

Super-mini Signal Conditioners *Mini-M Series*

RAMP BUFFER

MODEL **M2CRS**

MODEL & SUFFIX CODE SELECTION

MODEL _____
 INPUT _____
 M2CRS-□□□□

Current	Voltage
A : 4 – 20mA DC	1 : 0 – 10mV DC
A1: 4 – 20mA DC *1	15: 0 – 50mV DC
B : 2 – 10mA DC	16: 0 – 60mV DC
C : 1 – 5mA DC	2 : 0 – 100mV DC
D : 0 – 20mA DC	3 : 0 – 1V DC
E : 0 – 16mA DC	4 : 0 – 10V DC
F : 0 – 10mA DC	5 : 0 – 5V DC
G : 0 – 1mA DC	6 : 1 – 5V DC
H : 10 – 50mA DC	4W : -10 – +10V DC
J : 0 – 10µA DC	5W : -5 – +5V DC
K : 0 – 100µA DC	0 : Specify voltage

GW: -1 – +1mA DC
 FW: -10 – +10mA DC

Z : Specify current

*1 : 50Ω input resistance for Code A1

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 : CE or UL not available

STANDARDS & APPROVALS

/N : Without CE or UL

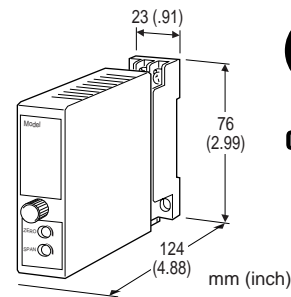
/CE: CE marking

/UL : UL approval (CE marking)

ORDERING INFORMATION

Specify code number and variables.

- Code number (e.g. M2CRS-6A-M2/CE)
- Special input and output ranges (For codes Z & 0)



Functions & Features

- Limiting the rate of change of the output once the rate of the input exceeds the preset value
- Rate-of-change adjustable up to 40 seconds
- Universal power input
- CE marking
- UL approval

Typical Applications

- Reducing the rate of change caused by a step change or spikes on the input signal
- Protecting equipment that cannot withstand rapidly changing process variables

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

Front adjustments: zero and span; ±5%

Rate-of-change adjustment: 260°-turn screwdriver adjustment (front; factory set to MIN.); approx. 0.5 – 40 sec. (0 – 100%)

INPUT & OUTPUT

INPUT

• **DC Current:** shunt resistor attached to input terminals (0.5W)

Input resistance: For resistance values other than listed below, specify when ordering.

4 – 20mA : 250 (Ω)
 (50Ω for Code A1)

2 – 10mA : 500

1 – 5mA : 1000

0 – 20mA : 50

0 – 16mA : 62.5

0 – 10mA : 100

0 – 1mA : 1000

10 – 50mA : 100

0 – 10µA : 1000

0 – 100µA : 1000

-1 – +1mA : 1000

-10 – +10mA : 100

• **DC Voltage:** -300 – +300V DC
Minimum span: 3mV
Zero suppression/elevation: max. 1.5 times span
Input resistance
 (Span) 3 – 10mV : 10k (Ω minimum)
 10 – 100mV : 10k
 0.1 – 1V : 100k
 ≥1V : 1M

■ **OUTPUT**

• **DC Current:** 0 – 20mA DC
Minimum span: 1mA
Zero suppression/elevation: max. 1.5 times span
Load resistance: output drive 15V maximum
 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 ≥0.5V
 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

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-2.

PERFORMANCE in percentage of span

Accuracy: ±0.2%
Temp. coefficient: ±0.015%/°C (±0.008%/°F)
Line voltage effect: ±0.1% over voltage range
Insulation resistance: ≥100MΩ with 500V DC
Dielectric strength: 2000V AC @1 minute
 (input to output to power to ground)

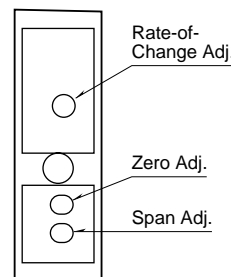
STANDARDS & APPROVALS

CE conformity: EMC Directive (89/336/EEC)
 EMI EN61000-6-4
 EMS EN61000-6-2
 Low Voltage Directive (73/23/EEC)
 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)

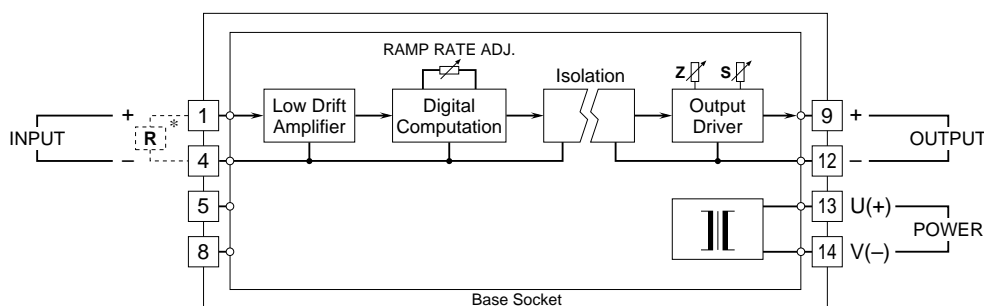
INSTALLATION

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 ±10%,
 R2: 11 – 27V, or P: 85 – 150V (110V ±10% for UL); ripple 10% p-p max.; approx. 3W



SCHEMATIC CIRCUITRY & CONNECTION DIAGRAM



*Input shunt resistor attached for current input.

Specifications subject to change without notice.