

From the set-up menu,  and  buttons to select the address ID.

SEt

Addr

101

Press **E₁** button to enter the selection routine. The current setting will be flashing.

SEt

Addr

101

Use **MD** and **P** buttons to choose Modbus address (001 to 247).

On completion of the entry procedure, press **E₁** button to confirm the setting and press **V/A** button to return to the main set-up menu.

4.6.2 Baud Rate

SEt

BAUD

9.6

From the set-up menu, use **MD** and **P** buttons to select the Baud Rate option.

SEt

BAUD

9.6

Press **E₁** to enter the selection routine. The current setting will flash.

SEt

BAUD

38.4

Use **MD** and **P** buttons to choose Baud rate 2.4k, 4.8k, 9.6k, 19.2k, 38.4k

On completion of the entry procedure, press **E₁** to confirm the setting and press **V/A** to return to the main set up menu.

4.6.3 Parity

SEt

PARi

Even

From the set-up menu, use **MD** and **P** buttons to select the parity option.

SEt

PARi

Even

Press **E₁** to enter the selection routine. The current setting will flash.

SEt

PARi

NONE

Use **MD** and **P** buttons to choose parity (EVEN / ODD / NONE (default)).

On completion of the entry procedure, press **E₁** to confirm the setting and press **V/A** to return to the main set up menu.

4.6.4 Stop bits

SEt

stop

2

From the set-up menu, use **MD** and **P** buttons to select the stop bit option.

SEt

stop

2

Press **E₁** to enter the selection routine. The current setting will flash.

SEt

stop

1

Use **MD** and **P** buttons to choose stop bit (2 or 1)

On completion of the entry procedure, press **E₁** to confirm the setting and press **V/A** to return to the main set up menu.

4.7 CLR

The meter provides a function to reset the maximum demand value of current and power.

CLr

From the set-up menu, use **MD** and **P** buttons to select the reset option.

CLr

Press **E₁** to enter the selection routine. The dit will flash.

Press **E₁** to confirm the setting and press **V/A** to return to the main set up menu.

4.8 Backlight Set-up

Our high-definition backlit display can be set to a duration that suits the end-customer best.

SEt

LP

60

From the set-up menu, use **MD** and **P** buttons to select the reset option.

SEt

LP

20

Press **E₁** to enter the selection routine. The dit will flash. The options are 0/5/10/30/60/120 minutes.

Press **E₁** to confirm the setting and press **V/A** to return to the main set up menu.

5 Specifications

5.1 Measured Parameters

The unit can monitor and display the following parameters of a single phase two wire (1p2w), three phase three wire (3p3w) or three phase four wire (3p4w) system.

5.1.1 Voltage and Current

- Phase to neutral voltages 100 to 289V a.c. (not for 3p3w supplies).
- Voltages between phases 173 to 500V a.c. (3p supplies only).
- Percentage total voltage harmonic distortion (THD%) for each phase to N (not for 3p3w supplies).
- Percentage voltage THD% between phases (three phase supplies only).
- Current THD% for each phase

5.1.2 Power factor and Frequency and Max. Demand

- Frequency in Hz
- Instantaneous power:
- Power 0 to 3600 MW
- Reactive power 0 to 3600 MVAR
- Volt-amps 0 to 3600 MVA
- Maximum demanded power since last Demand reset
- Power factor
- Maximum neutral demand current, since the last Demand reset (for three phase supplies only)

5.1.3 Energy Measurements

- Imported/Exported active energy 0 to 9999999.9 kWh
- Imported/Exported reactive energy 0 to 9999999.9 kVARh
- Total active energy 0 to 9999999.9 kWh
- Total reactive energy 0 to 9999999.9 kVARh

5.2 Measured Inputs

Voltage inputs through 4-way fixed connector with 35mm² stranded wire capacity. Single phase two wire(1p2w), three phase three wire(3p3w) or three phase four wire(3p4w) unbalanced. Line frequency measured from L1 voltage or L3 voltage.

5.3 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) ±1% of range maximum
- Reactive power (VAr) ±1% of range maximum
- Apparent power (VA) ±1% of range maximum
- Active energy (Wh) Class 1 IEC 62053-21
- Reactive energy (VARh) ±1% of range maximum
- Total harmonic distortion 1% up to 31st harmonic
- Response time to step input 1s, typical, to >99% of final reading, at 50 Hz.

5.5 Interfaces for External Monitoring

- Three interfaces are provided:
- RS485 communication channel that can be programmed for Modbus RTU protocol
 - Relay output indicating real-time measured energy. (configurable)
 - Pulse output 400imp/kWh (not configurable)

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

5.5.1 Pulse Output

Opto-coupler with potential free SPST-NO Contact (Contact range 5-27VDC / Max current input: Imin 2mA and Imax 27mA DC). The pulse output can be set to generate pulses to represent kWh or kVARh.

Rate can be set to generate 1 pulse per:
0.01 = 10 Wh/VARh
0.1 = 100 Wh/VARh
1 = 1 kWh/kVARh
10 = 10 kWh/kVARh
100 = 100 kWh/kVARh

Pulse width 200/100/60 ms.

5.5.2 RS485 Output for Modbus RTU

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

Baud rate 2400, 4800, 9600, 19200, 38400

Parity none (default) / odd / even

Stop bits 1 or 2

RS485 network address nnn – 3-digit number, 1 to 247

Modbus™ Word order Hi/Lo byte order is set automatically to normal or reverse. It cannot be configured from the set-up menu.

5.6 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 50 or 60Hz ±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

5.7 Environment

- Operating temperature -40°C to +70°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.

5.8 Mechanics

- DIN rail dimensions 76 x 100 mm (WxH) per DIN 43880
- Mounting DIN rail (DIN 43880)
- Sealing IP51 indoor
- Material Self-extinguishing UL 94 V-0

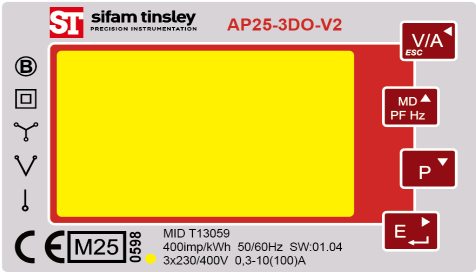
5.9 Declaration of Conformity

We, Sifam Tinsley Instrumentation LTD, declare under our sole responsibility as the manufacturer that the poly phase multifunction electrical energy meter “AP25-3DO-V2” correspond to the production model described in the EC-type examination certificate and to the requirements of the Directive 2014/32/EU EC type examination certificate number T13059. Identification number of the NB 0122.

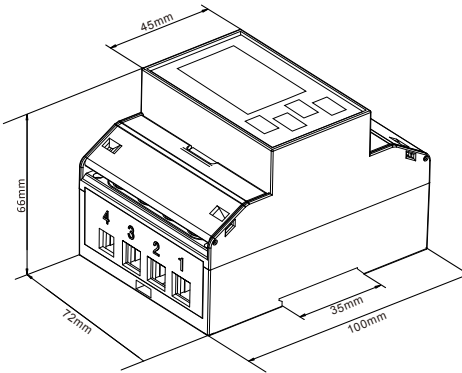
6 AP25-3DO-V2



6.1 Nameplate



7 Dimensions

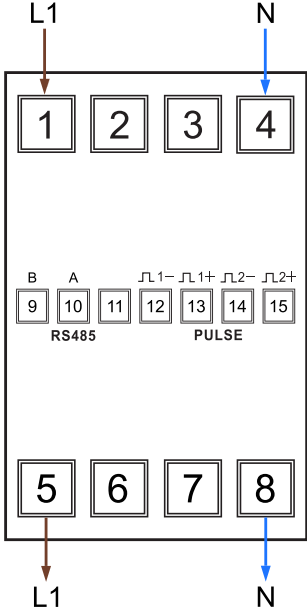


8 Installation / Maintenance

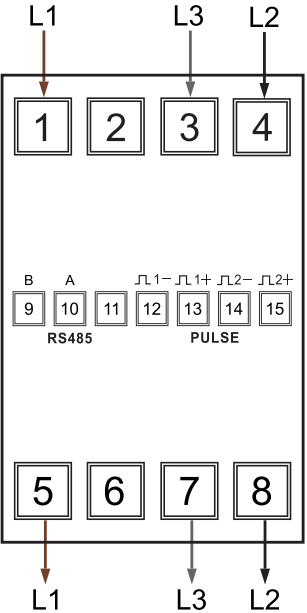
Read these instructions carefully and look at the equipment to become familiar with the device before trying to install “HAZARD OF ELECTRIC SHOCK, EXPLOSION, OR ARC FLASH”

Apply appropriate personal protective equipment and follow safe electrical work practices applicable to local standards. Turn off all power supplying this device and the equipment in which it is installed before working on it. Always use a properly rated voltage sensing device to confirm that all power is off. Do not exceed the device's ratings for maximum limits. Do not use this device for critical control or protection applications where human or equipment safety relies on the operation of the control circuit. Do not allow the total additive current flowing through the device to exceed maximum continuous current rating. Failure to follow these instructions will result in death or serious injury.

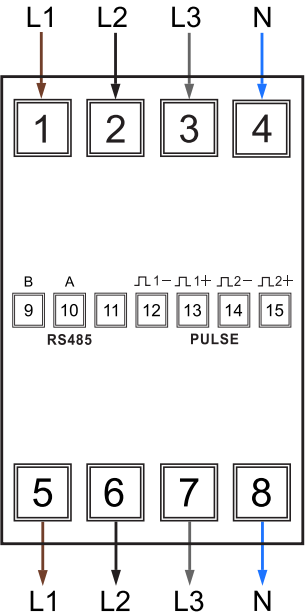
8.1 Single phase two wires



8.2 Three phase three wires



8.3 Three phase four wires



8.4

Turn off all power supplying this device and the equipment in which it is installed before working on it. 2. Always use a properly rated voltage sensing device to confirm that all power is off.

8.5 Input Wiring and Fusing

Choose fuses of a type and with a breaking capacity appropriate to the supply and in accordance with local regulations.

A switch or circuit breaker allowing isolation of supplies to the unit must be provided where practical. In primary metering applications, ensure the supply is isolated before any maintenance on the product. Tampering with the product seals may contravene local laws

8.6 Wire Size / Torque

Connections (depending on system type, see section 8.1 to 8.3)								
							Cable size (mm² / AWG)	Torque
B	A	┌─┐ ┌─┐ ┌─┐ ┌─┐ ┌─┐ ┌─┐					22 Gauge Belden 8761 or equivalent	0.4 Nm
9	10	11	12	13	14	15		
RS485			PULSE					
L1	L2	L3	N				25mm²	2.5 Nm

8.7 Maintenance

The front of the case should be wiped with a dry cloth only, using minimal pressure. If necessary wipe the rear case with a dry cloth.

No user serviceable parts