

## Plug-in Signal Conditioners M-UNIT

### CT TRANSMITTER

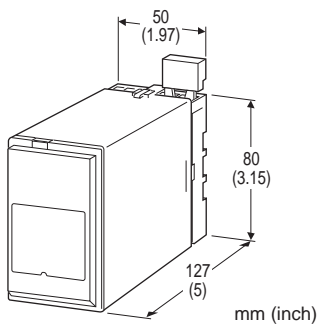
(inverter use)

#### 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 incorporated 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



### MODEL: CTH-5[1]-[2][3]

#### ORDERING INFORMATION

- Code number: CTH-5[1]-[2][3]
- Specify a code from below for each [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  $\Omega$  max.)
- B: 2 - 10 mA DC (Load resistance 1500  $\Omega$  max.)
- C: 1 - 5 mA DC (Load resistance 3000  $\Omega$  max.)
- D: 0 - 20 mA DC (Load resistance 750  $\Omega$  max.)
- E: 0 - 16 mA DC (Load resistance 900  $\Omega$  max.)

F: 0 - 10 mA DC (Load resistance 1500  $\Omega$  max.)

G: 0 - 1 mA DC (Load resistance 15 k $\Omega$  max.)

Z: Specify current (See OUTPUT SPECIFICATIONS)

##### Voltage

1: 0 - 10 mV DC (Load resistance 10 k $\Omega$  min.)

2: 0 - 100 mV DC (Load resistance 100 k $\Omega$  min.)

3: 0 - 1 V DC (Load resistance 100  $\Omega$  min.)

4: 0 - 10 V DC (Load resistance 1000  $\Omega$  min.)

5: 0 - 5 V DC (Load resistance 500  $\Omega$  min.)

6: 1 - 5 V DC (Load resistance 500  $\Omega$  min.)

4W: -10 - +10 V DC (Load resistance 2000  $\Omega$  min.)

5W: -5 - +5 V DC (Load resistance 1000  $\Omega$  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 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 to power

Input waveform: Up to 15 % of 3rd harmonic content

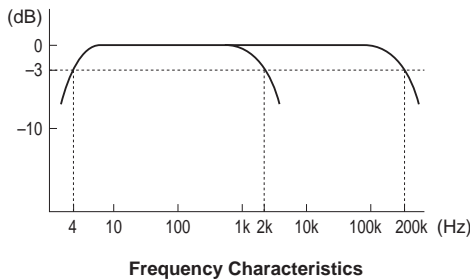
Overrange output: 0 to 120 % at 1 - 5 V



**Zero adjustment:** -5 to +5 % (front)  
**Span adjustment:** 95 to 105 % (front)  
**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



there is great difference between the frequencies of input signal and power supply)

**Line voltage effect:**  $\pm 0.1$  % over voltage range (input 5 - 100 %)

**Insulation resistance:**  $\geq 100$  M $\Omega$  with 500 V DC

**Dielectric strength:** 2000 V AC @1 minute (input to output to power to ground)

## STANDARDS & APPROVALS

**CE conformity:**

EMC Directive (2004/108/EC)

EMI EN 61000-6-4: 2007

EMS EN 61000-6-2: 2005

Low Voltage Directive (2006/95/EC)

EN 61010-1: 2001

Installation Category II

Pollution Degree 2

Input to output to power - Reinforced insulation (300 V)

## 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  $\geq 0.5$  V

## INSTALLATION

**Power input**

•**AC:** Operational voltage range: rating  $\pm 10$  %, 50/60  $\pm 2$  Hz, approx. 2 VA

•**DC:** Operational voltage range: rating  $\pm 10$  %, 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:**  $\pm 0.3$  % at 20 Hz - 1 kHz

$\pm 7$  % at 7 Hz - 100 kHz

**Temp. coefficient:**

$\pm 0.015$  %/°C ( $\pm 0.008$  %/°F) at 20 Hz - 1 kHz

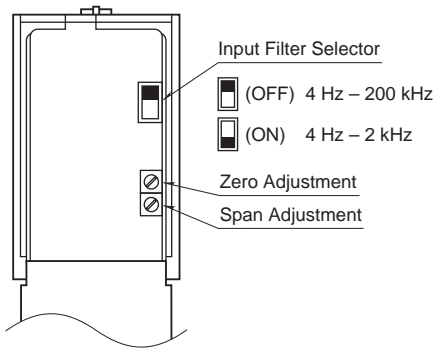
$\pm 0.35$  %/°C ( $\pm 0.19$  %/°F) at 7 Hz - 100 kHz

**Response time:** 1.5 sec. (0 - 90 %)

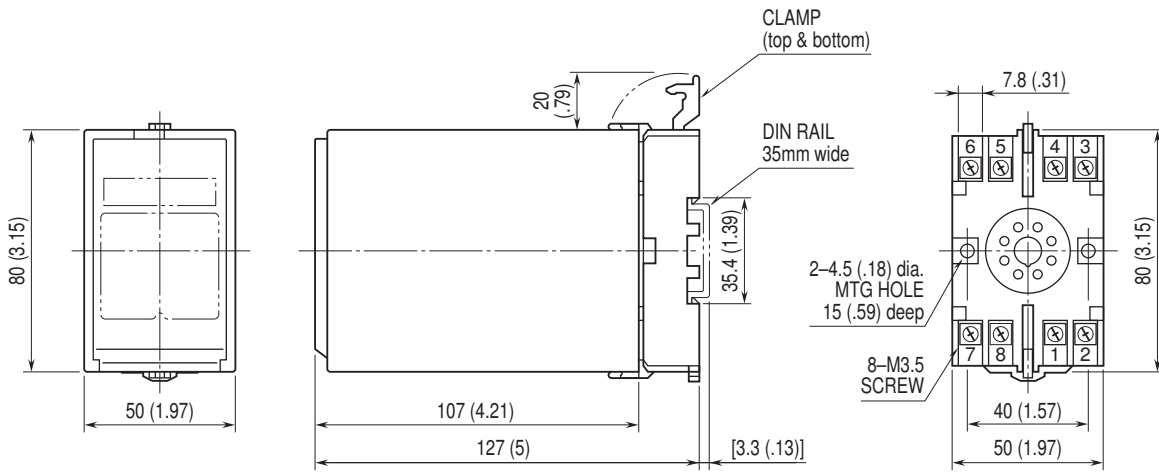
**Ripple:** 0.5 %p-p max. (The output ripple may increase when



## EXTERNAL VIEW

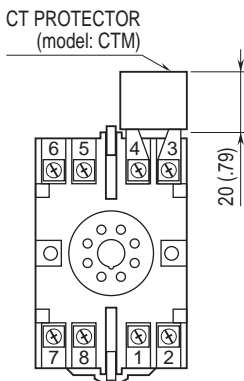


## DIMENSIONS unit: mm (inch)

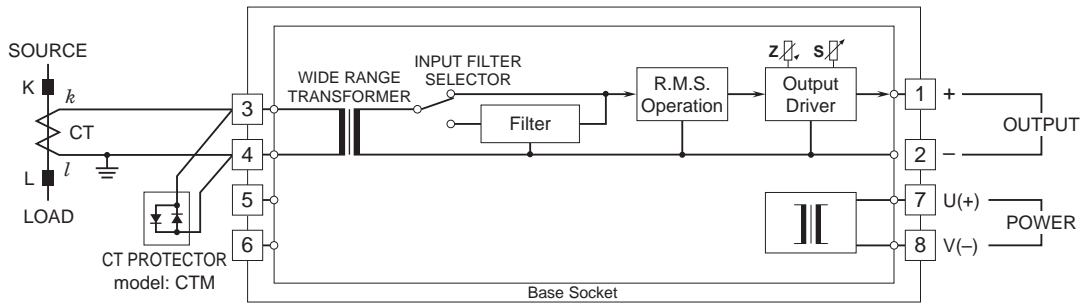


• When mounting, no extra space is needed between units.

## TERMINAL ASSIGNMENTS unit: mm (inch)



**SCHEMATIC CIRCUITRY & CONNECTION DIAGRAM**



Specifications are subject to change without notice.

