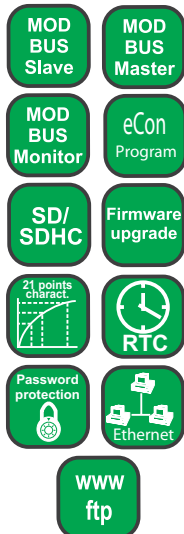


P30U TRANSDUCER OF TEMPERATURE AND STANDARD SIGNALS

FEATURES:



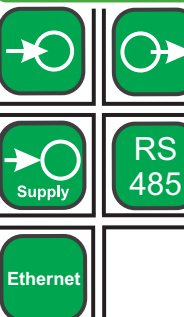
INPUT:



OUTPUT:



GALVANIC ISOLATION:



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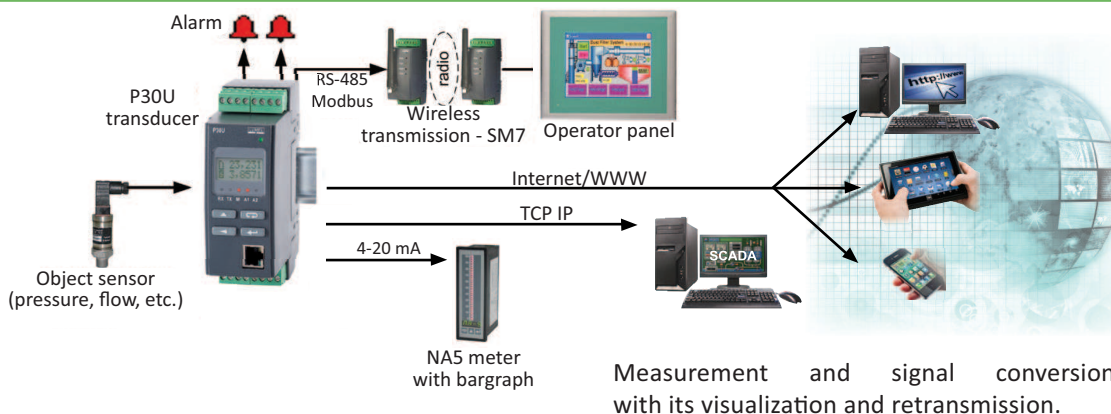
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✓ **NOTICE!**
NEW
functions!



- Universal measuring input.
- Version: standard, with SD card, **with Ethernet and internal memory.**
- Mathematical functions, i.a. **median filter function on measured value.**
- Individual characteristic (up to 21 points).
- 1 or 2 (option) alarm output.
- Built-in power supply of object transducers 24V d.c. (option).
- RS-485 interface Modbus RTU Slave, RTU Master or Monitor.
- **Modbus TCP Slave (option).**
- **Possibility to record one measuring value and simultaneously up to 50 read-out/ written values via RS-485 Modbus Master.**
- Data recording in internal memory, up to 4MB or in external SD/SDHC card or **internal file system memory (8 GB) (option).**
- Transducer programmable using buttons, eCon freeware (through RS-485 or **Ethernet**) or **any web browser (through Ethernet).**
- Firmware upgradeable by the user.

EXAMPLE OF APPLICATION:



INPUT

Input type	Nominal measuring range Z	Coefficient k *	Input type	Range	Minimal sub-range with class preservation
Voltage 10 V	-10...10 V	4	Thermocouple J type	0...400 °C	1
Voltage 24 V	-24...24 V	5		-200...1200 °C	2
Current	-20...20 mA	10	Thermocouple K type	0...400 °C	1
Resistance 400	0...400 Ω	4		-200...1370 °C	2
Resistance 2000	0...2000 Ω	2	Thermocouple S type	0...1760 °C	2
Resistance 5500	0...5500 Ω	2		-20...420 °C	1
Pt100	-200...850 °C	5	Thermocouple N type	-200...1300 °C	1
Pt250	-200...600 °C	4		-40...260 °C	1
Pt250	-200...850 °C	3	Thermocouple E type	-200...1000 °C	2
Pt500	-200...180 °C	3		0...1760 °C	2
Pt500	-200...850 °C	3	Thermocouple R type	-200...400 °C	1
Pt1000	-200...250 °C	4		400...1800 °C	1
Pt1000	-200...850 °C	2	RS-485	In the Master mode of RS-485 interface, the transducer can poll up to 50 registers from one device, with implemented Modbus protocol, using RS-485 interface. In this mode, it is not possible to poll the transducer by another Master device. In the Master mode of RS-485 interface, the transducer can monitor activity of the RS-485 connection and react (accept as a measured value) to the value of the frame of the selected slave device. The transducer can analyze up to 50 registers from one device. In this mode, it is not possible to poll the transducer by another Master device.	
Ni100	-60...180 °C	1			
Ni1000	-60...150 °C	2			
Ni100-LG	-60...180 °C	1			
Ni1000-LG	-60...180 °C	2			
Cu100	-50...180 °C	1			
Voltage mV	-5...20 mV	1			
	-75...75 mV	4			
	-200...200 mV	4			

Accuracy class = 0.1 with the exception of N, E and T thermocouples, where accuracy class = 0.2 and S, R, and B thermocouples, where accuracy class = 0.5.

k* coefficient of narrowing the measuring range with keeping the accuracy class.

NOTE: Minimal sub-range with keeping the accuracy class is z/k (it is freely programmable).

Example: 10 Z = -10...10V;

k = 10

Z/k = 2 V, so the minimal sub-range can be e.g. -1...1 V; 0...2 V; 5...7 V

OUTPUT

Output type	Properties	Remarks
Analog	Current: 0/4...20 mA, load resistance $\leq 500 \Omega$ Voltage: 0...10 V, load resistance $\geq 500 \Omega$	accuracy class: 0.1
Relay	1 or 2 relays; voltageless contacts – NO – maximum load 5A 30V d.c., 250V a.c.	
Supplying output	24 V d.c. / 30 mA (option)	

DIGITAL INTERFACE

Interface type	Protocol	Baud rate
RS-485	Modbus RTU: 8N2, 8E1, 8O1, 8N1; Address 1...247	4.8, 9.6, 19.2, 38.4, 57.6, 115.2, 230.4, 256 kbit/s

EXTERNAL FEATURES

Overall dimensions	45 x 120 x 100 mm	
Weight	< 0.25 kg	
Protection grade	for housing: IP40/ IP30	for terminals: IP20
Readout field	LCD 2 x 8	

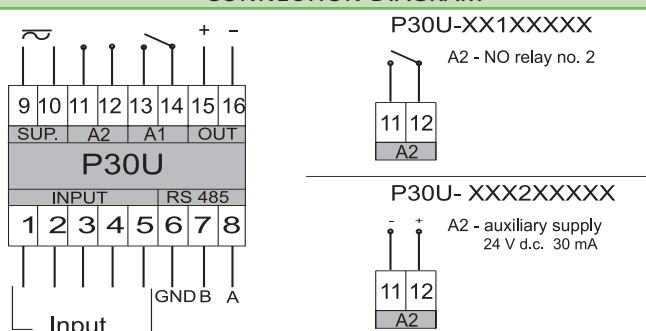
RATED OPERATION CONDITIONS

Supply voltage	85...253 V d.c. / a.c. (40...400 Hz) 20...40 V a.c. (40...400 Hz) or 20...60 V d.c.	Power consumption < 6 VA
Temperature	ambient: -25...+55°C	storage: -30...+70°C
Relative humidity	25...95 %	inadmissible condensation
Working position	any	

SAFETY AND COMPATIBILITY REQUIREMENTS

Electromagnetic compatibility	noise immunity	acc. EN 61000-6-2
	noise emissions	acc. EN 61000-6-4
Isolation between circuits	basic	acc. EN 61010-1
Pollution level	2	
Installation category	III	acc. EN 61010-1
Maximal phase-to-earth voltage	- for supply circuits 300 V - for other circuits 50 V	
Altitude above sea level	< 2000 m	

CONNECTION DIAGRAM



ORDERING

P30U -	X	X	X	X	XX	X	X
Analog output:							
current (range 0/4...20 mA)	1						
voltage (0...10 V)	2						
Additional equipment:							
without any	0						
with external SD/SDHC slot	1						
with Ethernet interface and internal file system memory	2						
Addition output:							
NO relay, 5 A 30 V d.c., 250 V a.c.	1						
supply 24 V d.c. / 30 mA	2						
Supply:							
85...253 V a.c./d.c.	1						
20...40 V a.c., 20...60 d.c.	2						
Version:							
standard	00						
custom-made*	XX						
Language version:							
Polish	P						
English	E						
other*	X						
Acceptance tests:							
without extra requirements	8						
with an extra quality inspection certificate	7						
according to customer's request*	X						

ACCESSORIES:

Capacity	Ordering code
1 GB	20-199-00-00023
2 GB	20-199-00-00025

Order example:

Code P30U-111100P8 means transducer execution with current output, slot for SD/SDHC card, with 2 alarm relays, 85...253 V a.c. / d.c. (40...400 Hz) power supply, standard version, Polish language, without extra requirements.

* after agreeing with the manufacturer.

SEE ALSO:



Temperature sensors



N30U meter



LUMEL - PROCESS software

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P300 TRANSDUCER OF PULSES, FREQUENCY, TURNS, OPERATION TIME



FEATURES:

MOD
BUS
Slave

MOD
BUS
TCP

HTTP

FTP

SD/
SDHC

eCon
Program

21 points
charact.

RTC

Firmware
upgrade

Password
protection

2 x UNIVERSAL INPUT:

Hz

↺

□

□

Value
setting

OUTPUT:

↗

↘

⊕U

RS
485

GALVANIC ISOLATION:

↻

↻

→

RS
485

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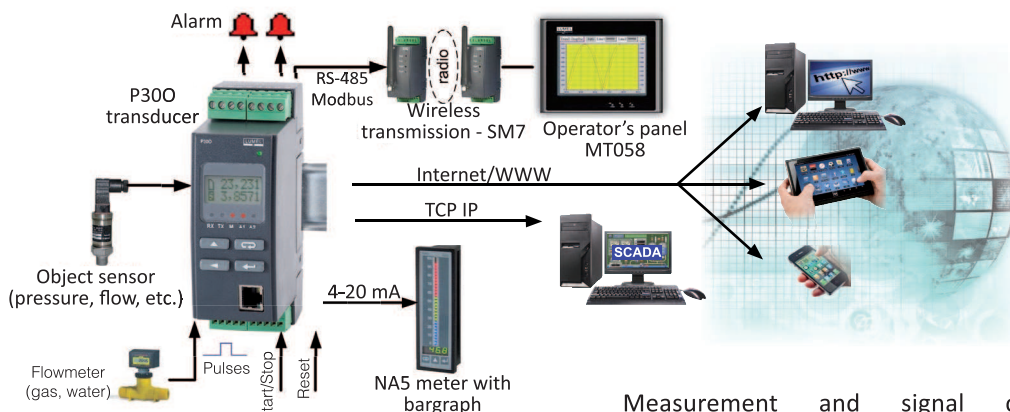


NEW



- 2 universal pulse inputs.
- Version: standard, with SD card, with Ethernet and internal memory.
- Mathematical functions for each input.
- Individual characteristic (up to 21 points) for each input.
- 1 or 2 (option) alarm output.
- Power supply of object transducers 24V d.c. (option).
- RS485 interface Modbus RTU Slave, Modbus TCP Slave (option).
- Data recording in internal memory up to 4MB, in external SD/SDHC card (option) or internal file system memory (8GB) (option).
- Transducer configuration using buttons, RS485 interface and eCon software, WWW server.
- Firmware upgradeable by the user.

EXAMPLE OF APPLICATION:



Measurement and signal conversion with its visualization and retransmission.

MAIN INPUT

Input type No. 1	Nominal range	Maximal range	Class
Number of pulses ¹	-99999...99999	-99999...99999	±1 pulse
Frequency $f < 10 \text{ kHz}$ ¹	0.05...10000 Hz	0.05...12000 Hz	0.01
Rational speed ¹	0...60000 [Rot/min]	0...72000 [Rot/min]	0.01
Period $t < 20 \text{ s}$ ¹	0.0001...20 [s]	0.0001...21 [s]	0.01
Period $t < 1.5 \text{ h}$	0.001...5400 [s]	0.0001...5600 [s]	0.01
Frequency $f < 1 \text{ MHz}$	0.1...1000 kHz	0.1...3000 kHz	0.01
Operating time	0...99999 [h]	0...99999 [h]	0.5 sec/ 24h
Current time	00.00 ... 23.59	00.00 ... 23.59	0.5 sec/ 24h
Counter INPUT1 - INPUT2 ¹	-99999...99999	-99999...99999	±1 pulse
Encoder ¹	-99999...99999	-99999...99999	±1 pulse

AUXILIARY INPUT

Input type No. 2	Nominal range	Maximal range	Class
Number of pulses ¹	-99999...99999	-99999...99999	±1 pulse
Frequency $f < 10 \text{ kHz}$ ¹	0.05...10000 Hz	0.05...12000 Hz	0.01
Rational speed ¹	0...60000 [Rot/min]	0.3...72000 [Rot/min]	0.01
Period $t < 20 \text{ s}$ ¹	0.0001...20 [s]	0.0001...21 [s]	0.05
Period $t < 1.5 \text{ h}$	0.001...5400 [s]	0.0001...5600 [s]	0.01
Frequency $f < 1 \text{ MHz}$	0.1...1000 kHz	0.1...3000 kHz	0.01
Operating time	0...99999 [h]	0...99999 [h]	0.5 sec/ 24h
Current time	00.00 ... 23.59	00.00 ... 23.59	0.5 sec/ 24h
Setting value	-99999...99999	-99999...99999	-

duration time of control pulse (START/STOP, RESET functions) >10 ms, input and control signals 5...24 V d.c.

¹ Minimal duration time of high or low level signal is 40μs - measured value can be incorrect, if for boundary frequency 10 kHz the pulse duty cycle will be < 30% or greater than 70%

OUTPUTS

Output type	Properties	Remarks
Analog	Current: 0/4...20 mA, load resistance ≤ 500 Ω; Voltage: 0...10 V, load resistance ≥ 500 Ω	accuracy class: 0,1
Relay	1 or 2 relays; voltageless contacts – NO – maximum load 5A 30V d.c., 250V a.c.	
Supplying output	24 V d.c. / 30 mA (option)	

DIGITAL INTERFACE

Interface type	Protocol	Remarks
RS-485	Modbus RTU: 8N2, 8E1, 8O1, 8N1; Address 1...247	Baud rate: 4.8, 9.6, 19.2, 38.4, 57.6, 115.2, 230.4, 256 kbit/s
Ethernet 10/100 Base-T	Modbus TCP, HTTP, FTP	WWW server, FTP server, DHCP client

EXTERNAL FEATURES

Overall dimensions	45 x 120 x 100 mm	
Weight	< 0.25 kg	
Protection grade	for housing: IP40	for terminals: IP10
Readout field	LCD 2 x 8	

RATED OPERATION CONDITIONS

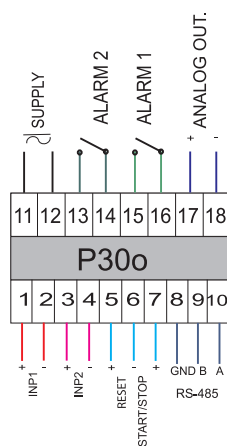
Supply voltage	85...253 V d.c. / a.c. (40...400 Hz) 20...40 V a.c. (40...400 Hz) or 20...60 V d.c.	Power consumption < 5 VA
Temperature	ambient: -25...+55°C	storage: -30...+70°C
Relative humidity	25...95 %	inadmissible condensation
Working position	any	

SAFETY AND COMPATIBILITY REQUIREMENTS

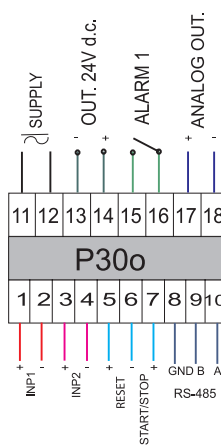
Electromagnetic compatibility	noise immunity	acc. EN 61000-6-2
	noise emissions	acc. EN 61000-6-4
Isolation between circuits	basic	acc. EN 61010-1
Pollution level	2	
Installation category	III	acc. EN 61010-1
Maximal phase-to-earth voltage	- for supply circuits 300 V - for other circuits 50 V	
Altitude above sea level	< 2000 m	

CONNECTION DIAGRAM

P30o-XX1XXXXX



P30o-XX2XXXXX



ORDERING

P30o -	X	XX	X	X	XX	X	X
Analog output:							
current (range 0/4...20 mA)	1						
voltage (0...10 V)	2						
Additional equipment:							
without	0						
with external SD/SDHC slot	1						
with Ethernet interface and internal file system memory	2						
Additional output:							
relay (NO), 5 A 30 V d.c., 250 V a.c.	1						
supply 24 V d.c. / 30 mA	2						
Supply:							
85...253 V a.c./d.c.	1						
20...40 V a.c., 20...60 d.c.	2						
Version:							
standard		00					
custom-made*		XX					
Language:							
Polish			P				
English			E				
other*			X				
Acceptance tests:							
without extra requirements				0			
with an extra quality inspection certificate				1			
acc. to customer's request*				X			

ACCESORIES:

SD CARD	
Capacity	Ordering code
1 GB	0923-611-193
2 GB	0923-611-194

* after agreeing with the manufacturer.

Order example:

Code P30o-112100E1 means transducer execution with current output, SD slot for SD card, with additional output 24 V d.c./ 30 mA, power supply 85...253 V a.c./d.c., standard version, English language, without extra requirements.

SEE ALSO:



Free eCon software for easy programming of LUMEL's products. Available on our website



KD7 recorder with MODBUS master protocol for recording data measured by P300 transducer.



SM3 binary inputs module. For readout of binary states and pulses through RS-485 protocol.

OUR OFFER



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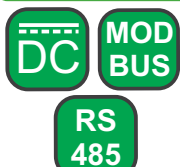
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P30H TRANSDUCER OF D.C. CIRCUITS PARAMETERS WITH DATA RECORD AND ETHERNET

FEATURES:



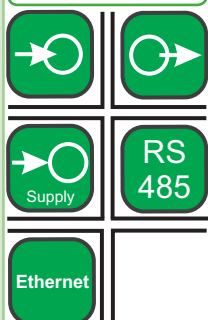
INPUT:



OUTPUTS:



GALVANIC ISOLATION:



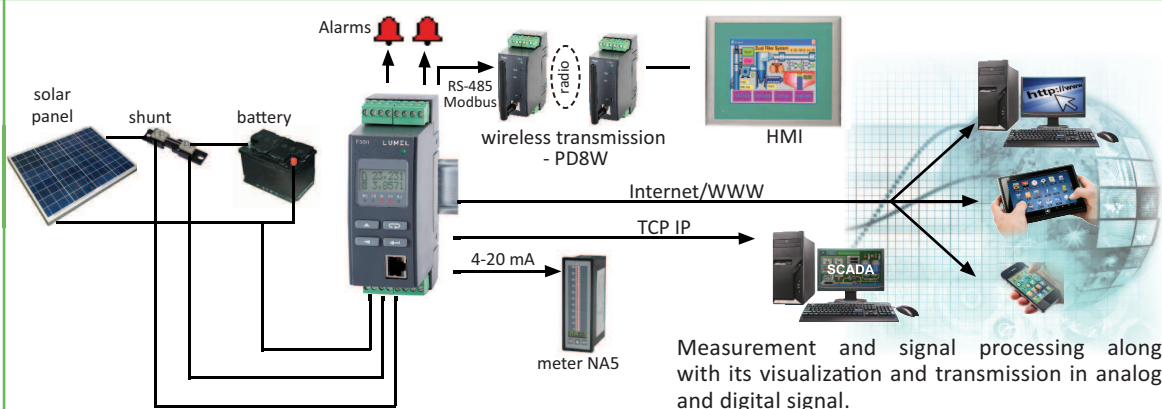
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- Measurement of voltage, current, power, energy and other parameters in d.c. circuits.
- Conversion of measured value in an output signal on the base of the individual characteristic.
- 1 or 2 alarm relays with NO contact working in 6 modes.
- Additional supplying output 24 V d.c. 30 mA switched-on/switched-off (option).
- Recording of input signals in internal memory, on SD/SDHC card (option) or internal file system memory (option).
- Interface RS-485 Modbus RTU.
- RS-485 Master/Monitor mode – possibility to poll 1 device.
- SD/SDHC support (option).
- Interface Ethernet 10/100 BASE-T (option).
 - Protocol: Modbus TCP/IP, HTTP, FTP.
 - Services: www server, ftp server, client DHCP.

EXAMPLE OF APPLICATION



MEASURED AND CALCULATED VALUES BY THE TRANSDUCER

- d.c. voltage U (direct or through additional resistor D5)
- d.c. current I (direct through shunt)
- power of d.c. current P
- voltage difference in time dU (5 s, 30 s, 1 min, 5 min or 15 min)
- current difference in time dI (5 s, 30 s, 1 min, 5 min or 15 min)
- voltage averaged over time U_{AV} (15, 30 or 60 min.)
- current averaged over time I_{AV} (15, 30 or 60 min.)
- power averaged over time P_{AV} (15, 30 or 60 min.)
- operating/ measurement time t [s]
- operating/ measurement time t [H.M]
- load capacity C
- input energy $E_{p\leftarrow}$
- output energy $E_{p\rightarrow}$
- total energy E_p (input+output)
- maximum and minimum values

INPUTS AND MEASURING RANGES

Measured value		Nominal range $K_0=1, K_1=1000$	Measuring range (maximum)	Class
Voltages U, dU, UAV	12V	-4 ... 12 V	-5...15 V	0.2
	48V	-4 ... 48 V	-10...57,6 V	
	100V	-5 ... 100 V	-10...120 V	
	250V	-5 ... 250 V	-10 ... 300V	
	600V*	-10 ... 500 V	-10...600 V	
	1000V*	-10 ... 1000 V	-10...1000 V	0.2 + class of additional resistor
Currents (shunt voltage) I, dI, IAV		-150 ... 150 A (-150 ... 150 mV)	-180 ... 180 A (-180...180 mV)	0.2+ shunt class (voltage measurement 0,2)
Time counter T [s] T [H.M]		0...999999999 s 0...277777.5 h.m		1s/ 24h, resolution 1 s
Capacity C		-92 233 720 368 ... 92 233 720 368 kWh		$\pm 0.5 \%$
Power P, PAV	12V	-0.6 ... 1.8 kW	-0.75 ... 2.25 kW	0.4 + shunt class
	48V	-0.6 ... 7.2 kW	-1.5 ... 8.64 kW	
	100V	-0.75 ... 15 kW	-1.5 ... 18 kW	
	250V	-0.75 ... 37.5 kW	-1.5 ... 45 kW	
	600V*	-1.5...75 kW	-3...90 kW	
	1000V*	-3...150 kW	-6...180 kW	0.4 + shunt class + + class of additional resistor
Input energy $E_{p\leftarrow}$ Output energy $E_{p\rightarrow}$ Total energy E_p		0 .. 99 999 999,9 kWh		$\pm 0.5 \%$ + shunt class

* – version in set with additional resistor D5 ($K_0 \neq 1$),

K_0 – voltage ratio ($PRIMAR. U / SECOND. U$),

K_1 – current ratio ($SHUNT I / SHUNT mV$, $K_1 = 1000$ e.g. for shunt 150 A/150 mV)

The maximum range display of measured values on the LCD display are -99999G ... 99999G. These ranges depend upon the size parameters of the primary and secondary voltage divider and the shunt ratio (parameters $PRIMAR. U$, $SECOND. U$, $SHUNT I$, $SHUNT mV$).

OUTPUTS

Output type	Properties	Remarks
Analog OUT1, OUT2 (1 or 2 outputs - depends on transducer version)	OUT1 current: 0/4...20 mA, load resistance $\leq 500 \Omega$ voltage: 0...10 V, load resistance $\geq 500 \Omega$	accuracy class 0.1
	OUT2 current: 0/4...20 mA, load resistance $\leq 250 \Omega$ voltage: 0...10 V, load resistance $\geq 500 \Omega$	accuracy class 0.5
Relay OUT2, OUT3 (1 or 2 outputs - depends on transducer version)	1 or 2 relays; voltageless contacts – NO – maximum load 5A 30V d.c., 250V a.c.	
Additional supplying output OUT3	24 V d.c. / 30 mA (option)	

DIGITAL INTERFACE

Interface type	Properties	Remarks
Ethernet 10/100 Baste-T (option)	Modbus TCP/ IP HTTP, FTP	www, ftp server, client DHCP
RS-485	Modbus RTU: 8N2, 8E1, 8O1, 8N1 Address 1...247	baud rate: 4.8, 9.6, 19.2, 38.4, 57.6, 115.2, 230.4, 256 kbit/s

EXTERNAL FEATURES

Overall dimensions	45 × 120 × 100 mm	
Weight	< 0.25 kg	
Protection grade	for housing: IP40/ IP30	for terminals: IP20
Readout field	LCD 2 x 8 characters with LED backlight	

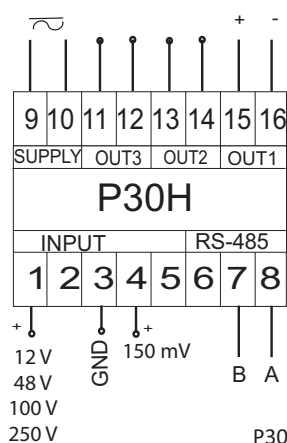
RATED OPERATION CONDITIONS

Supply voltage	• 85...253 V a.c., 85...300 V d.c. • 20...40 V a.c., 20...60 V d.c.	power consumption < 5 VA
Temperature	ambient: -25...23...+55°C	storage: -30...+70°C
Humidity	25...95 %	inadmissible condensation
Working position	any	

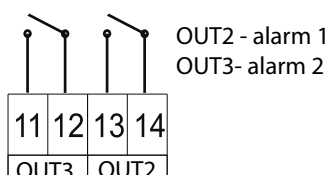
SAFETY AND COMPATIBILITY REQUIREMENTS

Electromagnetic compatibility	noise immunity	acc. to EN 61000-6-2
	noise emissions	acc. to EN 61000-6-4
Isolation between circuits	basic / reinforced (see user's manual)	acc. to EN 61010-1
Pollution level	2	
Installation category	III for input voltage up to 300 V d.c., III for input voltage 300...600 V d.c. with additional resistance D5, II for input voltage 600...1000 V d.c. with additional resistance D5	acc. to EN 61010-1
Maximal phase-to-earth voltage	• for supply and input circuits 300 V • for other circuits 50 V	
Altitude above sea level	< 2000 m	

CONNECTION DIAGRAM

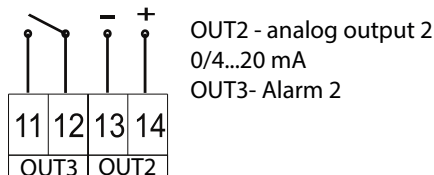


P30H-XX11XXXXX



SUPPLY - supply
OUT2 - output no.2 (alarm or analog output)
OUT3 - output no.3 (alarm or supplying output 24V)
OUT1 - main analog output no.1
INPUT - measuring input
RS-485 - interface RS-485

P30H-XX21XXXXX



SEE ALSO:



Screen recorder KD8
with touch panel -
3 or 6 channels -
RS-485 interface.



Programmable
digital meter of
temperature,
resistance and
standard signals
N30U.



Software
LUMEL - PROCES.

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P30H

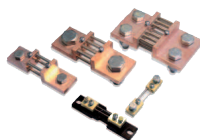
TRANSDUCER OF D.C. CIRCUITS PARAMETERS WITH DATA RECORD AND ETHERNET

CONNECTION DIAGRAM

SEE ALSO:



Temperature and d.c. standard signals universal digital meter with OLED - N21 type.



Shunts class 0.5



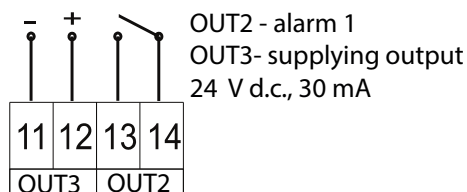
Analog meters

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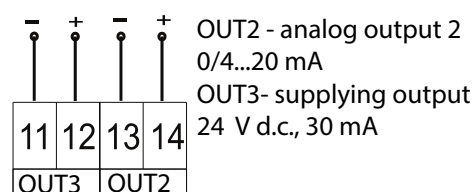
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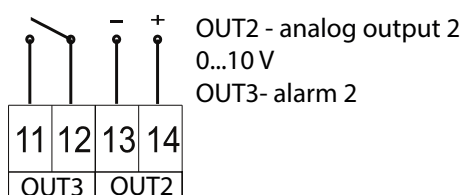
P30H-XX12XXXXX



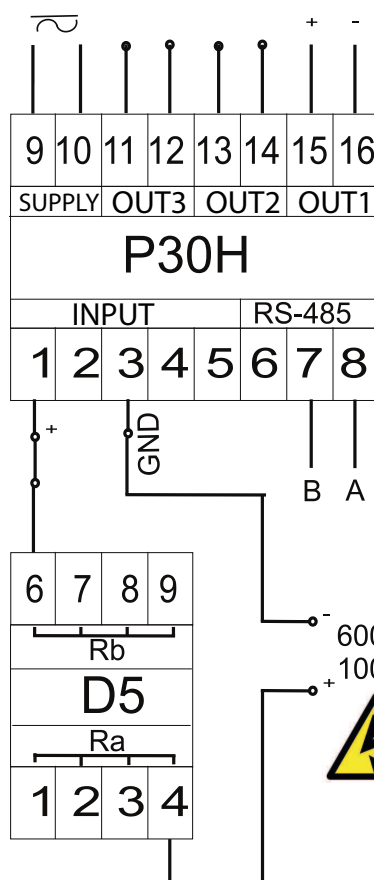
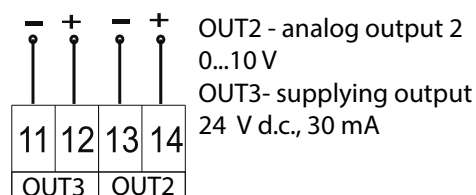
P30H-XX22XXXXX



P30H-XX31XXXXX



P30H-XX32XXXXX



indirect voltage measurement 600 V, 1000 V

ORDERING

Transducer P30H -	X	X	X	X	X	XX	X	X
Analog output OUT1:								
current (0/4...20 mA)	1							
voltage (0...10 V)	2							
Additional equipment:								
without	0							
with external SD/SDHC card	1							
with Ethernet interface and archive file system memory	2							
Output OUT2:								
relay A1, 5 A 30 V d.c., 250 V a.c.	1							
analog current output (0/4...20 mA)	2							
analog voltage output (0...10 V)	3							
Output OUT3:								
relay A2, 5 A 30 V d.c., 250 V a.c.	1							
power output 24 V d.c. / 30 mA	2							
Supply:								
85...253 V a.c., 85...300 V d.c.	1							
20...40 V a.c., 20...60 d.c.	2							
Version:								
standard							00	
custom-made*							XX	
Language:								
Polish							P	
English							E	
other*							X	
Acceptance tests:								
without extra requirements								0
with an extra quality inspection certificate								1
acc. to customer's request*								X

* after agreeing with the manufacturer

Order example:

The code **P30H-111210E1** means transducer in standard version with analog current output, with external SD/SDHC card, with relay alarm no.1, with power output 24 V/30mA, with supply 85...235 V a.c./d.c., in English, with an extra quality inspection certificate.

Additional resistance D5 -	X	X	X
Measuring range in set with P30H:			
600 V	1		
1000 V	2		
Language:			
Polish		P	
English		E	
other*		X	
Acceptance tests:			
without extra requirements			0
with an extra quality inspection certificate			1
acc. to customer's request*			X

* after agreeing with the manufacturer

Order example:

The code **D5-2E1** means additional resistance D5 with measuring range 1000 V, in English, with an extra quality inspection certificate.

SEE ALSO:



Transducer
of 1-phase power
network parameters
- P30P.



3-phase power
network meter
- ND20.



Current
transformers

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P21Z PROGRAMMABLE TRANSDUCER OF AC CURRENT, AC VOLTAGE AND FREQUENCY

LUMEL

FEATURES:

PD14
Programmer

eCon
Program

MOD BUS

Linear
charts

INPUTS:



OUTPUTS:

0...10
V

0...20
mA

4...20
mA

RS
485

GALVANIC ISOLATION:



Interface
PD14

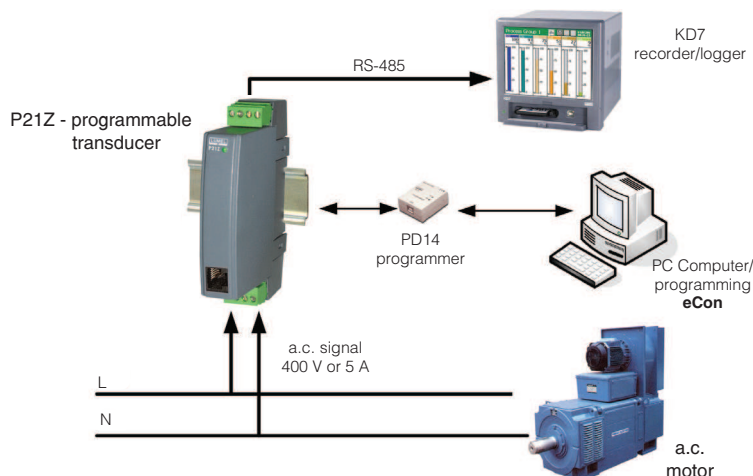
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- Continuous conversion of AC current, AC voltage without DC component and frequency.
- Standard DC current or DC voltage output signal or RS-485 interface with Modbus protocol.
- Compact dimensions.
- 0.2 accuracy class.
- Fully programmable parameters by PD14 programmer and free e-Con program:
 - measurement averaging time,
 - conversion characteristic,
 - preservation of the output signal at overflows,
 - RS-485 transmission parameters.

EXAMPLE OF APPLICATION



Measurement and archiving of a.c. motor current/voltage work parameters.
Measured data are transmitted to the recorder/data logger.

INPUTS

Measuring ranges	Parameters	Overloads	Error
0...1...100...130 V a.c.	input resistance > 2 MΩ	Short duration overload (1s): 2 Un (< 1000V), 10 In Sustained overload: 150% Un (only for Un = 400 V and ± 400 V), 120% Un (for other Un), 120% In	Basic error (at manufacturer's settings): ± (0.2% of range) Additional error from ambient temperature changes: ± (50% of the basic error/10K)
0...2,5...250...325 V a.c.			
0...4...400...600 V a.c.			
0...0,01...1,0...1,3 A a.c.	input resistance 10 mΩ ±10%		± 0.2% of range
0...0,05...5,0...6,3 A a.c.	input resistance 2 mΩ ±10%		
20...500 Hz (in voltage range 24...480)	input resistance > 2 MΩ		

OUTPUTS

Output kind	Properties	Remarks
0...20...22 mA	$R_{load} \leq 250 \Omega$	Resolution: 0.01% of the range
4...20...22 mA		
0...10...11 V	$R_{load} \geq 500 \Omega$	

DIGITAL INTERFACE

Interface type	Transmission protocol	Modes	Baud rates
RS-485	MODBUS RTU	8N2, 8E1, 8O1, 8N1	4.8, 9.6, 19.2 kbit/s

EXTERNAL FEATURES

Weight	< 0.125 kg	
Dimensions	22.5 x 120 x 100 mm	
Protection grade (acc. to EN 60529)	ensured by the housing: IP 40	from the terminal side: IP 20
Fixing	on a 35 mm rail	acc. to EN 60715

RATED OPERATING CONDITIONS

Supply	85..253 V a.c. 40..400 Hz; 90..300 V d.c. 20..40 V a.c. 40..400 Hz; 20..60 V d.c.	power consumption: < 3 VA
Temperature	ambient: -20...23...60°C	storage: -25...85°C
Relative humidity	< 95%	inadmissible vapour condensation
Operating position	any	
Preheating time	15 min	
Averaging time of the measurement	≥ 0.5 s	1 second set by default

SAFETY AND COMPATIBILITY REQUIREMENTS

Electromagnetic compatibility	Noise immunity	acc. to EN 61000-6-2
	Noise emissions	acc. to EN 61000-6-4
Isolation between circuits	basic	acc. to EN 61010-1
Pollution grade	2	
Installation category	III (for the 400 V option - category II) for the supply circuit: 300 V	
Maximal phase-to-earth operating voltage	for the measuring input: 600 V cat. II (300 V - cat. III)	
	for the programming input: 50 V	
	for the output: 50 V	
Altitude above sea level	< 2000 m	

CONNECTION DIAGRAMS

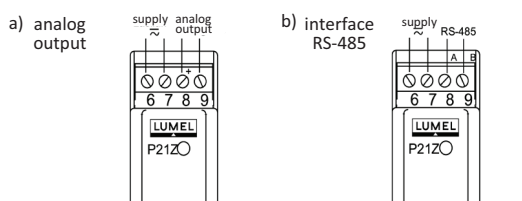


Fig. 1. Electrical connections of P21Z transducer: analog output and supply.

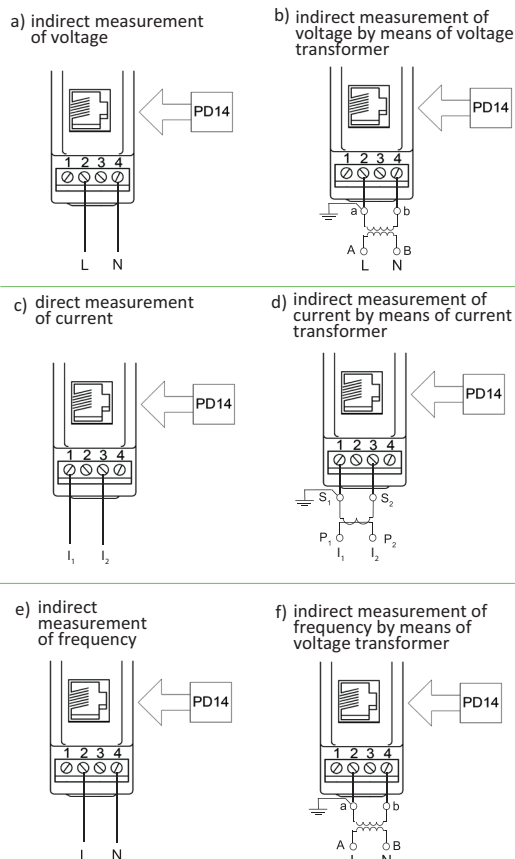


Fig. 2. Electrical connections of P21Z transducer inputs.

ORDERING

ORDERING CODES:

P21Z -	X	X	X	XX	X	X
Input signal:						
100 V a.c.	1					
250 V a.c.	2					
400 V a.c.	3					
1 A a.c.	4					
5 A a.c.	5					
frequency 20...500 Hz	6					
Output:						
0...20 mA	1					
4...20 mA	2					
0...10 V	3					
RS-485	4					
Supply:						
85..253 V a.c. 40..400 Hz; 90..300 V d.c.	1					
20..40 V a.c. 40..400 Hz; 20..60 V d.c.	2					
Version:						
standard				00		
non-standard settings				NS		
custom-made*				XX		
Language:						
Polish					P	
English					E	
other*					X	
Acceptance tests:						
without extra quality inspection requirements					0	
with an extra quality inspection certificate					1	
acc. to customer's request					X	

* - after agreeing with the manufacturer

Order example:

The code **P21Z - 1 1 1 00 E 0** means:

- P21Z** - transducer of a.c. current or a.c. voltage signals
- 1** - input signal: 1...100 V a.c.
- 1** - output signal: 0...20 mA
- 1** - supply voltage: 85..253 V a.c. 40..400 Hz; 90..300 V d.c.
- 00** - standard version
- E** - English language
- 0** - without extra quality inspection requirements

SEE ALSO:



Free eCon software for easy programming of LUMEL's products. Available on our website.

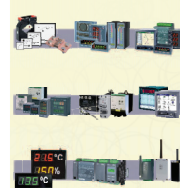


PD14 programmer - unit for programming LUMEL's products, with USB connection, LPCon compatible.



Programmable digital meter of d.c. current and d.c. voltage N30H.

OUR OFFER



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P20Z TRANSDUCER OF RMS CURRENT OR VOLTAGE

INPUTS:

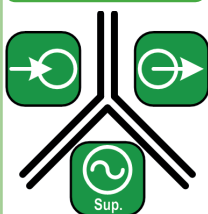


OUTPUTS:

0..20
mA

0..10
V

**GALVANIC
ISOLATION!**



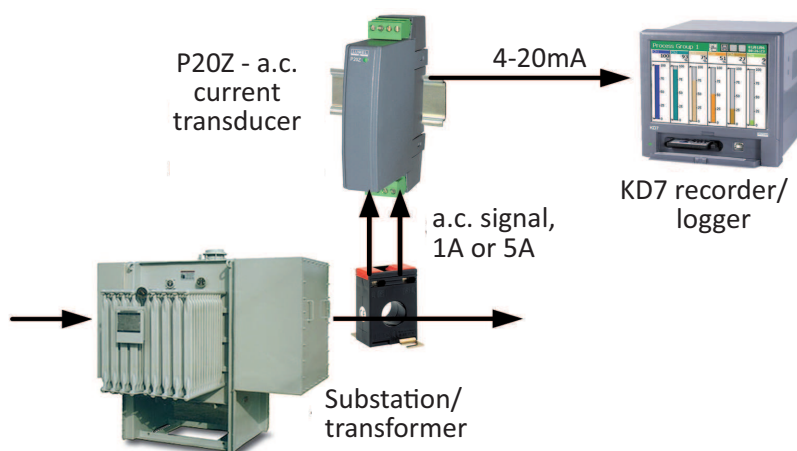
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- Continuous conversion of RMS current or voltage without constant component
- Standard d.c. current or d.c. voltage output signal
- Small dimensions
- 0.2 accuracy class

EXAMPLE OF APPLICATION



Measurement and archiving of the a.c current. Measured data are retransmitted to the recorder/data logger.

INPUTS

Input:	Frequency of the input signal	Input signal min..max value	Short duration overload (5s)	Admissible peak factor
Voltage	45..65..500Hz	0..0.01..1.2 Un	2 Un (max. 1000V)	2
Current		0..0.01..1.2 In	10 In	

MEASURING RANGES

Input kind	Measuring range	Accuracy class
Voltage	60, 100, 150, 250, 400, 500, 600 V a.c.	Accuracy class: 0.2
Current	1A (X/1 A a.c.), 5A (X/5 A a.c.)	Additional errors: In multiplication of the class index (k): •from ambient temperature change: <0.5 k/10K •external magnetic field: <1 k •frequency of the input signal: <1 k/100 Hz

OUTPUTS

Output kind	Properties	Remarks
0..5 mA	$R_{load} \leq 2000 \Omega$	Response time: 0.5 sec
0..20 mA	$R_{load} \leq 500 \Omega$	
4..20 mA		
0..10 V	$R_{load} \geq 500 \Omega$	

EXTERNAL FEATURES

Weight	0.125 kg	
Dimensions	22.5 x 120 x 100 mm	
Protection grade (acc. to EN 60529)	ensured by the housing: IP50	from the terminal cover: IP20
Fixing	on a 35 mm rail	
Maximal wire section	2.5 mm ² for execution with screw socket-plug terminals	1.5mm ² for execution with inseparable socket terminals

RATED OPERATING CONDITIONS

Supply voltage	85..253 V a.c./d.c or 20..40 V a.c./d.c.	power consumption: 4 VA
Temperature	ambient: -20..23..55°C	storage: -25..85°C
Relative humidity	≤ 95%	inadmissible condensation
Operating position	any	
External magnetic field	0..40..400 A/m	
Transducer preheating time	15 min	

SAFETY AND COMPATIBILITY REQUIREMENTS

Electromagnetic compatibility	Noise immunity	acc. to EN 61000-6-2
	Noise emissions	acc. to EN 61000-6-4
Isolation ensured by the housing	double	acc. to EN 61010-1
Isolation between circuits	basic	
Pollution grade	2	
Installation category	for operating voltages in relation to the ground up to 300V: III for operating voltages in relation to the ground up to 600V: II	
Altitude above sea level	<2000 m	

CONNECTION DIAGRAMS

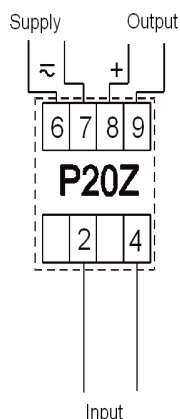


Fig.1 Direct measurement of voltage

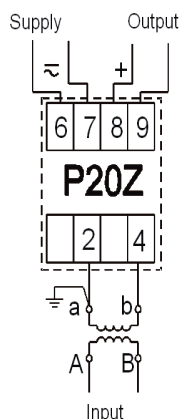


Fig.2 Indirect measurement of voltage by means of a voltage transformer

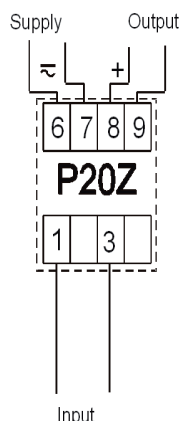


Fig.3 Direct measurement of current

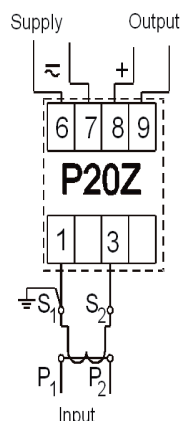


Fig.4 Indirect measurement of current by means of a current transformer

ORDERING

TABLE 1. ORDERING CODES:

P20Z -	XX	X	X	X	XX	X
Input range:						
0..60 V	01					
0..100 V	02					
0..150 V	03					
0..250 V	04					
0..400 V	05					
0..500 V	06					
0..600 V	07					
0..1 A	08					
0..5 A	09					
Output range:						
0..5 mA		1				
0..20mA		2				
4..20 mA		3				
0..10 V		4				
Supply:						
85...253 V a.c./d.c.				1		
20...40 V a.c./d.c.				2		
Kind of terminals:						
inseparable with screws				1		
socket-plug with screws				2		
Version:						
standard					00	
custom-made*					XX	
Acceptance tests:						
without extra requirements						8
with an extra quality inspection certificate						7
acc. to customer's request*						X

* - after agreeing with the manufacturer

Order example:

The code **P20Z - 09 3 1 1 00 8** means:

- P20Z** - transducer of RMS current or voltage
- 09** - input signal 5A (X/5A)
- 3** - output signal 4..20mA
- 1** - supply voltage: 85...253 V a.c./d.c.
- 1** - with inseparable screw terminals
- 00** - standard execution version
- 8** - without extra requirements

SEE ALSO:



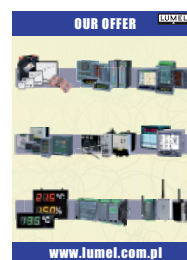
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Programmable digital meter of d.c. current and d.c. voltage N30H.



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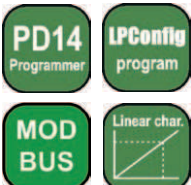
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P20H PROGRAMMABLE TRANSDUCER OF DC CURRENT OR VOLTAGE

LUMEL

FEATURES:



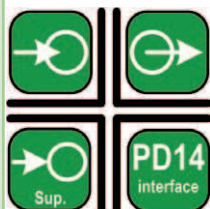
INPUTS:



OUTPUTS:



GALVANIC ISOLATION:



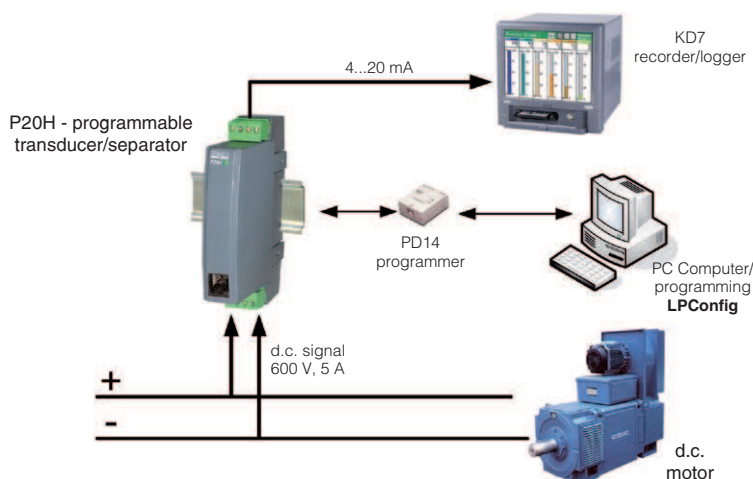
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- Continuous conversion of high current or high voltage signals.
- Standard d.c. current or d.c. voltage output signal.
- Small dimensions.
- 0.2 accuracy class.
- Fully programmable parameters:
 - measurement averaging time,
 - conversion characteristic,
 - preservation of the output signal at overflows,
 - RS-485 transmission parameters.

EXAMPLE OF APPLICATION



Measurement and archiving of d.c. motor current/voltage work parameters. Measured data are transmitted to the recorder/data logger.

INPUTS

Measuring ranges	Parameters	Overloads	Error
<u>-1...100</u> ...110 V d.c.	input resistance > 2 MΩ	Short duration overload (1s): 2 Un (< 1000V), 10 In Sustained overload: 150% Un (only for Un = 400 V and ±400 V), 120% Un (for other Un), 120% In	Basic error (at manufacturer's settings): ± (0.2% of range) Additional error from ambient temperature changes: ± (50% of the basic error/10K)
<u>-2...250</u> ...275 V d.c.			
-5...400...600 V d.c.			
-120... <u>-100...100</u> ...120 V d.c.			
-300... <u>-250...250</u> ...300 V d.c.			
-600... <u>-400...400</u> ...600 V d.c.			
-1.2... <u>-1...1</u> ...1.2 A d.c.	input resistance 10 mΩ ±10%	120% In	
-6... <u>-5...5</u> ...6 A d.c.	input resistance 2 mΩ ±10%		

OUTPUTS

Output kind	Properties	Remarks
0...20...22 mA	$R_{load} \leq 500 \Omega$	Resolution: 0.01% of the range
4...20...22 mA		
0...10...11 V	$R_{load} \geq 500 \Omega$	

DIGITAL INTERFACE

Interface type	Transmission protocol	Modes	Baud rates
RS-485	MODBUS RTU	8N2, 8E1, 8O1, 8N1	4.8, 9.6, 19.2 kbit/s

EXTERNAL FEATURES

Weight	< 0.125 kg	
Dimensions	22.5 x 120 x 100 mm	
Protection grade (acc. to EN 60529)	ensured by the housing: IP 40	from the terminal side: IP 20
Fixing	on a 35 mm rail	acc. to EN 60715

RATED OPERATING CONDITIONS

Supply	85...253 V a.c. (45...65Hz) or d.c. 20...40 V a.c. (45...65 Hz) or d.c.	power consumption: < 3 VA
Temperature	ambient: -20...23...60 °C	storage: -25...85 °C
Relative humidity	< 95%	inadmissible vapour condensation
Operating position	any	
Preheating time	15 min	
Averaging time of the measurement	≥ 0.1 s	1 second set by default

SAFETY AND COMPATIBILITY REQUIREMENTS

Electromagnetic compatibility	Noise immunity	acc. to EN 61000-6-2
	Noise emissions	acc. to EN 61000-6-4
Isolation between circuits	basic	
Pollution grade	2	
Installation category	III (for the 400 V option - category II)	
Maximal phase-to-earth operating voltage	for the supply circuit: 300 V	acc. to EN 61010-1
	for the measuring input: 600 V cat. II (300 V - cat. III)	
	for the programming input: 50 V	
	for the output: 50 V	
Altitude above sea level	< 2000 m	

CONNECTION DIAGRAMS

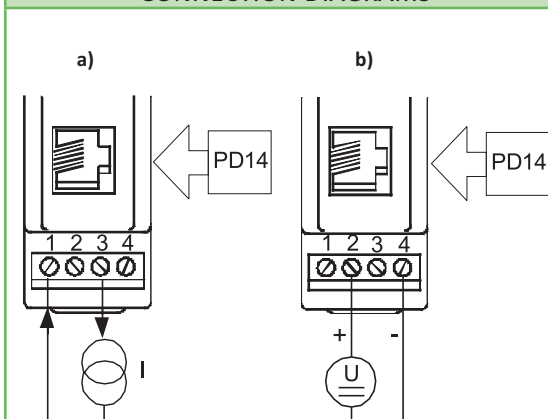


Fig. 1. Electrical connections of P20H transducer inputs.
a) current, b) voltage

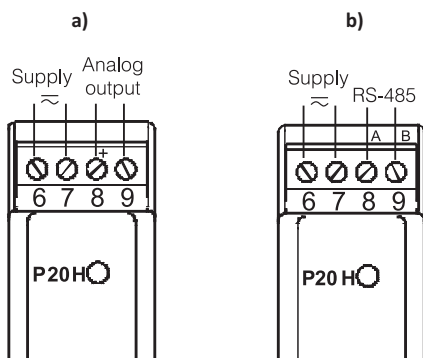


Fig. 2. Electrical connections of the P20H transducer supply and output.
a) with analog output, b) with RS-485 interface.

ORDERING

ORDERING CODES:

P20H -	X	X	X	XX	X	X
Input signal:						
+/- 100 V	1					
+/- 250 V	2					
+/- 400 V	3					
+/- 1 A	4					
+/- 5 A	5					
0...100 V	6					
0...250 V	7					
0...400 V	8					
Output:						
0...20 mA	1					
4...20 mA	2					
0...10 V	3					
RS-485	4					
Supply:						
85...253 V a.c./d.c.	1					
20...40 V a.c./d.c.	2					
Version:						
standard				00		
non-standard settings				NS		
custom-made*				XX		
Language:						
Polish					P	
English					E	
other*					X	
Acceptance tests:						
without extra quality inspection requirements						0
with an extra quality inspection certificate						1
acc. to customer's request						X

* - after agreeing with the manufacturer

Order example:

The code **P20H - 6 1 1 00 E 0** means:

- P20H** - transducer of d.c. current or d.c. voltage signals
- 6** - input signal: 0...100 V d.c.
- 1** - output signal: 0...20 mA
- 1** - supply voltage: 85...253 V a.c./d.c.
- 00** - standard version
- E** - English language
- 0** - without extra quality inspection requirements

SEE ALSO:



Free LPConfig software for easy programming of LUMEL's products. Available on our website



PD14 programmer - unit for programming LUMEL's products, with USB connection, LPCon compatible.



Programmable digital meter of d.c. current and d.c. voltage N30H.

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P20G SEPARATOR

FEATURES:

PD14
compatible

LPConfig
compatible

$Y=a \cdot x+b$
Individual
characteristic

INPUTS:

DC

-20...20
mA

-10...10
V

OUTPUTS:

-20...20
mA

-10...10
V

GALVANIC ISOLATION:



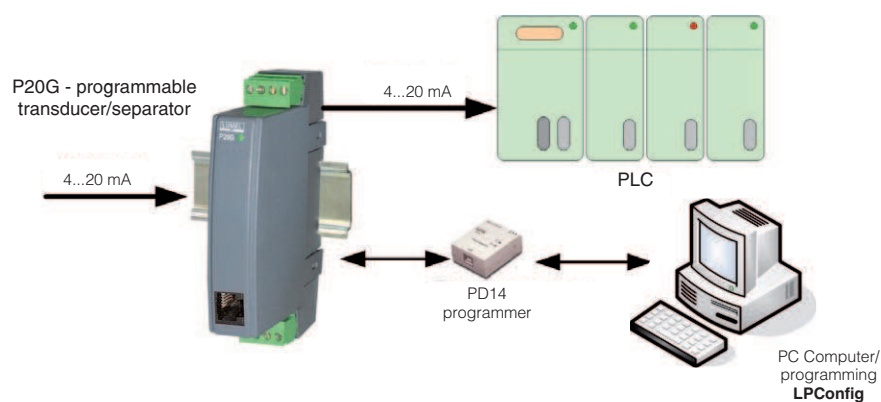
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- Full galvanic isolation of the input, output and supply.
- Matching of analog signals in automation systems.
- Fully configurable through the PD14 programmer. By means of the programmer, one can change the input type, output type, measurement averaging time and recalibrate the analog output according to the output individual characteristic.
- Small dimensions.
- 0.2 accuracy class.

EXAMPLE OF APPLICATION



Separation between PLC analog inputs

INPUTS

Input:	Measuring range:	Parameters	Overloads	Error
Current: -20...20 mA	-20...20 mA; -5...5 mA; 0...20 mA 0...5 mA 4...20 mA	Resistance: $12 \Omega \pm 1\%$	Short duration over- load: $5 I_n$ Sustained overload $1.1 I_n$	Conversion class: 0.2
Voltage: -10...10 V	-10...10 V; -5...5 V -1...1 V 0...10 V 0...5 V 0...1 V	Resistance: $> 1 M\Omega$	Short duration over- load: $5 U_n$ Sustained overload $1.2 U_n$	

OUTPUTS

Output kind	Properties	Remarks
-20...20 mA	$R_{load} \leq 500 \Omega$	Conversion class: 0.2
-10...10 V	$R_{load} \geq 500 \Omega$	

EXTERNAL FEATURES

Weight	< 0.125 kg	
Dimensions	22.5 x 120 x 100 mm	
Protection grade (acc. to EN 60529)	ensured by the housing: IP 40	from the terminal side: IP 20
Fixing	on a 35 mm rail	acc. to EN 60715

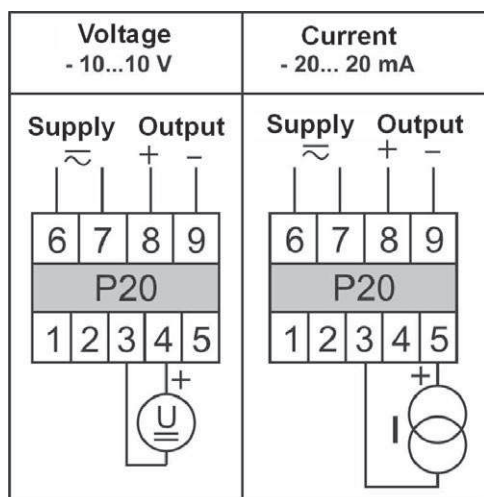
RATED OPERATING CONDITIONS

Supply voltage	85...253 V d.c./a.c. (45...65 Hz) or 20...85 V d.c., 20...65 V a.c. (45...65 Hz)	power consumption: < 2 VA
Temperature	ambient: -20...23...55°C	storage: -25...85°C
Relative humidity	≤ 95%	inadmissible condensation
Operating position	any	
Preheating time	10 min	
Averaging time of the measurement	≥ 0.1 s	
Response time of the separator	≥ 0.1 s	

SAFETY AND COMPATIBILITY REQUIREMENTS

Electromagnetic compatibility	Noise immunity	acc. to EN 61000-6-2
	Noise emissions	acc. to EN 61000-6-4
Isolation between circuits	basic	
Pollution grade	2	
Installation category	III	
Maximal phase-to-earth operating voltage	for the supply circuit: 300 V (version: 230 V)	acc. to EN 61010-1
	for the measuring input: 50 V	
	for the output: 50 V	
Altitude above sea level	< 2000 m	

CONNECTION DIAGRAMS



Electrical connection diagram of the P20G separator

ORDERING

TABLE 1. ORDERING CODES:

P20G -	XX	XX	X	XX	X	X
Input:						
kind of programmed input: see table 2	XX					
Output:						
kind of programmed output: see table 2		XX				
Supply:						
85...253 V a.c./d.c.				1		
20...85 V d.c., 20...65 V a.c.				2		
Version:						
standard					00	
non-standard settings					NS	
custom-made*					XX	
Language:						
Polish						P
English						E
other*						X
Acceptance tests:						
without extra quality inspection requirements						0
with an extra quality inspection certificate						1
acc. to customer's request*						X

TABLE 2. CODING OF THE P20G SEPARATOR KIND OF INPUT AND OUTPUT

Range	Input code	Output code
0...1 V	01	01**
0...5 V	02	02
0...10 V	03	03
±1 V	04	04**
±5 V	05	05
±10 V	06	06
0...5 mA	07	07**
0...20 mA	08	08
±5 mA	09	09**
±20 mA	10	10
4...20 mA	11	11
Custom-made version*	XX	XX

* - after agreeing with the manufacturer
** - conversion class > 0,2

Order example:

The code **P20G - 08 06 1 00 E 1** means:

- P20G** - Separator of analog signals (U d.c. and I d.c.)
- 08** - kind of programmed input: 0...20 mA
- 06** - kind of programmed output: ±10 V
- 1** - supply voltage: 85...253 V a.c./d.c.
- 00** - standard version
- E** - English language
- 1** - with an extra quality inspection requirements

SEE ALSO:



Free LPConfig software for easy programming of LUMEL's products. Available on our website

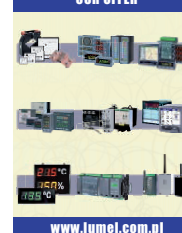


PD14 programmer - unit for programming LUMEL's products, with USB connection, LPCon compatible.



Programmable digital meter of d.c. current and d.c. voltage N30H.

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P20 TRANSDUCER OF TEMPERATURE AND STANDARD SIGNALS

FEATURES:

PD14
Programmer

LPConfig
Program



- Full galvanic isolation of the input, output and supply.
- Matching of analog signals in automation systems.
- Fully configurable through the PD14 programmer. By means of the programmer, one can change the input type, measurement averaging time and rescaling the analog output according to the output individual characteristic.
- Small dimensions.
- 0.2 accuracy class.

INPUTS:



-20..20
mA

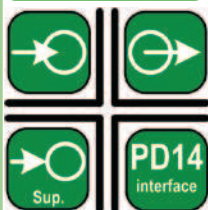
-10..10
V

OUTPUTS:

0/4..20
mA

0..10
V

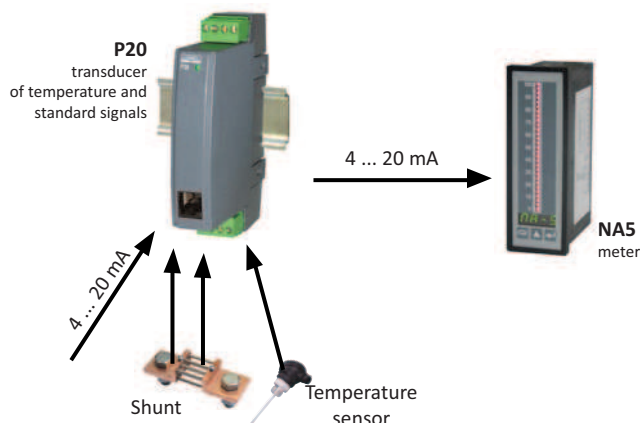
GALVANIC ISOLATION:



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EXAMPLE OF APPLICATION



INPUTS

Input	Measurement range*	Parameters	Error
Current: -20...20 mA	0...20 mA 4...20 mA 0...5 mA -20...20 mA	Resistance: 12 Ω ± 1%	Conversion class: 0.2 * * A part of sub-ranges for thermocouples and RTD has a specified individual class (see table 1)
Voltage: -10...10 V	0...10 V 0...5 V -10...10 V -5...5 V	Resistance: > 1 MΩ	
Voltage d.c. [mV]	0...60 mV -60...60 mV -150...150 mV 0...150 mV	-	
Pt 100	-200...850 °C		
Pt250			
Pt500			
Pt1000			
Thermocouple J type	-200...1200 °C		
Thermocouple K type	-200...1370 °C		
Thermocouple S type	0...1760 °C		
Thermocouple N type	-200...1200 °C		
Resistance	0...4000 Ω		

* for detailed measurement ranges see table 1

OUTPUTS

Output kind	Load resistance	Remarks
0/4...20 mA	$R_{load} \leq 500 \Omega$	Conversion class: 0.2
0...10 V	$R_{load} \geq 500 \Omega$	

EXTERNAL FEATURES

Weight	< 0.125 kg	
Overall dimensions	22.5 x 120 x 100 mm	
Protection grade (acc. to EN 60529)	for housing: IP40	for terminals: IP20
Fixing	on a DIN rail 35 mm	acc. to EN 60715

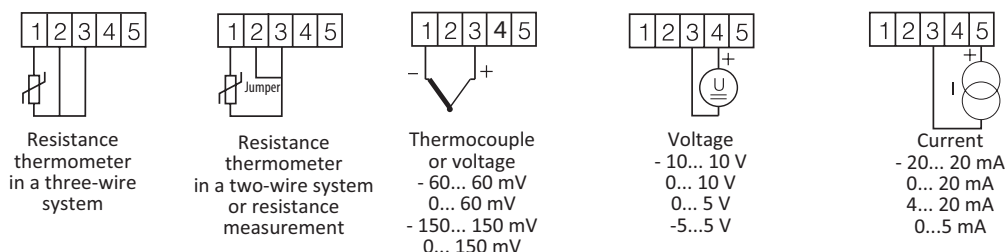
RATED OPERATION CONDITIONS

Supply voltage	85...253 V d.c./a.c. (45...65Hz) lub 20...85 V d.c., 20...65 V a.c. (45...65 Hz)	Power consumption: < 2 VA
Temperature	ambient: -20...23...55°C	storage: -25...85°C
Relative humidity	< 95%	inadmissible condensation
Working position	any	
Preheating time	10 min	
Averaging time	range: d.c. current [mA], d.c. voltage [V] ≥ 0.1 s	other ranges ≥ 0.3 s

SAFETY AND COMPATIBILITY REQUIREMENTS

Electromagnetic compatibility	noise immunity	acc. to EN 61000-6-2
	noise emissions	acc. to EN 61000-6-4
Isolation between circuits	basic	acc. to EN 61010-1
Pollution level	2	
Installation category	III	
Maximal phase-to-earth voltage	for supply circuits: 300 V	
	for input: 50 V	
	for output: 50 V	
Altitude above sea level	< 2000 m	

CONNECTION DIAGRAMS



ORDERING

P20 ORDERING CODE:

P20 -	X	X	XX	XX	X
Analog output:					
current 0...20 mA	1				
current 4...20 mA	2				
voltage 0...10 V	3				
Supply:					
85...253 V a.c./d.c.	1				
20...85 V d.c., 20...65 V a.c.	2				
Kind of input:					
write the code from table 1	XX				
Version:					
standard				00	
custom-made*				XX	
Acceptance tests:					
without extra requirements				0	
with an extra quality inspection certificate				1	
acc. to customer's request*				X	

* - after agreeing with the manufacturer

Order example:

The code **P20 - 1-1-04-00-1** means:

- P20** - transducer of temperature and standard signals
- 1** - with current analog output: 0... 20 mA
- 1** - voltage supply 85... 253 V a.c./d.c.
- 04** - Pt100 output signal on the 0...400°C range
- 00** - standard version
- 7** - with an extra quality inspection certificate

TABLE 1. INPUT SIGNALS P20

Type of sensor/input [Unit]	Range	Code	Type of sensor/input [Unit]	Range	Code
Pt100 [°C]	-200...850	01	TC of K type [°C]	-200...1370	36
	0...850	02		0...1200	37
	0...600	03		0...1000	38
	0...400	04		0...800	39
	0...200	05		0...600	40
	-200...200	06		0...400 ¹	41
	-100...100 ¹	07		-200...200 ¹	42
Pt250 [°C]	-200...850	08	TC of S type [°C]	0...1760	43
	0...850	09		0...1600	44
	0...600	10		0...1400 ¹	45
	0...400	11		0...1200 ¹	46
	0...200	12		0...1000 ¹	47
	-200...200	13	TC of N type [°C]	-200...1200	48
	-100...100	14		0...1200	49
Pt500 [°C]	-200...850	15		0...1000	50
	0...850	16		0...800	51
	0...600	17		0...600 ¹	52
	0...400	18		0...400 ¹	53
	0...200	19		-200...200 ¹	54
	-200...200	20	Voltage d.c. [V]	0...10	55
	-100...100	21		0...5	56
Pt1000 [°C]	-200...850	22		-10...10	57
	0...850	23	Voltage d.c. [mV]	-5...5	58
	0...600	24		0...60	59
	0...400	25		-60...60	60
	0...200	26		0...150	61
	-200...200	27		-150...150	62
	-100...100	28	Current d.c. [mA]	0...20	63
TC of J type [°C]	-200...1200	29		4...20	64
	0...1200	30		0...5	65
	0...1000	31		-20...20	66
	0...800	32	Resistance [Ω]	0...400	67
	0...600	33		0...4000	68
	0...400 ¹	34		Custom-made	XX
	-200...200 ¹	35			

¹Accuracy class 0.5

SEE ALSO:



Free LPConfig software for easy programming of LUMEL's products. Available on our website

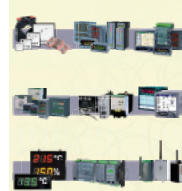


PD14 programmer - unit for programming LUMEL's products, with USB connection, LPCon compatible.



Programmable digital meter of d.c. current and d.c. voltage N30H.

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P17G SEPARATOR SUPPLIED FROM A CURRENT LOOP

LUMEL

FEATURES:



INPUT:

0/4...20
mA

OUTPUTS:

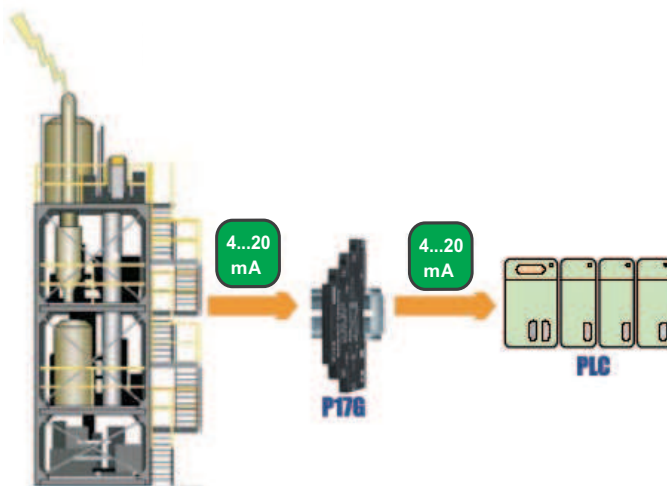
0/4...20
mA

GALVANIC ISOLATION:



- For the separation of measuring signals (eg in PLC).
- Thin casing - 6.2 mm.
- Standard d.c. current output signal 0/4 - 20 mA.
- Does not require an auxiliary supply voltage.

EXAMPLE OF APPLICATION



Galvanic separation (protection of PLC controller inputs).

INPUTS

Input type	Range	Overload	Error
Current 0...20 mA	0 .. 20 mA	Maximal input current 40 mA	Conversion error: +/- 0.2 % Additional errors: - from load resistance changes $\leq 0.15\% / 100\ \Omega$ - from ambient temperature changes: $\leq 0.05\% / 10^\circ\text{C}$
	4 .. 20 mA		

OUTPUTS

Output type	Admissible load resistance	Pulsations
Current 0 .. 20 mA, (4...20 mA)	$R_{load} < 500\ \Omega$	$\leq 10\ \text{mV}$

EXTERNAL FEATURES

Overall dimensions	6.2 x 77.5 x 100 mm	
Weight	80 g	
Protection grade	ensured by the casing: IP50	from terminal side: IP20
Fixing	on a 35 mm DIN rail	acc. to EN 60715

RATED OPERATING CONDITIONS

Temperature	ambient: -20...23...65°C	storage: -40...85°C
Humidity	< 95%	inadmissible condensation
Operating position	any	

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SAFETY AND COMPATIBILITY REQUIREMENTS

Electromagnetic compatibility	noise immunity	acc. to EN 61000-6-2
	noise emissions	acc. to EN 61000-6-4
Isolation between circuits	basic	acc. to EN 61010-1
Pollution level	2	
Installation category	III	
Maximal phase-to-earth operating voltage	50 V	

INSTALLATION

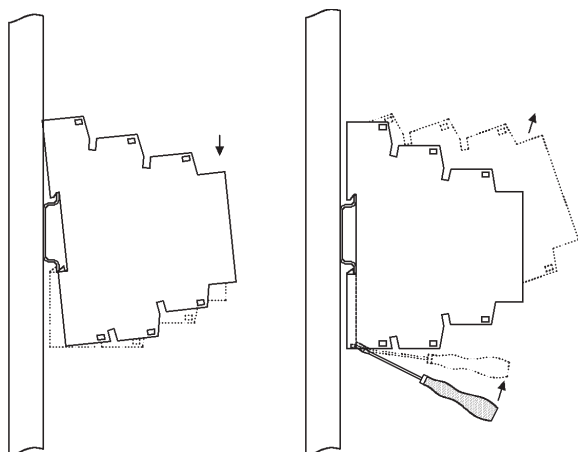


Fig.1. Way of assembling/disassembling on the rail.

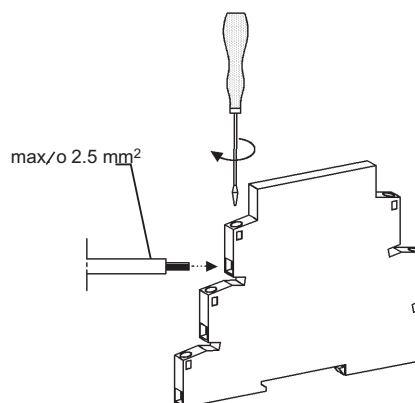
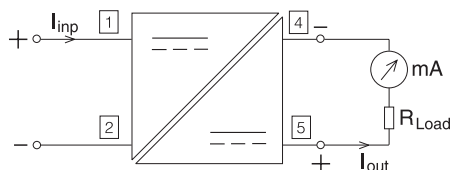


Fig.2. Way of wire fixing.

CONNECTION DIAGRAM



ORDERING

	P17G	XX	X
Version:			
standard		00	
as per order*		XX	
Acceptance tests:			
without extra quality requirements			8
with an extra quality inspection certificate			7
acc. to customer's request*			X

* - after agreeing with the manufacturer

ORDER EXAMPLE

The code: **P17G-00-8** means:

P17G - passive separator of P17G type,
00 - standard version,
8 - without extra quality requirements.

SEE ALSO:



Programmable separator P20G.

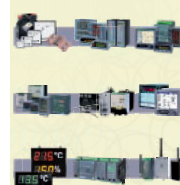


Programmable temperature, resistance, voltage from shunt and standard signals-P20.



Transducer of temperature and standard signals - P30U.

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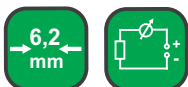
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P17 TRANSDUCER SUPPLIED FROM A CURRENT LOOP 4-20mA

FEATURES:



- Thin-walled casing - 6.2 mm.
- Standardized d.c. current output signal 4-20 mA.
- Supply from a current loop.

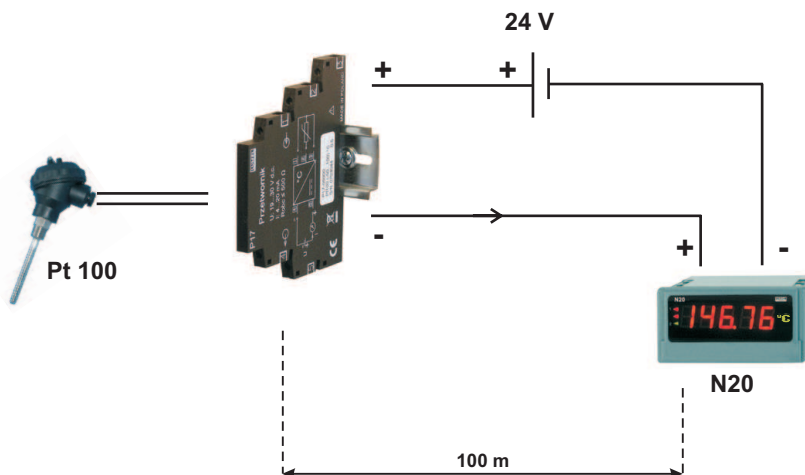
INPUTS:



OUTPUTS:

4...20
mA

EXAMPLE OF APPLICATION



Remote temperature measurement.

INPUTS

Input type	Range	Overload	Error
Voltage	0 .. 10 V 0 .. 60 mV	short duration (3s): 30 V (sensor and voltage inputs) sustained: 1% (thermocouple, resistance thermometers), 20% (voltage and	Basic error: +/- 0.5 % of range Additional error (from ambient temperature changes): +/- (0.25 % of range/ 10 K)
Thermocouple J	-100 .. 1200°C		
Thermocouple K	-100 .. 1370°C		
Thermocouple N	-100 .. 1300°C		
Thermocouple E	-100 .. 900°C		
Resistance thermometer Pt 100	-50 .. 100 °C -50 .. 400°C		

OUTPUTS

Output type	Admissible load resistance	Output resolution
4 .. 20 mA	$R_{load} < 500 \Omega$	0.005 mA

EXTERNAL FEATURES

Overall dimensions	76.9 x 99.1 x 6.2 mm	
Weight	80 g	
Protection grade	ensured by casing: IP50	from terminal side: IP20
Fixing	on a 35 mm DIN rail	acc. to EN 60715

RATED OPERATING CONDITIONS

Supply voltage	19 .. 30 V d.c.	power input < 0.7 VA
Temperature	ambient: -20...23...55°C	storage: -25...85°C
Relative humidity	< 95%	inadmissible condensation
Operating position	any	
Preheating time	15 min	

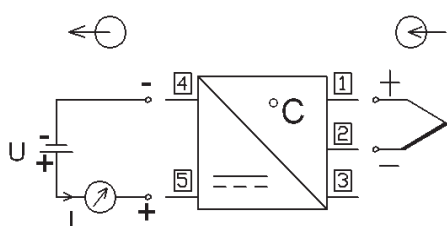
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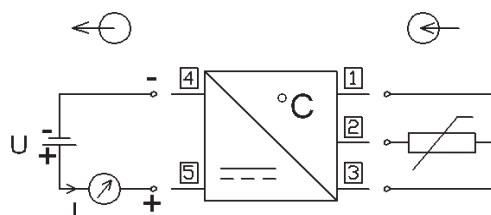
SAFETY AND COMPATIBILITY REQUIREMENTS

Electromagnetic compatibility	noise immunity	acc. to EN 61000-6-2
	noise emissions	acc. to EN 61000-6-4
Isolation between circuits	basic	acc. to EN 61010-1
Pollution degree	2	
Installation category	III	
Maximal phase-to-earth operating voltage	50 V	

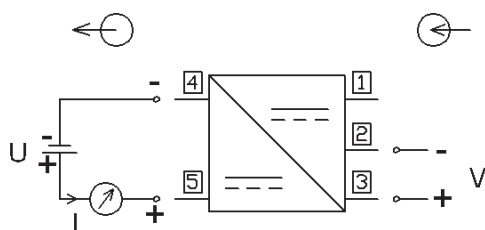
CONNECTION DIAGRAM



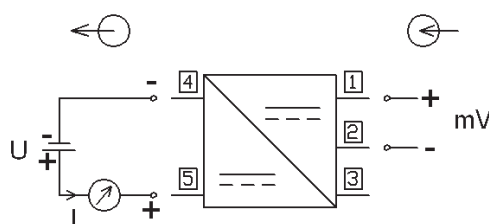
Thermocouple



Resistance thermometer in a 3-wire system



Voltage 0 .. 10 V



Voltage 0 .. 60 mV

Fig.1. Connection of external signals.

ORDERING

	P17	XX	XX	X
Input type and range:				
voltage	(0 .. 10) V	00		
thermocouple J (Fe-CuNi)	(-100 .. 1200)°C	01		
thermocouple K (NiCr-NiAl)	(-100 .. 1370)°C	02		
thermocouple N (NiCrSi-NiSi)	(-100 .. 1300)°C	03		
thermocouple E (NiCr-CuNi)	(-100 .. 900)°C	04		
resistance thermometer Pt100	(-50 .. 100)°C	05		
resistance thermometer Pt100	(-50 .. 400)°C	06		
voltage	(0 .. 60) mV	09		
Version:				
standard			00	
custom-made*			XX	
Acceptance tests:				
without extra quality inspection requirements				8
with an extra quality inspection certificate				7
acc. to customer's agreements*				X

* - after agreement with the manufacturer

Order example:

The code: **P17- 05-00-8** means:

- P17** - transducer of P17 type supplied from a current loop
- 05** - input signal: resistance thermometer Pt100, range: -50 .. 100°C
- 00** - standard version
- 8** - without extra quality inspection requirements.

SEE ALSO:



Transducer of temperature and standard signals - P30U.



Meter of current, d.c. voltage and temperature - N20.



KD7 recorder.



Programmable transducer of temperature and standard signals-P20.

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