P20 TRANSDUCER OF TEMPERATURE AND STANDARD SIGNALS

Features:

PD14 Programmer | eCon | Linear chrtcs.

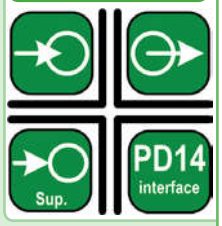
Inputs:

DC | -20..20 mA | -10..10 V

Outputs:

0/4..20 mA | 0..10 V

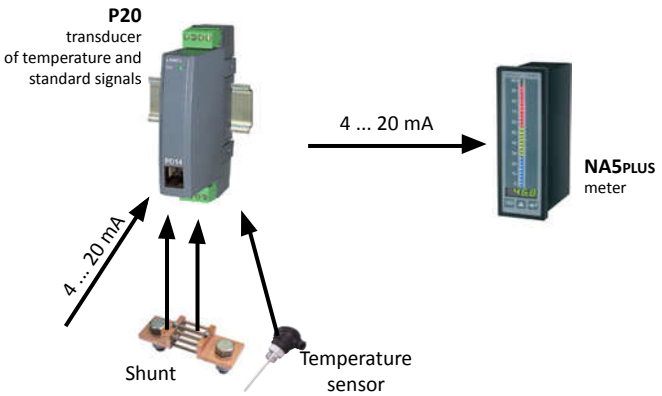
Galvanic isolation:





- 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.

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

Export department:
+48 68 45 75 139/ 321/ 368
Fax: +48 68 32 54 091
e-mail: export@lumel.com.pl

LUMEL S.A.
ul. Sulechowska 1
65-022 Zielona Góra
POLAND
WWW.LUMEL.COM.PL

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EVERYTHING COUNTS

P20 TRANSDUCER OF TEMPERATURE AND STANDARD SIGNALS

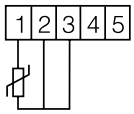
RATED OPERATION CONDITIONS

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

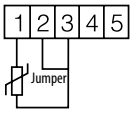
SAFETY AND COMPATIBILITY REQUIREMENTS

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 see level	< 2000 m	

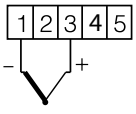
CONNECTION DIAGRAMS



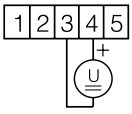
Resistance thermometer in a three-wire system



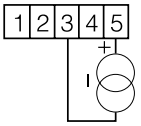
Resistance thermometer in a two-wire system or resistance measurement



Thermocouple or voltage
- 60... 60 mV
0... 60 mV
- 150... 150 mV
0... 150 mV



Voltage
- 10... 10 V
0... 10 V
0... 5 V
-5...5 V



Current
- 20... 20 mA
0... 20 mA
4... 20 mA
0...5 mA

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					**8**
with an extra quality inspection certificate					**7**
with test certificate					**4**
acc. to customer's request*					**X**

* - after agreeing with the manufacturer

Order example:

The code **P20 - 1-1-04-00-7** 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		-5..5	58
	0..600	24	Voltage d.c. [mV]	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	[1]Accuracy class 0.5		

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

Export department:
+48 68 45 75 139/ 321/ 368
Fax: +48 68 32 54 091
e-mail: export@lumel.com.pl

LUMEL S.A.
ul. Sulechowska 1
65-022 Zielona Góra
POLAND
WWW.LUMEL.COM.PL