

## Dual Output Plug-in Signal Conditioners W-UNIT

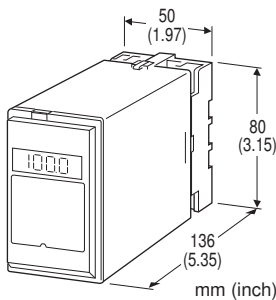
### AC TRANSMITTER

#### Functions & Features

- Converting an alternating current/voltage into two standard process signals
- True RMS sensing
- Isolation up to 2000 V AC
- LCD meter
- High-density mounting

#### Typical Applications

- Converting a large AC current in combination with a shunt resistor, or a narrow span AC voltage



### MODEL: WAC-[1][2][3]-[4][5]

#### ORDERING INFORMATION

- Code number: WAC-[1][2][3]-[4][5]
- Specify a code from below for each of [1] through [5].  
(e.g. WAC-A1A6-B/E/Q)
- Special input and output ranges (For codes AZ, A8, Z & 0)
- Specify the specification for option code /Q  
(e.g. /C01/S01)

Note: When the user requires a current and a voltage output, specify the current to be the Output 1 which allows a greater load.

#### [1] INPUT

##### Current

- AA:** 0 - 10 mA AC (Input resistance 100 Ω)
- AB:** 0 - 50 mA AC (Input resistance 20 Ω)
- AC:** 0 - 100 mA AC (Input resistance 10 Ω)
- AD:** 0 - 500 mA AC (Input resistance 1 Ω)
- AZ:** Specify current (See INPUT SPECIFICATIONS)  
(0 % input must be 0 mA.)

##### Voltage

- A1:** 0 - 100 mV AC (Input resistance 100 kΩ min.)
- A2:** 0 - 500 mV AC (Input resistance 100 kΩ min.)
- A3:** 0 - 1 V AC (Input resistance 100 kΩ min.)

- A4:** 0 - 5 V AC (Input resistance 100 kΩ min.)
- A5:** 0 - 10 V AC (Input resistance 100 kΩ min.)
- A6:** 0 - 120 V AC (Input resistance 100 kΩ min.)
- A7:** 0 - 150 V AC (Input resistance 100 kΩ min.)
- A8:** Specify voltage (See INPUT SPECIFICATIONS)  
(0 % input must be 0 V.)

#### [2] OUTPUT 1

##### Current

- A:** 4 - 20 mA DC (Load resistance 600 Ω max.)
- B:** 2 - 10 mA DC (Load resistance 1200 Ω max.)
- C:** 1 - 5 mA DC (Load resistance 2400 Ω max.)
- D:** 0 - 20 mA DC (Load resistance 600 Ω max.)
- E:** 0 - 16 mA DC (Load resistance 750 Ω max.)
- F:** 0 - 10 mA DC (Load resistance 1200 Ω max.)
- G:** 0 - 1 mA DC (Load resistance 12 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 1000 Ω min.)
- 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.)
- 4W:** -10 - +10 V DC (Load resistance 10 kΩ min.)
- 5W:** -5 - +5 V DC (Load resistance 5000 Ω min.)
- 0:** Specify voltage (See OUTPUT SPECIFICATIONS)

#### [3] OUTPUT 2

##### Current

- A:** 4 - 20 mA DC (Load resistance 350 Ω max.)
- B:** 2 - 10 mA DC (Load resistance 700 Ω max.)
- C:** 1 - 5 mA DC (Load resistance 1400 Ω max.)
- D:** 0 - 20 mA DC (Load resistance 350 Ω max.)
- E:** 0 - 16 mA DC (Load resistance 430 Ω max.)
- F:** 0 - 10 mA DC (Load resistance 700 Ω max.)
- G:** 0 - 1 mA DC (Load resistance 7000 Ω max.)
- Z:** Specify current (See OUTPUT SPECIFICATIONS)

##### Voltage

Same range availability as Output 1

#### [4] 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

Span  $\leq$  500 mA: 1  $\Omega$   
 Span  $\leq$  1 A: 0.5  $\Omega$   
 ■ AC Voltage: 0 - 250 V AC  
 Minimum span: 50 mV  
 Input resistance: 100 k $\Omega$  min.

## [5] OPTIONS (multiple selections)

### Input Signal Indicator

blank: Without  
 /E: With (0.0 - 100.0 % display)

### 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 power  
**Input waveform**  
**RMS sensing:** 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)  
 Adjustable individually for each output 1 and output 2.  
 ■ **DISPLAY (Input indicator)**  
**LCD digital display:** 0.0 - 100.0 % (min. digit 0.1 %) (No scaling)

## INPUT SPECIFICATIONS

**Frequency:** 40 Hz min., 1 kHz max.  
 ■ **AC Current:** 0 - 1 A AC; input resistor incorporated  
**Minimum span:** 1 mA  
**Input resistance**  
 Span 1 mA: 1 k $\Omega$   
 Span  $\leq$  2 mA: 500  $\Omega$   
 Span  $\leq$  5 mA: 200  $\Omega$   
 Span  $\leq$  10 mA: 100  $\Omega$   
 Span  $\leq$  20 mA: 50  $\Omega$   
 Span  $\leq$  50 mA: 20  $\Omega$   
 Span  $\leq$  100 mA: 10  $\Omega$

## OUTPUT SPECIFICATIONS

■ **DC Current:** 0 - 20 mA DC  
**Minimum span:** 1 mA  
**Offset:** Max. 1.5 times span  
**Load resistance:** Output drive 12 V max. for Output 1; 7 V max. for Output 2  
 ■ **DC Voltage:** -10 - +12 V DC  
**Minimum span:** 5 mV  
**Offset:** Max. 1.5 times span  
**Load resistance:** Output drive 1 mA max. at  $\geq$  0.5 V

## INSTALLATION

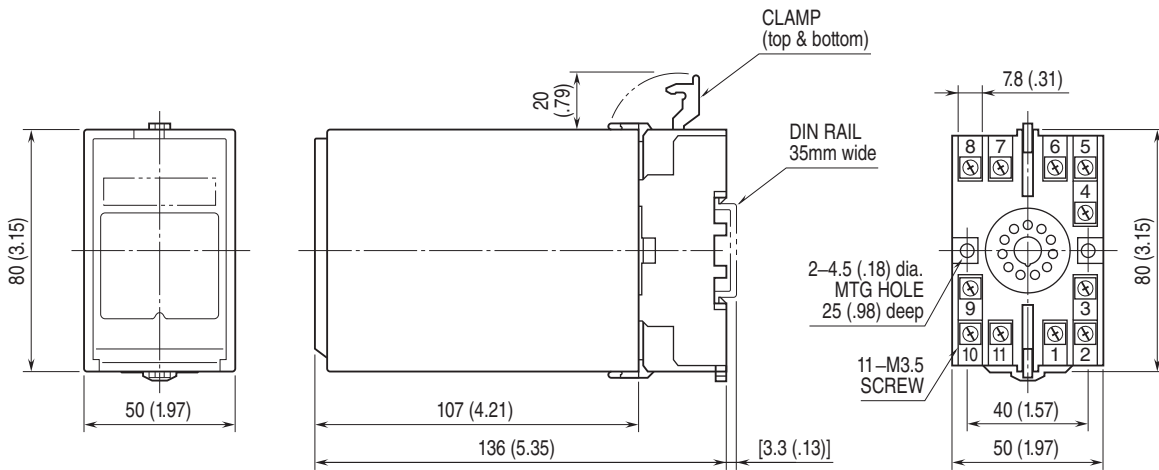
### Power input

• **AC:** Operational voltage range: rating  $\pm$ 10 %, 50/60  $\pm$ 2 Hz, approx. 3 VA  
 • **DC:** Operational voltage range: rating  $\pm$ 10 %, or 85 - 150 V for 110 V rating, ripple 10 %p-p max., approx. 3 W (125 mA at 24 V)  
**Operating temperature:** -5 to +55°C (23 to 131°F)  
**Operating humidity:** 30 to 90 %RH (non-condensing)  
**Mounting:** Surface or DIN rail  
**Weight:** 400 g (0.88 lb)

## PERFORMANCE in percentage of span

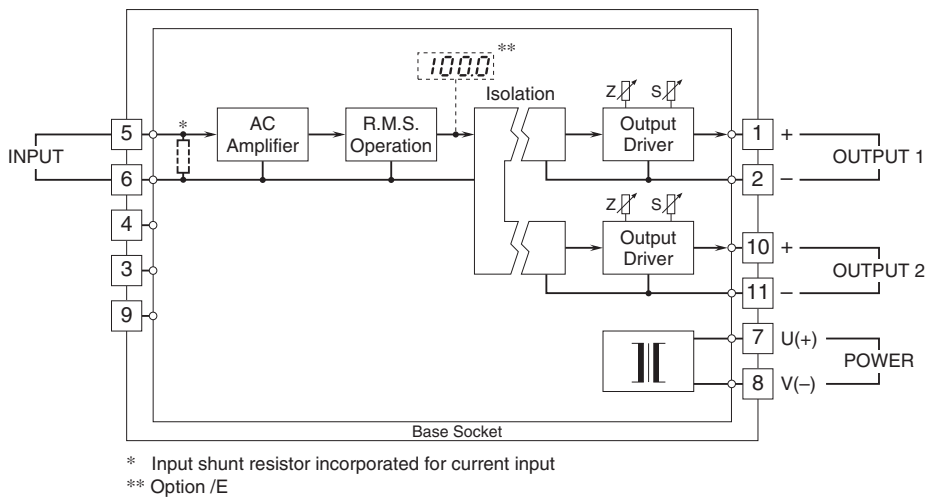
**Accuracy:**  $\pm$ 0.4 %  
**Display accuracy:**  $\pm$ (0.4 % of FS + 1 digit)  
**Temp. coefficient:**  $\pm$ 0.05 %/°C ( $\pm$ 0.03 %/°F)  
**Response time:**  $\leq$  0.7 sec. (0 - 90 %)  
**Ripple:** 0.5 %p-p max.  
**Line voltage effect:**  $\pm$ 0.1 % over voltage range  
**Insulation resistance:**  $\geq$  100 M $\Omega$  with 500 V DC  
**Dielectric strength:** 2000 V AC @1 minute (input to output to power to ground)  
 1000 V AC @ 1 minute (output 1 to output 2)

## 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.