

Super-mini Signal Conditioners *Mini-M Series*

HIGH/LOW SELECTOR

MODEL **M2SES**

MODEL & SUFFIX CODE SELECTION

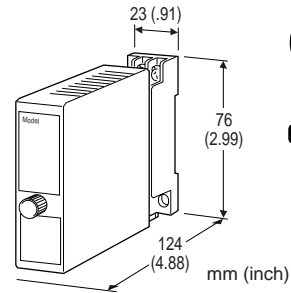
M2SES-□□□□□

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 : CE or UL not available
 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 (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: $\pm 0.2\%$

Selecting sensitivity: 0.5%

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

Response time: ≤ 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)

Installation category II

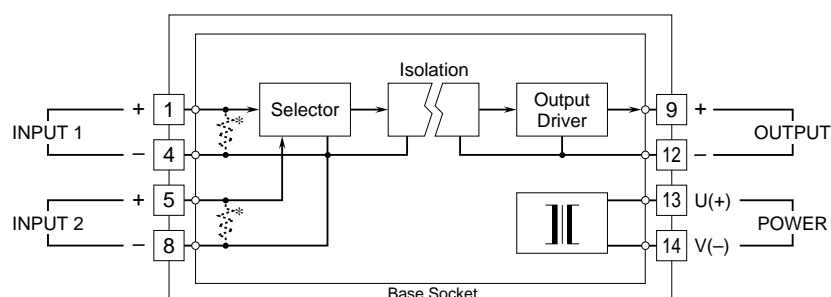
Pollution degree 2

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 hazardous locations (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.