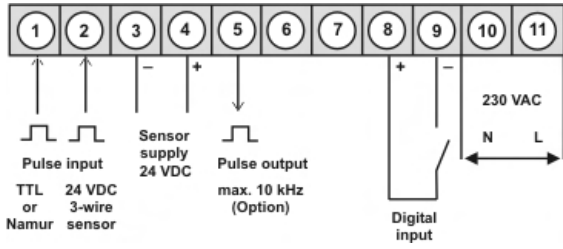




**M2 – 5-digit digital panel meter in 96x48 mm (BxH)  
 Frequency (0.01 Hz to 999.99 kHz) or  
 position survey via incremental encoder  
 with HTL- or TTL-output**

- red display of -19999...99999 digits (optional green, orange, blue or tricolour display)
- compact installation depth: 70 mm without plug-in terminal
- adjustment via factory default or directly on the sensor signal
- min-/max-memory with adjustable permanent display
- 30 additional adjustable supporting 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 actuation of tara- /hold-function, display change, setpoint setting, alarm actuator
- flexible alarm system with adjustable delay times
- volume measurement (Totaliser) for frequencies up to 1 kHz (pulse precisely)
- mathematical functions like reciprocal value, square root, squaring and rounding
- constant setting / respectively setpoint setting
- sliding averaging
- brightness control via parameters or front keys
- programming interlock via access code
- protection class IP65 at the front
- plug-in screw terminal
- optional: 2 relay outputs
- optional: 1 independently scalable analog output
- optional: galv. insulated digital input for the triggering of Tara, Hold, display change
- 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

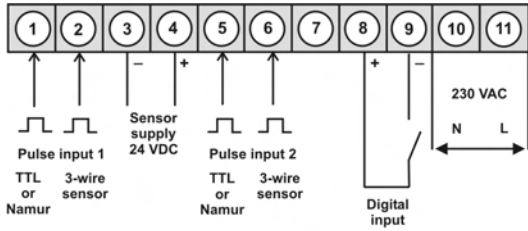
• Frequency (0.01 Hz to 999.99 kHz)



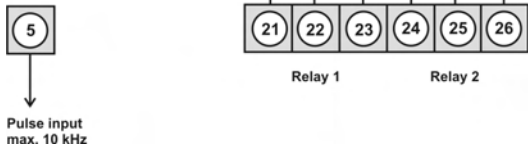
Supply 230 VAC

M2-1FR5B.0307.570CD

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



Options:  
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.

• Product key options

M 2- 1 F R 5 B. 0 3 0 7. 5 7 0 C D

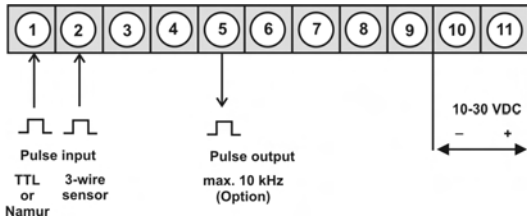
EUR

	S420 pulse inputs for incremental encoder
2	2 relay outputs
1	Without keypad, operation on the back
4	Voltage supply 115 VAC
2	Sensor supply 10 VDC / 20 mA incl. digital input
6	Sensor supply 12 VDC / 50 mA incl. digital input
K	Pulse output max. 10 kHz
B	Blue
G	Green
Y	Orange
T	Tricolour (Red-Green-Orange)*

\* 230 VAC voltage supply is not available with relay outputs.

Please state physical unit on demand, e.g. U/min.

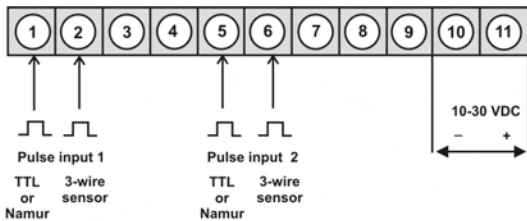
• Frequency (0.01 Hz to 999.99 kHz)



Supply 10-30 VDC

M2-1FR5B.0007.670CD

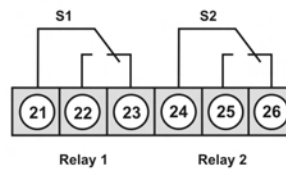
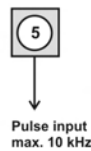
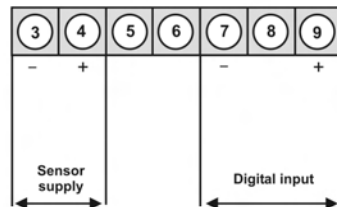
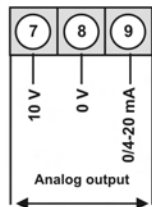
• Frequency (0.01 Hz to 999.99 kHz) for incremental encoder S420



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.

• Product key options

M 2- 1 F R 5 B. 0 0 0 7. 6 7 0 C D

EUR

	S420 Pulse inputs for incremental encoders
2	2 relay outputs
1	Without keypad, operation on the back
X	Analog output 0/4-20 mA, 0-10 VDC
2	Sensor supply 10 VDC / 20 mA incl. digital input
3	Sensor supply 24 VDC / 50 mA incl. digital input
6	Sensor supply 12 VDC / 50 mA incl. digital input
K	Pulse output max. 10 kHz, incl. sensor supply 24 VDC / incl. digital input
B	Blue
G	Green
Y	Orange
T	Tricolour (Red-Green-Orange)*

\* 230 VAC voltage supply is not available with relay outputs.

Please state physical unit on demand, e.g. U/min.

ORDER NUMBER

EUR

• Parameterisation software

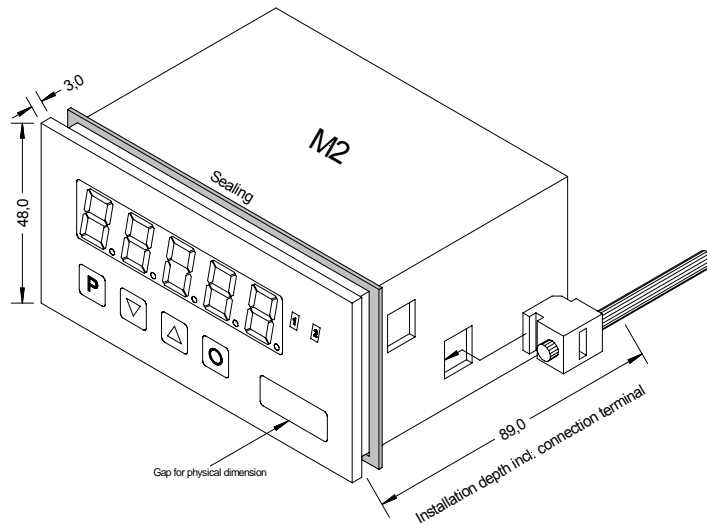
PC based configuration software PM-Tool for devices without keypad, for a simple adjustment of standard devices, incl. CD & USB-adapter. Programming is made via an interface on the back.

PM-TOOL-MUSB4

• **Technical data**

<b>Dimension</b>	Housing	B96 x H48 x D70 mm (including plug-in terminal D= 89 mm)
	Panel cut-out	92.0 <sup>+0.8</sup> x 45.0 <sup>+0.6</sup> mm
	Fixing	screw elements for insulation thickness up to 3 mm
	Housing material	PC Polycarbonate, black
	Sealing material	EPDM, 65 Shore, black
	Protection class	at the front IP65 standard, back side IP00
	Weight	approx. 250 g
	Connection	plug-in terminal; line 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 available in green, blue, orange or tricolour (red/green/orange)
	Display range	-19999 to 99999
	Setpoints	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	impulse input, TTL, Namur, 3-wire initiator PNP/NPN
	Input resistance	R <sub>i</sub> 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...999.99 kHz, 0.01 Hz...9.9999 kHz with rev counter, 0...2.5000 kHz with position recording
	Measuring fault	0.05% of measuring range, ± 1 digit
<b>Output</b>	Relay	with change-over contact 250 V / 5 AAC, 30 V / 5 ADC
	Switching cycle	10 * 10 <sup>3</sup> at 5 AAC, 5 ADC ohm resistive burden 10 * 10 <sup>6</sup> mechanically Separation in accordance with DIN EN 50178 / Specifications in accordance with 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 / 20 mA
<b>Digital input</b>	Input galv. insulated	< 2.4 OFF; > 10 V ON; max. 30 VDC, R <sub>i</sub> at ~ 5 kΩ
<b>Power pack</b>	Supply	230 VAC 50/60 Hz +/- 10 % (max. 10 VA) 10-30 VDC, galvanic insulated (max. 4 VA)
<b>Memory</b>	EEPROM	Data life ≥ 100 years at 25°C
<b>Ambient conditions</b>	Working temperature	0 to + 60 °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	

**Housing:**



• Order key

	M	2-	1	F	R	5	B.	0	3	0	7.	6	7	0	C	D	
<b>Basic type M-Line</b>																	<b>Dimension</b>
<b>Installation depth</b> 89 mm (incl. plug-in terminal)																	<b>D</b> physical unit
<b>Housing size</b> 96x48x70 mm (BxHxD)																	<b>Version</b>
<b>Display type</b> Frequency																	<b>C</b> C
<b>Display colours</b> Blue Green Red Red/Green/Orange Orange																	<b>Switching points</b>
<b>Number of digits</b> 5-digit																	<b>0</b> no switching point <b>2</b> 2 relay outputs
<b>Digit height</b> 14 mm																	<b>Protection class</b>
<b>Digital input</b> without 1x digital input																	<b>1</b> without keypad, operation on the back <b>7</b> IP65 / plug-in terminal
																	<b>Supply voltage</b>
																	<b>4</b> 115 VAC <b>5</b> 230 VAC <b>6</b> 10-30 VDC galv. insulated
																	<b>Measuring input</b>
																	<b>7</b> Pulse, Namur, 3-wire PNP/NPN
																	<b>Analog output</b>
																	<b>0</b> without <b>X</b> 0-10 VDC, 0/4-20 mA
																	<b>Sensor supply</b>
																	<b>0</b> without <b>2</b> 10 VD / 20 mA, incl. digital input <b>3</b> 24 VDC / 50 mA, incl. digital input <b>6</b> 12 VDC / 50 mA, incl. digital input <b>K</b> 24 VDC / 50 mA, incl. digital input and pulse output (10 kHz)