

Super-mini Signal Conditioners *Mini-M Series*

AC TRANSMITTER

MODEL **M2AC**

MODEL & SUFFIX CODE SELECTION

MODEL _____ M2AC-□□□□

INPUT _____

Current	Voltage
AA : 0 – 10mA AC	A1 : 0 – 100mV AC
AB : 0 – 50mA AC	A2 : 0 – 500mV AC
AC : 0 – 100mA AC	A3 : 0 – 1V AC
AD : 0 – 500mA AC	A4 : 0 – 5V AC
AZ : Specify current* ¹	A5 : 0 – 10V AC
	A6 : 0 – 120V AC
	A7 : 0 – 150V AC
	A8 : Specify voltage * ¹

*¹ : 0% input must be 0mA or 0V.

OUTPUT _____

Current	Voltage
A : 4 – 20mA DC	1 : 0 – 10mV DC
B : 2 – 10mA DC	2 : 0 – 100mV DC
C : 1 – 5mA DC	3 : 0 – 1V DC
D : 0 – 20mA DC	4 : 0 – 10V DC
E : 0 – 16mA DC	5 : 0 – 5V DC
F : 0 – 10mA DC	6 : 1 – 5V DC
G : 0 – 1mA DC	4W : -10 – +10V DC
Z : Specify current	5W : -5 – +5V DC
	0 : Specify voltage

POWER INPUT _____

AC Power	DC Power
M : 85 – 264V AC * ²	R : 24V DC
M2 : 100 – 240V AC	R2 : 11 – 27V DC * ²
	P : 110V DC

*² : Select 'N' for 'Standards & Approvals' code.

STANDARDS & APPROVALS _____

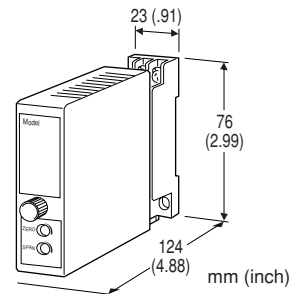
/N : Without CE or UL
 /CE : CE marking
 /UL : UL approval (CE marking)

ORDERING INFORMATION

Specify code number and variables.
 • **Code number** (e.g. M2AC-A1A-M2/CE)
 • **Special input and output ranges**
 (For codes AZ, A8, Z & 0)

GENERAL SPECIFICATIONS

Construction: plug-in
Connection: M3 screw terminals (torque 0.8 N·m)
Housing material: flame-resistant resin (black)
Isolation: input to output to power
Input waveform: up to 15% of 3rd harmonic content
Overrange output: 0 – 120% at 1 – 5V
Front adjustments: zero and span; ±5%



Functions & Features

- Converting an alternating current/voltage into a standard process signal
- True RMS sensing
- Universal power input
- High-density mounting
- CE marking
- UL approval

Typical Applications

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

INPUT & OUTPUT

INPUT

Frequency: 40 Hz min., 1 kHz max. with 100% input

• **AC Current:** 0 – 1A AC; input resistor (2W) incorporated

Minimum span: 1mA

Input resistance

Input	Input Resistance
1mA	: 1k (Ω)
≤2mA	: 500
≤5mA	: 200
≤10mA	: 100
≤20mA	: 50
≤50mA	: 20
≤100mA	: 10
≤500mA	: 1
≤1A	: 0.5

• **AC Voltage:** 0 – 250V AC

Minimum span: 50mV

Input resistance: approx. 100kΩ minimum

OUTPUT

•DC Current: 0 – 20mA DC

Minimum span: 1mA

Zero suppression/elevation: max. 1.5 times span

Load resistance: output drive 15V maximum

Output	Load Resistance
4 – 20mA	: 750 (Ω maximum)
2 – 10mA	: 1500
1 – 5mA	: 3000
0 – 20mA	: 750
0 – 16mA	: 900
0 – 10mA	: 1500
0 – 1mA	: 15k

•DC Voltage: -10 – +12V DC

Minimum span: 5mV

Zero suppression/elevation: max. 1.5 times span

Load resistance: output drive 1mA maximum at $\geq 0.5V$

Output	Load Resistance
0 – 10mV	: 10k (Ω minimum)
0 – 100mV	: 100k
0 – 1V	: 1000
0 – 10V	: 10k
0 – 5V	: 5000
1 – 5V	: 5000
-10 – +10V	: 10k
-5 – +5V	: 5000

INSTALLATION**Power input**

AC: operational voltage range 85 – 264V
(90 – 264V for UL);
47 – 66 Hz; approx. 3VA at 100V
approx. 4VA at 200V
approx. 5VA at 264V

DC: operational voltage range for R: 24V
 $\pm 10\%$, R2: 11 – 27V, or P: 85 – 150V
(110V $\pm 10\%$ for UL);
ripple 10% p-p max.; approx. 3W

Operating temperature: -5 to +55°C (23 to 131°F)

Operating humidity: 30 to 90% RH (non-condensing)

Mounting: surface or DIN rail

Dimensions: W23×H76×D124 mm (0.91"×2.99"×4.88")
See General Spec. Sheet Figure A-1.

Weight: 150 g (0.33 lbs)

Terminal assignment: See General Spec. Sheet Figure B-1.

PERFORMANCE in percentage of span

Accuracy: $\pm 0.4\%$

Temp. coefficient: $\pm 0.05\%/^{\circ}C$ ($\pm 0.03\%/^{\circ}F$)

Response time: ≤ 0.7 seconds (0 – 90%)

Ripple: 0.5% p-p max. (50/60 Hz)

Line voltage effect: $\pm 0.1\%$ over voltage range

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

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

STANDARDS & APPROVALS

CE conformity: EMC Directive (89/336/EEC)

EMI EN61000-6-4

EMS EN61000-6-2

Low Voltage Directive (73/23/EEC)

EN61010-1

Installation category II

Pollution degree 2

Max. operating voltage 300V

Input or output to power – Reinforced insulation

Input to output – Basic insulation

Approval: UL/C-UL nonincendive

Class I, Division 2, Groups A, B, C, and D
(UL 1604, CAN/CSA-C22.2 No.213)

UL/C-UL general safety requirements

(UL 3111-1, CAN/CSA-C22.2 No.1010-1)

SCHEMATIC CIRCUITRY & CONNECTION DIAGRAM