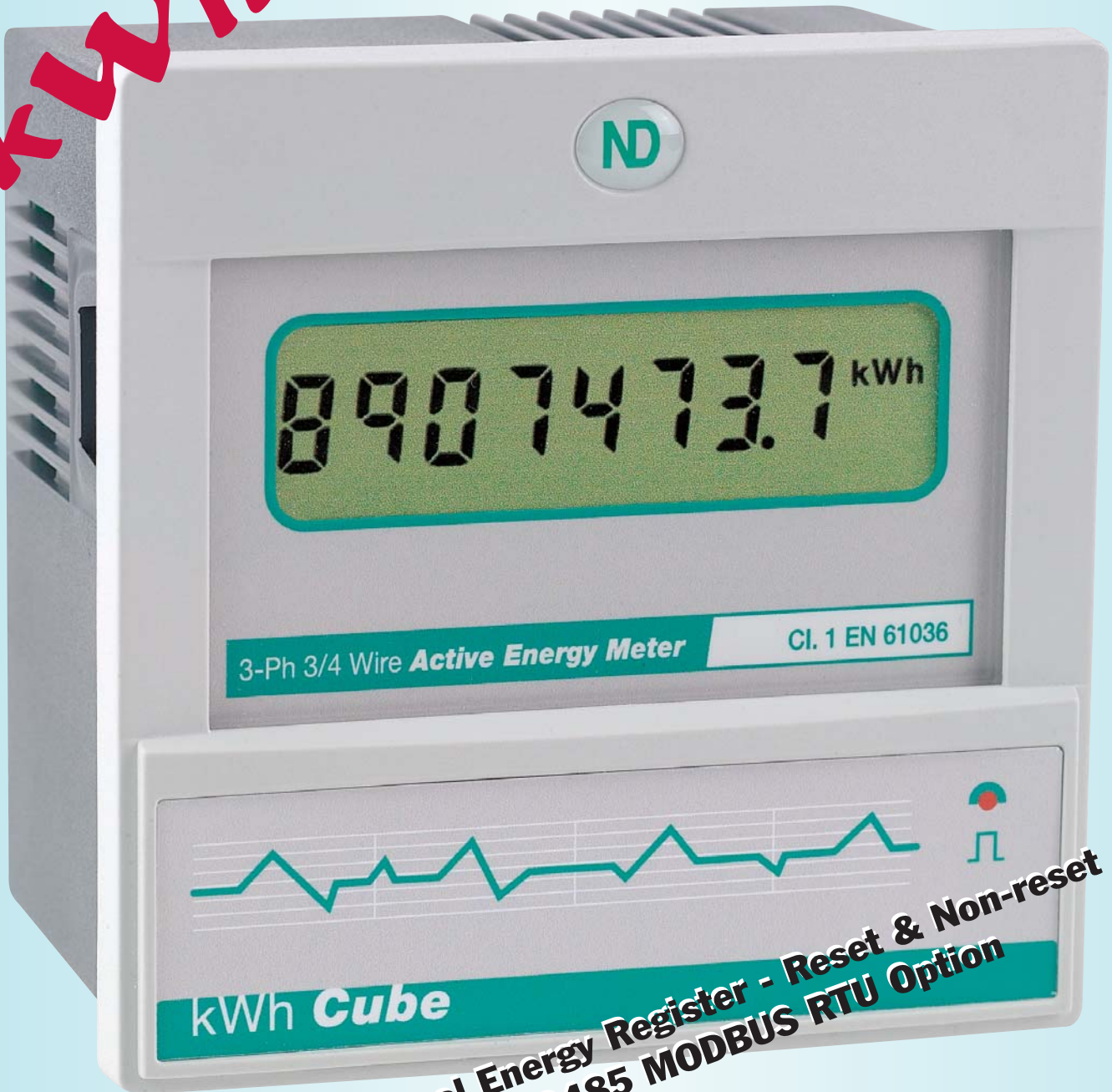


ND

kWh Cube

**Panel Mounting
Electronic
kWh Meter**



- **8 Digit Backlit LCD with Legends**
- **Accuracy Better than Class 1**
- **kW Display for Commissioning**
- **Pulsing Output for BEMs**
- **Fully User Configurable**

DESCRIPTION

The **kWh Cube** is an electronic kWh Meter - Panel mounting, easy to install and convenient to use. Equally suitable for both 3 wire and 4 wire 3Ø unbalanced loads (optionally for single phase or balanced 3Ø systems), the **kWh Cube** has been designed to measure accurately irrespective of the type of load - ideal for a motor or heater, or modern electronically controlled loads.

Safe to Use

Installation safety - through compliance with the Low Voltage Directive (LVD) - is assured with fully isolated current inputs. Current input isolation provides versatility of connection. Installation in conjunction with other instrumentation can be carried out safely, without affecting accuracy.

Easy to Install

The **kWh Cube** has simple panel mount clips and is fitted with large Rising Cage terminals - allowing connection to a wide range of cables from 0.25mm² to 4.0mm².

Easy to Commission

Instantaneous kW can be displayed. Connections can be confirmed & the load measured.

Easy to Use

The **kWh Cube** can be read irrespective of location, under all lighting conditions. The giant backlit LCD display overcomes small character size, poor visibility and short life associated with electromechanical counters and provides the necessary legends (Wh, kWh, MWh).

A programmable isolated pulse output is optionally available for interface to a remote data collection system or BEMs.

Input Scaling

The Meter may be user configured to suit installations using Current and/or Voltage Transformers, with decimal point and legend being automatically set to provide optimum resolution.

Fully Supported

Comprehensive operating instructions - supplied with every **kWh Cube** - include full information on installation. These include connection schematics and configuration details for common CT ratios. Full technical support is readily available from your local Distributor or from Technical Sales at Northern Design.

Universality of Connections

For maximum convenience all **kWh Cube** Meters can be powered from the measurement voltage. Where supplies may be subject to unusually wide variations, the Meters may be powered from a separate auxiliary supply. Standard kWh Cube Meters are suitable for both 3 wire and 4 wire 3Ø unbalanced loads, and can be used on single phase.

Accurate Real World Measurement

A precision analogue measurement system maintains full accuracy in the presence of harmonics and randomly and/or periodically interrupted waveforms - as commonly found on modern electronically controlled loads. Standard accuracy is Class 1 (EN 61036), higher accuracy models being available on request.

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SPECIFICATION

INPUTS

System	3 Phase 3 or 4 Wire Unbalanced Load 3 Phase Balanced & Single Phase to order
Voltage	400/230V. 3 Phase 3 or 4 Wire 110/63V & 208/120V optional
Current Measurement	5A from external CTs. 1A optional. Fully isolated
Range	Voltage 50% to 120% Current 0.5% to 120%
Frequency Range	Fundamental 45 to 65Hz Harmonics Up to 40th harmonic
Voltage Burden	<0.1VA per phase
Current Burden	<0.1VA per phase
Overload Voltage	x2 for 2 seconds max.
Overload Current	x40 for 1 second max.

DISPLAY

Type	Custom, Supertwist, LCD with LED backlight
Data Retention	25 years min. Stores kWh & Meter set-up
Format	8x9mm high digits with DPs & 3mm legends
Scaling	Direct reading. User programmable CT & VT
Legends	Wh, kWh, MWh etc. depending on user settings

AUXILIARY SUPPLY

Standard	230V 50/60 Hz ±15%
Options	110V 50/60 Hz ±15%
Load	3VA max.

ACCURACY

kWh	Better than Class 1 per EN 61036 (IEC 1036)
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OUTPUT RELAY

Function	1 Pulse per unit of energy (Optional 2nd Output)
Scaling	Settable 1,10,100 or 1000 counts of kWh register
Pulse Period	0.1 secs. (0.5 sec on request) Longer periods to special order

Rise & Fall Time < 2.0ms

Type	N/O Volt free contact. Optically isolated BiFET
Contacts	100mA ac/dc max., 100V ac/dc max.
Isolation	2.5kV

GENERAL

Temperature	Operating -10°C to +65°C Storage -25°C to +70°C
Humidity Environment	< 75% non-condensing IP62 when mounted in panel

MECHANICAL

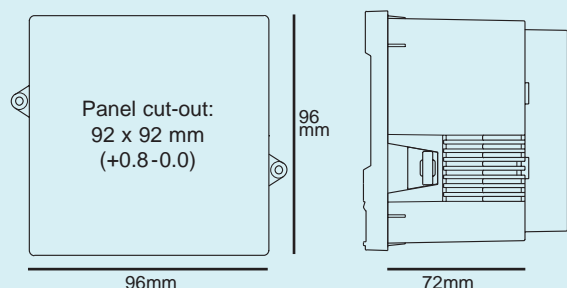
Enclosure	Mablex® with fire protection to UL94-V-O self extinguishing
Dimensions	96x96x71 per DIN 43700
Weight	300 gms
Terminals	Rising Cage. 4mm ² (12AWG) cable max.

MODBUS RTU Communications Option

A high speed MODBUS RTU communication option can be factory fitted within the meter enclosure.

Dual Energy Registers

The kWh Cube features 2 Energy Registers - one user resettable and the other non-resettable.



Dimensions