Plug-in Signal Conditioners M-UNIT

PT TRANSMITTER

(true RMS sensing; high speed response; peak hold)

Functions & Features

- Converts an alternating voltage from a voltage
- transformer into a standard process signal
- Dual output: The second output can be switched to 'peak
- hold' mode with the front DIP switch
- Resetting the peak hold output with the front reset control button
- True RMS sensing with fast 50-millisecond
- response time (0 90 %) is possible
- Isolation up to 2000 V AC

Typical Applications

• Monitoring impulsive power line voltage change



MODEL: PTPH-[1][2][3]-[4][5]

ORDERING INFORMATION

- Code number: PTPH-[1][2][3]-[4][5] Specify a code from below for each of [1] through [5]. (e.g. PTPH-5AA-M2/CE/Q)
- Specify the specification for option code /Q (e.g. /C01/S01)

[1] INPUT

Voltage

1: 0 - 110 V AC 2: 0 - 220 V AC 5: 0 - 150 V AC 6: 0 - 300 V AC 8: 0 - 259 V AC

[2] OUTPUT 1

Current

A: 4 – 20 mA DC (Load resistance 500 Ω max.) G: 0 – 1 mA DC (Load resistance 10 k Ω max.) Voltage



- 4: 0 10 V DC (Load resistance 10 kΩ min.)
- **5**: 0 5 V DC (Load resistance 5000 Ω min.)
- **6**: 1 5 V DC (Load resistance 5000 Ω min.)

[3] OUTPUT 2 (momentary value or peak hold) Current

A: 4 – 20 mA DC (Load resistance 350 Ω max.) **G**: 0 – 1 mA DC (Load resistance 7000 Ω max.) **Voltage** Same range availability as Output 1

[4] POWER INPUT

AC Power

M2: 100 – 240 V AC (Operational voltage range 85 – 264 V, 47 – 66 Hz)

DC Power

(CE not available)

R: 24 V DC (Operational voltage range 24 V ±10 %, ripple 10 %p-p max.) (CE not available) P: 110 V DC (Operational voltage range 85 – 150 V, ripple 10 %p-p max.)

[5] OPTIONS (multiple selections)

Standards & Approvals blank: Without CE /CE: CE marking Other Options blank: none /Q: Option other than the above (specify the specification)

SPECIFICATIONS OF OPTION: Q (multiple selections)

COATING (For the detail, refer to M-System's web site.) /C01: Silicone coating /C02: Polyurethane coating /C03: Rubber coating TERMINAL SCREW MATERIAL /S01: Stainless steel

GENERAL SPECIFICATIONS

Construction: Plug-in Connection: M3.5 screw terminals Screw terminal: Chromated steel (standard) or stainless steel Housing material: Flame-resistant resin (black) Isolation: Input to output 1 to output 2 to contact input to power Input waveform: Up to 20 % of 3rd harmonic content Overrange output: 0 to 120 % at 1 – 5 V Zero adjustment: -5 to +5 % (front) Span adjustment: 95 to 105 % (front)

Adjustable individually for each output 1 and output 2. Indicator LED: Red LED blinks in 800 millisecond intervals when the power is supplied; blinks in 200 millisecond intervals when the peak hold output is reset.

Function setting: DIP switch

• Output 2 Function (Momentary value output/Peak hold value output)

- Line Frequency
- Response Time

Reset control: Used to reset the peak hold output. Momentary value is output immediately after the resetting.

INPUT SPECIFICATIONS

VOLTAGE INPUT

Frequency: 50 or 60 Hz Input burden: \leq 0.5 VA Overload capacity: 200 % of rating for 1 minute, 120 % continuous

Operational range: 0 - 120 % of rating

■ Contact Input: Used to reset the peak hold output. Momentary value is output immediately after the resetting. Detecting voltage/current: 15 V DC / approx. 2.5 mA Detection levels: $\leq 5 \text{ k}\Omega$, $\leq 6 \text{ V}$ for ON; $\geq 100 \text{ k}\Omega$, $\geq 14 \text{ V}$ for OFF

INSTALLATION

Power Consumption
•AC:
Approx. 5 VA at 100 V
Approx. 6 VA at 200 V
Approx. 7 VA at 240 V
•DC: Approx. 3 W
Operating temperature: -5 to +60°C (23 to 140°F)
Operating humidity: 30 to 90 %RH (non-condensing)
Mounting: Surface or DIN rail
Weight: 210 g (0.46 lb)

PERFORMANCE in percentage of span

Accuracy: $\pm 0.5 \%$ Temp. coefficient: $\pm 0.03 \%$ °C ($\pm 0.02 \%$ /°F) Response time: $\le 50/100/200/500 \text{ msec.} (0 - 90 \%)$ Peak hold reset time: 20 msec. Ripple: 0.5 %p-p max. Line voltage effect: $\pm 0.1 \%$ over voltage range Insulation resistance: $\ge 100 \text{ M}\Omega$ with 500 V DC Dielectric strength: 2000 V AC @ 1 minute (input to output 1 or output 2 or contact input to power to ground) 500 V AC @ 1 minute (output 1 to output 2 to contact input) Impulse withstand voltage: $1.2/50 \mu \text{sec.}, \pm 5 \text{ kV}$ (input to



output 1 or output 2 or contact input or ground)

STANDARDS & APPROVALS

EU conformity: EMC Directive EMI EN 61000-6-4 EMS EN 61000-6-2 Low Voltage Directive EN 61010-1 Measurement Category II (input) Installation Category II (power) Pollution Degree 2 Contact input or output to power: Reinforced insulation (300 V) Input to output: Reinforced insulation (300 V) Input to contact input or power: Basic insulation (300 V) RoHS Directive

EXTERNAL VIEW



EXTERNAL DIMENSIONS & TERMINAL ASSIGNMENTS unit: mm [inch]



• When mounting, no extra space is needed between units.

SCHEMATIC CIRCUITRY & CONNECTION DIAGRAM



Specifications are subject to change without notice.



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