Digital I/O Slave Units with Screw Terminal Blocks (3-tier Terminal Block)

# $\overline{CRT1-\Box D08TA(-1)/\Box D16TA(-1)/\Box D08TAH(-1)/\Box D16TAH(-1)}$

With the relay terminal blocks, doubling up wires on terminals is not necessary!
Smart Slave Units with Easy-to-understand Wiring Locations with One Common for Every Point.

Doubling up wires on terminals is unnecessary and wiring locations are easy to understand with these Smart Slaves with 3-tier Terminal Blocks.

- Easy-to-understand wiring. No doubling up of wires. Easy-to-understand wiring locations.
- Simplify startup with the communications power supply monitor (Smart function).
- Collect various preventive maintenance data required to improve productivity, such as information on equipment deterioration due to aging and equipment operating time data (Smart function).
- The communications baud rate is set without using switches and addresses are set using rotary switches, so setting errors are reduced.
- Communications connector and removable I/O terminal block enable maintenance without disconnecting wiring.



### **Ordering Information**

| Name                           |         | Specifications              |     |   | Model          |
|--------------------------------|---------|-----------------------------|-----|---|----------------|
|                                | lanuta  | Innute O innute             | NPN |   | CRT1-ID08TA    |
|                                | Inputs  | 8 inputs                    | PNP |   | CRT1-ID08TA-1  |
|                                | Outputs | 8 outputs                   | NPN |   | CRT1-OD08TA    |
|                                | Outputs | o outputs                   | PNP |   | CRT1-OD08TA-1  |
|                                | Inputs  | 16 inputs                   | NPN | Without Short-circuit and                             | CRT1-ID16TA    |
|                                | Inputs  | 10 inputs                   | PNP | Disconnected Line Detection                           | CRT1-ID16TA-1  |
|                                | Outputs | 16 outputs                  | NPN |   | CRT1-OD16TA    |
|                                | Outputs | 16 outputs                  | PNP |   | CRT1-OD16TA-1  |
|                                | Inputs/ | 8 inputs/                   | NPN |   | CRT1-MD16TA    |
|                                | Outputs | 8 outputs                   | PNP |   | CRT1-MD16TA-1  |
| hree-tier Screw Terminal Block | Inputs  | 8 inputs                    | NPN |   | CRT1-ID08TAH   |
|                                | liiputs | o inputs                    | PNP |   | CRT1-ID08TAH-1 |
|                                | Outputs | Outputs 8 outputs           | NPN |   | CRT1-OD08TAH   |
|                                | Outputs | o outputs                   | PNP |   | CRT1-OD08TAH-1 |
|                                | Inputs  | 16 inputs                   | NPN | With Chart sireuit and Disconnected                   | CRT1-ID16TAH   |
|                                | inputs  | 10 Inputs                   | PNP | With Short-circuit and Disconnected<br>Line Detection | CRT1-ID16TAH-1 |
|                                | Outputs | 16 outputs                  | NPN |   | CRT1-OD16TAH   |
|                                | Outputs | το σαιραίδ                  | PNP |   | CRT1-OD16TAH-1 |
|                                | Inputo/ | 9 inputo/                   | NPN |   | CRT1-MD16TAH   |
|                                | Outputs | Inputs/ 8 inputs/ 8 outputs | PNP |   | CRT1-MD16TAH-  |

#### **Performance Specifications**

For Basic Performance Specifications of Slave Units, refer to page 30.

# **Input Section Specifications**

#### ● Eight-point Input Units (3-tier Terminal Block)

| Item  | Specification  |  |   |  |  |
|---|--|--|---|--|--|
| Model   | CRT1-ID08TA  | CRT1-ID08TA-1  | CRT1-ID08TAH-1  | CRT1-ID08TAH-1   |  |
| I/O capacity                                    | 8 inputs   |  |   |  |  |
| Internal I/O common                             | NPN  | PNP  | NPN   | PNP  |  |
| ON voltage                                      | 15 VDC min. (between each input terminal and the V terminal)                             | 15 VDC min. (between each input terminal and the G terminal) | 10.5 VDC min. (between each input terminal and the V terminal)                        | 10.5 VDC min. (between each input terminal and the G terminal) |  |
| OFF voltage                                     | 5 VDC max. (between each input terminal and the V terminal)                              | 5 VDC max. (between each input terminal and the G terminal)  |   |  |  |
| OFF current                                     | 1.0 mA max.  |  |   |  |  |
| Input current                                   | At 24 VDC: 6.0 mA max./input<br>At 17 VDC: 3.0 mA min./input                             |  |   |  |  |
| ON delay  | 1.5 ms max.  |  |   |  |  |
| OFF delay                                       | 1.5 ms max.  |  |   |  |  |
| Power supply short-circuit detection            | Operates at 50 mA/point min.   |  |   |  |  |
| Disconnection detection                         |  |  | Operates at 0.3 mA/point max.   |  |  |
| Number of circuits per common                   | 8 inputs/common  |  |   |  |  |
| Isolation method                                | Photocoupler   |  |   |  |  |
| Input indicator                                 | LED (yellow)   | LED (yellow)   |   |  |  |
| Installation                                    | DIN Track  |  |   |  |  |
| Power supply type                               | Multi-power supply   |  |   |  |  |
| Current supplied to input devices               | 100 mA/point   |  | 50 mA/point   |  |  |
| Communications power supply current consumption | 30 mA max. for 24-VDC power supply voltage<br>50 mA max. for 14-VDC power supply voltage |  | 35 mA max. for 24-VDC power supply voltage 60 mA max. for 14-VDC power supply voltage |  |  |
| I/O power supply current consumption            | 5 mA max. for 24-VDC power supply voltage 25 mA max. for 24                              |  |   | supply voltage   |  |
| Weight  | 190 g max. 200 g max.  |  |   |  |  |

#### ●Sixteen-point Input Units (3-tier Terminal Block)

| Item  | Specification  |  |   |  |  |
|---|--|--|---|--|--|
| Model   | CRT1-ID16TA  | CRT1-ID16TA-1  | CRT1-ID16TAH  | CRT1-ID16TAH-1   |  |
| I/O capacity                                    | 16 inputs  |  |   |  |  |
| Internal I/O common                             | NPN  | PNP  | NPN   | PNP  |  |
| ON voltage                                      | 15 VDC min. (between each input terminal and the V terminal)                         | 15 VDC min. (between each input terminal and the G terminal) | 10.5 VDC min. (between each input terminal and the V terminal)                        | 10.5 VDC min. (between each input terminal and the G terminal) |  |
| OFF voltage                                     | 5 VDC max. (between each input terminal and the V terminal)                          | 5 VDC max. (between each input terminal and the G terminal)  |   |  |  |
| OFF current                                     | 1.0 mA max.  |  |   |  |  |
| Input current                                   | At 24 VDC: 6.0 mA max./input<br>At 17 VDC: 3.0 mA min./input                         |  |   |  |  |
| ON delay  | 1.5 ms max.  |  |   |  |  |
| OFF delay                                       | 1.5 ms max.  |  |   |  |  |
| Power supply short-circuit detection            | Operates at 50 mA/po   |  |   |  |  |
| Disconnection detection                         | Operates at 0.3 mA/point max.  |  |   |  |  |
| Number of circuits per common                   | 8 inputs/common  |  |   |  |  |
| Isolation method                                | Photocoupler   |  |   |  |  |
| Input indicator                                 | LED (yellow)   | LED (yellow)   |   |  |  |
| Installation                                    | DIN Track  |  |   |  |  |
| Power supply type                               | Multi-power supply   |  |   |  |  |
| Communications power supply current consumption | 40 mA max. for 24-VDC power s<br>55 mA max. for 14-VDC power s                       | 117  | 40 mA max. for 24-VDC power supply voltage 70 mA max. for 14-VDC power supply voltage |  |  |
| I/O power supply current consumption            | 5 mA max. for 24-VDC power supply voltage 25 mA max. for 24-VDC power supply voltage |  |   | supply voltage   |  |
| Weight  | 330 g max. 340 g max.  |  |   |  |  |

# **Output Section Specifications**

#### ● Eight-point Output Units (3-tier Terminal Block)

| Item  | Specification   |  |  |  |  |
|---|---|--|--|--|--|
| Model   | CRT1-OD08TA   | CRT1-OD08TA-1  | CRT1-OD08TAH   | CRT1-OD08TAH-1   |  |
| I/O capacity                                    | 8 outputs   |  |  |  |  |
| Internal I/O common                             | NPN   | PNP  | NPN  | PNP  |  |
| Rated output current                            | 0.5 A/output, 2 A/common  |  |  |  |  |
| Residual voltage                                | 1.2 V max. (0.5 A DC, between each output terminal and the G terminal)  | 1.2 V max. (0.5 A DC, between each output terminal and the V terminal) | 1.2 V max. (0.5 A DC, between each output terminal and the G terminal) | 1.2 V max. (0.5 A DC, between each output terminal and the V terminal) |  |
| Leakage current                                 | 0.1 mA max.   |  | l  | ı  |  |
| ON delay  | 0.5 ms max.   |  |  |  |  |
| OFF delay                                       | 1.5 ms max.   |  |  |  |  |
| Load short-circuit detection                    |   | Supported.   |  |  |  |
| Disconnection detection                         |   |  | Operates at 3 mA/point max.<br>(Does not operate at over 3 mA.)        |  |  |
| Number of circuits per common                   | 8 outputs/common  |  |  |  |  |
| Isolation method                                | Photocoupler  | Photocoupler   |  |  |  |
| Output indicators                               | LED (yellow)  |  |  |  |  |
| Installation                                    | DIN Track   |  |  |  |  |
| Power supply type                               | Multi-power supply  |  |  |  |  |
| Current supplied to output devices              | 100 mA/point  |  |  |  |  |
| Communications power supply current consumption | 35 mA max. for 24-VDC power supply voltage<br>55 mA max. for 14-VDC power supply voltage  |  |  |  |  |
| I/O power supply current consumption            | 15 mA max. for 24-VDC power supply voltage 15 mA max. for 24-VDC power supply voltage 35 mA max. for 24-VDC supply voltage supply voltage |  |  | 35 mA max. for 24-VDC power supply voltage                             |  |
| Output handling for communications errors       | Select either hold or clear from CX-Integrator.   |  |  |  |  |
| Weight  | 190 g max.  |  |  |  |  |

#### ● Sixteen-point Output Unit (3-tier Terminal Block)

| Item  | Specification  |  |  |  |  |
|---|--|--|--|--|--|
| Model   | CRT1-OD16TA  | CRT1-OD16TA-1  | CRT1-OD16TAH   | CRT1-OD16TAH-1   |  |
| I/O capacity                                    | 16 outputs   |  |  |  |  |
| Internal I/O common                             | NPN PNP  |  | NPN  | PNP  |  |
| Rated output current                            | 0.5 A/output, 2 A/common   |  |  |  |  |
| Residual voltage                                | 1.2 V max. (0.5 A DC, between each output terminal and the G terminal)   | 1.2 V max. (0.5 A DC, between each output terminal and the V terminal) | 1.2 V max. (0.5 A DC, between each output terminal and the G terminal) | 1.2 V max. (0.5 A DC, between each output terminal and the V terminal) |  |
| Leakage current                                 | 0.1 mA max.  |  |  |  |  |
| ON delay  | 0.5 ms max.  |  |  |  |  |
| OFF delay                                       | 1.5 ms max.  |  |  |  |  |
| Number of circuits per common                   | 8 outputs/common   |  |  |  |  |
| Load short-circuit detection                    |  |  | Supported.   |  |  |
| Disconnection detection                         |  |  | Operates at 3 mA/point max.<br>(Does not operate at over 3 mA.)        |  |  |
| Isolation method                                | Photocoupler   |  |  |  |  |
| Output indicators                               | LED (yellow)   |  |  |  |  |
| Installation                                    | DIN Track  |  |  |  |  |
| Power supply type                               | Multi-power supply   |  |  |  |  |
| Communications power supply current consumption | 45 mA max. for 24-VDC power supply voltage 65 mA max. for 14-VDC power supply voltage 70 mA max. for 14-VDC power supply voltage |  |  |  |  |
| I/O power supply current consumption            | 15 mA max. for 24-VDC power supply voltage   |  |  | 35 mA max. for 24-VDC power supply voltage                             |  |
| Output handling for communications errors       | Select either hold or clear from CX-Integrator.  |  |  |  |  |
| Weight  | 330 g max.   |  |  |  |  |

# **Input and Output Section Specifications**

# ●8-point Input and 8-point Output Units (3-tier Terminal Block) Common Specifications

| Item  | Specification  |               |   |                |
|---|--|---------------|---|----------------|
| Model   | CRT1-MD16TA  | CRT1-MD16TA-1 | CRT1-MD16TAH  | CRT1-MD16TAH-1 |
| Installation                                    | DIN Track  |               |   |                |
| Communications power supply current consumption | 40 mA max. for 24-VDC power supply voltage<br>60 mA max. for 14-VDC power supply voltage |               | 40 mA max. for 24-VDC powers 70 mA max. for 14-VDC powers |                |
| Weight  | 330 g max.   |               | 340 g max.  |                |

#### **Input Section Specifications**

| Item                                 | Specification   |  |  |  |  |
|--------------------------------------|---|--|--|--|--|
| Model                                | CRT1-MD16TA   | CRT1-MD16TA-1  | CRT1-MD16TAH   | CRT1-MD16TAH-1   |  |
| I/O capacity                         | 8 inputs  |  | ı  | ı  |  |
| Internal I/O common                  | NPN   | PNP  | NPN  | PNP  |  |
| ON voltage                           | 15 VDC min. (between each input terminal and the V terminal)                          | 15 VDC min. (between each input terminal and the G terminal) | 10.5 VDC min. (between each input terminal and the V terminal) | 10.5 VDC min. (between each input terminal and the G terminal) |  |
| OFF voltage                          | 5 VDC max. (between each input terminal and the V terminal)                           | 5 VDC max. (between each input terminal and the G terminal)  |  |  |  |
| OFF current                          | 1.0 mA max.   | 1.0 mA max.  |  |  |  |
| Input current                        | At 24 VDC: 6.0 mA max./input<br>At 17 VDC: 3.0 mA min./input                          |  |  |  |  |
| ON delay                             | 1.5 ms max.   |  |  |  |  |
| OFF delay                            | 1.5 ms max.   | 1.5 ms max.  |  |  |  |
| Power supply short-circuit detection |   | Operates at 50 mA/point min.                                 |  |  |  |
| Disconnection detection              |   | Operates at 0.3 mA/point max.                                |  |  |  |
| Number of circuits per common        | 8 inputs/common   | 8 inputs/common  |  |  |  |
| Isolation method                     | Photocoupler  |  |  |  |  |
| Input indicator                      | LED (yellow)  |  |  |  |  |
| Power supply type                    | Multi-power supply  |  |  |  |  |
| I/O power supply current consumption | 5 mA max. for 24-VDC power supply voltage  25 mA max. for 24-VDC power supply voltage |  |  | supply voltage   |  |

#### **Output Section Specifications**

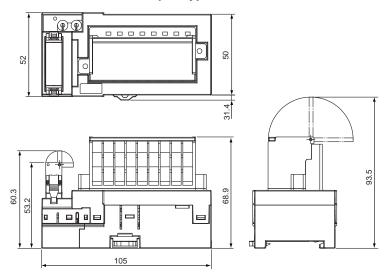
| Item                                      | Specification  |  |  |  |  |  |
|---|--|--|--|--|--|--|
| Model                                     | CRT1-MD16TA  | CRT1-MD16TA-1  | CRT1-MD16TAH   | CRT1-MD16TAH-1   |  |  |
| I/O capacity                              | 8 outputs  | 8 outputs  |  |  |  |  |
| Internal I/O common                       | NPN  | PNP  | NPN  | PNP  |  |  |
| Rated output current                      | 0.5 A/output, 2 A/common   |  |  |  |  |  |
| Residual voltage                          | 1.2 V max. (0.5 A DC, between each output terminal and the G terminal)             | 1.2 V max. (0.5 A DC, between each output terminal and the V terminal) | 1.2 V max. (0.5 A DC, between each output terminal and the G terminal) | 1.2 V max. (0.5 A DC, between each output terminal and the V terminal) |  |  |
| Leakage current                           | 0.1 mA max.  |  |  |  |  |  |
| ON delay                                  | 0.5 ms max.  |  |  |  |  |  |
| OFF delay                                 | 1.5 ms max.  |  |  |  |  |  |
| Load short-circuit detection              | Supported.   |  |  |  |  |  |
| Disconnection detection                   | Operates at 3 mA/point max. (Does not operate at over 3 mA.)                       |  |  | A.)  |  |  |
| Number of circuits per common             | 8 outputs/common   |  |  |  |  |  |
| Isolation method                          | Photocoupler   |  |  |  |  |  |
| Output indicators                         | LED (yellow)   |  |  |  |  |  |
| I/O power supply current consumption      | 15 mA max. for 24-VDC power supply voltage  35 mA max. for 24-VDC posupply voltage |  |  | 35 mA max. for 24-VDC power supply voltage                             |  |  |
| Output handling for communications errors | Select either hold or clear from CX-Integrator.                                    |  |  |  |  |  |



Dimensions (Unit: mm)

CRT1-ID08TA (-1) CRT1-OD08TA(-1)

#### When a DCN4-TB4 Open Type Connectors Is Mounted



CRT1-ID16TA(-1) CRT1-OD16TA(-1 CRT1-MD16TA(-1)

When a DCN4-TB4 Open Type Connectors Is Mounted

