



**sifam tinsley**  
PRECISION INSTRUMENTATION

DIN RAIL MULTIFUNCTION POWER METER  
(MID CERTIFIED)  
AP25-1DO  
[www.sifamtinsley.co.uk](http://www.sifamtinsley.co.uk)



**NEW  
PRODUCT**



Multifunction Meters

Transducers & Isolators

Temperature Controllers

Converters & Recorders

Digital Panel Meters

Current Transformers

Analogue Panel Meters

Shunts

Digital Multimeters

Clamp Meters

Insulation Testers

**AP25-1DO**

**DIN RAIL MULTIFUNCTION POWER  
METER (MID CERTIFIED)**

User Manual - Issue 1.0

**SUBJECT TO CHANGE WITHOUT NOTICE**

This manual superseded all previous versions – please keep for future reference

**NEW  
PRODUCT**

### Features

- MID B+D Certified
- Class B (kWh) EC Directive 2004/22/EC
- Certificate Number 0120/SGS0198
- Multifunction 100A Direct Connected
- Built In Pulsed & RS485 Modbus Outputs



**Sifam Tinsleys AP25-1DO** is a new generation modern design power monitor that will measure and display electrical power quality parameters. It has been engineered to cover most applications (Single Phase networks / Built in Pulse and RS485 Modbus / Import and Export kWh), replacing the need for several different models of this power meter.

As the demand for MID certified meters has increased, we have obtained annex B and D of the EC Directive 2004/22/EC. This power meter has been tested and certified for single phase networks and import and export active energy (kWh).

The AP25-1DO is produced to the highest quality and utilizes the latest microprocessor and technology. It has a blue backlit display and 16 different measuring parameters. With built in pulsed outputs and RS485 Modbus RTU it is fully compatible for integration with BMS and remote monitoring systems.

### 1. Parameters

- Phase to Neutral voltage
- Frequency
- Current Max Demand
- kW,kVA & • kVAr
- Power Max Demand
- Power Factor
- Import kWh
- Export kWh
- Import kVarh
- Export kVarh
- Total kWh (Active Energy)
- Total kVarh (Reactive Energy)
- Hours Run

## 2. Specifications

### Measured Parameters

The unit can monitor and display the following parameters of a single phase two wire (1p2w) system.

#### Voltage and Current

- Phase to neutral voltages 176 to 276V a.c.
- Imin-Iref (Max) 0.5-10(100A)

This meter is certified and tested at class 1 (Accurate to within  $\pm 1\%$ ). If the meter has a load smaller than the Imin (minimum current) we cannot guarantee class 1 accuracy.

#### Power factor and Frequency and Max. Demand

- Frequency in Hz
- Instantaneous power:
- Power 0 to 3600 MW
- Reactive power 0 to 3600 MVA
- Volt-amps 0 to 3600 MVA
- Maximum demanded power since last Demand reset Power factor

### Energy Measurements

Imported/Exported active energy	0 to 99999.99 kWh
Imported/Exported reactive energy	0 to 99999.99 kVAh
Total active energy	0 to 99999.99 kWh
Total reactive energy	0 to 99999.99 kVAh

### Measured Inputs

Voltage inputs through 3-way fixed connector with 19mm<sup>2</sup> maximum terminal wire.

Nominal Voltage Input	(Ph+N) 176 to 276V
Max Continuous Voltage	120% of nominal
Nominal Input Current	0.5-10(100)A
Max Continuous Current	120% of nominal
Nominal Input Current Burden	0.5VA
Frequency	50Hz( $\pm 10\%$ )

### Accuracy

Voltage	0.5% of range maximum
Current	0.5% of nominal
Frequency	0.2% of mid-frequency
Power factor	1% of unity (0.01)
Active power (W)	$\pm 1\%$ of range maximum
Reactive power (VA)	$\pm 1\%$ of range maximum
Apparent power (VA)	$\pm 1\%$ of range maximum
Active energy (Wh)	Class 1 IEC 62053-21
Reactive energy (VARh)	$\pm 1\%$ of range maximum

### Interfaces for External Monitoring

#### Two interfaces are provided:

- RS485 communication channel that can be programmed for Modbus RTU protocol
- Relay output indicating real-time measured energy.(configurable)

The Modbus configuration (baud rate etc.) and the pulse relay output assignments (kW/kVAh, import/export etc.) are configured through the set-up screens

### Pulse Output

The meter provides two pulsed outputs, both pulsed outputs are passive type. The first pulsed output is configurable. The pulsed output can be set to read total / import / export / kWh / kVarh. The pulse constant can be set to generate 1 pulse per: 0.001(default) / 0.01/0.1/1kWh/kVarh. The second pulsed output is non-configurable. It is fixed to read total kWh.

**Rate** can be set to generate 1 pulse per:

0.001 = 1 Wh/VArh (default)

0.01 = 10 Wh/VArh

0.1 = 100 Wh/VArh

1 = 1 kWh/kVArh

**Pulse width** 200/100/60 ms.

### RS485 Output for Modbus RTU

For Modbus RTU, the following RS485 communication parameters can be configured from the set-up menu:

**Baud rate** 1200, 2400, 4800, 9600.

**Parity** none (default) / odd / even

**Stop bits** 1 or 2

**RS485 network address** 3-digit number, 1 to 247

### Reference Conditions of Influence Quantities

Influence Quantities are variables that affect measurement errors to a minor degree. Accuracy is verified under nominal value (within the specified tolerance) of these conditions.

Ambient temperature	23°C ±1°C
Input waveform	50Hz ±2%
Input waveform	Sinusoidal (distortion factor < 0.005)
Auxiliary supply voltage	Nominal ±1%
Auxiliary supply frequency	Nominal ±1%
Auxiliary supply waveform (if AC)	Sinusoidal (distortion factor < 0.05)
Magnetic field of external origin	Terrestrial flux

### Environment

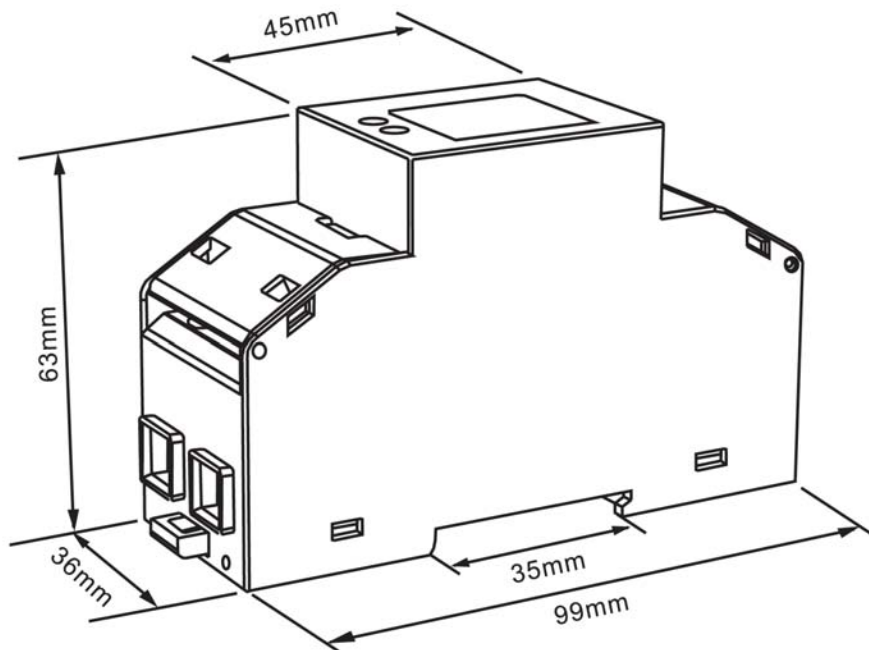
Operating temperature	-25°C to +55°C*
Storage temperature	-40°C to +70°C*
Relative humidity	0 to 95%, non-condensing
Altitude	Up to 3000m
Warm up time	1 minute
Vibration	10Hz to 50Hz, IEC 60068-2-6, 2g
Shock	30g in 3 planes

\*Maximum operating and storage temperatures are in the context of typical daily and seasonal variation.

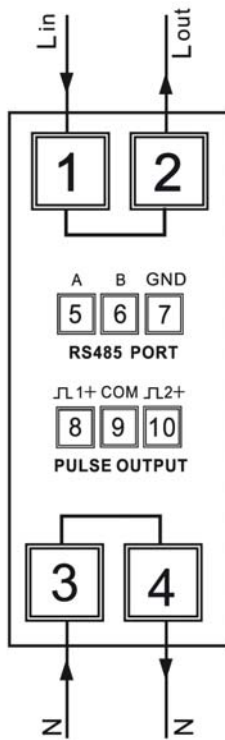
### Mechanics

DIN rail dimensions	mm x mm (WxH) per DIN 43880
Mounting	DIN rail (DIN 43880)
Sealing	IP51 indoor
Material	Self-extinguishing UL 94 V-0Energy Measurements

### 3. Dimensions



### 4. Installation



Specifications are subject to change without notice.

## Contact



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