

# DIN 96mm THREE LINE DISPLAY, 3 METERS IN 1, MULTI DISPLAY ENERGY METER

PRODUCT  
GROUP  
**EE**

## TYPE: MULTICUBE 950

### ■ FEATURES

- Panel mounting
- Suitable for 1ph or 3ph loads, 3 wire or 4 wire
- Meters 3 x 3ph loads or 9 x 1ph loads, or in any combination
- TRMS measurement to 80<sup>th</sup> Harmonic
- 4 x isolated configurable pulse or alarm outputs
- Optional MODBUS RTU output
- Optional MBus output
- Current input via CT's 333mV (option for 5 Amp & 1 Amp CT's)
- Class 0.5 accuracy



### ■ DESCRIPTION & MODE OF OPERATION

The MULTICUBE 950 is a Din 96mm three line display, powerful and extremely cost effective "3 in 1" metering solution, monitoring 3 x 3 phase loads (3 wire or 4 wire) or, 9 x 1 phase loads or a combination of them, for example 2 x 3 phase loads and 3 x 1 phase loads.

Cost effectiveness per meter point is further enhanced by just one voltage and comms connection per MULTICUBE 950. Further time savings come from the "Plug & Play" RJ12 to RJ12 CT adaptors, included as part of the kit. Each three 333mV secondary CT kits are supplied with their secondary tails already terminated into the adaptor and the RJ12 cables do the rest. In the case of single phase loads three loads go to one adaptor.

Whilst the MULTICUBE 950 is built around our range of 333mVAC secondary split core current transformers, it is also possible to use the MULTICUBE 950 with 5 Amp and 1 Amp secondary CT's, either totally or in part. Should 5 Amp or 1 Amp secondary CT's be utilised a separate Din rail mounted adaptor needs to be purchased and the secondary of these CT's physically terminated and then the RJ12 connections are made.

The MULTICUBE 950 also features innovative "Auto CT Recognition", this avoids errors from programming the CT primaries incorrectly by automatically recognising the CT primaries for you. Additionally, "Auto CT Rotation" compensates for CT's installed the wrong way round. Plus "Auto CT Accuracy Compensation" guarantees the accuracy of your data, the meter will compensate for any phase angle errors in your CT's, giving peace of mind that data will not contain any hidden inaccuracies.

Further safeguards against error are provided by the RJ12 plugs that cannot be installed the wrong way round. This just leaves the possibility of installing the CT's on the wrong phases (CT's not in phase). Should this occur a warning on the meter's large backlit display comes up informing there is an error.

The very powerful MULTICUBE 950 also packs in demands and alarms as standard and fast communication options allow up to 20 reads every second. The fast MODBUS RTU option also provides aggregated "3 in 1" data and optional 100mSec reading updates. Also included is a MODBUS test facility to test the integrity of the MODBUS wiring.

The MULTICUBE 950 auto scales to Wh, KWh, MWh etc, depending on the CT ratio programmed. The MULTICUBE 950 is able to accept a very wide voltage input span of 80-480V L-L or 46-277V L-N, thus enabling the CUBE 400 to be used on VT circuits such as 11KV/110V, therefore a VT ratio can also be programmed if required.



## ■ DISPLAY PARAMETERS

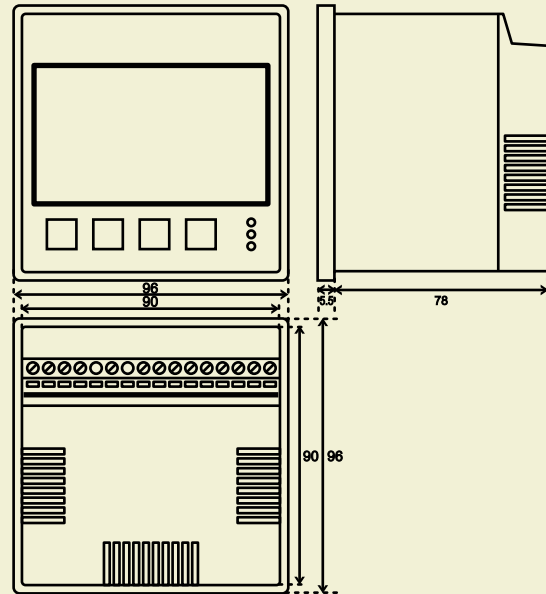
	<u>Per Phase</u>	<u>Sum</u>
Volts, L-L & L-N	1-3	
Amps	1-9	
Power Factor	1-9	*
Import KWh	1-9	*
Import KVAh	1-9	*
Import KVArh	1-9	*
Export KWh	1-9	*
Export KVArh	1-9	*
Hz		*
Export KWh	1-9	*
Export KVArh	1-9	*
Peak Volts L-N	1-3	
Peak Amps	1-9	
Neutral Amps		*
KW, KVA, KVAr	1-9	*
KW, KVA, KVAr Demand	1-9	*
Peak KW, KVA, KVAr Demand	1-9	*
Average Volts & Peak	1-3	
Amp Demand & Peak	1-9	

### ADDITIONAL PARAMETERS VIA MODBUS

And if Harmonics option specified:-

% THD Volts & Amps	*
Individual Harm. 2 <sup>nd</sup> to 63 <sup>rd</sup>	*

## DIMENSIONS



## ■ SPECIFICATIONS

### Inputs

System:	1 phase 3 phase, 3 wire or 4 wire Balanced or unbalanced
Voltage:	80-480V L-L / 46-277V L-N +20%
Current:	Via external 333mv CT's Option via adaptor for 5 Amp, 1 Amp Measuring range 0.2% to 120%
Frequency:	45-65Hz
Harmonics:	Input to 80 <sup>th</sup> Harmonic Individual measured to 63 <sup>rd</sup> (option)

Voltage burden: < 0.1VA per phase

Current burden: < 0.1VA per phase

Voltage overload: x4 for 1 hour

Current overload: x40 for 0.5 Sec max

### Auxiliary supply

Standard:	100-240VAC (45-65Hz)
Load:	4VA max

### General

Temperature:	Operating -10°C to +55°C
Humidity:	<75% non condensing
Material:	Mablex to UL94-V-0, self ext.
Terminals:	4mm rising cage
Dimensions:	96 x 96 x 83.5mm (72mm behind panel)

### Accuracy

KWh:	Class 0.5 per EN 62053-22 Class 0.5 per ANSI C12.20
KVArh:	Class 1 per EN 62053-23
KW & KVA:	Class 0.25 IEC 60688
KVAr:	Class 0.5 IEC 60688
Amps & Volts:	Class 0.1 IEC 60688
Power Factor:	± 0.2°
Neutral current:	Class 0.5 IEC 60688

### Pulse outputs

Function:	1 pulse for KWh, or programmable for an Event Alarm
Scaling:	Programmable between 1 & 100 counts of registers

Pulse periods: Programmable between 0.1-20Sec

Type: 4 x NO volt free, optically isolated

Rating: 100mA @ 70VDC/33VAC max

Isolation: 3.5KV for 1 min

### Communications modbus RTU

Baud:	4800-38400
Parity:	Selectable NONE/ODD/EVEN
ID's:	Joint master & individual meters
Speed:	Up to 20 reads per second
Instantaneous:	Readings updated every second
Isolation:	3.5KV

### Communications MBus

Baud:	1200-9600
ID's:	Joint master & individual meters
Tables:	Short / Long configurable
Isolation:	3.5KV

## ■ ORDERING INFORMATION

### TYPE

MULTICUBE 950
MULTICUBE 950 / MODBUS
MULTICUBE 950 / HARMONICS / MODBUS
MULTICUBE 950 / Mbus
MULTICUBE 950 / HARMONICS / Mbus

### OPTIONS\*

230VAC aux supply (standard)
110VAC aux supply
24VDC aux supply
5 Amp adaptor
1 Amp adaptor

### 333mV SECONDARY CT KITS\*\*

RJ12 to RJ12 CT leads, length 3M
RJ12 to RJ12 CT leads, length 5M
Set of 3 x SCL8 5A with adaptor
Set of 3 x SCL10 30A with adaptor
Set of 3 x SCL16 50A with adaptor
Set of 3 x SCL19 50A with adaptor
Set of 3 x SCL16 100A with adaptor
Set of 3 x SCL19 150A with adaptor
Set of 3 x SCL32 400A with adaptor
Set of 3 x SCL51 800A with adaptor

\*Specify

\*\*Please see page 179 for 333mV secondary CT's