

# UNIVERSAL MEASURING INSTRUMENTS

## TNM160 - Energy meter and Electrical powermeter



- Simple installation - DIN Rail mounted

TNM160 energy powermeter is a compact, multi functional, multi channel, three\single-phase powermeter, especially designed to meet the stringent needs of power and energy measurement in any electrical installation up to 1 or 2 sets of three phase energy meters, or up to 6 single phase.

TNM160 includes history data logging up to 6 months and supports standard communication protocols BACnet and Modbus with simple integration into building management systems over RS485 or Ethernet TCP.

An indispensable tool for the building engineer, it aids efficient use of electricity by showing power factor, max. and min demand an current in neutral line.

### Technical Data

3 phase / 1 phase	up to 1 or 2 sets / up to 6
Accuracy	0.2%
Sampling rate	1600 sample per cycle
Digital In / out	- / -
Harmonic resolution	32
Simple operated menus	yes
Multilingual support	yes
Data logging	yes, up to 6 months
Build in T.O.U Energy meter	yes
RS485 Communication Port Modbus	yes
Ethernet (TCP/IP)	yes
BACnet TCP/IP protocol	yes
BACnet MS/TP protocol	yes
Web browser capability	yes
LCD graphical display type	color display
Display resolution	320x240 pixels
Display of Waveform and baragraph	yes
Current transformers supported	5A / 1A
Power requirements	90 ∞ 250 VAC 110 ∞ 280 VDC
Frequency	50 / 60 Hz
Consumption	6 VA
Mounting	DIN Rail mounting
Dimensions (HxWxD)	160 x 97 x 65 mm
Weight	550 gr.
Environmental	Operation: -20 ∞ 70°C Storage: -20 ∞ 80°C Humidity: 0 ∞ 95 RH% non condensing
Measurement ranges	Voltage: 0 - 550 VAC Voltage(with transformer): up to 999999999 KV Current (with transformer) : up to 999999999 KA Maximum Input Voltage : 1000V Maximum Input Current : 6A Supported current sensors: 1A / 5A
Measurement type	True RMS
Standard Approvals	EN62052-11, EN62053-22, EN62053-23, CE, UL61010, EN61000 -3-2, EN61000 -3-3, BTL

### Measurement and Display values

Measurement Parameter	Display range
Current	0.001 - 99999 KA
Neutral current (calculated)	0.001 - 99999 KA
Voltage L-N	0.001 - 99999 KV
Voltage L-L	0.001 - 99999 KV
Frequency (Hz)	45.001 - 65.001 Hz
Active power total/phase	0.000 W - 99999 MW
Reactive power total/phase	0.000 VAR - 99999 MVAR
Apparent power total/phase	0.000 VA - 99999 MVA
Power factor (cap./ ind)	-1.000 ÷ 1.000
Active total/phase	0.001 WH - 999999999 MWH
Reactive total/phase	0.001 VARH - 999999999 MVARH
Apparent total/phase	0.001 VAH - 999999999 MVAH
Measurement Parameter	Measuring in direct connection
Current	0.1 - 6A
Voltage L-N	0.1 - 550V
Voltage L-L	0.1 - 950V
Frequency (Hz)	45 - 65 Hz
Power factor (cap./ ind)	-1.000 ÷ 1.000

### Mechanical mounting:

