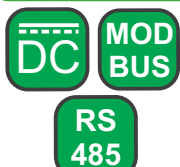


P30H TRANSDUCER OF D.C. CIRCUITS PARAMETERS WITH DATA RECORD AND ETHERNET

FEATURES:



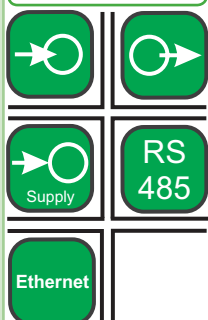
INPUT:



OUTPUTS:



GALVANIC ISOLATION:



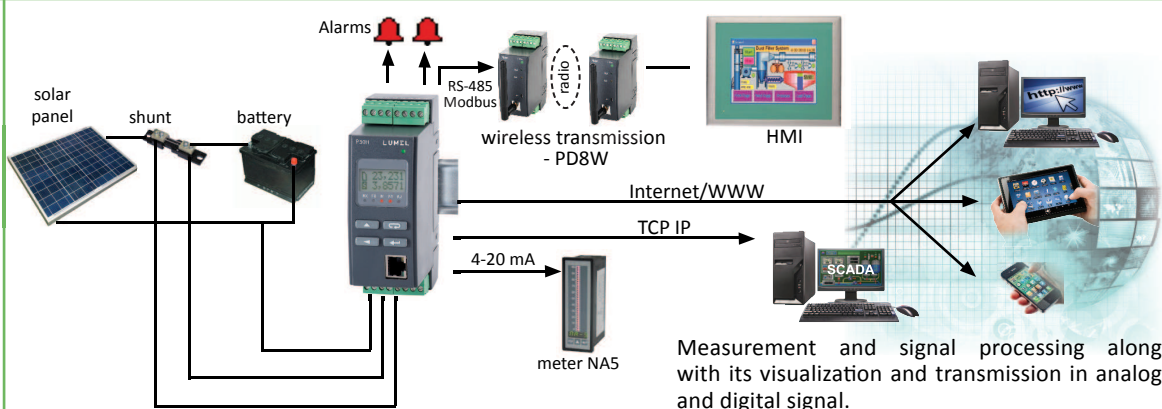
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- Measurement of voltage, current, power, energy and other parameters in d.c. circuits.
- Conversion of measured value in an output signal on the base of the individual characteristic.
- 1 or 2 alarm relays with NO contact working in 6 modes.
- Additional 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	

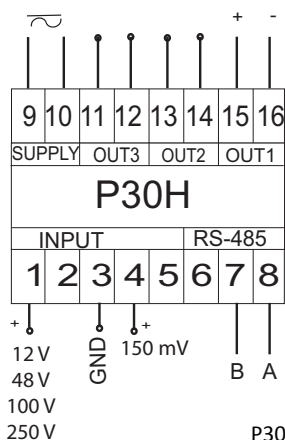
RATED OPERATION CONDITIONS

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

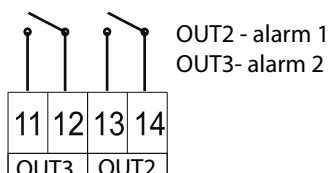
Electromagnetic compatibility	noise immunity	acc. to EN 61000-6-2
	noise emissions	acc. to EN 61000-6-4
Isolation between circuits	basic / reinforced (see user's manual)	acc. to EN 61010-1
Pollution level	2	
Installation category	III for input voltage up to 300 V d.c., III for input voltage 300...600 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

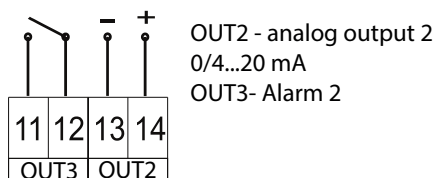


SUPPLY - supply
OUT2 - output no.2 (alarm or analog output)
OUT3 - output no.3 (alarm or supplying output 24V)
OUT1 - main analog output no.1
INPUT - measuring input
RS-485 - interface RS-485

P30H-XX11XXXXX



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
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P30H

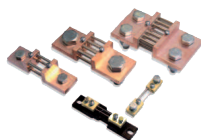
TRANSDUCER OF D.C. CIRCUITS PARAMETERS WITH DATA RECORD AND ETHERNET

CONNECTION DIAGRAM

SEE ALSO:



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



Shunts class 0.5



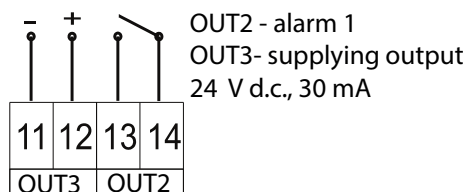
Analog meters

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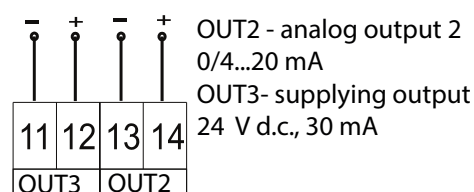
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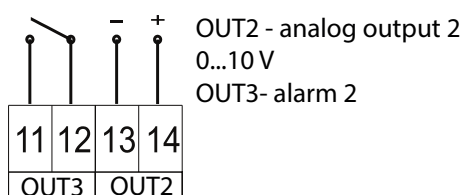
P30H-XX12XXXXX



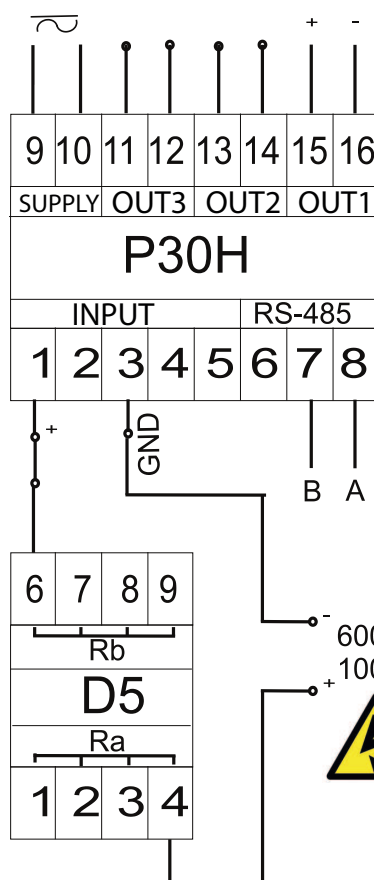
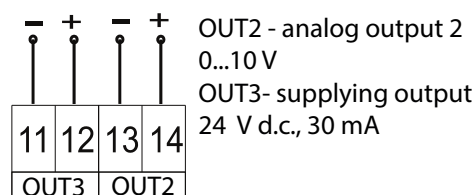
P30H-XX22XXXXX



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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