

The Tiny – Technical Details

Single Phase kWh Electricity Meter



Order Codes

SC100 – Standard
 SC100/P – With Pulsed Output
 SC100/IE – With Import & Export Facilities

Voltage

Nominal Voltage Un 220-240V, 120V
 Voltage Range 80-115%Un
 Voltage Withstand 415V
 Continuous

Frequency

Nominal Frequency 50/60Hz
 Frequency Variation +/- 2%

IEC-Specific Data

Current

Base Current
 Direct Connection Ib 5, 10, 15, 20A
 Current Max Imax 40, 60, 80, 100A
 Starting Current EC 0.004Ib

Measurement Accuracy

Max Measuring Range 20mA up to 100A
 Measuring Accuracy
 Class 1 or 2 IEC 62053-21
 Class 2 or 3 IEC 62053-23

Measurement Behaviour

Starting Current IEC 0.4% of Ib
 Max Measuring range 20mA up to 100A

Power Consumption

Voltage <5W
 Current Circuit <4VA

Environmental Influences

Temperature Test IEC62053-21/IEC62053-23
 Temperature Range
 Operation -10 C to +45 C
 Power Measurement Range -25c to +55c
 Storage -25 C to +70 C
 This Complies with EN 62052-11:2003 section 6.1

Temperature Coefficient

Range From -10 C to +45 C
 Typical mean value $\pm 0.015\%$ per K
 IEC 62053-21
 $\cos\phi = 1$ (from 0.1 Ib to Imax) $\pm 0.05\%$ per K
 $\cos\phi = 0.5$ (from 0.2 Ib to Imax) $\pm 0.06\%$ per K
 IEC 62053-23
 $\sin = 1$ (from 0.1 Ib to Imax) $\pm 0.10\%$ per K
 $\sin = 0.5$ (from 0.2 Ib to Imax) $\pm 0.15\%$ per K
 Impermeability to IEC 60529 IP51

Shock Test

BS EN60068-2-27

Electromagnetic Compatibility

Electrostatic Discharges to IEC 61000-4-2
 Contact Discharges 8kV
 Air Discharges 15kW
 Electromagnetic RF Fields to IEC 61000-4-3
 80 MHz to 2 GHz at least 10V/m

Radio Interference suppression to IEC/CISPR 22 Class B

Fast Transient Burst Test to IEC 61000-4-4

With basic current Ib:

For current and voltage circuits 4kV
 For auxiliary circuits >40V 4kV
 With open current circuit for voltage and current circuits 4kV
 Fast Transient Surge Test to IEC 61000-4-5
 Impulse Voltage 4kV
 Impedence of source 2Ω
 Rise/Decay time of impulse voltage 1.2 μ s/50 μ s
 Rise/Decay time of impulse voltage 8 μ s/50 μ s

Approvals

Quality Manufactured to ISO 9001:1994
 OFGEM Approval Number 986
 Certified Life 20 years
 Reference Standards IEC 62052-11, IEC 62053-21, IEC 62053-23

Insulation Strength 4.4kV at 50Hz for 80 seconds

Impulse Voltage Strength to IEC62053-11
 Impulse Voltage 6kV
 Impedence of source 500 Ω
 Rise/Decay time of impulse voltage 1.2 μ s/50 μ s

Technical Details

meters uk Ltd

Utility Meter Manufacturers

Whitegate, White Lund Trading Estate Lancaster, Lancashire, LA3 3BT

Tel 01524 555929 Fax 01524 847009 www.meters.co.uk

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Single Phase kWh Electricity Meter

Protection Class II to IEC626050-131 2

Enclosures

Required when installation is external
Or has environmental influences

Display

Characteristics

Type 7 character,

7 segment LCD

Digit Size 8x3.5mm

Number of Digits 6 significant
numbers 2dp

With Viewing Window

Operating Behaviour**

Voltage Interruptions (Power Down)

Blocking of inputs and outputs
Immediate

Standby Operation for 0.15s

Data Storage after 0.15s

Switch Off after approx 0.15s

Voltage Restoration (Power Up)

Function Standby <5s

(depending on duration of failure)

Detection of energy direction and phase
voltage <5s



Power Supply Quality

The meter complies with EN63052-11

Section 7.1.1.

Voltage range and 7.1.2 Voltage dips and
short interruptions



Standard Enclosure

Case Material

Base, Top Cover and Terminal Cover

Flame retardant and UV stabilised
polycarbonate

Weight and Dimensions

Weight 304g

Dimensions

Width 125mm

Height 80mm

Depth 36mm

Terminal Details

Arrangement

BS5685

Size 8.3mm diameter



Connections

Standard Layout and Dimensions

Pulsed Output – (Where fitted)

(Order code SC100/P)

Output – Transistor

Pulse – Voltage Free

Pulse Width – 100 mSecs

Measurement 1 pulse = 1 watt hour

1000 pulses per kWh

No of pulses maximum per second at

100amps = 6.6

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