P12O TRANSDUCER OF IMPULSES, REVOLUTIONS, FREQUENCY WITH ANALOG , RELAY AND RS-485 DIGITAL OUTPUTS

LUMEL

FEATURES:

21 points charact. | Password protection | PD14 Compatible | RJ-11 connector | PD11 program

INPUTS:

Hz

OUTPUTS:

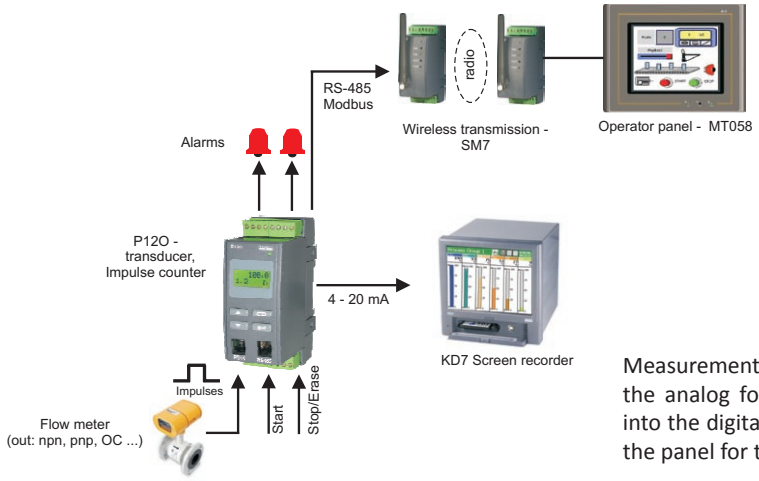
0/4...20 mA | 0...10 V | 2x | RS 485

GALVANIC ISOLATION:

PD14 | Sup.

- Co-operation with switches, magnetic attachments, impulse outputs of OC, npn, pnp type, a.c. voltages, NK reed relay transmitters (option), optoelectronic transmitters (option).
- Easy to configure through the PD11 program.
- Inputs: start, stop, erase.
- Impulse counting upwards and downwards.
- Digital filter of input signals.
- Mathematic functions: multiplication, division.
- Storage of minimal and maximal values
- Analog output.
- RS-485 Modbus digital interface.
- 2 alarm relays.

EXAMPLE OF APPLICATION



Measurement of impulses and conversion into the analog form stored in the recorder and into the digital form wirelessly transmitted to the panel for the visualization of results.

INPUTS

Input signal parameters

- amplitude: 1 .. 253 V,
- inactive state: 0 .. 0.8 V,
- transient state: 0.8 .. 1 V,
- maximal signal frequency: 3 kHz

Input type	Range	Minimal sub-range with class preservation	Error (iv - indicated value mv - upper limit of the measuring sub-range)	Accuracy class
Impulse counter	0 .. 99999	25	0.01 % mv	0.2
Rev-counter	0 .. 99999 rev	25 obr	0.01 % mv	0.2
Work time counter	0 .. 99999 h	25 h	2 s/ 24 h	0.2
Frequency	0.1 .. 99.99 Hz	2 Hz	0.01 % mv	0.2
Frequency	100.0 .. 3000.0 Hz		0.02 % iv	0.2
Rotational speed	0 .. 10000 rev/min	120 obr/min	0.02 % mv	0.2
Rotational speed	10000 .. 99999 rev/min		0.01 % iv	0.2
Period	0.3 .. 999.99 ms	20 ms	0.01 % mv	0.2
Period	1.0000 .. 9.9999 s		0.02 % mv	0.2
Long period > 10 s	0.5 .. 99999 s	25 s	0.0001 % mv	0.2
Control input (start, stop, erase)	- voltageless transoptor - galvanic isolation		- range of added voltages: 5 .. 24 V d.c.	

OUTPUTS

Output type	Properties	Remarks
Analog 0/4 .. 20 mA	resolution: 0.025%, maximal response time: 100 ms	load resistance < 500 Ω
Analog 0 .. 10 V	resolution: 0.025%, maximal response time: 100 ms	load resistance > 500 Ω
Relay	voltageless NO contacts (normally open)	load capacity: - voltage 250 V a.c., 150 V d.c., - current 5 A for: 30 V d.c. or 250 V a.c.
Supply	24 V 30 mA	destined to supply sensors or to input activation: start, stop, erase

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External features

Readout field (P12O-2)	display: LCD 2 x 8	indication range: -99999 .. 99999
Overall dimensions	45 × 100 × 120 mm	
Weight	< 0.3 kg	
Protection grade	IP40	
Fixing	on a 35 mm DIN rail	

Rated operation conditions

Supply voltage	85 .. 230 .. 253 V a.c./d.c. or 20 .. 24 .. 50 V a.c./d.c. (40 .. 50/60 .. 440 Hz)	input power < 5 VA
Temperature	ambient: -25...23...55°C	storage: -25...85°C
Humidity	< 95%	inadmissible condensation
Operating position	any	
Conversion time	min 100 ms	

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	600 V	

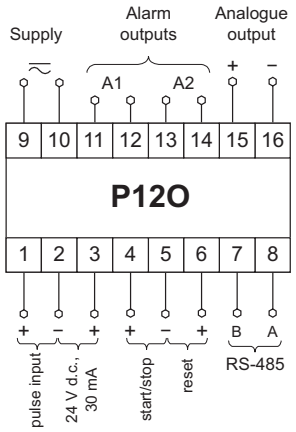
Features

Transducer memory	750 samples
Minimal recording interval	1 sec
Additional error from ambient temperature changes	+/- (0.1% of the range/ 10 K)
Password	password protection against unwanted change of parameters

Digital interface

Type of interface	Properties
RS-485 Modbus	Modes: ASCII (8N1, 7E1, 7O1) and RTU (8N2, 8E1, 8O1, 8N1); baud rate: 2400, 4800, 9600 bit/s maximal response time: 300 ms
RS-232	programmer socket; baud rate 9600 bit/s

Connection diagrams



Ordering

P12O -	X	XX	X	X	X	XX	X
Kind of transducer:							
without display	1						
with display	2						
Input signal[1]: write the code of the input signal from the table 1							
Output signal:							
voltage: 0...10V			1				
current: 0...20mA			2				
current: 4...20mA			3				
current: 0...5 mA			4				
as per order[2]			X				
Supply:							
85...253 V d.c./a.c.				1			
20...50 V d.c./a.c.				2			
Kind of terminals:							
socket-plug with screw connections					0		
as per order[3]					X		
Version:							
standard						00	
custom-made[2]						XX	
Acceptance tests:							
without extra quality requirements							8
with an extra quality inspection certificate							7
according to customer's request[2]							X

[1] The transducer has a universal input. One must give in the order, the code of the input signal which has to be programmed (see table 1).
[2] After agreeing with the manufacturer.
[3] Possible version with self-locking sockets.

Table 1

Input signal [1]:	Input signal code
impulse counter: 0...99999	00
frequency: 0.1...3000 Hz	01
rev. counter: 0...99999 obr	02
rotational speed: 0.99999 obr/min	03
period: 0.3...9999 ms	04
long period >10s: 0...99999 s	05
working time counter: 0...99999 h	06
as per order[2]	XX

The transducer preserves its class when the measuring range decreases (see: *minimal sub ranges at class preservation* in the catalog card). In the P12O-1 transducer, beside the basic range, one must give the required sub-range in remarks. In case, when the given sub-range is less than the sub-range given in the catalogue card, one must write the input signal: XX on the order

Order example:

The code **P12O-2-04-3-1-0-00-8** means transducer of P12O type, with a display, programmed by the manufacturer on the input range: 0.3 ... 9999 ms, analog current output signal: 4 ... 20 mA, supply: 85 ... 253 V a.c./d.c., socket-plug with screw connection, standard version, without extra quality requirements.

See also:


KD7 recorder.


PD10 converter (RS-485/USB).


Programmable meters with multicolor bargraphs - NA5 and NA6.

Digital displays for outdoor applications - DN.

For more information about LUMEL's products please visit our website: www.lumel.com.pl

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