Digital I/O Slave Units with Screw Terminal Blocks (2-tier Terminal Block/Relay Output/SSR Output) CRT1 = D08(-1)/D16(-1)/ROS /ROF

Visualize the actual worksite status! Simple and Intelligent I/O Slave Units.

In addition to the Digital I/O Slave Unit's basic digital ON/OFF signals, collect useful information from the Slave Unit to improve equipment operating rates and maintainability.

- Communications connector and removable I/O terminal block enable faster startup times and improved maintainability.
- One Expansion Unit can be added to each Digital I/O Slave Unit to increase system configuration flexibility.
- Collect various preventive maintenance data required to improve productivity, such as information on equipment deterioration due to aging and equipment operating time data.
- Simplify startup with the communications power supply monitoring function.



Ordering Information

Name		Specifications		Model
	Inputs	8 inputs	NPN	CRT1-ID08
			PNP	CRT1-ID08-1
	Outents	8 outputs	NPN	CRT1-OD08
	Oulpuis		PNP	CRT1-OD08-1
Two tion Seren Terminal Black	Innute	16 inputs	NPN	CRT1-ID16 *
Iwo-tier Screw Terminal Block	Inputs		PNP	CRT1-ID16-1 *
	Outputs	16 outputs	NPN	CRT1-OD16 *
			PNP	CRT1-OD16-1 *
	Inputs/Outputs	8 inputs/ 8 outputs	NPN	CRT1-MD16
			PNP	CRT1-MD16-1
Screw Terminal Block with Relay Outputs	Outputo	8 outputs	0	CRT1-ROS08
	Outputs	16 outputs	Contacts	CRT1-ROS16
Screw Terminal Block with SSR Outputs	Outputs	8 outputs	CCD	CRT1-ROF08
		16 outputs	55N	CRT1-ROF16

* These Units are also available with a DCN-TB4 Terminal Conversion Adapter included in the package. Add "(-B)" to the end of the model number to receive the Adapter as well.

Expansion Units

One Expansion Unit can be combined with one Digital I/O Slave Unit (CRT1-ID16(-1), CRT1-OD16(-1), CRT1-ROS16, or CRT1-ROF16). The following Expansion Units are available. They can be combined in various ways for flexible I/O capacity expansion.

Model	I/O points	Input capacity	Output capacity
XWT-ID08	8 DC inputs (NPN)	8	0
XWT-ID08-1	8 DC inputs (PNP)	8	0
XWT-OD08	8 transistor outputs (NPN)	0	8
XWT-OD08-1	8 transistor outputs (PNP)	0	8
XWT-ID16	16 DC inputs (NPN)	16	0
XWT-ID16-1	16 DC inputs (PNP)	16	0
XWT-OD16	16 transistor outputs (NPN)	0	16
XWT-OD16-1	16 transistor outputs (PNP)	0	16

Performance Specifications for CRT1-ROS08/ROS16 (with relay outputs) and CRT1-ROF08/ROF16 (with SSR outputs)

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

Relay Output

Item	Specification
Communications power supply voltage	14 to 26.4 VDC
Noise immunity	Conforms to IEC 61000-4-4, 2 kV (power line).
Vibration resistance	10 to 55 Hz with double-amplitude of 0.7 mm X, Y, and Z directions for 80 min each
Shock resistance	100 m/s ² (3 times in 6 directions on 3 axes)
Dielectric strength	500 VAC (between isolated circuits)
Insulation resistance	20 $M\Omega$ min. (between isolated circuits)
Ambient operating temperature	-10 to 55°C
Ambient operating humidity	25% to 85% (with no condensation)
Ambient operating atmosphere	No corrosive gases
Storage temperature	–25 to 65°C
Storage humidity	25% to 85% (with no condensation)
Terminal block screws tightening torque	M3 wiring screws: 0.5 N·m M3 mounting screws: 0.5 N·m

SSR Output

Item	Specification
Communications power supply voltage	14 to 26.4 VDC
Noise immunity	Conforms to IEC 61000-4-4, 2 kV (power line).
Vibration resistance	10 to 60 Hz with double-amplitude of 0.7 mm, 60 to 150 Hz and 50 m/s 2 in X, Y, and Z directions for 80 min each
Shock resistance	150 m/s ² (3 times in 6 directions on 3 axes)
Dielectric strength	500 VAC (between isolated circuits)
Insulation resistance	20 M Ω min. (between isolated circuits)
Ambient operating temperature	-10 to 55°C
Ambient operating humidity	25% to 85% (with no condensation)
Ambient operating atmosphere	No corrosive gases
Storage temperature	–25 to 65°C
Storage humidity	25% to 85% (with no condensation)
Terminal block screws tightening torque	M3 wiring screws: 0.5 N·m M3 mounting screws: 0.5 N·m

Input Section Specifications

• Eight-point Input Units (2-tier Terminal Block)

Item	Specif	ication
Model	CRT1-ID08	CRT1-ID08-1
I/O capacity	8 inputs	
Internal I/O common	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)
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 m At 17 VDC: 3.0 mA m	nax./input nin./input
ON delay	1.5 ms max.	
OFF delay	1.5 ms max.	
Number of circuits per common	8 inputs/common	
Isolation method	Photocoupler	
Input indicator	LED (yellow)	
Installation	DIN Track	
Power supply type	Multi-power supply	
Communications power supply current consumption	30 mA max. for 24-VI voltage 50 mA max. for 14-VI voltage	DC power supply DC power supply
I/O power supply current consumption	5 mA max. for 24-VDC	power supply voltage
Weight	160 g max.	

Sixteen-point Input Units (2-tier Terminal Block)

Item	Specifi	cation
Model	CRT1-ID16	CRT1-ID16-1
I/O capacity	16 inputs	
Internal I/O common	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)
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 mA max.	
Input current	At 24 VDC: 6.0 mA m At 17 VDC: 3.0 mA m	ax./input ax./input
ON delay	1.5 ms max.	
OFF delay	1.5 ms max.	
Number of circuits per common	16 inputs/common	
Isolation method	Photocoupler	
Input indicator	LED (yellow)	
Installation	DIN Track mounting	
Power supply type	Multi-power supply	
Communications power supply current consumption	55 mA max. for 24-VE voltage 85 mA max. for 14-VE voltage	DC power supply DC power supply
I/O power supply current consumption	5 mA max. for 24-VDC	power supply voltage
Weight	141 g max.	

Output Section Specifications

• Eight-point Output Units (2-tier Terminal Block)

Item	Specif	ication
Model	CRT1-OD08	CRT1-OD08-1
I/O capacity	8 outputs	
Internal I/O common	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)
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	
Isolation method	Photocoupler	
Output indicators	LED (yellow)	
Installation	DIN Track	
Power supply type	Multi-power supply	
Communications power supply current consumption	35 mA max. for 24-V voltage 55 mA max. for 14-V voltage	DC power supply DC power supply
I/O power supply current consumption	15 mA max. for 24-VDC	power supply voltage
Output handling for communications errors	Select either hold or Integrator.	clear from CX-
Weight	160 g max.	

●Eight-point Output Units (Relay Outputs)

Item	Specification
Model	CRT1-ROS08
I/O capacity	8 outputs
Mounted Relays	DRTA-NY5W-K (5 VDC)
Rated load	Resistive load 250 VAC, 2 A, common: 8 A 30 VDC, 2 A, common: 8 A
Rated ON current	3 A
Maximum contact voltage	250 VAC, 125 VDC
Maximum contact current	3 A
Maximum switching capacity	750 VA AC, 90 W DC
Minimum applicable load (reference value)	5 VDC, 1 mA
Mechanical service life	20,000,000 operations min.
Electrical service life	100,000 operations min.
Installation method	DIN Track
Communications power supply current consumption	95 mA max. for 24-VDC power supply voltage 150 mA max. for 14-VDC power supply voltage
Output hold for communications errors	Select either hold or clear from CX- Integrator.
Weight	170 g max.

Sixteen-point Output Units (2-tier Terminal Block)

Item	Specif	ication
Model	CRT1-OD16	CRT1-OD16-1
I/O capacity	16 outputs	·
Internal I/O common	NPN	PNP
Rated output current	0.5 A/output, 4 A/con	nmon
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)
Leakage current	0.1 mA max.	•
ON delay	0.5 ms max.	
OFF delay	1.5 ms max.	
Number of circuits per common	16 outputs/common	
Isolation method	Photocoupler	
Output indicators	LED (yellow)	
Installation	DIN Track mounting	
Power supply type	Multi-power supply	
Communications power supply current consumption	55 mA max. for 24-VD 85 mA max. for 14-VD	C power supply voltage C power supply voltage
I/O power supply current consumption	15 mA max. for 24-VDC	c power supply voltage
Output handling for communications errors	Hold or clear can be Integrator)	selected. (CX-
Weight	141 g max.	

Sixteen-point Output Units (Relay Outputs) (per Output)

Item	Specification
Model	CRT1-ROS16
I/O capacity	16 outputs
Mounted Relays	DRTA-NY5W-K (5 VDC)
Rated load	Resistive load 250 VAC, 2 A, common: 8 A 30 VDC, 2 A, common: 8 A
Rated ON current	3 A
Maximum contact voltage	250 VAC, 125 VDC
Maximum contact current	3 A
Maximum switching capacity	750 VA AC, 90 W DC
Minimum applicable load (reference value)	5 VDC, 1 mA
Mechanical service life	20,000,000 operations min.
Electrical service life	100,000 operations min.
Installation	DIN Track mounting
Communications power supply current consumption	155 mA max. for 24-VDC power supply voltage 255 mA max. for 14-VDC power supply voltage
Output hold for communications errors	Hold or clear can be selected. (CX- Integrator)
Weight	260 g max.

● Eight-point Output Units (SSR Outputs) (per Output)

Item	Specification
Model	CRT1-ROF08
I/O capacity	8 outputs
Load voltage	24 to 265 VAC
Load current	0.3 A
Inrush current resistivity	50 A (60 Hz)
Installation method	DIN Track
Communications power supply current consumption	60 mA max. for 24-VDC power supply voltage 90 mA max. for 14-VDC power supply voltage
Output hold for communications errors	Select either hold or clear from CX- Integrator.
Weight	160 g max.

Note: The SSRs cannot be replaced.

Sixteen-point Output Units (SSR Outputs) (per Output)

Item	Specification
Model	CRT1-ROF16
I/O capacity	16 outputs
Load voltage	24 to 265 VAC
Load current	0.3 A
Inrush current resistivity	50 A (60 Hz)
Installation	DIN Track mounting
Communications power supply current consumption	85 mA max. for 24-VDC power supply voltage 130 mA max. for 14-VDC power supply voltage
Output hold for communications errors	Hold or clear can be selected. (CX- Integrator)
Weight	250 g max.

Note: The SSRs cannot be replaced.

Load Current vs. Ambient Temperature



Input and Output Section Specifications

•Eight-point Input and Eight-point Output Units (2-tier Terminal Block) CRT1-MD16/CRT1-MD16-1

Common Specifications

Item	Specification	
Model	CRT1-MD16	CRT1-MD16-1
Installation	DIN Track	
Communications power supply current consumption	35 mA max. for 24-VDC power supply voltage 60 mA max. for 14-VDC power supply voltage	
Weight	170 g max.	

Input Section Specifications

Item	Specification		
Model	CRT1-MD16	CRT1-MD16-1	
I/O capacity	8 inputs		
Internal I/O common	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)	
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 At 17 VDC: 3.0 mA min./input		
ON delay	1.5 ms max.		
OFF delay	1.5 ms max.		
Number of circuits per 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		

Output Section Specifications

Item	Specification	
Model	CRT1-MD16	CRT1-MD16-1
I/O capacity	8 outputs	
Internal I/O common	NPN	PNP
Rated output current	0.5 A/output, 2A/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)
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	
Isolation method	Photocoupler	
Output indicators	LED (yellow)	
I/O power supply current consumption	15 mA max. for 24-VDC power supply voltage	
Output handling for communications errors	Select either hold or clear from CX- Integrator.	

(Unit: mm)

Dimensions

CRT1-ID08 (-1) CRT1-OD08 (-1)

CR11-OD08 (-1)

When a DCN4-TB4 Open Type Connectors Is Mounted



CRT1-ID16 (-1) CRT1-OD16 (-1)

When a DCN4-TB4 Open Type Connectors Is Mounted



CRT1-MD16 (-1)

When a DCN4-TB4 Open Type Connectors Is Mounted



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CRT1-ROS08 CRT1-ROF08

When a DCN4-TB4 Open Type Connectors Is Mounted



CRT1-ROS16 CRT1-ROF16

When a DCN4-TB4 Open Type Connectors Is Mounted

