PAM420
Multi Function Meter

- **Phase Angle Meter**
- **2 channels: voltage, current and frequency meter**
- **Timer**
- **Compact and lightweight**
- **Local calibration**
- **Rechargeable batteries**
- **Easy to use**

Description

The PAM420 is specifically designed for measurements on electrical power systems. It is capable of displaying phase angle, voltage, current, frequency and timing.

The phase angle is calculated from the relationship between two power signals, which can be two currents, two voltages or any combination.

Currents up to 25 A and voltages up to 500 V can be applied directly to the instrument. The current input range can be extended by using external current transformers.

Application

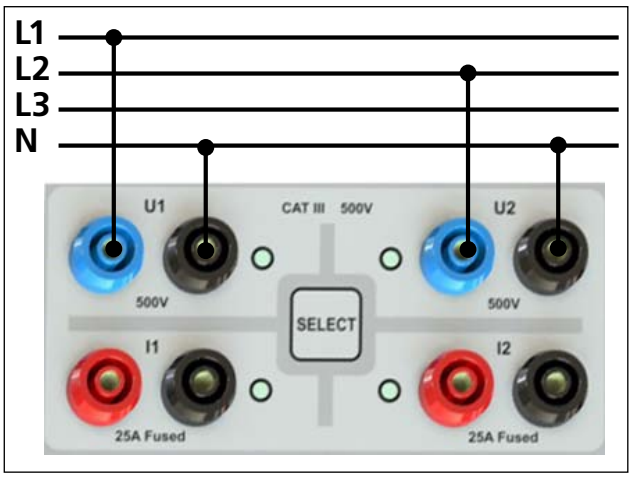
The PAM420 is suited for checking polyphase metering installations, testing protective relays, make comparative test in electrical substations, and verifying the phase angle deviation on power transformers.

Features and benefits

- Direct digital reading to tenths of a degree (0.1°) – does not require calculation or interpretation.
- Designed for use in substation or industrial environments – transport case provided for rugged protection.
- Phase angle calculated from of any combination of two power signals to be measured giving broad application capability.
- Timer with high accuracy for contact or voltage trig.
- Local calibration.

φ	180.0	°
U1	228.1	V
F1	50.01	Hz
U2	230.2	V
F2	49.99	Hz

Example of measured values shown on display



Application example of the PAM420

Specifications PAM420

Specifications are valid at nominal input voltage and an ambient temperature of +25°C, (77°F). Specifications are subject to change without notice.

Environment

Application field	The instrument is intended for use in high-voltage substations and industrial environments.
Temperature	
Operating	-10°C to +50°C (14°F to +122°F)
Storage & transport	-40°C to +70°C (-40°F to +158°F)
Humidity	5% – 95% RH, non-condensing
Altitude	< 2000 m above sea level

CE-marking

EMC	2004/108/EC
LVD	2006/95/EC

General

Measurement category	CAT III 500 V CAT IV 300 V
Enclosure class	IP21
Power supply	Rechargeable batteries
Mains adapter	100–240 V AC, 50/60 Hz
Adapter output voltage	9 V DC
Output connector	Ø 5.08 mm with Ø 2.54 centre pin (+)
Power consumption	10 W (max)
Dimensions	
Instrument	260 x 140 x 55 mm (except handle) (10.2" x 5.5" x 2.2")
Transport case	390 x 300 x 140 mm (15.4" x 11.8" x 5.5")
Weight	1.2 kg (2.6 lbs) 3.5 kg (7.7 lbs) with accessories and transport case
Test lead set, with 4 mm stackable safety plugs	Black 2 x 2 m (6.6 ft), 2.5 mm² Red 2 x 2 m (6.6 ft), 2.5 mm²
Display	Alpha numerical LC display with backlighter

Measurement section

Current – Inputs I1 and I2

Measurement category	CAT III 500 V CAT IV 300 V
Input range	0 – 25 A AC
Inaccuracy	0.5% of reading
Resolution	0.1 A
Protection	Built-in 25 A fuse

Voltage – Inputs U1 and U2

Measurement category	CAT III 500 V CAT IV 300 V
Input range	0 – 500 V AC true RMS
Inaccuracy	0.15 % of reading + 0.03% of range (± 0.15 V)
Resolution	0.1 V

Phase angle

Range	0 – 359.9°(2–500 V and 0.15–25 A)
Type of phase angle measurement	Current-current, voltage-voltage and current-voltage
Waveform	Sinusoidal
Resolution	0.1°
Inaccuracy	±0.5° at >10% of voltage/current range ±1° at 2–10% of voltage/current range ±2° at 1–2% of voltage/current range

Frequency

Note: Frequency component in voltage component only

Range	15 – 75 Hz
Inaccuracy	0.1%
Resolution	0.01 Hz

Timer

Measurement category	CAT II 250 V
Range	0-999.999 s
Resolution	1 ms
Inaccuracy	±0.02% + 2 digits of displayed value
Max input voltage	250 V AC/DC
Input debouncing filter	1 ms

Voltage mode

Parameter	Min	Max	Unit
Trig AC	9	250	V AC
Trig DC	11	250	V DC

Contact mode

Parameter	Min	Max	Unit
Closed contact detection	0	1	kΩ
Open contact detection	4	-	kΩ

Ordering information

Item	Art. No.
PAM420 Incl. Test lead set, mains adapter (battery charger) and transport case	BP-39093

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