Safety Precautions

1. Snap in installation. Please buckle the fixed snaps into the installation holes of the case sides. While handling the screws and holes, do not let the metal particles or debris fall into the air vent of the controllers. This may give rise to malfunction and misoperation.

2. Avoid wiring or handling cable plugs with charge, which may cause electric shock or damage the circuits.

3. On seriously interfered occasions, shield cables should be adopted as the I/O cables of HMI and PLC. Shield cables can prevent thoroughly data from being read.

4. The working power supply is DC24V. Do not connect the I/O signal port to AC power source.

5. 3.81mm pluggable terminals are adopted for easy wiring.

6. Mitsubishi programming software for PLC, <COOLMAY HMI> software for HMI.

Product Information

- **Naming Rule**: EX2N-70H(A/AS)/100HA-24M
- **1. Series**: EX2N
- **2. HMI**: 43H(A)/43KH(A)/50KH(A)
- **3. I/O**: 10DI/10DO 16DI/16DO 24DI/24DO
- **4. Module type**: M: Main module of universal controller
- **5. DO type**: R: relay; T: transistor; RT: both relay and transistor
- **6. A1**: 4 channels for 4DI, 32 for 70H/100H
- **7. A0**: 2 channels for 4DI, 32 for 70H/100H
- **8. Input Voltage**: 100/220V AC
- **9. Indicator time**: About 10ms
- **10. Temperature**: -10°C~+75°C ( Same as HMI)
- **11. Installation method**: DIN rail and wall mount
- **12. Optical Isolation**: Maximum 50mA
- **13. Terminal block**: Plug-in
- **14. RS485**: 12 bits maximum
- **15. Switching**: 5DI/5DO 16:8DI/8DO 24:12DI/12DO etc.
- **16. Dimensions**: 261*212*40
- **17. Package**: 10 sets

Electrical parameters

<table>
<thead>
<tr>
<th>Model</th>
<th>Max Distance</th>
<th>Installation dimensions</th>
<th>Overall Size (Y/Φ/D)</th>
</tr>
</thead>
<tbody>
<tr>
<td>EX2N-43(A)</td>
<td>24</td>
<td>119</td>
<td>53</td>
</tr>
<tr>
<td>EX2N-43KH(A)/50KH(A)</td>
<td>24</td>
<td>142</td>
<td>55</td>
</tr>
<tr>
<td>EX2N-100HA</td>
<td>44</td>
<td>261</td>
<td>80</td>
</tr>
</tbody>
</table>

More specifications can be customized with large quantity.
There is a power supply (DC24V) inside PLC to test switch state. The end user only need to put in the dry contact. The signal of OC output is needed if the output signal of active crystal must be used together with a 2 KΩ resistance.

**Equivalent Circuit**

Diagram 11 is equivalent circuit diagram of transistor output. As the diagram shows, there are several groups of input terminals, each group is electrical isolation and the output electric shock of different groups should be connected with different power circuit. The transistor output can be only used for load circuit with DC24V.

As for inductive load connected with AC circuits. RC instantaneous voltage absorbing circuit should be considered as outside circuit. As for inductive load connected with DC circuits, free-wheeling diode should be added, shown as diagram 12.

Diagram 12: Inductive Load Absorbing Circuit

Please add a 10μF ceramic capacitor or a circular filter to amplify the antiramaing capability accordingly if analog input is not stable.

**Analog Register**

Analog Input(AD): EX2N-43H(A)/43KH(A)/50KH(A)-MT/MT/MRT/4AD2DA

- **AD Register Value**
  - Magnification Correction (units: milli) Size Connection Circle type of analog sampling
  - AD0-AD3:0-1000-20mA
  - AD4-AD7:0-20mA

- **Register Value**
  - Value/Current: 0.1-20mA
  - Resolution: 10mV/0.02mA

- **Set Value**
  - RXD: 0-10V/0-20mA

- **Description**
  - 0-10V/0-20mA

**Diagram 7: COM1/COM2**

**Diagram 5: COM1/COM2**

**Diagram 8: RS485 (PLC) EXK-H/EXK-A(D)&EXK-AH(D) COM port Pin definition**

**Diagram 9: Input Wiring**

**Diagram 10: Equivalent Circuit of Relay Output Module**

**Equivalent Circuit of Relay Output**

There are several groups of input terminals, each group is electrical isolation and the output electric shock of different groups should be connected with different power circuit. Please choose proper insurance for each load to cut the output unit and the plate wires of the plc due to the load circuit and other problems.

**Diagram 11: Equivalent Circuit of Transistor Output**

Please choose proper insurance for each load to avoid burning out the output unit and the plate wires of the plc due to the load circuit and other problems.