

## PROGRAMMABLE DISPLAYING TRANSDUCER / LIMIT SWITCH PMO 2100 / 4100

for temperature, current, voltage, pressure, strain gauge, rotation speed, flow rate



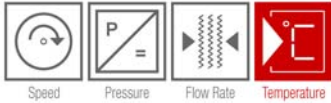
Rev.-Nr.: DS 401 E V0.2 2008-08-07

The Process Indicator / Limit Switch / Transducer is a universal device to display measurement data and to transform temperature, current, voltage, resistor as well as frequency. Further information about frequency meters (digital tachometers) are available in datasheet DS 105 E.

Input and output are galvanically isolated. The programming of the device is carried out on the front mounted key panel. The programming function can be disabled using the slide switch at the rear of the device. The limit values are still adjustable at the front panel after disabling the programming function.

### Standardized functions:

- 5 digit display - peak value storage
- Average determination of 1 - 20 s
- Linearisation of the measured value up to 10 vertexes
- circuit break control
- Digital input for Start/Stop, testing of the display, retrace blanking
- 2-wire transducer power supply 15 or 24 V DC, 50 mA



## Technical data

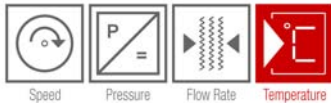
	PMO 2105/2101	PMO 4105/4101
DIMENSIONS	96 x 48 x 120 mm (w x h x d)	144 x 72 x 162 mm (w x h x d)
DEPTH BEHIND PANEL	90 ± 0,5 x 42,5 ± 0,5 mm	137,2 ± 0,5 x 66 ± 0,5 mm
PANEL THICKNESS	2 - 40 mm	2 - 40 mm
PROTECTION	IP 64	IP 64
HEIGHT OF DISPLAY	14 mm	20 mm
WEIGHT	540 g	780 g

## PMO 2105 / 4105

MEASURING RANGE	± 2 mA, ± 20 mA ± 200 mV, ± 2 V, ± 20 V, ± 200 V DC (Option R = 0 ... 200 Ω , 0.2 kΩ)
RESOLUTION	11 µV bei 200 mV measuring range
PROGRAMMABLE DISPLAY RANGE	- 19999 ... +99999
DECIMAL POINT	Programmable at each figure of the display
TRANSDUCER POWER SUPPLY	2- und 3-wire transducer, 15 V DC / 50 mA
OVERRANGE DISPLAY	„or“ at 10 % overrange
UNDERRANGE DISPLAY	„ur“ at 10 % underrange
STATUS DISPLAY	„---“ circuit break control at 4 ... 20 mA, pick-up value < 0,12 mA

## Options

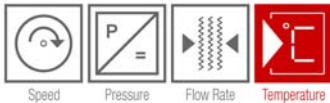
S2	Strain gauge, pressure, pressure differential sensors, constant current 1 mA, max. load 10 kΩ
S3	Strain gauge measuring transmitter, power supply source 10 V DC, 50 mA
S4	2- and 3-wire transducer power supply 24 V, DC, 50 mA
R	Resistance measurement 0 ... 200/0 ... 2000 Ω , constant current 1 mA



## PMO 2101 / 4101

RESISTANCE THERMOMETER	DISPLAY RANGE °C		MEASUREMENT ERROR (%) EW AT TV = 23°C	TEMPERATURE DRIFT	NORM	
<b>ELEMENT</b>						
Pt 100 2-, 3-, 4LEITER	-200 ... 850	oder	-200,0 ... 850,0	0,05 ± 1 Digit	0,01 °C/°C	DIN/IEC 751
Ni 100 2-, 3-, 4LEITER	-60 ... 240	oder	-60,0 ... 240,0	0,05 ± 1 Digit	0,01 °C/°C	DIN 43760
<b>THERMOELEMENTE</b>						
Ni-CrNi, Typ K	-200 ... 1370	oder	-200,0 ... 1370,0	0,1 ± 1 Digit	0,01 °C/°C	DIN/IEC 584
FE-CuNi, Typ L	-200 ... 900	oder	-200,0 ... 900,0	0,1 ± 1 Digit	0,01 °C/°C	DIN 43710
FE-CuNi, Typ J	-200 ... 1000	oder	-200,0 ... 1000,0	0,1 ± 1 Digit	0,01 °C/°C	DIN/IEC 584
PtRh90/10%-Pt, Typ S	0 ... 1760			0,1 ± 1 Digit	0,01 °C/°C	DIN/IEC 584
PtRh87/13%-Pt, Typ R	0 ... 1590			0,1 ± 1 Digit	0,01 °C/°C	DIN/IEC 584
PtPtRh70/30%-Pt94/6%, Typ B	400 ... 1800			0,1 ± 1 Digit	0,01 °C/°C	DIN/IEC 584
NiCr-CuNi, Typ E	-270 ... 1000	oder	-270,0 ... 1000,0 -200,0 ... 1000,0	0,2 ± 1 Digit 0,1 ± 1 Digit	0,01 °C/°C	DIN/IEC 584
Ni-CrSi-NiSiL, Typ N	-270 ... 1300	oder	-270,0 ... 1300,0 -200,0 ... 1300,0	0,2 ± 1 Digit 0,1 ± 1 Digit	0,01 °C/°C	DIN/IEC 584
Cu-CuNi, Typ T	-270 ... 400	oder	-270,0 ... 400,0 -200,0 ... 400,0	0,2 ± 1 Digit 0,1 ± 1 Digit	0,01 °C/°C	DIN/IEC 584
Cu-CuNi, Typ U	-200 ... 400	oder	-200,0 ... 400,0	0,1 ± 1 Digit	0,01 °C/°C	DIN 43710
<b>THERMOCOUPLE RESISTANCE</b>		max. 100 Ω				
<b>INPUT RESISTANCE</b>		470 kΩ				
<b>COLD SOLDER JOINT COMPENSATION</b>		internal 0(5) ... 45°C, external 50°C				
<b>OVERRANGE DISPLAY</b>		"or"				
<b>UNDERRANGE DISPLAY</b>		"ur"				

Rev.-Nr.: DS 401 E V0.2 2008-08-07

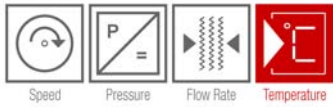


## Common technical data

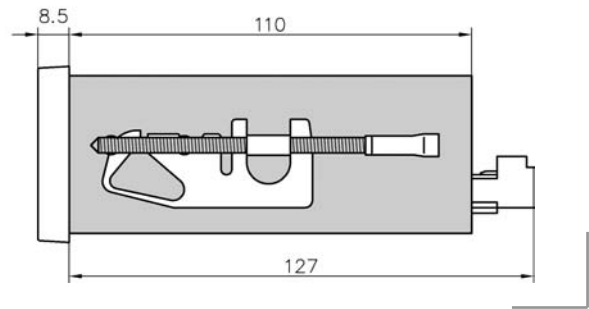
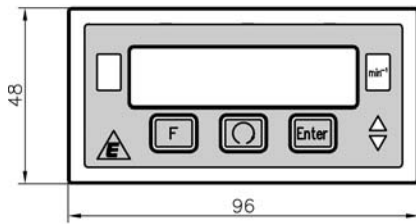
MEASURING RATE	3 measurements / s
AVERAGING	1 s of 3 measurements up to bis 20 s of 60 measurements
SUPPLY VOLTAGE	230 / 115 V AC $\pm$ 10%; 47...63 Hz (internal solder bridge)
POWER CONSUMPTION	6 VA
AMBIENT TEMPERATURE	0 ... 55°C
STORAGE TEMPERATURE	-10 ... +70°C
CONNECTIONS	Pluggable screw type terminal block 1,5 mm <sup>2</sup>
OPERATING CONTROL	Watchdog
ISOLATION GROUP	A acc. to VDE 0110 (built in condition)
RELATIVE HUMIDITY	$\leq$ 75% annual mean, seldom and slight dew

## Common Options

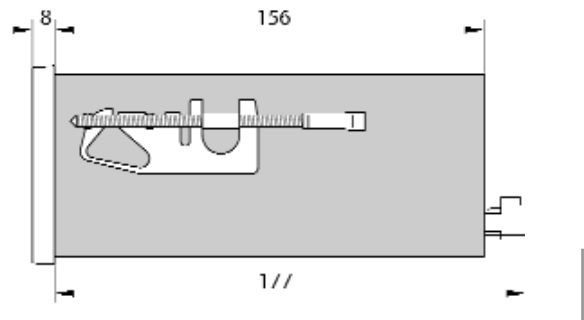
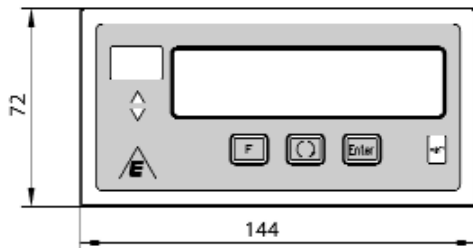
<b>N2</b>	Power supply 24V AC $\pm$ 10%; 47 ... 63 Hz, 6 VA, input and analog output are galvanically isolated Test voltage 1,5 kV acc. to VDE 0100, ch. 410
<b>N3</b>	Power supply 18 - 30 V DC, input and analog output are galvanically isolated Test voltage 1,5 kV acc. to VDE 0100, ch. 410
<b>I</b>	Transducer output, potential isolated, 0(4) ... 20 mA, load 500 $\Omega$ , Accuracy 0,1 %, resolution 12 Bit. at a circuit break analog output > 22 mA
<b>U</b>	Transducer output, potential isolated, 0(2) ... 10 V DC, load 2 k $\Omega$ , Accuracy 0,1 %, resolution 12 Bit. at a circuit break analog output > 11 V
<b>G2</b>	2 independent limit switches, potential isolated change-over contact, 250 V, 1 A 50 W, Operating current/ closed-circuit current, hysteresis per channel adjustable, 0 ... 99999
<b>G3</b>	Third limit value, potential isolated change-over contact, 125 V AC/0,4 A 30 V DC /2 A, Operating current/ closed-circuit current, hysteresis per channel adjustable, 0 ... 99999 (only available in connection with G2)
<b>SR85</b>	RS 485-Interface, initialization 9600 Baud, 8 Bit, 1 Stopbit, no parity, potential isolated, max. 31 devices (all Esters-devices are connectable with the RS 485- Interface)
<b>SM</b>	Black front frame and front panel



**Dimension illustration - PMO 2105/2101**



**Dimension illustration - PMO 4105/4101**



Rev.-Nr.: DS 401 E V0.2 2008-08-07





