

# Mini Three Phase Meter

SS9005



## Product Brief

### Three Phase Measurement and Control

The SS9005 Mini Three Phase Meter is a compact power metering and load control device for use in three-phase and single-phase applications. Designed to sit on a standard switchboard DIN rail, the SS9005 measures load voltage and current signals on up to three phases and wirelessly delivers a detailed set of single- and three-phase metrics to a ZigBee gateway.

The SS9005 Mini Three Phase Meter is suitable for a range of applications including sub-metering, Demand Management, autonomous load shedding, and building automation.

The SS9005 Mini Three Phase Meter is able to meter and switch a wide range of single- and three-phase loads at up to 240/415 VAC. Load switching is performed by an internal isolated relay that can be used to trigger an external third-party contactor or relay.

Designed to function in all major electrical networks, the Mini Three Phase Meter boasts high measurement accuracy (Class 1) with a customizable reporting frequency of up to 1Hz. Import/export energy accumulations and true signed power measurements make the SS9005 an ideal choice for monitoring renewable generation sources and energy storage devices.

High-resolution waveform sampling features provide a unique insight into the behavior and condition of monitored loads, yielding detailed information for load profiling and classification purposes.

Once installed, the Mini Three Phase Meter can receive important software updates over the network, reducing the cost of network maintenance and guaranteeing an up-to-date feature set for all devices in the field.

The SS9005 Mini Three Phase Meter communicates to other Saturn South and third-party devices using the ZigBee Home Automation communications standard in the 2.4GHz ISM band. All wireless communications to and from the device are secured with AES-128 encryption using standards based technologies to ensure privacy and data integrity.

### Applications

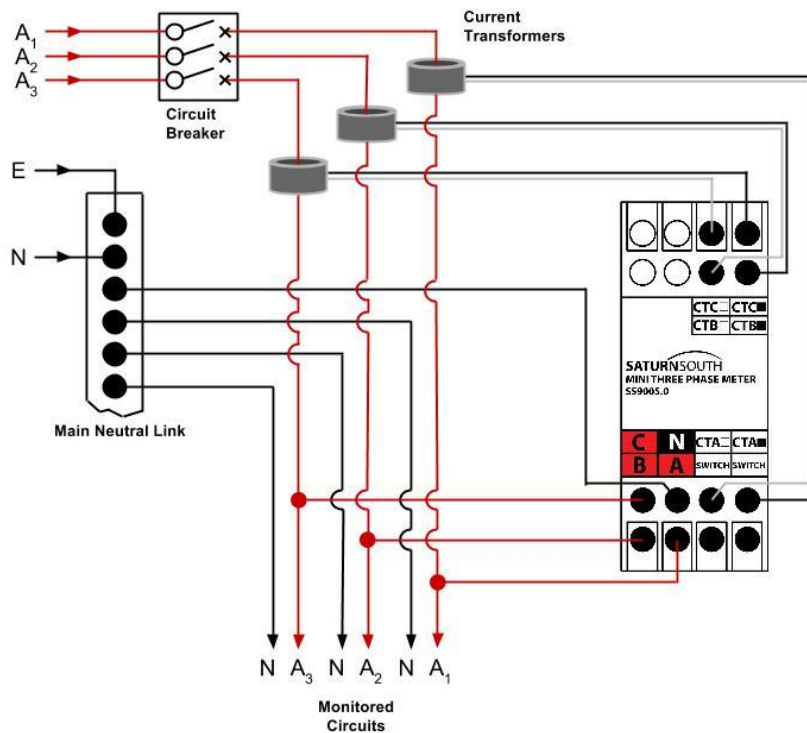
- Energy Efficiency
- Sub-metering
- Demand Management
- Network Support
- Frequency and Voltage Control
- EV Charge Management
- Building Automation
- Load Classification

### Features

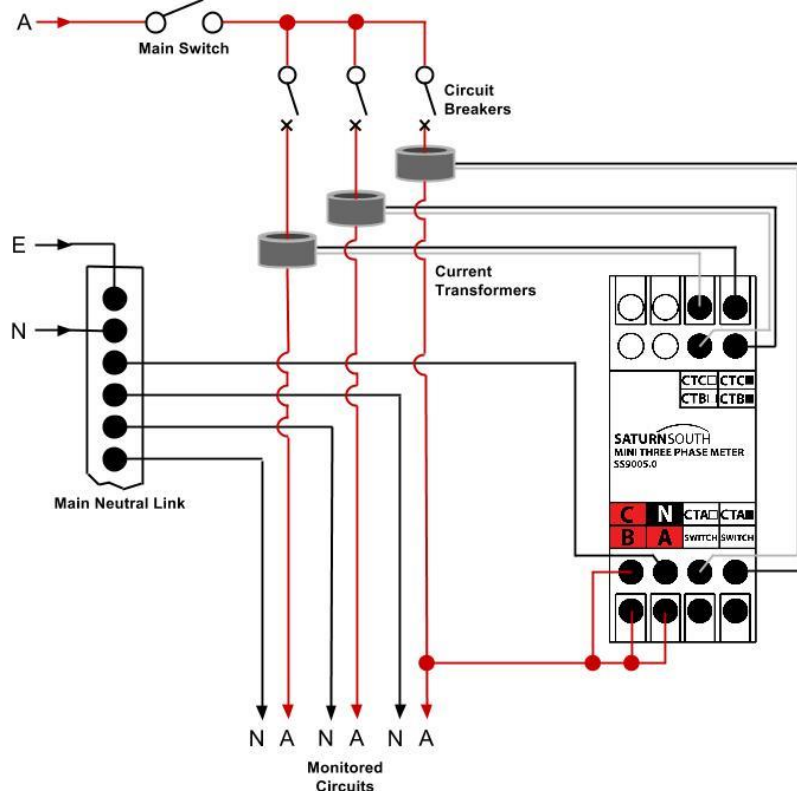
- Detailed metrics (RMS Voltage, RMS Current, Power Factor, Frequency, Accumulated Energy Import and Export)
- Able to report data as three single-phase loads, or as a single three-phase load
- Three split core clip-on current transformers included
- Compact 2U-wide DIN mount package
- ZigBee Home Automation
- Front panel button for manual activation and opt-out of dispatch events
- Able to control large loads via external contactor/relay
- Over-the-air software upgrading capability
- 4096Hz waveform sampling and reporting for voltage and current
- Co-branding options available

## Wiring Diagram for Typical Switchboard Installation

### Three Phase Load



### Three Loads Sharing Same Phase



### Technical Specifications

- Operational Voltage Range: 70 – 240VAC, 50/60Hz (Voltage reference for measurement doubles as power supply)
- 40A, 120A, 200A CTs available
- Internal Power Consumption: Less than 3W
- ZigBee (IEEE 802.15.4) Radio in the 2.4000-2.4835 GHz unlicensed ISM band
- 102dBm receiver sensitivity
- +20dBm transmit power
- Tested range of 250m+ in free space
- 5A 240VAC Internal Isolated relay for switching external contactor
- AES-128 Encryption
- Mass: 130g
- <1% measurement error
- Operating temperature: -20°C to 65°C
- Zero-cross switching for prolonged life of optional external switching components
- Waveform sampling and reporting capability at up to 16bit resolution, 4096s/s
- Internal switching components rated for more than 20000 switching operations.<sup>[1]</sup>

[1] Assuming a 5A load at 240VAC, PF = 1.0

### Standards

- AS/NZS 3100
- AS/NZS 61000.6.3
- AS/NZS 4268
- Certificate of Suitability
- C-Tick

### Availability

- Available Now

## Reportable Metrics

The following metrics are reported for Phase A, Phase B, and Phase C:

Attribute Name	Unit
Accumulated Energy Active Import	Wh
Accumulated Energy Reactive Import	varh
Accumulated Energy Active Export	Wh
Accumulated Energy Reactive Export	varh
Voltage RMS	V
Current RMS	A
Power Active	W
Power Reactive	var
Frequency	Hz
Power Factor	-

The following metrics are reported for the three-phase aggregate:

Attribute Name	Unit
Accumulated Energy Active Import	Wh
Accumulated Energy Reactive Import	varh
Accumulated Energy Active Export	Wh
Accumulated Energy Reactive Export	varh
Power Active	W
Power Reactive	var
Phase Angle A->B	degrees
Phase Angle A->C	degrees

## Ordering Codes

	Non-Switching	Switching
<b>60A</b>	SS9005.0.3_60A	SS9005.0.3_R_60A
<b>120A</b>	SS9005.0.3_120A	SS9005.0.3_R_120A
<b>200A</b>	SS9005.0.3_200A	SS9005.0.3_R_200A
<b>400A</b>	<i>Available Q2 2015</i>	<i>Available Q2 2015</i>
<b>800A</b>	<i>Available Q2 2015</i>	<i>Available Q2 2015</i>

## About Saturn South

Saturn South is an electronics manufacturer specializing in circuit and appliance-level switching and metering solutions.

Based in Tasmania, Australia, Saturn South works closely with its Industry and Government Partners to develop energy management products for the national and global market.

Visit us at [www.saturnsouth.com](http://www.saturnsouth.com).