

# ORDERING INFORMATION

# MODEL : M1EXS-2

PLEASE FILL IN THIS SECTION



|         |
|---------|
| Model   |
| Company |
| Name    |
| P/O No. |

FACTORY USE ONLY



|         |                               |
|---------|-------------------------------|
| Job No. | Approved by<br>(Sales office) |
| Ser No. | Issued by<br>(Sales office)   |
| Sales   | Approved by<br>(Factory)      |
|         | Set by<br>(Factory)           |
| Ser No. |                               |

Specify the items you want to change.

Default setting will be used if not specified.

## ■ CH1 INPUT SETTING

| ITEM                   | SET VALUE | DEFAULT VALUE | COMMENTS                                   | Factory Internal check   |
|------------------------|-----------|---------------|--|--------------------------|
| Angle span             |           | 270.00        | Specify the range between 60.00 to 359.99. | <input type="checkbox"/> |
| Rotating direction     |           | CW            | Specify CW or CCW.                         | <input type="checkbox"/> |
| Filter time constant*1 |           | 0 sec.        | Specify the range between 0 and 30 sec.    | <input type="checkbox"/> |

## ■ CH1 OUTPUT SETTING

| ITEM                     | SET VALUE  | DEFAULT VALUE                     | COMMENTS                                      | Factory Internal check   |
|--------------------------|--|-----------------------------------|---|--------------------------|
| Output range             | <input type="checkbox"/> 0 to 20 mA DC<br><input type="checkbox"/> -5 to +5 V DC<br><input type="checkbox"/> -10 to +10 V DC | 0 to 20 mA DC                     | Choose among 3 types.                         | <input type="checkbox"/> |
| 0 % output setting       |  | 4.000 mA<br>-5.000 V<br>-10.000 V | Specify within settable range in the table 1. | <input type="checkbox"/> |
| 100 % output setting     |  | 20.000 mA<br>5.000 V<br>10.000 V  |   |                          |
| Overrange output < 0 %   |  | -5.00 %                           | Specify the range between -5.00 and 0.00 %    | <input type="checkbox"/> |
| Overrange output > 100 % |  | 105.00 %                          | Specify the range between 100.00 and 105.00 % | <input type="checkbox"/> |

## ■ CH2 INPUT SETTING

| ITEM                   | SET VALUE | DEFAULT VALUE | COMMENTS                                   | Factory Internal check   |
|------------------------|-----------|---------------|--|--------------------------|
| Angle span             |           | 270.00        | Specify the range between 60.00 to 359.99. | <input type="checkbox"/> |
| Rotating direction     |           | CW            | Specify CW or CCW.                         | <input type="checkbox"/> |
| Filter time constant*1 |           | 0 sec.        | Specify the range between 0 and 30 sec.    | <input type="checkbox"/> |

## ■ CH2 OUTPUT SETTING

| ITEM                     | SET VALUE  | DEFAULT VALUE                     | COMMENTS                                      | Factory Internal check   |
|--------------------------|--|-----------------------------------|---|--------------------------|
| Output range             | <input type="checkbox"/> 0 to 20 mA DC<br><input type="checkbox"/> -5 to +5 V DC<br><input type="checkbox"/> -10 to +10 V DC | 0 to 20 mA DC                     | Choose among 3 types.                         | <input type="checkbox"/> |
| 0 % output setting       |  | 4.000 mA<br>-5.000 V<br>-10.000 V | Specify within settable range in the table 1. | <input type="checkbox"/> |
| 100 % output setting     |  | 20.000 mA<br>5.000 V<br>10.000 V  |   |                          |
| Overrange output < 0 %   |  | -5.00 %                           | Specify the range between -5.00 and 0.00 %    | <input type="checkbox"/> |
| Overrange output > 100 % |  | 105.00 %                          | Specify the range between 100.00 and 105.00 % | <input type="checkbox"/> |

\*1. Filter time constant

Set filter time constant of the first order lag filter. The first order lag filter is available with setting time. When '0' is set to this parameter, the first order lag filter is not available (Response time:  $\leq 0.5$  sec. (0  $\rightarrow$  90 %)). The first order lag filter is equivalent to general CR filter. The setting time constant is the time to follow until about 63 %, when input varies from 0 % to 100 %.

## ■ CH1 DISPLAY SETTING

| ITEM                | SET VALUE | DEFAULT VALUE | COMMENTS   | Factory Internal check   |
|---------------------|-----------|---------------|--|--------------------------|
| 0 % input scaling   |           | 0.00          | Specify within the range between -99999 and 999999. Decimal point position can be set arbitrarily.       | <input type="checkbox"/> |
| 100 % input scaling |           | 100.00        | Specify within the range between -99999 and 999999. Decimal point position is same as 0 % input scaling. | <input type="checkbox"/> |
| Unit (INP Scaling)  |           | %             | Choose from the table 2, or specify from the table 3 'Settable characters' within 13 characters.         | <input type="checkbox"/> |

■ CH2 DISPLAY SETTING

| ITEM                | SET VALUE | DEFAULT VALUE | COMMENTS   | Factory Internal check   |
|---------------------|-----------|---------------|--|--------------------------|
| 0 % input scaling   |           | 0.00          | Specify within the range between -99999 and 999999. Decimal point position can be set arbitrarily.       | <input type="checkbox"/> |
| 100 % input scaling |           | 100.00        | Specify within the range between -99999 and 999999. Decimal point position is same as 0 % input scaling. | <input type="checkbox"/> |
| Unit (INP Scaling)  |           | %             | Choose from the table 2, or specify from the table 3 'Settable characters' within 13 characters.         | <input type="checkbox"/> |

■ OTHER SETTING

| ITEM            | SET VALUE  | DEFAULT VALUE                        | COMMENTS   | Factory Internal check   |
|-----------------|--|--------------------------------------|--|--------------------------|
| Display setting | Upper:<br>Lower:   | Upper: Ch1 INPUT<br>Lower: Ch2 INPUT | Choose from the setting value in the table 4.  | <input type="checkbox"/> |
| Chanel enable   | CH1<br><input type="checkbox"/> Enable<br><input type="checkbox"/> Disable | CH1: Enable                          | Specify enable or disable.<br>It is not available to disable CH1 and CH2 simultaneously. | <input type="checkbox"/> |
|                 | CH2<br><input type="checkbox"/> Enable<br><input type="checkbox"/> Disable | CH2: Enable                          |  |                          |
| Brightness      |  | 4                                    | Specify among 1 (darkest) to 4 (brightest).  | <input type="checkbox"/> |
| Display timeout |  | 10 min.                              | Specify the range from 0, 1 to 60 min.<br>Set '0' to display 'always on'.                | <input type="checkbox"/> |

■ CH1 USER'S TABLE LINEARIZATION

| ITEM                       | SET VALUE   | DEFAULT VALUE | COMMENTS  | Factory Internal check   |
|----------------------------|---|---------------|---|--------------------------|
| User's table linearization | <input type="checkbox"/> Disable<br><input type="checkbox"/> Enable | Disable       | Specify enable or disable. When enable, specify the table in the page 5 to 6. | <input type="checkbox"/> |

■ CH2 USER'S TABLE LINEARIZATION

| ITEM                       | SET VALUE   | DEFAULT VALUE | COMMENTS  | Factory Internal check   |
|----------------------------|---|---------------|---|--------------------------|
| User's table linearization | <input type="checkbox"/> Disable<br><input type="checkbox"/> Enable | Disable       | Specify enable or disable. When enable, specify the table in the page 7 to 8. | <input type="checkbox"/> |

**Table 1**

| OUTPUT RANGE   |                 | MIN. SPAN | SETTABLE RANGE       |
|----------------|-----------------|-----------|----------------------|
| Current output | 0 to 20 mA DC   | 1.000 mA  | 0.000 to 20.000 mA   |
| Voltage output | -5 to +5 mV DC  | 0.250 V   | -5.000 to +5.000 V   |
|                | -10 to +10 V DC | 1.000 V   | -10.000 to +10.000 V |

**Table 2****AVAILABLE UNITS**

DC, AC, mV, V, kV,  $\mu$ A, mA, A, kA, mW, W, kW, var, kvar, Mvar, VA, Hz,  $\Omega$ , k $\Omega$ , M $\Omega$ ,  
cm, mm, m, m/sec, mm/min, cm/min, m/min, m/h, m/s<sup>2</sup>, inch, L,  
L/s, L/min, L/h, m<sup>3</sup>, m<sup>3</sup>/sec, m<sup>3</sup>/min,  
m<sup>3</sup>/h, Nm<sup>3</sup>/h, N·m, N/m<sup>2</sup>, g, kg, kg/h, N, kN, Pa, kPa, Mpa, t, t/h,  
°C, °F, K, %RH, J, kJ, MJ, rpm, sec, min, min<sup>-1</sup>, pH, %, ppm, deg, (blank),

**Table 3****SETTABLE CHARACTERS**

0 - 9 A - Z a - z ! " # \$ % & ' ( ) = - + \* ^ |  
@ ` [ ] { } ; : < > ? \_ , . /

**Table 4****Upper**

| SETTING VALUE       | DESCRIPTION                        |
|---------------------|------------------------------------|
| Ch1 INPUT           | Ch1 input engineering unit value*2 |
| Ch1 INPUT (Scaling) | Ch1 input scaling                  |
| Ch1 PERCENT         | Ch1 percent value*3                |
| Ch1 OUTPUT          | Ch1 output engineering unit value  |
| Ch2 INPUT           | Ch2 input engineering unit value*2 |
| Ch2 INPUT (Scaling) | Ch2 input scaling                  |
| Ch2 PERCENT         | Ch2 percent value*3                |
| Ch2 OUTPUT          | Ch2 output engineering unit value  |

**Lower**

| SETTING VALUE       | DESCRIPTION                        |
|---------------------|------------------------------------|
| Ch1 INPUT           | Ch1 input engineering unit value*2 |
| Ch1 INPUT (Scaling) | Ch1 input scaling                  |
| Ch1 PERCENT         | Ch1 percent value*3                |
| Ch1 OUTPUT          | Ch1 output engineering unit value  |
| Ch2 INPUT           | Ch2 input engineering unit value*2 |
| Ch2 INPUT (Scaling) | Ch2 input scaling                  |
| Ch2 PERCENT         | Ch2 percent value*3                |
| Ch2 OUTPUT          | Ch2 output engineering unit value  |
| None                | No display                         |

\*2. Display with 0.00 to 359.99 based on input signal.

\*3. Display the value which is converted as 0.00 - 100.00 % based on input setting.

**■ CH1 LINEARIZATION**

Factory  
Internal  
check

Specify the input & output values and the units.

$X[n]$  = Input Value of n-th

$Y[n]$  = Output Value of n-th

$-5\% \leq X[n] \leq +105\%$ ,  $-5\% \leq Y[n] \leq +105\%$ ,  $X[n] < X[n+1]$

Place the check mark for one of engineering unit value, % value or scaling value.

The value is converted to %, and the value rounded off is entered to the unit.

|                          |
|--------------------------|
| <input type="checkbox"/> |
|--------------------------|

| n   | X   | Y   |     |  |  |
|-----|---|---|-----|--|--|
|     | <input type="checkbox"/> Engineering unit value<br><input type="checkbox"/> % value<br><input type="checkbox"/> Scaling value | <input type="checkbox"/> Engineering unit value<br><input type="checkbox"/> % value<br><input type="checkbox"/> Scaling value |     |  |  |
| 001 |   |   | 026 |  |  |
| 002 |   |   | 027 |  |  |
| 003 |   |   | 208 |  |  |
| 004 |   |   | 029 |  |  |
| 005 |   |   | 030 |  |  |
| 006 |   |   | 031 |  |  |
| 007 |   |   | 032 |  |  |
| 008 |   |   | 033 |  |  |
| 009 |   |   | 034 |  |  |
| 010 |   |   | 035 |  |  |
| 011 |   |   | 036 |  |  |
| 012 |   |   | 037 |  |  |
| 013 |   |   | 038 |  |  |
| 014 |   |   | 039 |  |  |
| 015 |   |   | 040 |  |  |
| 016 |   |   | 041 |  |  |
| 017 |   |   | 042 |  |  |
| 018 |   |   | 043 |  |  |
| 019 |   |   | 044 |  |  |
| 020 |   |   | 045 |  |  |
| 021 |   |   | 046 |  |  |
| 022 |   |   | 047 |  |  |
| 023 |   |   | 048 |  |  |
| 024 |   |   | 049 |  |  |
| 025 |   |   | 050 |  |  |

■ CH1 LINEARIZATION

|     |  |  |     |  |  |
|-----|--|--|-----|--|--|
| 051 |  |  | 082 |  |  |
| 052 |  |  | 083 |  |  |
| 053 |  |  | 084 |  |  |
| 054 |  |  | 085 |  |  |
| 055 |  |  | 086 |  |  |
| 056 |  |  | 087 |  |  |
| 057 |  |  | 088 |  |  |
| 058 |  |  | 089 |  |  |
| 059 |  |  | 090 |  |  |
| 060 |  |  | 091 |  |  |
| 061 |  |  | 092 |  |  |
| 062 |  |  | 093 |  |  |
| 063 |  |  | 094 |  |  |
| 064 |  |  | 095 |  |  |
| 065 |  |  | 096 |  |  |
| 066 |  |  | 097 |  |  |
| 067 |  |  | 098 |  |  |
| 068 |  |  | 099 |  |  |
| 069 |  |  | 100 |  |  |
| 070 |  |  | 101 |  |  |
| 071 |  |  | 102 |  |  |
| 072 |  |  | 103 |  |  |
| 073 |  |  | 104 |  |  |
| 074 |  |  | 105 |  |  |
| 075 |  |  | 106 |  |  |
| 076 |  |  | 107 |  |  |
| 077 |  |  | 108 |  |  |
| 078 |  |  | 109 |  |  |
| 079 |  |  | 110 |  |  |
| 080 |  |  | 111 |  |  |
| 081 |  |  |     |  |  |

**■ CH2 LINEARIZATION**

Factory  
Internal  
check

Specify the input & output values and the units.

X[n] = Input Value of n-th

Y[n] = Output Value of n-th

-5% ≤ X[n] ≤ +105%, -5% ≤ Y[n] ≤ +105%, X[n] < X[n+1]

Place the check mark for one of engineering unit value, % value or scaling value.

The value is converted to %, and the value rounded off is entered to the unit.

|   |
|---|
| □ |
|---|

| n   | X<br><input type="checkbox"/> Engineering unit value<br><input type="checkbox"/> % value<br><input type="checkbox"/> Scaling value | Y<br><input type="checkbox"/> Engineering unit value<br><input type="checkbox"/> % value<br><input type="checkbox"/> Scaling value |     |  |  |
|-----|--|--|-----|--|--|
| 001 |  |  | 026 |  |  |
| 002 |  |  | 027 |  |  |
| 003 |  |  | 208 |  |  |
| 004 |  |  | 029 |  |  |
| 005 |  |  | 030 |  |  |
| 006 |  |  | 031 |  |  |
| 007 |  |  | 032 |  |  |
| 008 |  |  | 033 |  |  |
| 009 |  |  | 034 |  |  |
| 010 |  |  | 035 |  |  |
| 011 |  |  | 036 |  |  |
| 012 |  |  | 037 |  |  |
| 013 |  |  | 038 |  |  |
| 014 |  |  | 039 |  |  |
| 015 |  |  | 040 |  |  |
| 016 |  |  | 041 |  |  |
| 017 |  |  | 042 |  |  |
| 018 |  |  | 043 |  |  |
| 019 |  |  | 044 |  |  |
| 020 |  |  | 045 |  |  |
| 021 |  |  | 046 |  |  |
| 022 |  |  | 047 |  |  |
| 023 |  |  | 048 |  |  |
| 024 |  |  | 049 |  |  |
| 025 |  |  | 050 |  |  |

■ CH2 LINEARIZATION

|     |  |  |     |  |  |
|-----|--|--|-----|--|--|
| 051 |  |  | 082 |  |  |
| 052 |  |  | 083 |  |  |
| 053 |  |  | 084 |  |  |
| 054 |  |  | 085 |  |  |
| 055 |  |  | 086 |  |  |
| 056 |  |  | 087 |  |  |
| 057 |  |  | 088 |  |  |
| 058 |  |  | 089 |  |  |
| 059 |  |  | 090 |  |  |
| 060 |  |  | 091 |  |  |
| 061 |  |  | 092 |  |  |
| 062 |  |  | 093 |  |  |
| 063 |  |  | 094 |  |  |
| 064 |  |  | 095 |  |  |
| 065 |  |  | 096 |  |  |
| 066 |  |  | 097 |  |  |
| 067 |  |  | 098 |  |  |
| 068 |  |  | 099 |  |  |
| 069 |  |  | 100 |  |  |
| 070 |  |  | 101 |  |  |
| 071 |  |  | 102 |  |  |
| 072 |  |  | 103 |  |  |
| 073 |  |  | 104 |  |  |
| 074 |  |  | 105 |  |  |
| 075 |  |  | 106 |  |  |
| 076 |  |  | 107 |  |  |
| 077 |  |  | 108 |  |  |
| 078 |  |  | 109 |  |  |
| 079 |  |  | 110 |  |  |
| 080 |  |  | 111 |  |  |
| 081 |  |  |     |  |  |