

# ORDERING INFORMATION

# Model : JRP2

## PLEASE FILL IN THIS SECTION



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

## M-SYSTEM USE ONLY



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

**SOFTWARE SETTING**      Fill in blank sections or mark  with . Standard settings will be used if not otherwise specified.

| ITEM  | SET VALUE   | STANDARD       | COMMENTS  |                 |             |                            |      |                         |      |                      |     |                          |     |                       |     |                    |      |                            |      |                         |      |
|---|---|----------------|---|-----------------|-------------|----------------------------|------|-------------------------|------|----------------------|-----|--------------------------|-----|-----------------------|-----|--------------------|------|----------------------------|------|-------------------------|------|
| INPUT TYPE  | <input type="checkbox"/> Open collector<br><input type="checkbox"/> Voltage pulse<br><input type="checkbox"/> RS-422 line driver                                | Open collector |   |                 |             |                            |      |                         |      |                      |     |                          |     |                       |     |                    |      |                            |      |                         |      |
| PULSE SENSING<br>(voltage pulse only)                 | <input type="checkbox"/> Capacitor coupled<br><input type="checkbox"/> DC coupled   | DC coupled     | Choose from the list to the left for the voltage pulse input.<br>For the capacitor coupling, specify the detecting level to '0V.'   |                 |             |                            |      |                         |      |                      |     |                          |     |                       |     |                    |      |                            |      |                         |      |
| PULSE AMPLITUDE<br>(voltage pulse only)               | Vp-p  | N/A            | They are required to accurately understand the input waveform. The maximum voltage applicable across the input terminals is 50V.  |                 |             |                            |      |                         |      |                      |     |                          |     |                       |     |                    |      |                            |      |                         |      |
| DC OFFSET<br>(voltage pulse only)                     | V   | N/A            |   |                 |             |                            |      |                         |      |                      |     |                          |     |                       |     |                    |      |                            |      |                         |      |
| DETECTING LEVEL<br>(voltage pulse only)               | V   | N/A            |   |                 |             |                            |      |                         |      |                      |     |                          |     |                       |     |                    |      |                            |      |                         |      |
| NOISE FILTER<br>(voltage pulse & open collector only) | <input type="checkbox"/> High<br><input type="checkbox"/> Low<br><input type="checkbox"/> No filter<br>Please refer to the comments and the table to the right. | Low            | Choose a noise filter type to match the input frequency range.<br>If not used, the transmitter accuracy may not satisfy described accuracy level. <table border="1" style="margin-left: auto; margin-right: auto;"> <thead> <tr> <th>FREQUENCY RANGE</th> <th>FILTER TYPE</th> </tr> </thead> <tbody> <tr> <td>100 kHz (-200 to +200 kHz)</td> <td>None</td> </tr> <tr> <td>10 kHz (-10 to +10 kHz)</td> <td>None</td> </tr> <tr> <td>1 kHz (-1 to +1 kHz)</td> <td>Low</td> </tr> <tr> <td>100 Hz (-100 to +100 Hz)</td> <td>Low</td> </tr> <tr> <td>10 Hz (-10 to +10 Hz)</td> <td>Low</td> </tr> <tr> <td>1 Hz (-1 to +1 Hz)</td> <td>High</td> </tr> <tr> <td>100 mHz (-100 to +100 mHz)</td> <td>High</td> </tr> <tr> <td>10 mHz (-10 to +10 mHz)</td> <td>High</td> </tr> </tbody> </table> | FREQUENCY RANGE | FILTER TYPE | 100 kHz (-200 to +200 kHz) | None | 10 kHz (-10 to +10 kHz) | None | 1 kHz (-1 to +1 kHz) | Low | 100 Hz (-100 to +100 Hz) | Low | 10 Hz (-10 to +10 Hz) | Low | 1 Hz (-1 to +1 Hz) | High | 100 mHz (-100 to +100 mHz) | High | 10 mHz (-10 to +10 mHz) | High |
| FREQUENCY RANGE                                       | FILTER TYPE   |                |   |                 |             |                            |      |                         |      |                      |     |                          |     |                       |     |                    |      |                            |      |                         |      |
| 100 kHz (-200 to +200 kHz)                            | None  |                |   |                 |             |                            |      |                         |      |                      |     |                          |     |                       |     |                    |      |                            |      |                         |      |
| 10 kHz (-10 to +10 kHz)                               | None  |                |   |                 |             |                            |      |                         |      |                      |     |                          |     |                       |     |                    |      |                            |      |                         |      |
| 1 kHz (-1 to +1 kHz)                                  | Low   |                |   |                 |             |                            |      |                         |      |                      |     |                          |     |                       |     |                    |      |                            |      |                         |      |
| 100 Hz (-100 to +100 Hz)                              | Low   |                |   |                 |             |                            |      |                         |      |                      |     |                          |     |                       |     |                    |      |                            |      |                         |      |
| 10 Hz (-10 to +10 Hz)                                 | Low   |                |   |                 |             |                            |      |                         |      |                      |     |                          |     |                       |     |                    |      |                            |      |                         |      |
| 1 Hz (-1 to +1 Hz)                                    | High  |                |   |                 |             |                            |      |                         |      |                      |     |                          |     |                       |     |                    |      |                            |      |                         |      |
| 100 mHz (-100 to +100 mHz)                            | High  |                |   |                 |             |                            |      |                         |      |                      |     |                          |     |                       |     |                    |      |                            |      |                         |      |
| 10 mHz (-10 to +10 mHz)                               | High  |                |   |                 |             |                            |      |                         |      |                      |     |                          |     |                       |     |                    |      |                            |      |                         |      |
| INPUT ZERO<br>FREQUENCY fz                            | Hz  | 0 Hz           | Specify the frequency for 0% input.<br>-200 kHz (200 kHz in the reverse direction) ≤ fz < fs  |                 |             |                            |      |                         |      |                      |     |                          |     |                       |     |                    |      |                            |      |                         |      |
| INPUT SPAN<br>FREQUENCY fs                            | Hz  | 1000 Hz        | Specify the frequency for 100% input.<br>Min. 10% of the selected frequency range value required.<br>fz < fs ≤ Max. value of the selected frequency range<br>Max. 200 kHz (forward direction)   |                 |             |                            |      |                         |      |                      |     |                          |     |                       |     |                    |      |                            |      |                         |      |

| ITEM   | SET VALUE  | STANDARD                    | COMMENTS  |                 |                 |                            |                            |                         |               |                         |        |                          |                      |                       |              |                          |         |                            |                       |                         |              |                    |         |               |                            |          |               |                         |           |                |
|--|--|-----------------------------|---|-----------------|-----------------|----------------------------|----------------------------|-------------------------|---------------|-------------------------|--------|--------------------------|----------------------|-----------------------|--------------|--------------------------|---------|----------------------------|-----------------------|-------------------------|--------------|--------------------|---------|---------------|----------------------------|----------|---------------|-------------------------|-----------|----------------|
| LOW-END CUTOUT   | Hz<br><br>Please refer to the comments and the table to the right.   | 0 Hz                        | Choose within the input range (fs – fz). The transmitter forcibly provides an output equivalent to 0 Hz input.<br>The minimum increments used to determine the low-end cutout frequency depend upon frequency ranges.<br><table border="1"> <thead> <tr> <th>FREQUENCY RANGE</th> <th>MIN. INCREMENTS</th> </tr> </thead> <tbody> <tr> <td>100 kHz (-200 to +200 kHz)</td> <td>10 Hz</td> </tr> <tr> <td>10 kHz (-10 to +10 kHz)</td> <td>1 Hz</td> </tr> <tr> <td>1 kHz (-1 to +1 kHz)</td> <td>0.1 Hz</td> </tr> <tr> <td>100 Hz (-100 to +100 Hz)</td> <td>0.01 Hz</td> </tr> <tr> <td>10 Hz (-10 to +10 Hz)</td> <td>1 mHz</td> </tr> <tr> <td>1 Hz (-1 to +1 Hz)</td> <td>0.1 mHz</td> </tr> <tr> <td>100 mHz (-100 to +100 mHz)</td> <td>0.01 mHz</td> </tr> <tr> <td>10 mHz (-10 to +10 mHz)</td> <td>0.001 mHz</td> </tr> </tbody> </table>   | FREQUENCY RANGE | MIN. INCREMENTS | 100 kHz (-200 to +200 kHz) | 10 Hz                      | 10 kHz (-10 to +10 kHz) | 1 Hz          | 1 kHz (-1 to +1 kHz)    | 0.1 Hz | 100 Hz (-100 to +100 Hz) | 0.01 Hz              | 10 Hz (-10 to +10 Hz) | 1 mHz        | 1 Hz (-1 to +1 Hz)       | 0.1 mHz | 100 mHz (-100 to +100 mHz) | 0.01 mHz              | 10 mHz (-10 to +10 mHz) | 0.001 mHz    |                    |         |               |                            |          |               |                         |           |                |
| FREQUENCY RANGE  | MIN. INCREMENTS  |                             |   |                 |                 |                            |                            |                         |               |                         |        |                          |                      |                       |              |                          |         |                            |                       |                         |              |                    |         |               |                            |          |               |                         |           |                |
| 100 kHz (-200 to +200 kHz)                                       | 10 Hz  |                             |   |                 |                 |                            |                            |                         |               |                         |        |                          |                      |                       |              |                          |         |                            |                       |                         |              |                    |         |               |                            |          |               |                         |           |                |
| 10 kHz (-10 to +10 kHz)  | 1 Hz   |                             |   |                 |                 |                            |                            |                         |               |                         |        |                          |                      |                       |              |                          |         |                            |                       |                         |              |                    |         |               |                            |          |               |                         |           |                |
| 1 kHz (-1 to +1 kHz)   | 0.1 Hz   |                             |   |                 |                 |                            |                            |                         |               |                         |        |                          |                      |                       |              |                          |         |                            |                       |                         |              |                    |         |               |                            |          |               |                         |           |                |
| 100 Hz (-100 to +100 Hz)   | 0.01 Hz  |                             |   |                 |                 |                            |                            |                         |               |                         |        |                          |                      |                       |              |                          |         |                            |                       |                         |              |                    |         |               |                            |          |               |                         |           |                |
| 10 Hz (-10 to +10 Hz)  | 1 mHz  |                             |   |                 |                 |                            |                            |                         |               |                         |        |                          |                      |                       |              |                          |         |                            |                       |                         |              |                    |         |               |                            |          |               |                         |           |                |
| 1 Hz (-1 to +1 Hz)   | 0.1 mHz  |                             |   |                 |                 |                            |                            |                         |               |                         |        |                          |                      |                       |              |                          |         |                            |                       |                         |              |                    |         |               |                            |          |               |                         |           |                |
| 100 mHz (-100 to +100 mHz)                                       | 0.01 mHz   |                             |   |                 |                 |                            |                            |                         |               |                         |        |                          |                      |                       |              |                          |         |                            |                       |                         |              |                    |         |               |                            |          |               |                         |           |                |
| 10 mHz (-10 to +10 mHz)  | 0.001 mHz  |                             |   |                 |                 |                            |                            |                         |               |                         |        |                          |                      |                       |              |                          |         |                            |                       |                         |              |                    |         |               |                            |          |               |                         |           |                |
| LOW-END CUTOUT DEADBAND (0 Hz to 5% of the each frequency range) | Hz<br><br>See min. increments in the comments for LOW-END CUTOUT column.                                       | 1 % of each frequency range | Choose from the selectable range shown below.<br>It is invalid, when the deadband is set to 0 Hz.<br><table border="1"> <thead> <tr> <th>FREQUENCY RANGE</th> <th>MIN. INCREMENTS</th> <th>SELECTABLE RANGE</th> </tr> </thead> <tbody> <tr> <td>100 kHz (-200 to +200 kHz)</td> <td>10 Hz</td> <td>0 to 5.00 kHz</td> </tr> <tr> <td>10 kHz (-10 to +10 kHz)</td> <td>1 Hz</td> <td>0 to 500 Hz</td> </tr> <tr> <td>1 kHz (-1 to +1 kHz)</td> <td>0.1 Hz</td> <td>0 to 50.0 Hz</td> </tr> <tr> <td>100 Hz (-100 to +100 Hz)</td> <td>0.01 Hz</td> <td>0 to 5.00 Hz</td> </tr> <tr> <td>10 Hz (-10 to +10 Hz)</td> <td>1 mHz</td> <td>0 to 500 mHz</td> </tr> <tr> <td>1 Hz (-1 to +1 Hz)</td> <td>0.1 mHz</td> <td>0 to 50.0 mHz</td> </tr> <tr> <td>100 mHz (-100 to +100 mHz)</td> <td>0.01 mHz</td> <td>0 to 5.00 mHz</td> </tr> <tr> <td>10 mHz (-10 to +10 mHz)</td> <td>0.001 mHz</td> <td>0 to 0.500 mHz</td> </tr> </tbody> </table> | FREQUENCY RANGE | MIN. INCREMENTS | SELECTABLE RANGE           | 100 kHz (-200 to +200 kHz) | 10 Hz                   | 0 to 5.00 kHz | 10 kHz (-10 to +10 kHz) | 1 Hz   | 0 to 500 Hz              | 1 kHz (-1 to +1 kHz) | 0.1 Hz                | 0 to 50.0 Hz | 100 Hz (-100 to +100 Hz) | 0.01 Hz | 0 to 5.00 Hz               | 10 Hz (-10 to +10 Hz) | 1 mHz                   | 0 to 500 mHz | 1 Hz (-1 to +1 Hz) | 0.1 mHz | 0 to 50.0 mHz | 100 mHz (-100 to +100 mHz) | 0.01 mHz | 0 to 5.00 mHz | 10 mHz (-10 to +10 mHz) | 0.001 mHz | 0 to 0.500 mHz |
| FREQUENCY RANGE  | MIN. INCREMENTS  | SELECTABLE RANGE            |   |                 |                 |                            |                            |                         |               |                         |        |                          |                      |                       |              |                          |         |                            |                       |                         |              |                    |         |               |                            |          |               |                         |           |                |
| 100 kHz (-200 to +200 kHz)                                       | 10 Hz  | 0 to 5.00 kHz               |   |                 |                 |                            |                            |                         |               |                         |        |                          |                      |                       |              |                          |         |                            |                       |                         |              |                    |         |               |                            |          |               |                         |           |                |
| 10 kHz (-10 to +10 kHz)  | 1 Hz   | 0 to 500 Hz                 |   |                 |                 |                            |                            |                         |               |                         |        |                          |                      |                       |              |                          |         |                            |                       |                         |              |                    |         |               |                            |          |               |                         |           |                |
| 1 kHz (-1 to +1 kHz)   | 0.1 Hz   | 0 to 50.0 Hz                |   |                 |                 |                            |                            |                         |               |                         |        |                          |                      |                       |              |                          |         |                            |                       |                         |              |                    |         |               |                            |          |               |                         |           |                |
| 100 Hz (-100 to +100 Hz)   | 0.01 Hz  | 0 to 5.00 Hz                |   |                 |                 |                            |                            |                         |               |                         |        |                          |                      |                       |              |                          |         |                            |                       |                         |              |                    |         |               |                            |          |               |                         |           |                |
| 10 Hz (-10 to +10 Hz)  | 1 mHz  | 0 to 500 mHz                |   |                 |                 |                            |                            |                         |               |                         |        |                          |                      |                       |              |                          |         |                            |                       |                         |              |                    |         |               |                            |          |               |                         |           |                |
| 1 Hz (-1 to +1 Hz)   | 0.1 mHz  | 0 to 50.0 mHz               |   |                 |                 |                            |                            |                         |               |                         |        |                          |                      |                       |              |                          |         |                            |                       |                         |              |                    |         |               |                            |          |               |                         |           |                |
| 100 mHz (-100 to +100 mHz)                                       | 0.01 mHz   | 0 to 5.00 mHz               |   |                 |                 |                            |                            |                         |               |                         |        |                          |                      |                       |              |                          |         |                            |                       |                         |              |                    |         |               |                            |          |               |                         |           |                |
| 10 mHz (-10 to +10 mHz)  | 0.001 mHz  | 0 to 0.500 mHz              |   |                 |                 |                            |                            |                         |               |                         |        |                          |                      |                       |              |                          |         |                            |                       |                         |              |                    |         |               |                            |          |               |                         |           |                |
| ALARM MODE   | <input type="checkbox"/> High alarm<br><input type="checkbox"/> Low alarm<br><input type="checkbox"/> No alarm | High alarm                  | Choose from the list to the left.   |                 |                 |                            |                            |                         |               |                         |        |                          |                      |                       |              |                          |         |                            |                       |                         |              |                    |         |               |                            |          |               |                         |           |                |
| ALARM SETPOINT   | %  | 100.00%                     | Specify within -15.00 to +115.00% if High/Low alarm is selected. (% of the input range (fs – fz))   |                 |                 |                            |                            |                         |               |                         |        |                          |                      |                       |              |                          |         |                            |                       |                         |              |                    |         |               |                            |          |               |                         |           |                |
| ALARM DEADBAND   | %  | 1.00%                       | Specify within 0.00 to 20.00% if High/Low alarm is selected. (% of the input range (fs – fz))   |                 |                 |                            |                            |                         |               |                         |        |                          |                      |                       |              |                          |         |                            |                       |                         |              |                    |         |               |                            |          |               |                         |           |                |
| ALARM ON DELAY TIME AT START UP                                  | sec.   | 3 sec.                      | Specify the delay time for the alarm trip after the power is turned on, within 2.0 to 1000.0 sec. if High/Low alarm is selected.  |                 |                 |                            |                            |                         |               |                         |        |                          |                      |                       |              |                          |         |                            |                       |                         |              |                    |         |               |                            |          |               |                         |           |                |

**LINEARIZATION** Fill in the table only when the linearization is required. Refer to the example below.

| INPUT (%) | OUTPUT (unit : ) | INPUT (%) | OUTPUT (unit : ) |
|-----------|------------------|-----------|------------------|
| X (01)    | Y (01)           | X (09)    | Y (09)           |
| X (02)    | Y (02)           | X (10)    | Y (10)           |
| X (03)    | Y (03)           | X (11)    | Y (11)           |
| X (04)    | Y (04)           | X (12)    | Y (12)           |
| X (05)    | Y (05)           | X (13)    | Y (13)           |
| X (06)    | Y (06)           | X (14)    | Y (14)           |
| X (07)    | Y (07)           | X (15)    | Y (15)           |
| X (08)    | Y (08)           | X (16)    | Y (16)           |

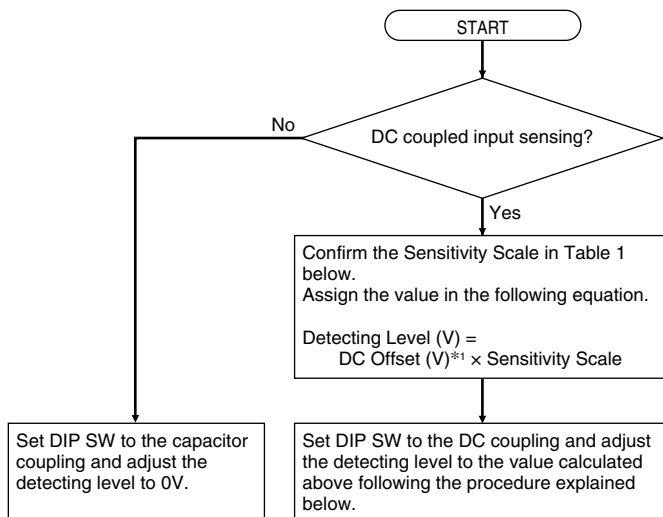
Output data in % is acceptable.

**EXAMPLE**

|        |          |        |           |        |           |        |            |
|--------|----------|--------|-----------|--------|-----------|--------|------------|
| X (01) | 0.00 (%) | Y (01) | 4.00 (mA) | X (09) | 80.00 (%) | Y (09) | 17.58 (mA) |
| X (02) | 10.00    | Y (02) | 6.37      | X (10) | 90.00     | Y (10) | 18.81      |
| X (03) | 20.00    | Y (03) | 8.42      | X (11) | 100.00    | Y (11) | 20.00      |
| X (04) | 30.00    | Y (04) | 10.25     | X (12) |           | Y (12) |            |
| X (05) | 40.00    | Y (05) | 11.92     | X (13) |           | Y (13) |            |
| X (06) | 50.00    | Y (06) | 13.47     | X (14) |           | Y (14) |            |
| X (07) | 60.00    | Y (07) | 14.92     | X (15) |           | Y (15) |            |
| X (08) | 70.00    | Y (08) | 16.28     | X (16) |           | Y (16) |            |

**DETECTING LEVEL (voltage pulse and two-wire current pulse)**

Determine the appropriate detecting level referring to the flow chart below. Input type is for voltage pulse.



\*1. Rounded off to one decimal place.

**Table 1**

| SW | PULSE AMPLITUDE | SENSITIVITY SCALE |
|----|-----------------|-------------------|
| 0  | 50 – 100 Vp-p   | 1/20              |
| 1  | 25 – 50 Vp-p    | 1/10              |
| 2  | 10 – 25 Vp-p    | 1/5               |
| 3  | 5 – 10 Vp-p     | 1/2               |
| 4  | 1 – 5 Vp-p      | 1                 |
| 5  | 0.5 – 1 Vp-p    | 5                 |
| 6  | 0.1 – 0.5 Vp-p  | 10                |
| 7  | Open collector  | 1                 |

A specific sensitivity scale is applied according to the pulse amplitude setting. The scaled input voltage is then compared to the preset detecting level.

With DC coupling, the scaled H level voltage must be higher than the detecting level so that the pulse state is accurately detected.

**Setting Examples**

**(DC Offset = Pulse Amplitude / 2)**

| PULSE AMPLITUDE (Vp-p) | AMPLITUDE RANGE (Vp-p) | DETECTING LEVEL (V) |
|------------------------|------------------------|---------------------|
| 50                     | 50 – 100               | 1.3                 |
| 50                     | 25 – 50                | 2.5                 |
| 30                     | 25 – 50                | 1.5                 |
| 25                     | 10 – 25                | 2.5                 |
| 15                     | 10 – 25                | 1.5                 |
| 10                     | 5 – 10                 | 2.5                 |
| 7.5                    | 5 – 10                 | 1.9                 |
| 5                      | 1 – 5                  | 2.5                 |
| 3.5                    | 1 – 5                  | 1.8                 |
| 2                      | 1 – 5                  | 1                   |
| 1                      | 0.5 – 1                | 2.5                 |
| 0.5                    | 0.1 – 0.5              | 2.5                 |

The maximum voltage applicable across the input terminals is 50V. For a voltage pulse input of 100 Vp-p amplitude, the DC offset must be set to 0V.