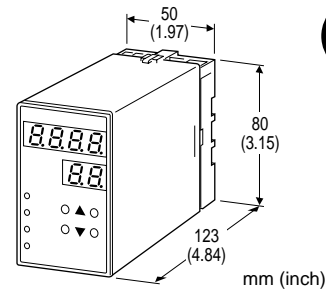
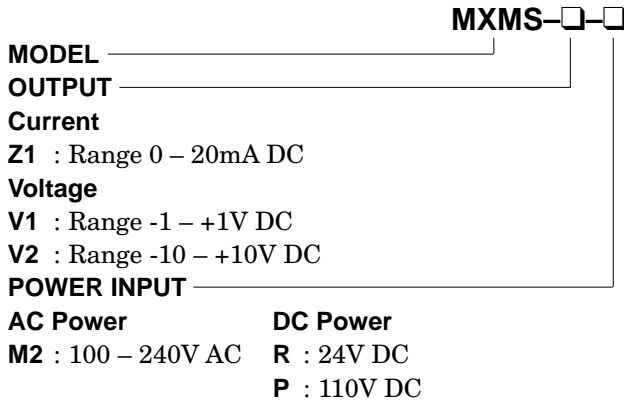


Plug-in Signal Conditioners *MX-UNIT*

PROGRAMMED RAMP GENERATOR
(front configurable)

MODEL **MXMS**

MODEL & SUFFIX CODE SELECTION



Functions & Features

- Generates various patterns of output by front UP-DOWN key programming
- Upscale/downscale limits, output cycle can be programmed
- Programming and display in engineering units
- Max. 16-point-segment ramps can be generated
- Loop test output

Typical Applications

- Parameters setting for computers and DCS
- Signals used in a panel, which are rarely changed.

ORDERING INFORMATION

Specify code number. (e.g. MXMS-V1-M2)

GENERAL SPECIFICATIONS

Construction: Plug-in
Connection: M3.5 screw terminals
Housing material: Flame-resistant resin (black)
Isolation: Control I/O to output to power
Programming: Via front keys

■DISPLAY

LED: 8 mm (.31") 7 segment, red
Number of display digits: 4 digits for DATA display;
 2 digits for ITEM display
Scaling: -9999 - 9999
PV indication: Output signal in engineering unit
Overrange indication: LEDs flashing
Power saving mode: Displays turn off if the keys are untouched for a preset time period
LEDs: Red; the PL1 turns on with negative polarity and the PL2 turns on during a program is running.

INPUT & OUTPUT

■OUTPUT ENABLE COMMAND

Minimum ON time: 0.1 sec. (Prevent chattering.)
Sensing voltage: 5V DC
ON/OFF levels: ≤500Ω for ON; ≥2kΩ for OFF

■OUTPUT

• **DC Current:** 0.0 - 20.0mA DC
Minimum increment: 0.1mA
Load resistance: 600Ω maximum

• **DC Voltage**

Code V1: -1.00 - +1.00V DC
Minimum increment: 10mV
Load resistance: 1000Ω minimum

Code V2: -10.0 - +10.0V DC
Minimum increment: 100mV
Load resistance: 10kΩ minimum

Note 1: Set to ITEM 17 (100% output voltage/current) a larger value than that to ITEM 16 (0% output voltage/current).

■RUN OUTPUT (open collector)

Max. collector-emitter voltage: 30V
Max. collector current: 30mA
Saturation voltage: 1.1V or less

INSTALLATION

Power input

- AC:** Operational voltage range 85 – 264V;
47 – 66 Hz, approx. 6VA
- DC:** Operational voltage range for R: 24V ±10%
or P: 85 – 150V; ripple 10% p-p max.;
approx. 3.5W (100mA at 24V)

- Operating temperature:** -5 to +55°C (23 to 131°F)
- Operating humidity:** 30 to 90% RH (non-condensing)
- Mounting:** surface or DIN rail
- Dimensions:** W50×H80×D123 mm (1.97"×3.15"×4.84")
See General Spec. Sheet Figure C-1.
- Weight:** 450 g (0.99 lbs)
- Terminal assignment:** See General Spec. Sheet Figure D-1.

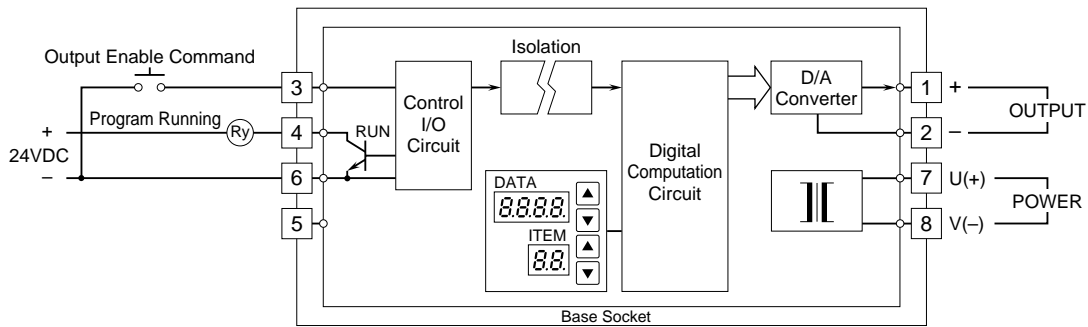
PERFORMANCE in percentage of span

- Accuracy:** ±0.05% (output accuracy)
The output span must be 20% or greater of the entire range to satisfy the described accuracy.
- Display accuracy:** Output accuracy ±1 digit (with 0.0 – 100.0 scaling)
- Temp. coefficient:** ±0.015%/°C (±0.008%/°F)
- Response time:** ≤0.5 seconds (0 – 90%)
- Line voltage effect:** ±0.1% over voltage range
- Time axis error:** ±0.5 sec. per minute
- Insulation resistance:** ≥100MΩ with 500V DC
- Dielectric strength:** 2000V AC @1 minute
(control I/O 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

SCHEMATIC CIRCUITRY & CONNECTION DIAGRAM

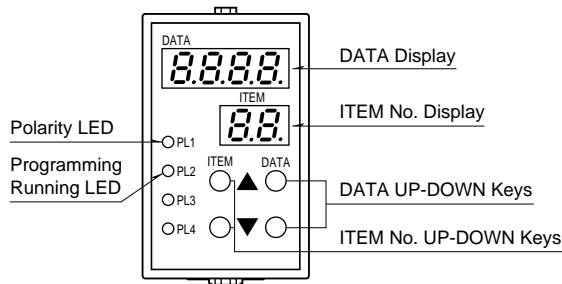


Specifications subject to change without notice.

FRONT PANEL CONFIGURATION & PROGRAMMING

PROGRAMMING PROCEDURE

1. Press ITEM UP or DOWN key until ITEM display indicates "01".
2. Press DATA UP or DOWN key and choose "2" on DATA display.
 - 1 : Data indication only.
 - 2 : All parameters are modifiable.
3. Press ITEM UP or DOWN key until ITEM display shows the ITEM No. you need to change.
4. Press DATA UP or DOWN key and choose a DATA No. or value you need on DATA display.
5. Repeat above 3 and 4. (Entered data is stored 1 sec. after the operation has been complete.)
6. Press ITEM UP or DOWN key until ITEM display indicates "01".
7. Press DATA UP or DOWN key and choose "1" on the display.
8. Press ITEM UP or DOWN key until ITEM display indicates "P". DATA display shows process input. You can now check data setting by choosing ITEM No.



Note : DO NOT press UP and DOWN keys simultaneously.

ITEM	MDF. CODE	DATA	CONTENTS	DEFAULT
P	N/A	-9999 – 9999	Output display in engineering unit (as set in ITEM 12/13)	—
01		1, 2, 3	Modification code 1 : Data indication only. 2 : All parameters are modifiable. 3 : Only ITEM 20 is modifiable.	1
02	N/A	0 – 99	Status indication ("0" is normally indicated.)	—
03	N/A	0, 1, 2	Output range code 0 : V1 (-1 – +1V) 1 : V2 (-10 – +10V) 2 : Z1 (0 – 20mA)	V1 : 0 V2 : 1 Z1 : 2
04/L	2	0.0 – 100.0	Output indicated in % with ITEM 01 DATA 1 (of the range set in ITEM 16/17) Loop test output with ITEM 01 DATA 2 ('L' is indicated as ITEM No.) (Use DATA UP/DOWN key to set the output signal.)	—
05	2	0 – 7	Output type 0 : Constant value 1 : Square wave 2 : Triangle wave (Climbing ramp) 3 : Triangle wave (Both ramps are symmetric.) 4 : Triangle wave (Descending ramp) 5 : Sine wave 6 : Programmed ramps (square output) 7 : Programmed ramps (segment output)	0
06	2	P0 – PF	Constant value selection (Valid only when ITEM 05 is set to "0.") Set constant values in % for ITEM P0 through PF, and choose one to use.	P0 : (0.0%)
07	2	0 – 60	Output cycle in seconds	0
08	2	1 – 9999	Output cycle in minutes	10
09	2	0, 1, 2	Output enable command 0 : Not used 1 : Output at Open, Interrupt at Closed 2 : Output at Closed, Interrupt at Open	0
10	2	0, 1	Action at an output interruption 0 : Reset to 0% 1 : Hold output at the interruption	0
11	2	0, 1 – 60	Stand-by time between output cycles 0 : No interruption between cycles 1 – 60 : Stand-by time (minutes)	0
12	2	-9999 – 9999	Display range scaling 0% *1	0.0
13	2	-9999 – 9999	Display range scaling 100% *1	100.0
14	2	0, 1, 2, 3	Decimal point position 0 : _ _ _ _ 1 : _ _ . _ 2 : _ . _ _ 3 : _ . _ _ _	1
15	2	0, 1 – 60	Power-saving mode 0 : Continuous display 1 – 60 : Time before display turned off (minutes)	10

ITEM	MDF. CODE	DATA	CONTENTS	DEFAULT
16	2	-1.00 – 1.00	Output code V1 0% output voltage (V) *2	-1.00
17	2	-1.00 – 1.00	100% output voltage (V) *2	1.00
16	2	-10.0 – 10.0	Output code V2 0% output voltage (V) *2	-10.0
17	2	-10.0 – 10.0	100% output voltage (V) *2	10.0
16	2	0.0 – 20.0	Output code Z1 0% output current (mA) *2	4.0
17	2	0.0 – 20.0	100% output current (mA) *2	20.0
18	2	-900 – 900	Zero adjustment *3	0
19	2	-900 – 900	Span adjustment *3	0
PP	2	1 – 16	Number of programmed output (segment) points	1
P0	2	0.0 – 100.0	Point P0 output setting (%)	0.0
P1	2	0.0 – 100.0	Point P1 output setting (%)	0.0
P2	2	0.0 – 100.0	Point P2 output setting (%)	0.0
P3	2	0.0 – 100.0	Point P3 output setting (%)	0.0
P4	2	0.0 – 100.0	Point P4 output setting (%)	0.0
P5	2	0.0 – 100.0	Point P5 output setting (%)	0.0
P6	2	0.0 – 100.0	Point P6 output setting (%)	0.0
P7	2	0.0 – 100.0	Point P7 output setting (%)	0.0
P8	2	0.0 – 100.0	Point P8 output setting (%)	0.0
P9	2	0.0 – 100.0	Point P9 output setting (%)	0.0
PA	2	0.0 – 100.0	Point PA output setting (%)	0.0
PB	2	0.0 – 100.0	Point PB output setting (%)	0.0
PC	2	0.0 – 100.0	Point PC output setting (%)	0.0
PD	2	0.0 – 100.0	Point PD output setting (%)	0.0
PE	2	0.0 – 100.0	Point PE output setting (%)	0.0
PF	2	0.0 – 100.0	Point PF output setting (%)	0.0
20	3	0, 1	Reset all settings *4	0
21	N/A	–	ROM version	–

*1: Of the range set in ITEM 16/17. ITEM 12 < ITEM 13. *2: ITEM 16 < ITEM 17.

*3: Fine adjustment of $\pm 2\%$ (V1: $\pm 0.04\text{V}$, V2: $\pm 0.4\text{V}$, Z1: $\pm 0.4\text{mA}$) is available respectively for zero and span.

*4: Press DATA UP key and choose DATA 1. Double-click DATA DOWN key. The display shows DATA 0 after the initialization is complete.