

**PANEL DIGITAL RECORDER
N30B TYPE**

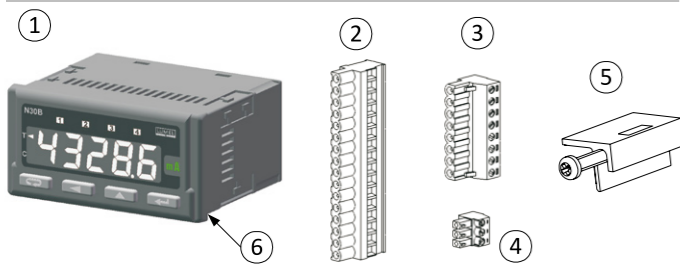


QUICK START MANUAL



Note! The full version of the user's manual is inserted in the www.lumel.com.pl/en/ web site.

1. RECORDER SET



- 1. recorder.....1 pc
- 2. plug with 16 screw terminals.....1 pc
- 3. plug with 18 screw terminals..... 1 pc
- 4. plug with 3 screw terminals..... 1 pc
- 5. screw clamp to fix the recorder in the panel4 pcs
- 6. seal.....1 pc
- 7. quick start manual.....1 pc
- 8. guarantee card.....1 pc

2. OPERATIONAL SAFETY

In the safety service scope, the recorder meets to requirements of the EN 61010-1 standard.



Observations concerning the operational safety:

- All operations concerning transport, installation and commissioning as well as maintenance must be carried out by qualified, skilled personnel, and national regulations for the prevention of accidents must be observed.
- Before switching the recorder on, one must check the correctness of connections to the network.
- The removal of the recorder casing during the guarantee contract period causes its cancellation.

- The device is destined to be installed and used in industrial electro-magnetic environment conditions.
- A switch or a circuit-breaker should be located near the device, easy accessible by the operator and suitably marked.

3. FIXING WAY

Fix the recorder in the panel by means of four screw clamps acc. to the fig. 1. The panel cut-out should have 92+0,6 x 45+0,6 mm dimensions. The thickness of the material from which the panel is made of cannot exceed 6 mm.

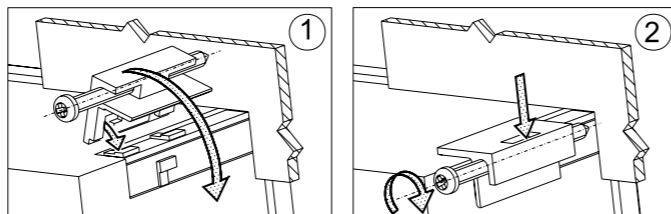


Fig.1. Recorder fixing in the panel.

4. CONTROLLER DIMENSIONS

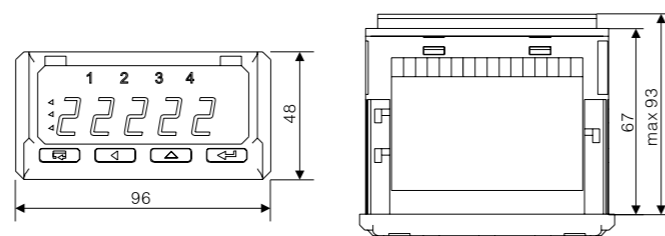


Fig.2. Controller dimensions.

5. CONNECTION DIAGRAMS

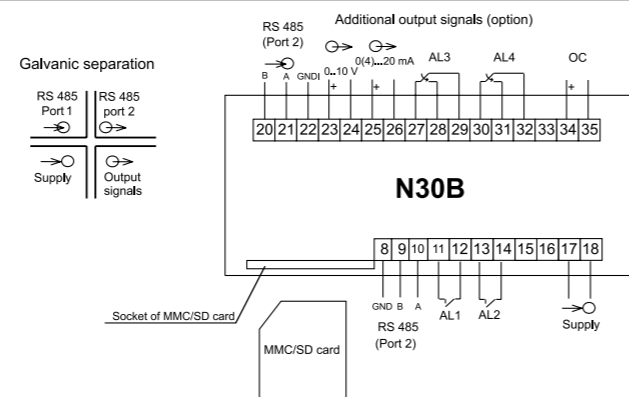
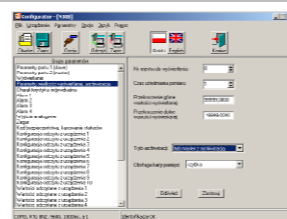


Fig.3. Controller connection diagram

6. RECORDER CONFIGURATION

The recorder configuration can be carried out by the free LPCon program available on our website www.lumel.com.pl/en/ or through the recorder menu acc. to the user's manual. Additionally, the dedicated program for the recorder service is placed on the website.



Transmission of the configuration through the RS-485 interface



7. STARTING TO WORK

After switching the supply on, the controller carries out the display test, displays the **n30-b** inscription, the program version and next, displays measured and set point values. A character message informing about abnormalities may appear on the display (section 8).

The pressure and holding down the push-button during ca 3 seconds causes the entry in the programming matrix. The programming matrix can be protected by a safety code. In case of the lack of code, the programm transits to the programming option. The first group of **i n P u t** parameters is displayed. The monitoring of parameters is always available through the pressure and holding down the push-button during ca. 3 seconds.

Manufacturer's settings of the RS-485 interface: address:1; mode: 8N2; baud rate: 9600 (response time 200 ms – work without memory card; response time 1000 ms – work with memory card).

8. ERROR CODES

- Overflow of upper value of the measuring range value or communication error with the co-operating device.
- Overflow of lower value of the programmed indication range.
- FULL** The memory card is filled. One must replace it by a new one.
- E r F r t** Communication error with the data memory. One must contact the service workshop.
- E r P A r** Parameter error. Wrong configuration data. Manufacturer's settings will be restored after pressing any push-button.
- E r d E F** Default settings have been restored. One must press any push-button to transit to a normal work.
- E r F P L** Error of measured values stored by the recorder (measured value, maximal value and minimal value). One must press any push-button to transit to the normal work. After pressing the push-button, the **E r d E F** message will be displayed during one second.
- E r C R o** Error of analog output calibration. One must press any push-button to transit to the normal work. Analog outputs will not be serviced. One must contact the Service Department.
- E r A P L** Configuration error of archive parameters – data have been lost.
- E r d F C** Communication error with the internal archive memory.

9. TECHNICAL DATA

Readout field:	5 digit (14 mm height), three-colour display
Programmable alarms:	4 alarms operating in 6 modes
Memory card archive:	SD, MMC
Power input:	in the supply circuit ≤ 6 VA, in the voltage, current circuit ≤ 0,05 VA
Relay output:	NO contacts, load-carrying capacity 250 V~/ 0,5 A~ change-over contacts, load-carrying capacity 250 V~/ 0,5 A~
Current analog output:	0(4) ... 20 ... 24 mA R _o ≤ 500 Ω
Protection grade ensured by the casing:	frontal side IP 65
RS485 serial interface:	address 1..247 mode: 8N2, 8E1, 8O1, 8N1 baud rate: 4.8, 9.6, 19.2, 38.4, 57.6, 115.2kbit/s transmission protocol: Modbus RTU response time: 200/1000 ms (without card/with card)
Alarm output:	OC type (NPN) 30 V d.c./30 mA
Weight:	< 0.2 kg
Dimensions:	96 x 48 x 93 mm

Reference Conditions and Rated Operating Conditions.

- supply voltage:	85 .. 253V a.c. (40..400 Hz); 90 .. 320V d.c. 20 .. 40V a.c. (40..400Hz); 20 .. 60V d.c.
- ambient temperature	-25 ... 23 ... +55°C
- storage temperature	-30 ... +70°C
- relative air humidity	25 ... 95 % (inadmissible condensation of water vapour)

Standards fulfilled by the recorder: EN 61000-6-2,
EN 61000-6-4,
EN 61010-1.

10. ORDERING CODES

TABLE 1. ORDERING CODE:					
Digital panel recorder N30B -	X	X	XX	XX	X X
Supply:					
85...253 V a.c. (40 ... 400 Hz);	1				
90 ... 320 V d.c.					
20...40 V a.c. (40 ... 400 Hz);	2				
20 ... 60 V d.c.					
Additional outputs:					
lack	0				
OC output, RS485 (port 2), analog outputs	1				
OC output, RS485 (port 2), analog outputs, switched-over relay outputs	2				
Unit:					
unit code acc. to the table 2			XX		
Version:					
standard			00		
custom-made*			XX		
Language:					
Polish					P
English					E
other*					X
Acceptance tests:					
without extra requirements					8
with an extra quality inspection certificate					7

* - after agreeing with the manufacturer

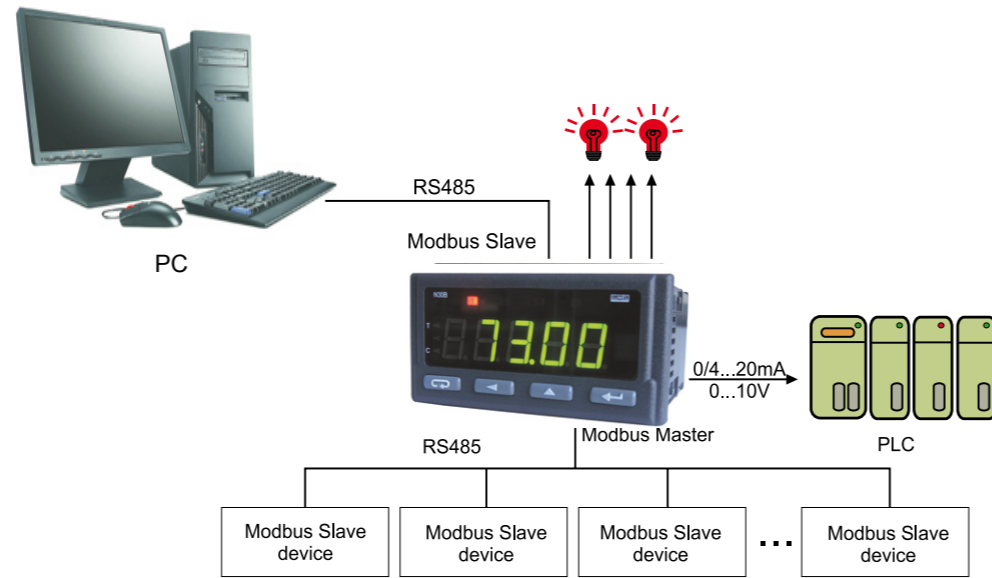


Fig. 4. Exemplary application: Data presentation and recording from control-me

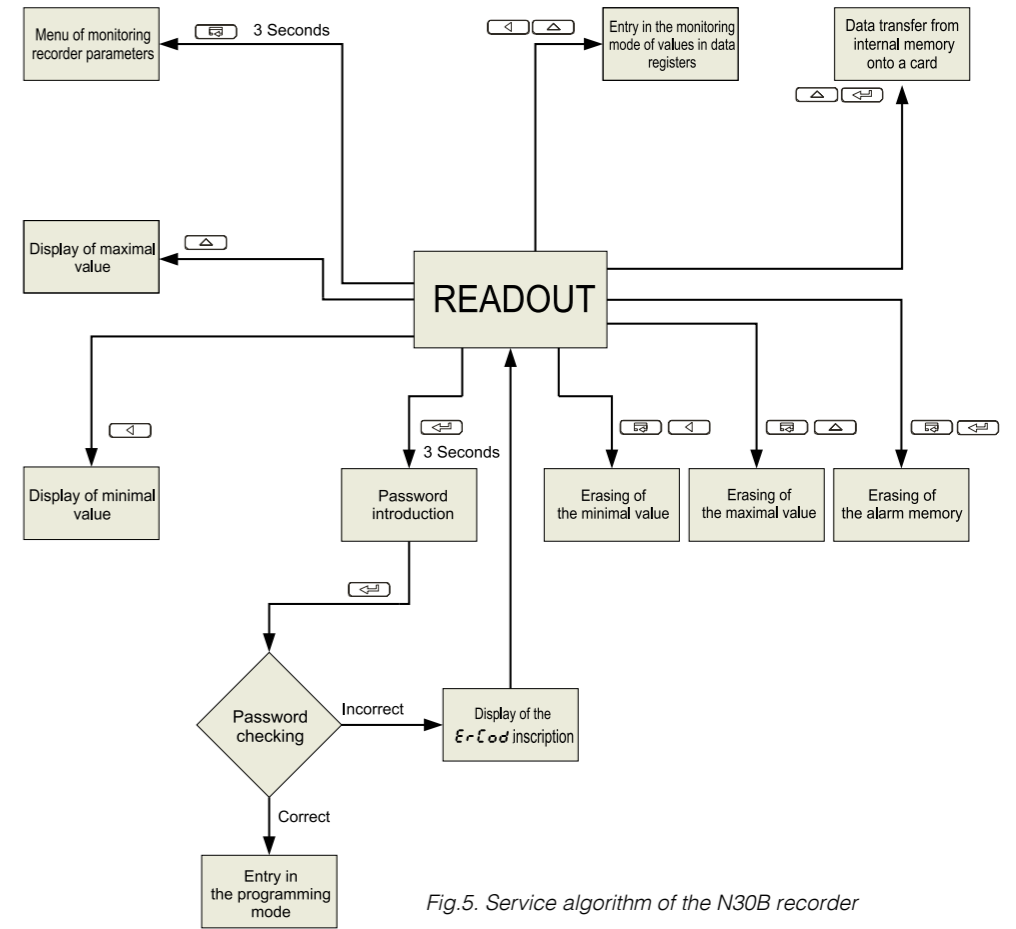


Fig.5. Service algorithm of the N30B recorder

TABLE 2. CODES OF HIGHLIGHTED UNIT:					
Code	Unit	Code	Unit	Code	Unit
00	lack of unit	20	kVAh	40	sz
01	V	21	MVAh	41	imp
02	A	22	Hz	42	rps
03	mV	23	kHz	43	m/s
04	kV	24	Ω	44	l/s
05	mA	25	kΩ	45	obr/min
06	kA	26	°C	46	rpm
07	W	27	°F	47	mm/min
08	kW	28	K	48	m/min
09	MW	29	%	49	l/min
10	var	30	%RH	50	m³/min
11	kvar	31	pH	51	sz/h
12	Mvar	32	kg	52	m/h
13	VA	33	bar	53	km/h
14	kVA	34	m	54	m³/h
15	MVA	35	l	55	kg/h
16	kWh	36	s	56	l/h
17	MWh	37	h		
18	kvarh	38	m³	XX	on order*
19	Mvarh	39	obr		

Order example:

The code: **N30B-1-0-29-00-E-0** means: digital panel recorder N30B, supply: 85...253 V a.c./d.c., lack of additional outputs; unit "%* acc. to the table 2; standard version; English language; without extra requirements.

Item	INPUT	rdISP	Ent	RTYPE	----								
1	Parameters of main input	Displayed register	Measurement time	Archiving type	----								
2	Parameters of individual characteristic	Number of points of individual characteristic	First point of the indiv. characteristic. Point X.	First point of the indiv. characteristic. Point Y.	...	H2I	Y2I						
3	diSP	dP	colLo	colBe	colUP	colLo	colHi	ourLo	ourHi				
4	ALr1	P.R1	PrL.1	PrH.1	tYP.1	dLY.1	LED.1						
...						
7	ALr4	P.R4	PrL.4	PrH.4	tYP.4	dLY.4	LED.4						
8	OUT	P.Rn	An.Lo	An.Hi	tYP.R	baud	Prot	Addr	baud1	Prot1	t.out		
10	SER	SEt	SECUR	HoUr	YEARr	dAtE	Et	Unit	tEst	RIU	dEL.R		
11	dEU0	Addr0	r.bR0	r.no0	r.tYP0	rFrQ0	RrE60	RFrQ0	RtYP0	dQP.rL	dQP.rH		
...		
20	dEU9	Addr9	r.bR9	r.no9	r.tYP9	rFrQ9	RrE69	RFrQ9	RtYP9	dQP.rL	dQP.rH		

Fig.6. Programming matrix.