDC galv. isolated	
Red <input type="checkbox"/> R																				
Red/Green/Orange <input type="checkbox"/> T																				
Orange <input type="checkbox"/> Y																				
<b>Number of digits</b> 5-digits <input type="checkbox"/> 5																		<b>Measuring input</b>		
																		<input type="checkbox"/> 7	Pulse, Namur, 3-wire NPN/PNP	
<b>Digit height</b> 14 mm <input type="checkbox"/> B																		<b>Analog output</b>		
																		<input type="checkbox"/> 0	without	
																		<input type="checkbox"/> X	1x 0-10 VDC, 0/4-20 mA	
																		<input type="checkbox"/> Y	2x 0-10 VDC, 0/4-20 mA	
<b>Digital input</b>																		<b>Sensor supply</b>		
without <input type="checkbox"/> 0																		<input type="checkbox"/> 3	24 VDC / 50 mA (incl. digital input)	
Interface RS232 <input type="checkbox"/> 3 galv. isolated																		<input type="checkbox"/> 6	12 VDC / 50 mA (incl. digital input)	
Interface RS485 <input type="checkbox"/> 4 galv. isolated																		<input type="checkbox"/> K	24 VDC / 50 mA (incl. digital input and pulse output max. 10 kHz)	