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Measurement Transducer iNET-3P – Data Sheet



- Measurement transducer for monitoring 3-phase 220-240 V 50 Hz power supply parameters
- Works in association with a supervising device: Hubiot-2
- Monitors active/reactive power and energy consumption and detects abnormal conditions in street lighting networks
- Requires standard industrial current transformers with 5 A output
- Equipped with RS485 interface and MODBUS protocol
- Suitable for the DIN TH35 (EN50022) mounting rail
- Reliability: MTTF > 400,000 h
- Warranty: up to 5 years

Part numbers

Version	Part number
Basic version	780010.001

Electrical parameters

Parameter	Symbol	Test conditions	Value	Unit
Supply				
AC supply voltage	U_{in}	-	220-240	V
Supply voltage frequency nom.	f_{in}	-	50	Hz
Power consumption max.	P_{in}	-	3	W
Environment				
Ambient temperature range	T_{amb}	-	-40..+55	°C
Storage temperature range	T_{store}	-	-40..+85	°C
Protection level	-	-	IP 20, IK06	-

Miscellaneous parameters

Parameter	Symbol	Test conditions	Value	Unit
Mass	-	-	210	g
MTTF	-	$T_{amb} = 70^{\circ}\text{C}$, acc. Telcordia SR-332 Ed. 4	400,000	h
Warranty period up to	-	-	5	lat

Measured variables

Variable	Symbol	Resolution	Accuracy	Notes
Single phase active power	P_1, P_2, P_3	1 W	Class B	The power is zeroed if the current is lower than the starting current I_{st}
Multiphase active power	P	1 W	Class B	Arithmetic sum of the phase powers: P_1, P_2, P_3
Single phase reactive power	Q_1, Q_2, Q_3	1 var	Class 2	The power is zeroed if the current is lower than the starting current I_{st}
Multiphase reactive power	Q	1 var	Class 2	Arithmetic sum of the phase powers $ Q_1 , Q_2 , Q_3 $
Single phase active energy	E_{P1}, E_{P2}, E_{P3}	1 Wh	Class B	-
Multiphase active energy	E_P	1 Wh	Class B	-
Single phase reactive energy	E_{Q1}, E_{Q2}, E_{Q3}	1 varh	Class 2	-
Multiphase reactive energy	E_Q	1 varh	Class 2	-
Phase voltage	U_1, U_2, U_3	0.1 V	1% of measured value	For $U \geq 100$ V If $U < 100$ V, the result is zeroed
Phase current	I_1, I_2, I_3	0.1 A	1% of measured value	For $I \geq I_{min}$ 1.5% of measured value if $I_{st} \leq I < I_{min}$ If $I < I_{st}$, the result is zeroed

Notes.

Definition of the currents is in accordance with the EN 50470-3 standard:

- Starting current $I_{st} = 0.01$ A * CT current ratio
 - Minimum current $I_{min} = 0.05$ A * CT current ratio
 - Transitional current (above that value, the meter achieves power and energy measurement accuracy of class B or 2)
- $I_{tr} = 0.25$ A * CT current ratio

Electric power measurement accuracy is in accordance with the EN 50470-3 standard and equals:

for $I \geq I_{tr}$:

- single phase active power: 1 %
- single phase reactive power: 2 %

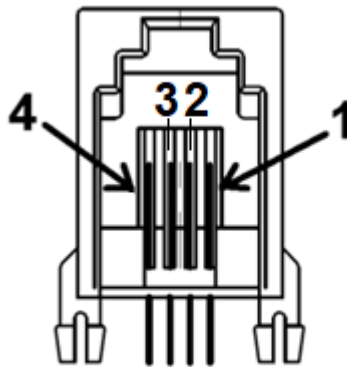
for $I_{min} \leq I < I_{tr}$:

- single phase active power ($\cos\phi=1$): 1.5 %
- single phase reactive power: 3 %

Connectors of the transducer

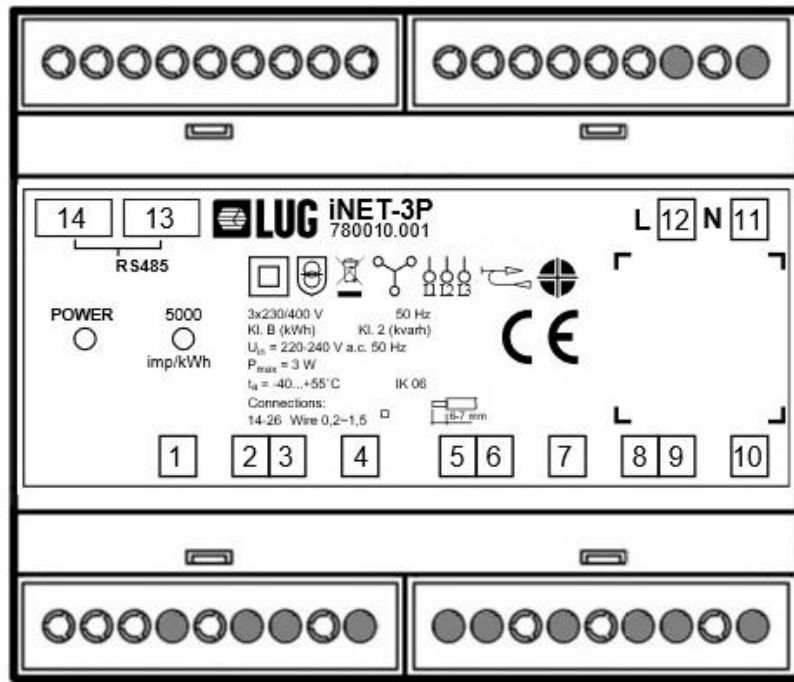
Measurement interface port

The transducer is equipped with the RS485 interface working at the rate of 9600 bauds, in 8N1 format under the MODBUS RTU protocol. Two interface connectors (RJ9-type) are paralleled to simplify the creation of RS485 bus. The port needs to be powered by a supervising device with a dc voltage of approx. 12 V.



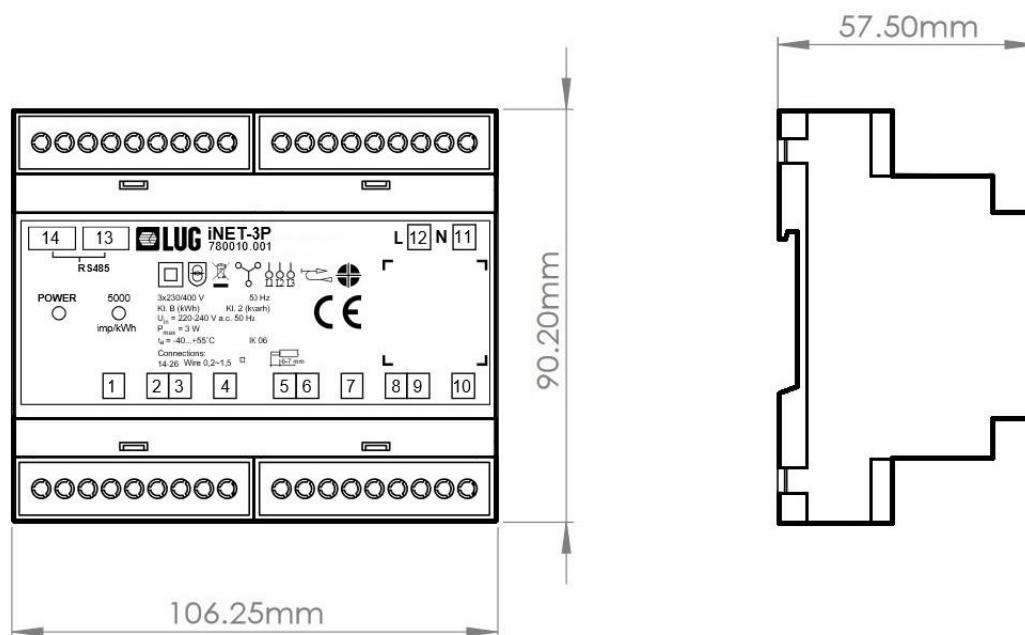
No.	Connector J13	Connector J14	Remarks
1	Power supply +12 V DC	Power supply +12 V DC	Power supplied by a supervising device
2	RS485 (A)	RS485 (A)	Communication
3	RS485 (B)	RS485 (B)	Communication
4	GND	GND	Power and reference ground for signals 1-3

Connector numbering and function



No.	Function
1	Neutral line N measurement input
2, 3	Phase L1 current measurement input (2 – in, 3 – out)
4	Phase L1 voltage measurement input
5, 6	Phase L2 current measurement input (5 – in, 6 – out)
7	Phase L2 voltage measurement input
8, 9	Phase L3 current measurement input (8 – in, 9 – out)
10	Phase L3 voltage measurement input
11	Neutral line N for powering the transducer
12	Phase line L for powering the transducer
13, 14	Paralleled RS-485 ports

Dimensions



Conformance to the standards

PN-EN 61000-6-3
PN-EN 61000-6-2
PN-EN 61000-3-2
PN-EN 61000-3-3
PN-EN 61010-1
RoHS 2 Directive