

Designed specifically for Retro-fit Applications

- *Simple & Quick to Install*
- *Split Current Sensors
100 Amp — 1200 Amp*
- *Universal Connection
1 ϕ , 2 ϕ or 3 ϕ ;
90 — 480 V 3 ϕ Line/Line*
- *MODBUS RTU
Communications*
- *Easy installation*
- *UL & CSA versions
available*



Comprehensive Measurements

- *Import & Export Energies*
- *kW & Current Demands*
- *Neutral Current*
- *True rms measurement to the 30th harmonic
Individual harmonics to the 15th*

Designed & Made in the UK with a 5 year Warranty

txd 350 – a meter specifically designed for retro-fit applications. The Meter is supplied complete with specially designed openable current sensors. Easy to fit, with indicator LEDs & added measurements to ensure **'Right First Time'** installation.

Easy to Commission — Right First Time

Wiring: Using intelligent LED indicators, any installation problems are quickly rectified.

Installation: Just 2 screws mount the txd350.

Easy to Use

Using standard RS485 MODBUS RTU[®] communications, the **txd 350** can be connected to any Energy Management or SCADA system.

Multi-Parameter

Available via MODBUS RTU

| | Phases | | Phases |
|---------------------|--------------------|--|--------------------|
| Volts, LN & LL | 1, 2, 3 | Pk Volts LN | 1, 2, 3 |
| Amps | 1, 2, 3 | Pk Amps | 1, 2, 3 |
| PF | 1, 2, 3 & Σ | Neutral Current | Σ |
| kW, kVA & kvar | 1, 2, 3 & Σ | kVA & kvar | 1, 2, 3 & Σ |
| Import kWh & kvarh | Σ | kW, kVA & kvar Demand | Σ |
| Export kWh & kvarh | Σ | Pk kW, kVA & kvar Demand | Σ |
| Capacitive kvarh | Σ | Average Volt & Peak | 1, 2, 3 |
| Inductive kvarh | Σ | Amp Demand & Peak | 1, 2, 3 |
| kVAh | Σ | %THD Volts & Amps | 1, 2, 3 |
| Frequency | | V & I Harmonics 2 nd – 15 th | 1, 2, 3 |
| Hours Run (on Load) | Σ | | |

True rms measurement of Volts & Amps – and true Power Measurement – to the 30th harmonic at 50Hz.

Current Ranges

| FS Amps | Current Range | CT Type | Max Cable ϕ |
|-----------------------|-----------------|---------|------------------|
| 100 Amp | 500mA — 120 Amp | SCL16 | 15mm |
| 150 Amp - 300 Amp | 0.2% — 120% | SCT19 | 19 x 19mm |
| 400 Amp - 500 Amp | 0.2% — 120% | SCL32 | 32 x 32mm |
| 600 Amp - 1200 Amp | 0.2% — 120% | SCT51 | 51 x 51mm |

Other current ranges may be available to order.

Fully Supported

Comprehensive operating instructions - supplied with every Meter – provide full information on installation. These include connection schematics and configuration details. Full technical support is readily available from your local Distributor or from Technical Sales at ND Metering Solutions.

Universality of Connections

For maximum convenience all these Meters are powered from the measurement voltage.

Standard Meters are suitable for 1 ϕ 2 wire, 2 ϕ 3 wire and 3 ϕ 3 wire or 4 wire unbalanced loads.

Accurate Real World Measurement

A precision measurement system maintains full accuracy up to the 30th harmonic (at 50Hz) in the presence of harmonics and randomly and/or periodically interrupted waveforms - as commonly found on modern electronically controlled loads.

Communications

In addition to the standard MODBUS registers, user assignable registers simplify communications.

OUTLINE SPECIFICATION

INPUTS

| | |
|---------------------------------|--|
| System | 3 Phase 3 or 4 Wire: 90-480V Nominal Ph. to Ph. 2 Phase 3 Wire: 90-240V Nominal Ph. to Neutral. Single Phase 2 Wire: 90-277V Nominal Ph. to Neutral |
| Current I_n | Use only ND Current Transducers with the following Specification: Nominal CT Primary: 100A; 150A; 200A, 300A, 400A; 600A, 800A, 1000A or 1200A Nominal CT Secondary: 0.333Vac Insulation Class 600Vac UL Recognised transducers available to order |
| Measurement Range | Voltage 70 – 550Vac (Phase – Phase) Current 0.2% to 120% Nominal CT Rating |
| Frequency Range | Fundamental 45 to 65Hz Harmonics Up to 30 th harmonic at 50Hz Individual to the 15 th |
| Burden | Voltage <2 VA per phase Current To suit CT used |
| Overload | Voltage Un +15% Current I_n x2 Continuous |

AUXILIARY SUPPLY

Powered from the voltage inputs
Any 2 voltage connections may be used

ACCURACY

All errors ± 1 digit. Accuracies specified equivalent to Meter being used with Class 1 CTs

| | |
|-------------------------|---|
| kWh | Equivalent to Class 1 per EN 62053-21 & BS 8431 |
| kvarh | Equivalent to Class 2 per EN 62053-23 & BS 8431 |
| kW & kVA | Equivalent to Class 0.25 IEC 60688 |
| kvar | Equivalent to Class 0.5 IEC 60688 |
| Amps & Volts | Equivalent to Class 0.1 IEC 60688 ($0.01I_n - 1.2I_n$ or $0.1U_n - 1.2U_n$) |
| PF | Equivalent to $\pm 0.2^\circ$ ($0.05I_n - 1.2I_n$ and $0.2U_n - 1.2U_n$) |
| Neutral Current | Equivalent to Class 0.5 IEC 60688 ($0.05I_n - 1.2I_n$) |

MODBUS[®] Serial Comms

| | |
|---------------------|---|
| Bus Type | RS485 2 wire + 0v. 1/2 Duplex, 1/4 unit load |
| Voltage | Insulation 2.1kV. Maximum input/output voltage 12Vdc |
| Protocol | MODBUS [®] RTU with 16 bit CRC |
| Baud Rate | 4800, 9600 or 19,2000 User settable |
| Address | 1 – 99 User settable |
| Latency | Reply within 250ms max. |
| Command Rate | New command within 5ms of previous one |

GENERAL

| | |
|--------------------|--|
| Temperature | Operating 0°C to +60°C Storage -25°C to +70°C |
| Humidity | < 75% non-condensing |

MECHANICAL

| | |
|-------------------|---|
| Material | Zytel FR70G25V0 with fire protection to UL94-V-O. Self extinguishing |
| Dimensions | 140 x 44 mm x 49mm |
| Weight | ~ 160 gms |
| Terminals | |
| Voltage | Rising Cage. 4.0 mm ² (12 AWG) cable max. |
| Current | Rising Cage. 1.5 mm ² (12 AWG) cable max. |
| MODBUS | Rising Cage. 1.5 mm ² (12 AWG) cable max. |

SAFETY

| | |
|--------------------|--|
| Conforms to | EN 61010-1:2001 Installation Category III, Pollution Degree 2 |
|--------------------|--|