nano sensorics

Description

The **"PowerSense"** is advanced technology DIN rail 3-phase LoRaWAN meter applied for the full measurement electric energy consumption, power factor, tariffs and other electric properties in order to ensure energy monitoring, management and sub-metering.

Essential Measurements:

- Consumption (kWh, kvarh/Total/Net + kVAh total)
- Power Factor (Total and per phase)
- Frequency
- ULN, ULL per Phase and Average
- Current per Phase and Average with calculated Neutral
- Device Operating Time (Running Hours)

Extended Measurements:

- U and I THD, TOHD, TEHD and Individual Harmonics up to 31st
- Current TDD, TDD Odd, TDD Even, K-Factor and Crest Factor
- U and I Unbalance and Phase Angle
- Fundamental kW and PF
- kvarh Q1-Q4

Application:

- Industrial facility, Commercial and Utility Substation Metering
- Smart buildings and facilities sub-metering and Cost Allocation
- Building, Factory and Process Automation
- Energy Management and Power Quality Monitoring

Made in Lithuania

Voltage inputs	
Voltage (Un)	277ULN/480ULL
Frequency	45-65Hz
Range	20-277V L-N / 35-480V L-L
Burden	<2W/phase
Input Impedance	5MΩ
P. Overload	750VAC L-L
Current Inputs (·I11, I12, ·I21, I22, ·I31, I32)	
Current (In)	40mA
Range	0.15%-100% In
Starting Current	0.15% In
Burden	<0.25VA / phase
External CT's	100A, 200A, 400A, 800A, 1600A/40mA
Range	5mA-6A

UAB " Nano sensorics"
Pakaunės g. 70, LT-47243 Kaunas
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Accuracy	
CT Voltage	±0.5% (0.01V resolution)
Current	±0.5% (0.001A resolution)
kW, kvar, kVA	±1.0% (0.001kX resolution)
kWh, kVAh	IEC62053-21: 2003 Class 1 (0.01kXh resolution)
kvarh	IEC62053-23: 2003 Class 2 (0.01kvarh resolution)
PF	±1.0% (Resolution 0.001)
Frequency	±0.02Hz (Resolution 0.01Hz)
THD	IEC61000-4-7 Class II (Resolution 0.001%)
In (Cal.)	±1.0% (Resolution 0.001A)
Mounting	
Mounting	Din Rail
IP class	IP30
Dimensions	95x72
Power Supply (L+, N-)	
Standard	95-250VAC/DC, ±10%, 47-440Hz
Burden	<2W
Overvoltage Category	CAT III up to 300ULN
Optional Digital Inputs (DI1, DI2, DI3, DI4, DIC)	
Type	Dry contact, 24VDC in
Sampling	1000Hz
Hysteresis	1ms minimum
Optional Digital Outputs (DO11, DO12, DO21, DO22)	
Type	Form A Mechanical Relay
Loading	5A @ 250VAC or 30VDC
Communications	
LoRaWAN	LoRaWANTM Specification 1.0.2
Supported LoRaWAN® regions	EU863 – 870 Optional: EU863 – 870, AU915 – 928, EU433, AS923
Modbus RTU protocol	RS-485 port at 1,200 to 38,400 bps
Optional Solid State Energy Pulse Output (E1+, E1-, E2+, E2-) Selectable kWh/kvarh	
Pulse Constant	10/100/1000/3200 imp/kxh
Isolation	Opti
Max. Load Voltage	80V
Max. Forward Current	50mA
Pulse Width	80±20ms
Conditions	
Op. Temp.	-25°C to +70°C

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St. Temp.	-40°C to +85°C
EMC Compatibility	
Electrostatic Discharge	EN61000-4-2: 2009
Surges	EN61000-4-5: 2014+A1: 2017
Magnetic Fields	EN61000-4-8: 2010
Optional Split Core CTs	
Option No. 1	100A, Split-Core CT (accuracy 0.5, 2meter cable length, 16mm aperture)
Option No. 2	200A, Split-Core CT (accuracy 0.5, 2meter cable length, 24mm aperture)
Option No. 3	400A, Split-Core CT (accuracy 0.5, 2meter cable length, 35mm aperture)
Option No. 4	800A, Split-Core CT (accuracy 0.5, 2meter cable length, 80x50mm aperture)
Option No. 5	1600A, 1-phase Split-Core CT (accuracy 0.5, 2meter cable length, 130x55mm aperture)

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