

Super-mini Signal Conditioners *Mini-M Series*

**HIGH/LOW SELECTOR**

MODEL **M2SES**

**MODEL & SUFFIX CODE SELECTION**

M2SES-□□□□□

MODEL \_\_\_\_\_

SELECTING FUNCTION \_\_\_\_\_

1 : Low input  
2 : High input

INPUT \_\_\_\_\_

Current

A : 4 – 20mA DC  
B : 2 – 10mA DC  
C : 1 – 5mA DC  
H : 10 – 50mA DC

Voltage

6 : 1 – 5V DC

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 *1	R : 24V DC
M2: 100 – 240V AC	R2: 11 – 27V DC *1
	P : 110V DC

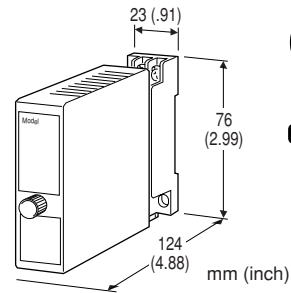
\*1 : Select 'N' for 'Standards & Approvals' code.

**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. M2SES-2AA-M2/CE)  
 • **Special output range** (For codes Z & 0)



**Functions & Features**

- Monitoring two DC input signals and transmitting an output signal proportional to the higher or lower input
- Universal power input
- High-density mounting
- CE marking
- UL approval

**Typical Applications**

- Selecting greater flow, pressure, etc. for control
- Heating control based on the highest temperature among several T/C's on a furnace

**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  
**Overrange output:** approx. -10 – +120% at 1 – 5V  
**Selecting operation:** automatic

**INPUT & OUTPUT**

■ **INPUT**

- **DC Current:** input resistor incorporated (2W)

**Input resistance**

Input	Input Resistance
4 – 20mA	: 250 (Ω)
2 – 10mA	: 500
1 – 5mA	: 1000
10 – 50mA	: 100

- **DC Voltage:** 1 – 5V DC

**Input resistance:** 1MΩ 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 ( $\Omega$ 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 ( $\Omega$ 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:  $\pm 0.2\%$

Selecting sensitivity: 0.5%

Temp. coefficient:  $\pm 0.015\%/^{\circ}C$  ( $\pm 0.008\%/^{\circ}F$ )

Response time:  $\leq 0.5$  seconds (0 – 90%)

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

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

Dielectric strength: 1000V AC @1 minute

(input to output)

2000V AC @1 minute

(input or 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

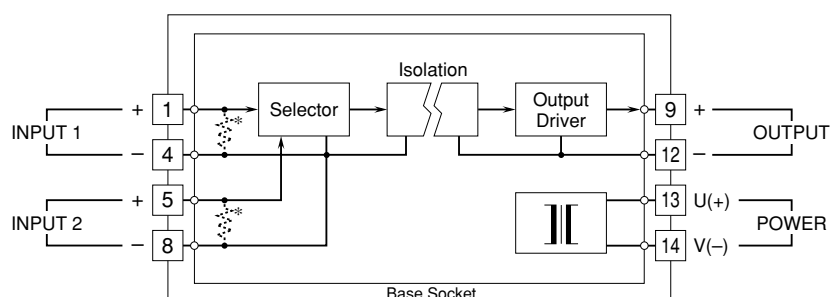
Input to output – Basic insulation

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**

\*Input shunt resistor incorporated for current inputs.