

INTELART

Robust in Automation

IM230 V1.0

Relay Output Module

Technical Manual

www.intelart.ir

08/2021

Warning notice system

This manual contains notices you have to observe in order to ensure your personal safety, as well as to prevent damage to property. The notices referring to your personal safety are highlighted in the manual by a safety alert symbol, notices referring only to property damage have no safety alert symbol. These notices shown below are graded according to the degree of danger.

| |
|---------------|
| DANGER |
|---------------|

| |
|---|
| Indicates that death or severe personal injury will result if proper precautions are not taken. |
|---|

| |
|----------------|
| WARNING |
|----------------|

| |
|--|
| Indicates that death or severe personal injury may result if proper precautions are not taken. |
|--|

| |
|---------------|
| NOTICE |
|---------------|

| |
|--|
| Indicates that property damage can result if proper precautions are not taken. |
|--|

Qualified personnel

The product/system described in this documentation may be operated only by personnel qualified for the specific task in accordance with the relevant documentation, in particular its warning notices and safety instructions.

Qualified personnel are those who, based on their training and experience, are capable of identifying risks and avoiding potential hazards when working with these products/systems

Contents

- 1 Technical Specifications 1
 - 1.1 Hardware Parameters 1
- 2 Configurations..... 3
 - 2.1 Digital Outputs 3
 - 2.1.1 Stop action 3
- 3 Address Space 4
- 4 Diagnostic and Wiring 5
- 5 Dimensional drawing 7

1 Technical Specifications

1.1 Hardware Parameters

The following table specifies the hardware information of the module.

Table 1 Hardware parameters

| | | |
|---------------------------|---|---|
| Digital Outputs | Outputs count | 8 |
| | Type of digital output | Isolated relay |
| | Rated operating voltage | 24 V |
| | Contact resistance | Max. 100 mΩ |
| | Nominal switching capacity (resistive load) | 5A 277V AC |
| | Max. switching power (resistive load) | 1,385 VA |
| | Max. switching voltage | 277 V AC |
| | Max. switching current | 5 A |
| | Insulation resistance | Min. 1,000 MΩ (at 500 V DC) |
| | Breakdown voltage Between open contacts | 750 Vrms for 1 min |
| | Breakdown voltage Between contact and coil | 4,000 Vrms for 1 min |
| | Delay time from "1" to "0" | Max. 10 ms |
| | Delay time from "0" to "1" | Max. 10 ms |
| | Max. operating speed | 20 cpm |
| | Expected life | Min. 2×10 ⁵ (5 A 125 V AC at rated load), Min. 10 ⁵ (5 A 250 V AC at rated load) |
| Stop action support | Yes. Shut Down, Keep Last Value, Output 1 | |
| Dimensions | Width | 30 mm |
| | Height | 102 mm |
| | Depth | 58 mm |
| Ambient Conditions | Storage temperature | -15 to 75 °C |
| | Operating temperature | 0 to 55 °C |
| | Relative Humidity | Max 90 %, No Condensation |

| | | |
|----------------------|----------------|-----------------|
| Miscellaneous | Weight | Approx. 230 g |
| | Power LED | Yes. Green LED |
| | Diagnostic LED | Yes. Yellow LED |

2 Configurations

2.1 Digital Outputs

The outputs of the module have no alternate function.

2.1.1 Stop action

Each output channel has a property named “StopAction” which determines the act of channel when PLC state changes to stop mode.

3 Address Space

The value of input channels and output channels and some configurations will be accessible via an address space. There are bunch of predefined mapped tags in order to read or write a value in the address space. The following table illustrates the type and purpose of each mapped tag.







Table 2 Mapped tags of parameters in the address space

| Category | Name | Data Type | Address | Function |
|-------------------------|----------|-----------|---------|---|
| Input Space (I) | | | | |
| Diagnose | DiagInfo | WORD | %IW0 | Gets all diagnostic information when the module is in RUN mode. <ul style="list-style-type: none"> • Bit 0: Power supply missing • Bit 1- Bit15: Reserved |
| Output Space (Q) | | | | |
| Digital Outputs | DQ00 | BOOL | %Q0.0 | Sets or gets the value of channel |
| | ⋮ | | ⋮ | |
| | DQ07 | | %Q0.7 | |
| | DQ00_07 | BYTE | %QB0 | A wrapper to get all output channel values as a byte |

4 Diagnostic and Wiring

The module has 2 LEDs indicating the status of module. The following table explains the combination of these two LEDs state.

Table 3 Combination of "POWER" and "MAINT" LEDs

| LED | | Indicating | Solution |
|---|---|--|--|
| POWER | MAINT | | |
|  Off |  Off | Power missing or hardware failure. | <ul style="list-style-type: none"> • Check the main power supply • Verify that the module is installed correctly |
|  On |  On | The module is configured and is in RUN mode. | -- |
|  On |  Flashes | Indicates an error (communication error, configuration error etc.) | <ul style="list-style-type: none"> • Verify that the module is installed correctly |

The following block diagram shows you information about wiring of the module.

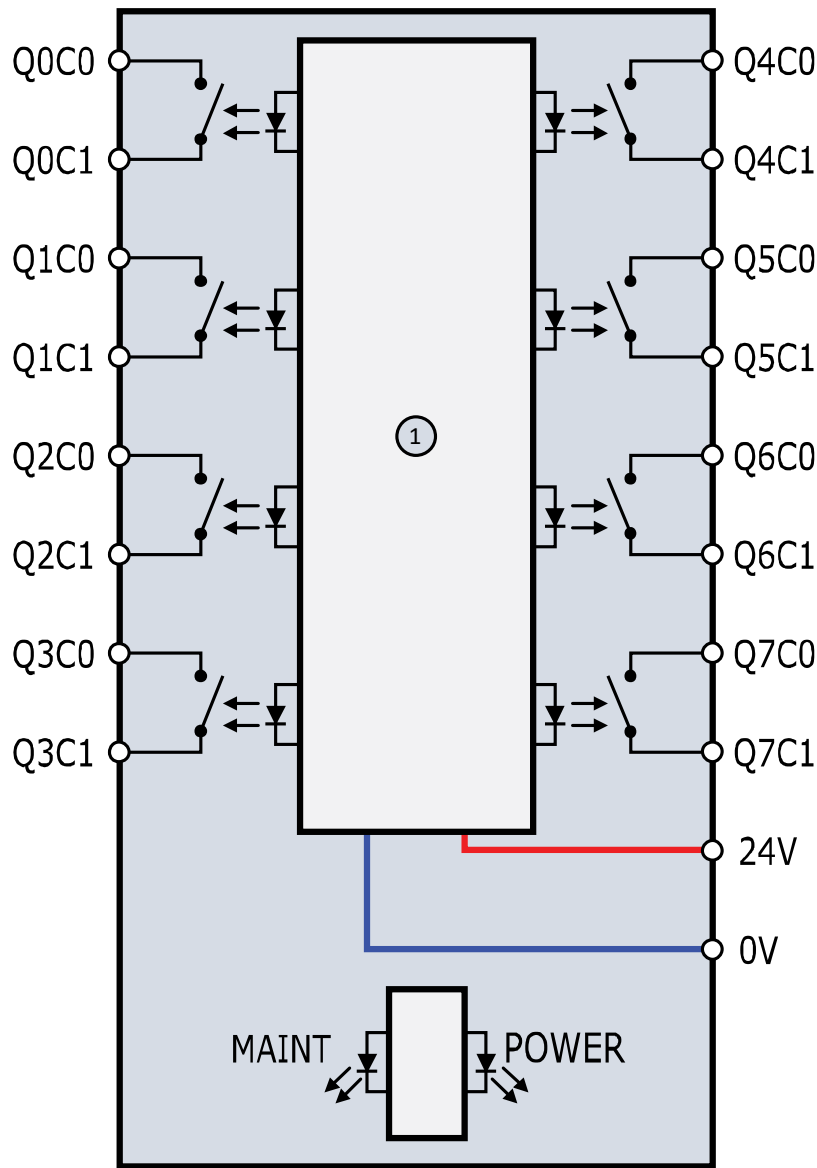


Figure 1 Wiring diagram and terminal assignments

| | | | |
|--------|---------------|--------|------------------------|
| ① | Relay outputs | QxCx: | Relay contact terminal |
| POWER: | Power LED | MAINT: | Maintenance LED |

5 Dimensional drawing

The dimensions of the module are available in this section. For install the module and its main device follow the below dimensional drawing.

