

# N300 DIGITAL PANEL METER

## Features

- three-colour display
- LPConfig Program
- MOD BUS
- RTC
- 21 points character.
- Password protection

IP65

## Inputs

- Hz
- Waveform icons

## Outputs

- 0/4...20 mA
- 0...10 V
- U
- 2x
- 2x

RS 485

## Galvanic Isolation

- Supply
- RS 485

Sifam Tinsley Instrumentation Ltd  
Unit 1 Warner Drive,  
Springwood Industrial Estate  
Braintree, Essex, UK, CM72YW  
E-mail: sales@sifamtinsley.com  
Web: www.sifamtinsley.com/uk  
Contact: +44(0)1803615139

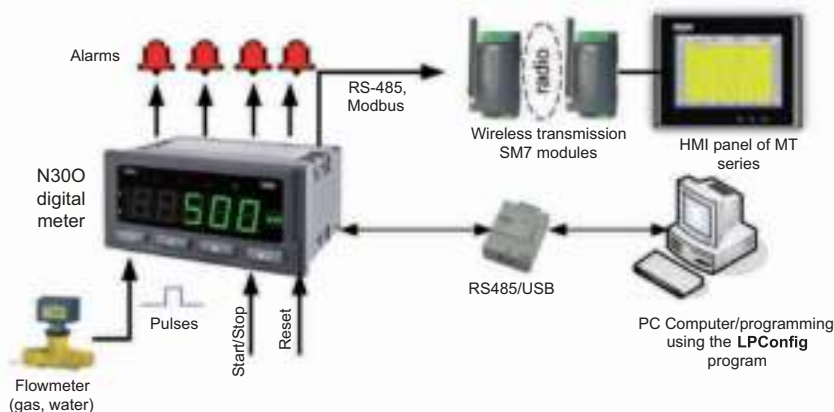


Sifam Tinsley Instrumentation Inc.  
3105, Creekside Village Drive,  
Suite No. 801, Kennesaw,  
Georgia 30144 (USA)  
E-mail Id : psk@sifamtinsley.com  
Web : www.sifamtinsley.com  
Contact No. : +1 404 736 4903



- Measurement: number of pulses, frequency, rotational speed, period, worktime counter.
- Two impulse counters, co-operation with encoders.
- Counter of actual and total values.
- 3-colour display (14 mm high), programmable in 3 ranges of the measured value.
- Meter programming from keyboard or through the RS-485 interface by means of the free LPConfig program.
- 4 alarm outputs with signalling on LED diodes, working in 6 different modes.
- Conversion of any measured value into an analog signal 0/4...20 mA or 0...10 V.
- Storage of minimal and maximal values for all measured quantities.
- Supply of object transducers (option).
- 21-point individual characteristic for the measured value.
- Mathematical function.
- Firmware updating (option).

## Example of Application



Measurement and visualization of the water/gas flow. The measured value is transmitted to the operating panel via radio modules

## Inputs

Input signal:	Input kind	Indication range	Maximal frequency of input signal	Class	Remarks
Voltage 5...36 V d.c.	Number of pulses IN1/IN2	-19 999..99 999	10 kHz/ 8 kHz	±1 pulse	with signal filtering 2 kHz
	Frequency < 10 kHz	0.05..99 999 Hz	100 kHz	0.01	with signal filtering 100 Hz
	Frequency > 10 kHz	1...99 999 Hz (measuring range up to 1 MHz)	1 MHz	0.01	
	Rotational speed	0.05...99 999 [rpm]	100 kHz	0.01	
	Period t < 10 s	0.0001...11 [s]		0.01	
	Period t < 10 s	0.0001...3600 [s]		0.01	
	Worktime counter	0...99 999 [h]			0.5 sec/ 24 hours
	Encoder	-19 999...99 999	10 kHz		with signal filtering 2 kHz
Current time	00.00...23.59			0.5 sec/ 24 hours	

## Outputs

Output kind	Properties	Remarks
Relay output	<ul style="list-style-type: none"> <li>• 2 x relays, voltageless NOC contacts load-carrying capacity 250 V a.c./ 0.5 A a.c.</li> <li>• 2 x relays, voltageless switched contacts load-carrying capacity 250 V a.c./ 0.5 A a.c.</li> </ul>	
Analog output	<ul style="list-style-type: none"> <li>• current programmable 0/4...20mA, load resistance ≤ 500 Ω</li> <li>• voltage programmable 0...10 V load resistance ≥ 500 Ω</li> </ul>	Error of analog output: <b>0.2% of the set range</b> Additional error from temperature changes: <b>50% of the class/10K</b>
OC output	• typu OC, passive npn, 30 V d.c./30 mA	
Auxiliary supply	• 24 V d.c./ 30mA	

## Digital Interface

Interface type	Transmission protocol	Modes	Baud rates
RS-485	MODBUS RTU	8N2, 8E1, 8O1, 8N1	4.8, 9.6, 19.2, 38.4, 57.6, 115.2 kbit/s



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## External Features

Readout field	5-digit LED display - indication range -19999..99999 digit height: 14 mm	three-colour display (color changes depending on displayed value): red, green, orange
Weight	< 0.2 kg	
Overall dimensions	96 ´ 48 ´ 93 mm	Panel cut-out: 92 <sup>+0,6</sup> ´ 45 <sup>+0,6</sup> mm
Protection grade (acc. to EN 60529)	from frontal side: IP65	from rear side: IP 10

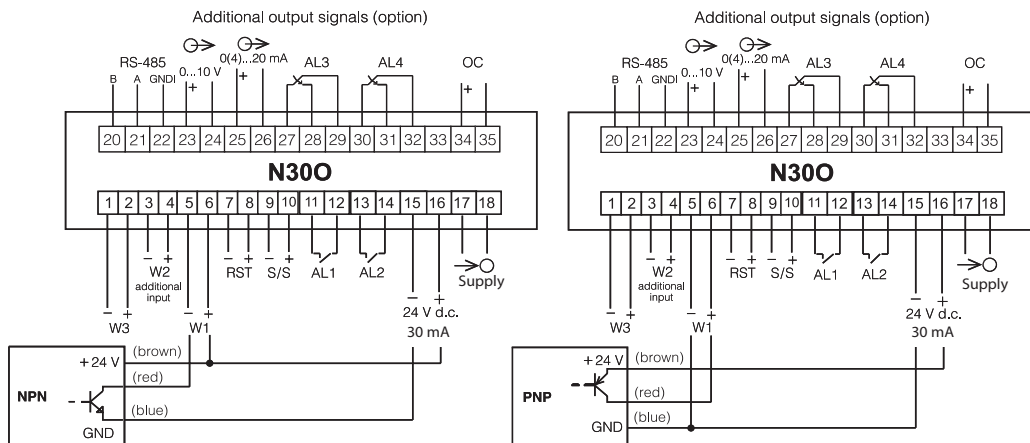
## Rated Operating Conditions

Supply voltage	85...253 V a.c. (40...400 Hz) or d.c., 20...40 V a.c. (40...400 Hz) or d.c.	power input < 6 VA
Temperature	ambient: -25...23...55°C	storage: -30...70°C
Relative humidity	25...95%	condensation inadmissible
Operating position	any	
External magnetic field	0...400 A/m	

## 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	
Pollution grade	2	
Installation category	III	
Maximal phase-to-earth operating voltage	for the supply circuit: 300 V for remaining circuits: 50 V	acc. to EN 61010-1
Altitude above sea level	< 2000 m	

## Connection Diagrams



Connections of the transducer with the OC output of NPN and PNP type.

## Ordering

Table 1. Ordering codes:

	N300 -	X	X	XX	XX	X	X
<b>Supply:</b>							
85...253 V AC (40...400 Hz); 320 V DC	1						
20...40 V AC (40...400 Hz) 20...60 V DC	2						
<b>Additional outputs:</b>							
lack	0						
OC output, RS485 (Port 2), analog output	1						
OC output, RS485 (Port 2), analog output, switched-over relay outputs	2						
<b>Unit:</b>							
Unit code ACC. to the Table -1			XX				
<b>Version:</b>							
Standard	0						
Custom-made*				XX			
<b>Language:</b>							
Polish						P	
English							E
other*							X
<b>Acceptance tests:</b>							
Without Extra Requirements							0
With an extra quality inspection certificate							1

**Order example:** The code **N300 - 1 0 01 00 E 0** means:  
**N300** - programmable N300 digital panel meter  
**1** - supply: 85...253 V a.c./d.c.  
**0** - lack of additional outputs  
**01** - unit "V" acc. to table 2  
**00** - standard option  
**E** - English language  
**0** - without extra requirements

Table 2. Codes of highlighted unit:

Code	Unit	Code	Unit	Code	Unit
00	lack of unit	20	kVAh	40	szt.
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	m <sup>3</sup> /min
11	kvar	31	pH	51	szt./h
12	Mvar	32	kg	52	m/h
13	VA	33	bar	53	km/h
14	kVA	34	m	54	m <sup>3</sup> /h
15	MVA	35	l	55	kg/h
16	kWh	36	s	56	l/h
17	MWh	37	h		
18	kvarh	38	m <sup>3</sup>	XX	on order*
19	Mvarh	39	obr		

\* - after agreeing with the manufacturer

## See Also



KD7 recorder with MODBUS master protocol for recording data measured by N300 meter.



SM3 binary inputs module. For readout of binary states and pulses through RS-485 protocol.

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Sifam Tinsley Instrumentation Ltd  
 Unit 1 Warner Drive,  
 Springwood Industrial Estate  
 Braintree, Essex, UK, CM72YW  
 E-mail: [sales@sifamtinsley.com](mailto:sales@sifamtinsley.com)  
 Web: [www.sifamtinsley.com](http://www.sifamtinsley.com)  
 Contact: +44(0)1803615139



Sifam Tinsley Instrumentation Inc.  
 3105, Creekside Village Drive,  
 Suite No. 801, Kennesaw,  
 Georgia 30144 (USA)  
 E-mail Id : [psk@sifamtinsley.com](mailto:psk@sifamtinsley.com)  
 Web : [www.sifamtinsley.com](http://www.sifamtinsley.com)  
 Contact No. : +1 404 736 4903