Plug-in Signal Conditioners M-UNIT

CT TRANSMITTER

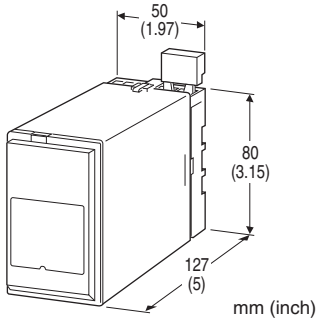
(inverter use)

Functions & Features

• Converting an alternating current from a current transformer into a standard process signal
• Wide range of frequency can be accepted thanks to the incoporated wide-range CT
• Isolation up to 2000 V AC
• High-density mounting

Typical Applications

• Monitoring load current of motors employing inverters
• Detecting failures of a pump or other device by monitoring abnormal load current of motors
• Monitoring current of electric welding machine



CE

MODEL: CTH–5[1]-[2][3]

ORDERING INFORMATION

• Code number: CTH-5[1]-[2][3]
Specify a code from below for each of [1] through [3].
(e.g. CTH-5A-B/Q)
• Special output range (For codes Z & 0)
• Specify the specification for option code /Q
(e.g. /C01/S01)

INPUT

Current
5: 0 – 5 A AC

[1] OUTPUT

Current
A: 4 – 20 mA DC (Load resistance 750 Ω max.)
B: 2 – 10 mA DC (Load resistance 1500 Ω max.)
C: 1 – 5 mA DC (Load resistance 3000 Ω max.)
D: 0 – 20 mA DC (Load resistance 750 Ω max.)
E: 0 – 16 mA DC (Load resistance 900 Ω max.)
F: 0 – 10 mA DC (Load resistance 1500 Ω max.)
G: 0 – 1 mA DC (Load resistance 15 kΩ max.)
Z: Specify current (See OUTPUT SPECIFICATIONS)
Voltage
1: 0 – 10 mV DC (Load resistance 10 kΩ min.)
2: 0 – 100 mV DC (Load resistance 100 kΩ min.)
3: 0 – 1 V DC (Load resistance 100 Ω min.)
4: 0 – 10 V DC (Load resistance 1000 Ω min.)
5: 0 – 5 V DC (Load resistance 500 Ω min.)
6: 1 – 5 V DC (Load resistance 500 Ω min.)
4W: -10 – +10 V DC (Load resistance 2000 Ω min.)
5W: -5 – +5 V DC (Load resistance 1000 Ω min.)
0: Specify voltage (See OUTPUT SPECIFICATIONS)

[2] POWER INPUT

AC Power
B: 100 V AC
C: 110 V AC
D: 115 V AC
F: 120 V AC
G: 200 V AC
H: 220 V AC
J: 240 V AC
DC Power
S: 12 V DC
R: 24 V DC
V: 48 V DC
P: 110 V DC (CE marking unavailable)

[3] OPTIONS

blank: none
/Q: With options (specify the specification)

SPECIFICATIONS OF OPTION: Q (multiple selections)

COATING (For the detail, refer to our 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 to power
Input waveform: Up to 15 % of 3rd harmonic content
Overrange output: 0 to 120 % at 1 – 5 V

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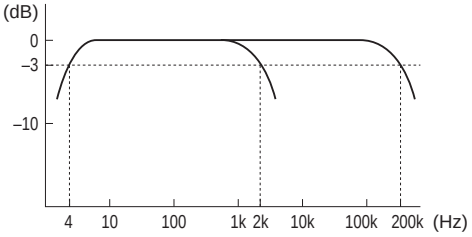
Zero adjustment: -5 to +5 % (front)
Span adjustment: 95 to 105 % (front)
Input filter: Selectable with the front switch

INPUT SPECIFICATIONS

Frequency: 4 Hz – 200 kHz (-3 dB) or 4 Hz – 2 kHz (-3 dB)
Input burden: 0.5 VA max.
Overload capacity: 1000 % of rating for 3 sec., 200 % for 10 sec., 120 % continuous
Operational range: 0 – 120 % of rating



Frequency Characteristics

OUTPUT SPECIFICATIONS

■ **DC Current**: 0 – 20 mA DC
Minimum span: 1 mA
Offset: Max. 1.5 times span
Load resistance: Output drive 15 V max.
■ **DC Voltage**: -10 – +12 V DC
Minimum span: 5 mV
Offset: Max. 1.5 times span
Load resistance: Output drive 10 mA max.; 5 mA for negative voltage output; at ≥ 0.5 V

INSTALLATION

Power input
• **AC**: Operational voltage range: rating ±10 %, 50/60 ±2 Hz, approx. 2 VA
• **DC**: Operational voltage range: rating ±10 %, or 85 – 150 V for 110 V rating (ripple 10 % p-p max.)
approx. 2 W (80 mA at 24 V)
Operating temperature: -5 to +60°C (23 to 140°F)
Operating humidity: 30 to 90 %RH (non-condensing)
Mounting: Surface or DIN rail
Weight: 300 g (0.66 lb)

PERFORMANCE in percentage of span

Accuracy: ±0.3 % at 20 Hz – 1 kHz
±7 % at 7 Hz – 100 kHz
Temp. coefficient:
±0.015 %/°C (±0.008 %/°F) at 20 Hz – 1 kHz
±0.35 %/°C (±0.19 %/°F) at 7 Hz – 100 kHz
Response time: Approx. 1.5 sec. (0 – 90 %)
Ripple: 0.5 %p-p max.(The output ripple may increase when there is great difference between the frequencies of input signal and power supply)
Line voltage effect: ±0.1 % over voltage range (input 5 - 100 %)
Insulation resistance: ≥ 100 MΩ with 500 V DC
Dielectric strength: 2000 V AC @1 minute (input to output to power to ground)

STANDARDS & APPROVALS

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

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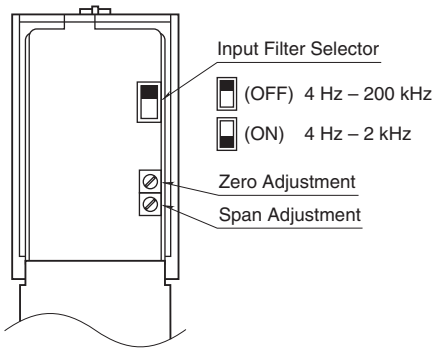
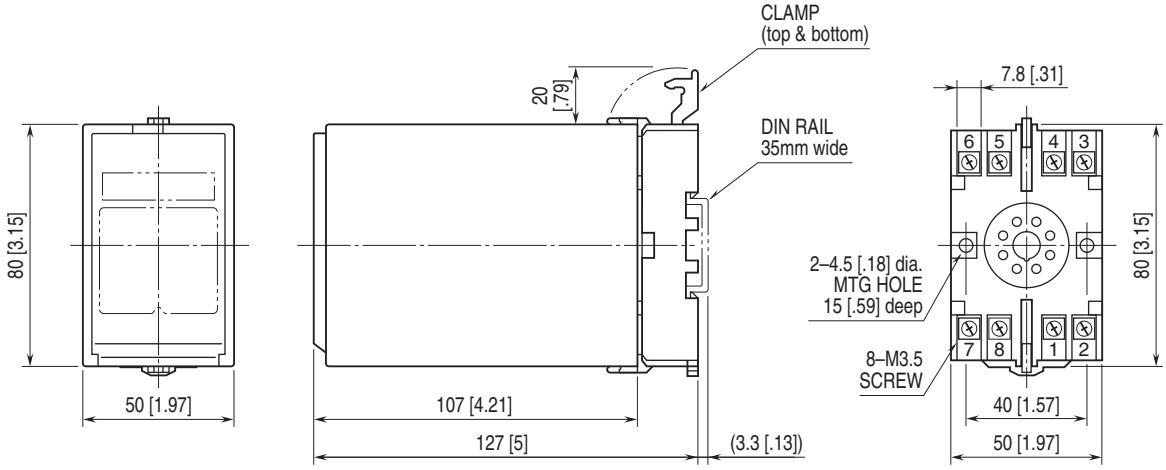
EXTERNAL VIEW

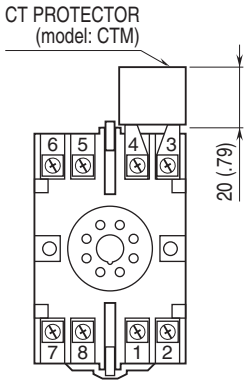


EXTERNAL DIMENSIONS unit: mm [inch]



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

TERMINAL ASSIGNMENTS unit: mm [inch]



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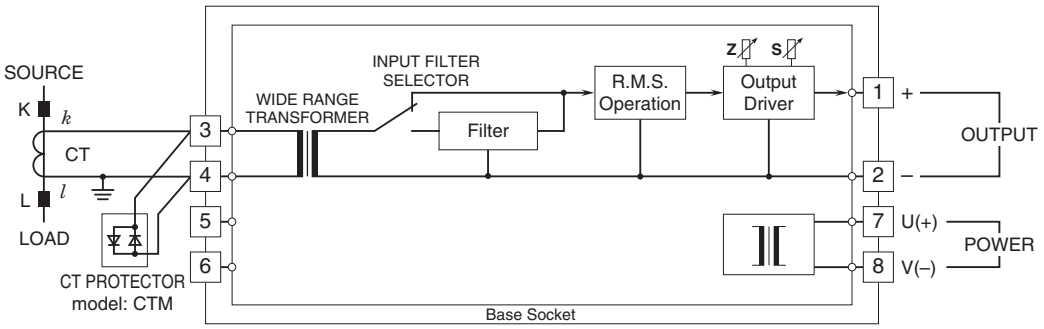
SCHEMATIC CIRCUITRY & CONNECTION DIAGRAM



⚠ Specifications are subject to change without notice.

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