

## PROGRAMMABLE COUNTER PMO 2160

for one- and more-quadrant operation



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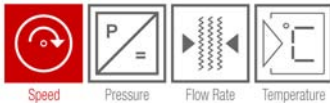
Due to its versatile programming possibilities the counter PMO 2160 is optional adjustable for measurement and control applications. It is especially qualified for positioning of uniaxial rotation and linear motion, for collecting operating data and for volume measurement of flow meters.

The counter reading can be scaled using a multiplier or divider.

The data can be transferred to the SPS using an analog or serial interface.

### Fields of applications

- Wood processing machines
- Printing machines
- Cutting machines
- Winders
- Sawing machines
- Blenders
- Dosing machines
- Paper- and paper board machines
- Textile machines
- Metal processing machines
- Measurement of drilling depth

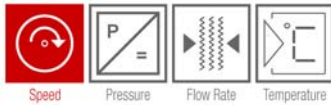


## Technical data

DIMENSION	48 x 96 x 120 mm (H x B x T)
DEPTH BEHIND PANEL	90 ± 0,5 x 42,5 ± 0,5 mm
PANEL THICKNESS	2 - 40 mm
HEIGHT OF DISPLAY	14 mm
AMOUNT OF DIGITS	5
WEIGHT	0,540 kg
MEASURAND SCALING	Display = counter reading x multiplier / divider
TYPE OF MEASUREMENT	a) Forward-/backward counting using one channel, second channel is used for direction b) Forward-/backward counting using two channels (difference) c) Phase discriminator, counter for incremental sensors d) Phase discriminator with four-edged-interpretation
COUNTER CAPACITY	± 2,1 x 10 <sup>9</sup> , undetachably
DISPLAY	-19999 ... 99999, scaling with divider and multiplier 0 ... 4 programmable fixed decimal place or floating point

## Control input

CONNECTION	Switching contact, open collector, or 5V-digital level active lo (IL=-4mA)
FUNCTIONS	a) Gate, counting begins only if external contact is closed b) Reset pulse, counter is reset to zero if external contact is closed, min. required pulse duration 3 ms c) Universal digital input programmable to: <ul style="list-style-type: none"> <li>■ Hold-0: display, limit values and analog output frozen at last reading, meantime with background counting</li> <li>■ Hold-1: display and limit values frozen to last reading, background counting and output through analog output</li> <li>■ Display test, all segments of display light up by input triggering</li> <li>■ Dark display, least brightness intensity by triggering input</li> </ul>
EXT. TRANSMITTER POWER SUPPLY	15 V DC / 60 mA
OPERATING CONTROL	Watchdog
TENSION OF SUPPLY	230 V / 115 V AC ± 10%, 47 - 63 Hz (selectable using internal solder bridge), test voltage 1,5 kV
POWER CONSUMPTION	6 VA
AMBIENT TEMPREAURE	0 ... 55°C
STORAGE TEMPERATUR	-10 ... +70°C
PROTECTION	Front side protection IP64 acc. to DIN 40050
CONNECTIONS	Pluggable screw type terminal block 1,5 mm <sup>2</sup>
ISOLATION GROUP	A acc. to VDE 0110 at built in state
RELATIVE HUMIDITY	≤ 75% annual mean, seldom and slight dew



## Impuls-/Frequency input

MAX. FREQUENCY	100 kHz
FREQUENCY RANGE	Programmable low-pass filter 30 Hz, 1 kHz oder 100 kHz
SENSITIVITY	60 mV / 1 V / 2,5 V; programmable via push-buttons

## Options

<b>N2</b>	Power supply 24 V AC $\pm$ 10% 47 ... 63 Hz, 6 VA	Measurement input and analog output are galvanically isolated, Test voltage 1,5 kV acc. to VDE 0100, section 410
<b>N3</b>	Power supply 18 - 30 V DC, 6 Watt	Measurement input and analog output are galvanically isolated, Test voltage 1,5 kV acc. to VDE 0100, section 410
<b>I</b>	0(4) ... 20 mA Analog output, galvanically isolated 0(2) ... 10 V Analog output, galvanically isolated	Max. load 500 $\Omega$ accuracy 0,1%, 12 Bit D/A converter with LSB-PWM (Resolution 14 Bit) Max. demand 2 k $\Omega$ , accuracy 0,1%, 12 Bit D/A converter with LSB-PWM (Resolution 14 Bit)
<b>G2</b>	2 independent limit switches	Galvanically isolated switching contacts, 250 V, 1 A 50 W, Active energized or fail-safe mode, hysteresis adjustable per channel 0 ... 99999 floating point
<b>G3</b>	3 independent limit switches	Third limit value, galvanically isolated switching contacts, 125 V AC/0,4 A 30 V DC /2 A, open-circuit/ closed-circuit, hysteresis adjustable per channel, 0 ... 99999 floating point
<b>SR85</b>		RS 485-Interface, galvanically isolated, max. 31 units, initialization 9600 Baud, 8 Bit, 1 Stopbit, no parity
<b>SM</b>		Black front frame

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## Dimension illustration

