DIGITAL METER WITH BARGRAPH

LUMEL

Features:

MOD BUS · RTC · Linear charac. · Password protection · RS 485 · IP50

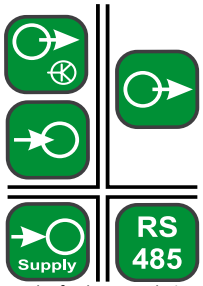
Inputs:

DC · 0 .. 20 mA · 60 mV · 0..10 V

Outputs:

0 .. 20 mA · 0..10 V · U

Galvanic isolation:

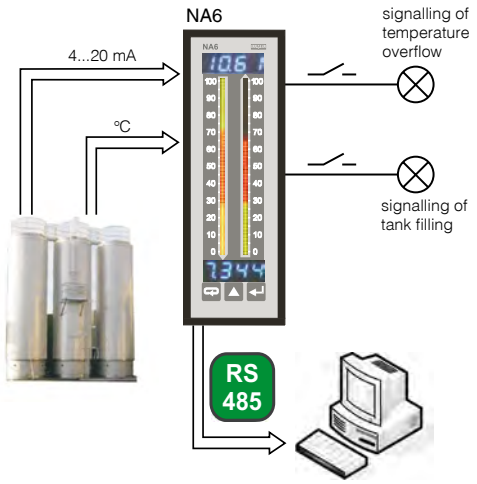


Lack of galvanic isolation between channels

- 2 independend measuring channels with an universal input,
- 3 or 7-colour bargraph with programmable colour switching over,
- Recording of 750 measuring segments, released temporary,
- Programmable indication characteristic and bargraph magnifier,
- Up to 8 programmable alarm outputs,
- Mathematical operations on channels,
- Communication in SCADA systems (RS485/Modbus interface),
- Conversion of measured quantity into an analog standard signal for automation systems.

Example of application

Measurement of level and temperature in a tank



Recording of temperature and level parameters

Inputs

Kind of input	Measuring range	Measurement subrange
Pt100	-200...850°C	320°C
Pt500	-200...850°C	230°C
Pt1000	-200...850°C	290°C
J (Fe-CuNi)	-100...1100°C	350°C, 700°C
K (NiCr-NiAl)	-100...1370°C	450°C, 950°C
N (NiCrSi-NiSi)	-100...1300°C	550°C, 1000°C
E (NiCr-CuNi)	-100...850°C	250°C, 520°C
R (PtRh13-Pt)	0...1760°C	
S (PtRh10-Pt)	0...1760°C	
T (Cu-CuNi)	-50...400°C	
Resistance	0...10 kΩ	110 Ω, 220 Ω, 460 Ω, 950 Ω, 2100 Ω, 5000 Ω,
Voltage	± 300 mV, Rinp. > 9 MΩ ± 0...600 V, Rinp. > 4.2 MΩ	19 mV, 35 mV, 75 mV, 155 mV, 5 V, 11 V, 22 V, 45 V, 90 V, 180 V, 360 V
Current	± 40 mA, Rinp. < 4 Ω ± 5 A, Rinp. = 10 mΩ ± 10%	5 mA, 11 mA, 23 mA, 1.8 A, 3.8 A

Intensity of current flowing through the resistance thermometer: < 400 µA
Resistance of wires connecting the resistance thermometer with the meter: < 20 Ω/1 wire

Outputs

Kind of output	Features
Analog output	• galvanically isolated with resolution 0.025% of range; current programmable 0/4...20 mA, load resistance ≤ 500 Ω or voltage programmable 0...10 V, load resistance ≥ 500 Ω, output response time: 100 ms.
Relay output	• 4 electromagnetic relays; NOC voltageless contacts, maximal load-carrying capacity: - voltage: 250 V a.c., 150 V d.c. - current: 5 A 30 V d.c., 250 V a.c. - resistance load: 1250 VA, 150 W
Open collector (OC) type	• voltageless of OC type with npn transistor, maximal load: 25 mA, range of appended voltages: 5...30 V d.c.
Digital	• **interface type**: RS-485; **transmission protocol:** MODBUS ASCII (8N1, 7E1, 7O1), RTU (8N2, 8E1, 8O1, 8N1); **baud rate:** 2400, 4800, 9600 bit/s
Additional supply output	• 24 V d.c., maximal load 20 mA

EXTERNAL FEATURES

Readout field	**2 × 4 LED displays**	7-segment digits of 7 mm high, measuring range -1999...9999
	bargraph	bargraph of 88 mm length: - 48 segments in three-colour version - 27 segments in seven-colour version
		Bargraph resolution: programmable
		Bargraph accuracy: ± 0.5 segment
Weight	< 0.4 kg	
Overall dimensions	48 × 144 × 100 mm	panel cut-out: $44^{+0,5} \times 137.5^{+0,5}$ mm
Protection grade (acc. to EN 60529)	IP50 from frontal side	IP20 from terminal side

LUMEL

DIGITAL METER WITH BARGRAPH

RATED OPERATING CONDITIONS

Supply voltage	95...253 V a.c./d.c., 20...40 V a.c./d.c.	Power consumption < 13 VA
Temperature	ambient: -10...23...55°C	Storage: -25...85°C
Relative humidity	< 95%	Condensation inadmissible

SAFETY AND COMPATIBILITY REQUIREMENTS

Electromagnetic compatibility	noise immunity	acc. to EN 61000-6-2
	noise emissions	acc. to EN 61000-6-4
Pollution grade	2	acc. to EN 61010-1
Installation category	III	
Maximal phase-to-earth operating voltage	input: 600 V	
	supply: 300 V	
	relays: 300 V	
	analog output: 50 V	
	RS-485: 50 V	

TABLE 1. EXECUTION CODE:

NA6 -	X	XX	X	X	X	X	X	X	XX	X
Bargraph colour:										
three-colour (R, G, R+G)	T									
seven-colour (R, G, B, R+G, R+B, G+B, R+G+B)	M									
Display colour on channels 1 and 2:										
without display*		00								
red-red		RR								
red-green		RG								
red-blue		RB								
green-red		GR								
green-green		GG								
green-blue		GB								
blue-red		BR								
blue-green		BG								
blue-blue		BB								
Input signal:										
universal input			U							
Analog output signal:										
lack				0						
current programmable 0/4...20 mA				1						
voltage programmable 0...10 V				2						
Digital output signal:										
lack					0					
RS-485 output signal					1					
Additional output:										
lack*						0				
4 relays						4				
8 outputs of OC type						8				
Supply:										
95...253 V a.c./d.c.							1			
20...40 V a.c./d.c.							2			
Kind of terminals:										
screwed plug-in sockets								0		
Version:										
standard									00	
custom-made**									XX	
Acceptance tests:										
without an extra quality inspection certificate										8
with an extra quality inspection certificate										7
acc. to customer's request**										X

* - in case of meters without displays, one must order an RS-485 digital output
** - after agreeing with the manufacturer

CONNECTION DIAGRAMS

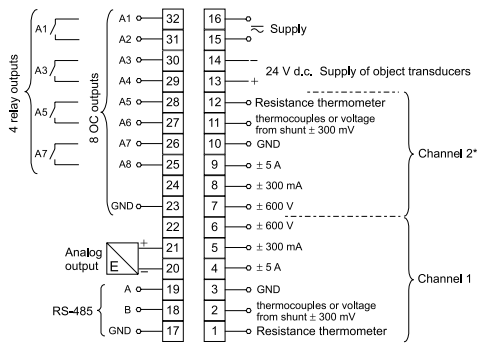


Fig. 1 Description of the terminal strip.

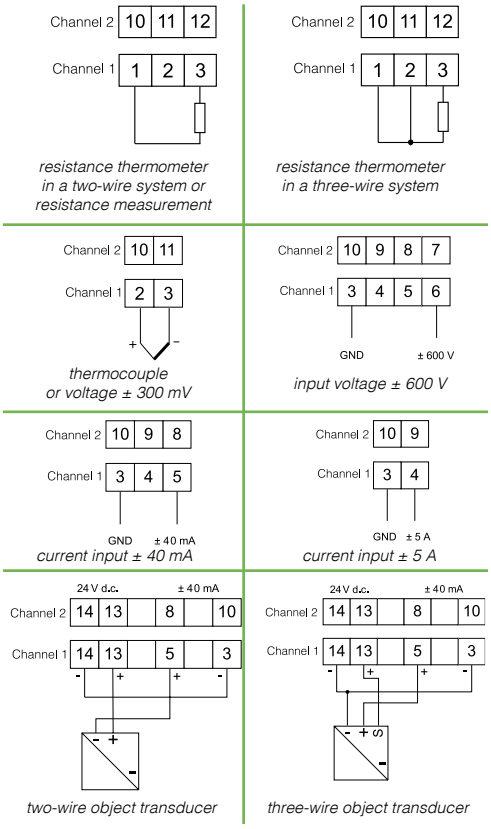


Fig. 2 Connection way of input signals.

Ordering Example:

The code: **NA6 - M GB U 1 1 4 1 0 00 8** means:

NA6 - digital meter with bargraph of NA6 type,
M - with a seven-color bargraph,
GB - green-blue display color on channel 1 and 2,
U - with an universal input signal,
1 - analog programmable output signal: 0/4...20 mA,
1 - RS-485 output signal,
4 - with additional 4 relays digital output signal,
1 - supply voltage: 95...253 V a.c./d.c.,
0 - terminals of plug-in socket type,
00 - standard version,
8 - without extra quality requirements.

SEE ALSO:

Temperature and humidity transducers P18 i P18L types.

N30 digital meters with a 3-colour display and free LPConfig program.

Visualization programs enabling to build distributed control and measuring systems like: LUMEL-CONTROL, LUMEL-PROCES, LUMEL3000.

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