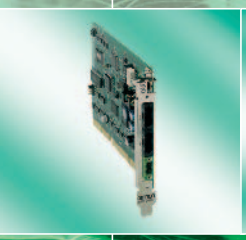
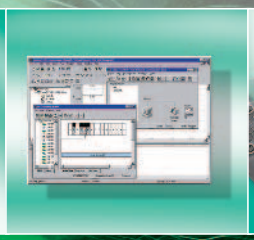
GENERAL CATALOGUE 2004

Automation Systems

- Programmable Controllers
- Wiring Systems
- Industrial Communication
- Remote I/O
- Industrial Information Technology
- Machine Management Tools
- HMI
- Software

Advanced Industrial Automation

Cat. No.Y201-EN2-02 AS

OMRON

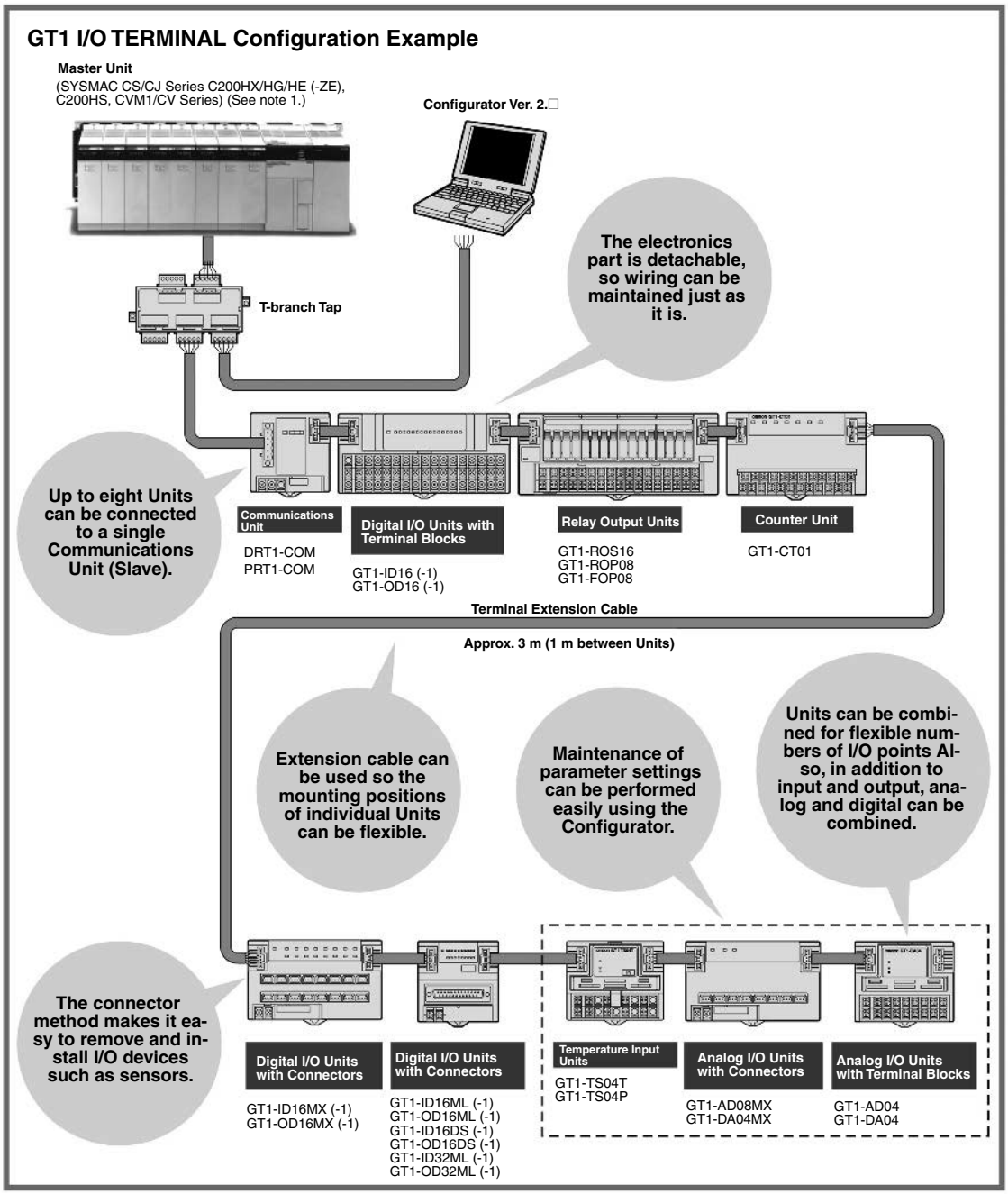
Remote I/O

GT1 I/O Series		518
	Communication Unit	519
	Digital I/O Units	524
	Relay Output Units	533
	Analog I/O Units	535
	Temperature Input Units	540
	Counter Unit	542
DRT Series		545
	Digital I/O Terminals	548
	Harsh Environment Terminals	554
	Analog I/O Terminals	561
	Sensor Connector Terminals	565
	Relay output Terminal	568
	8 Points I/O Terminals	571
	3-tier Connection Terminals	576
	Temperature Input Terminals	582
	Waterproof Terminals	584
	B7AC Interface Unit	589
	RS-232C Unit	592
SRT Series		595
	Digital I/O Terminals	596
	3-tier Connection Terminals	601
	Relay output terminals	604
	Waterproof Terminals	608
	Sensor Terminals	614
	Analog Input Terminal	619
	Analog Output Terminal	621
	Digital I/O Terminals	623

GT1 I/O Series

A GT1 I/O TERMINAL with a flexible combination of numerous versatile I/O Units handles digital I/O, analog I/O, counter inputs, or relay outputs and boosts on-site productivity higher than ever. Using a GT1 I/O TERMINAL, one Slave (Communications Unit) can connect to a maximum of eight I/O Units to achieve control of a maximum of 1,024 I/O points.

Note: The number of I/O points under control may be restricted by the application. Refer to the *DeviceNet MULTIPLE I/O TERMINAL Operation Manual (W348)* and *PRT1-COM manual* for details.



PRT1-COM

Communication Unit

Connects a maximum of eight I/O units of the GT1 series to PROFIBUS-DP

- PROFIBUS-DP compliant slave unit.
- Allows flexible combinations of I/O points.
- A wide range of I/O-types available.
- DIN rail mounting.
- High/low byte swap mechanism.

Ordering Information

Product Code	Description
PRT1-COM	PROFIBUS-DP GT1 I/O terminal
W900-E2-1	Operation Manual

Specifications

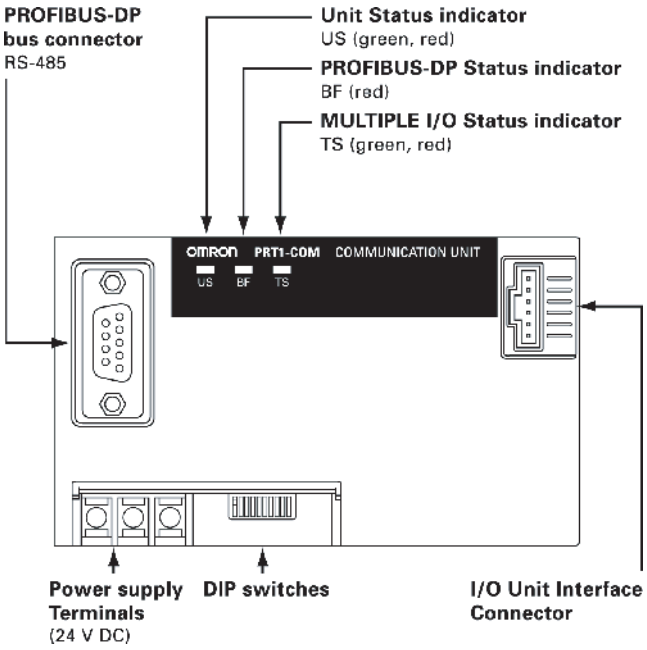
Communication Specification

Applicable standard	EN 50170 vol. 2
Type	PROFIBUS-DP Slave
Bus connector	9-pin sub-D female
Bus termination	External
Baud rate (auto-detect)	9.6 / 19.2 / 45.45 / 93.75 / 187.5 / 500 kbit/s, 1.5 / 3 / 6 / 12 Mbit/s
PROFIBUS address range	0 to 125
Communication cable	Type A (EN 50170 vol. 2)
Minimum slave interval time	0.5 ms
Input data	4 status bytes + max. 128 data bytes
Output data	max. 128 data bytes
Supported DP functions	• Data_Exchange • Slave_Diag • Set_Prm • Chk_Cfg • Global_Control (SYNC, FREEZE, CLEAR) • Get_Cfg • RD_Inp • RD_Outp
PROFIBUS-DP GSD file	OC_047D.GSD

Unit Specifications

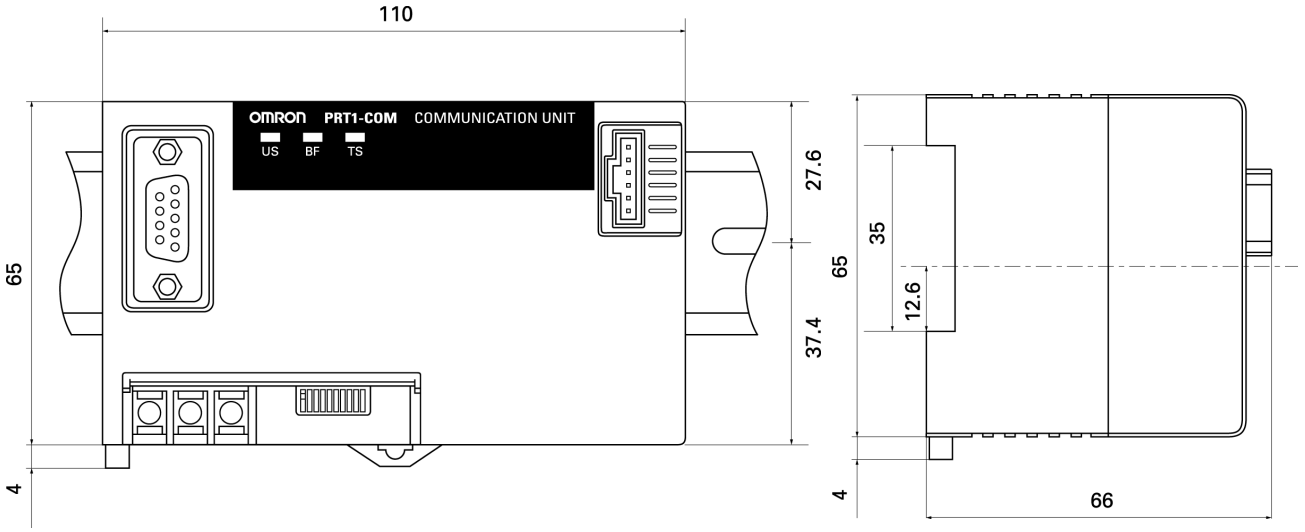
Number of GT1 I/O Units		8 max.
Input data		128 bytes max.
Output data		128 bytes max.
GT1 I/O power supply		0.3 A max.
Indicators	**Unit Status LED green / red**	OFF: Power not OK Green ON: Unit OK Green BLINK: Initialising Red ON: Unit error
	Bus Failure LED (PROFIBUS-DP) red	OFF: No errors ON: • Response monitoring time has elapsed. The master did not address PRT1-COM within the configured watchdog time. • PRT1-COM was not parameterised or not properly configured.
	Terminal Status LED (GT1 I/O) green / red	OFF: Power overload Green ON: Communication OK Green BLINK: Special I/O Unit Error Red ON: • Bus fault • Configuration fault • End station fault • I/O Unit over • Basic I/O Unit Error
Storage temperature		–20 to +65 °C
Ambient temperature		–10 to +55 °C
Ambient humidity		25 to 85% (non-condensing)
EMC compliance		EN 50081-2, EN 61131-2
Dielectric strength		500 V AC for 1 min.
Power supply		20.4 to 26.4 V DC
Current consumption on 24 V DC power suply		GT1 I/O current consumption + 0.15 [A]
Inrush current		30 A max.
Weight		165 g (typical)

Nomenclature



Dimensions

Note: All units are in millimeters unless otherwise indicated.



DRT1-COM

Communication Unit

Connects a maximum of eight I/O units of the GT1 series to DeviceNet

- Allows flexible combinations of I/O points.
- Covering a total cable length of 3 m.
- Dimensions: 65 x 64 x 65 (W x H x D)
- DIN rail mounting.

Ordering Information

Power supply voltage	Model
24 V DC	DRT1-COM

Specifications

Ratings

Connectable Units	8
I/O points	1,024 max. (including inputs and outputs)
Communications distance	Total extension: 3 m max. Between Units: 1 m max. (40 mm max. with the standard cable provided with the Unit.) (See note 1.)
Dielectric strength	500 V AC for 1 min.
Mounting method	35-mm DIN rail mounting
Unit output power supply	0.4 A max. (See note 2.)

Note: 1. One cable is provided with each I/O Unit.

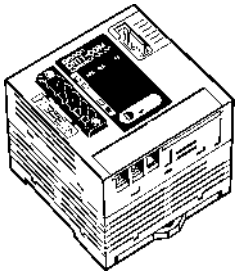
2. The total current consumption for I/O Unit interfaces must not exceed 0.4 A.

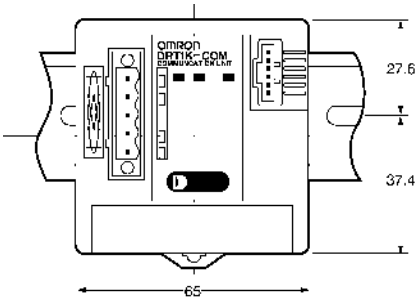
Characteristics

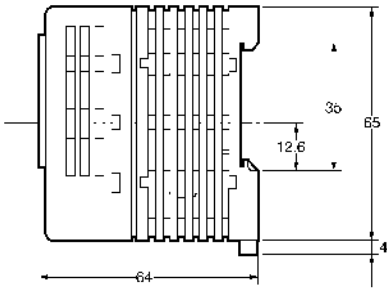
Communications power supply voltage	11 to 25 V DC (supplied from the communications connector)
Internal power supply voltage	24 V DC +10%/–15%
I/O power supply voltage	
Current consumption	Communications:30 mA max. at 24 V DC Internal circuit:0.6 A at 24 V DC (with max. I/O load)
Dielectric strength	500 V AC
Noise immunity	Conforms to IEC61000-4-4, 2 kV (Power line)
Vibration resistance	10 to 150 Hz, 1.0-mm double amplitude or 70 m/s^2
Shock resistance	200 m/s^2
Mounting strength	No damage when 100 N pull load was applied in all directions (10 N min. in the DIN rail direction)
Terminal strength	No damage when 100 N pull load was applied
Screw tightening torque	0.3 to 0.5 Nm Phoenix connector: 0.25 to 0.3 Nm
Ambient temperature	Operating:–10°C to 55°C (with no icing or condensation) Storage:–25°C to 65°C (with no icing or condensation)
Ambient humidity	Operating: 25% to 85%

Dimensions

Note: All units are in millimeters unless otherwise indicated.

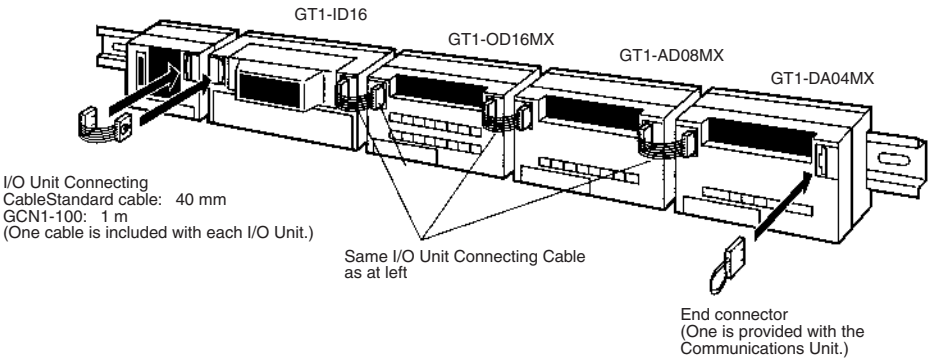






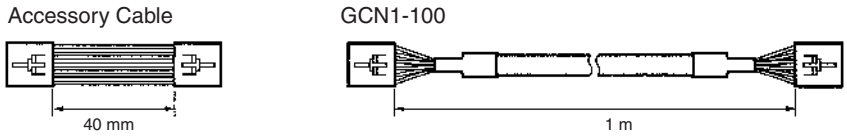
Note: In the above diagram the unit is shown with the end connector not mounted.

Connecting I/O Unit Connecting Cable



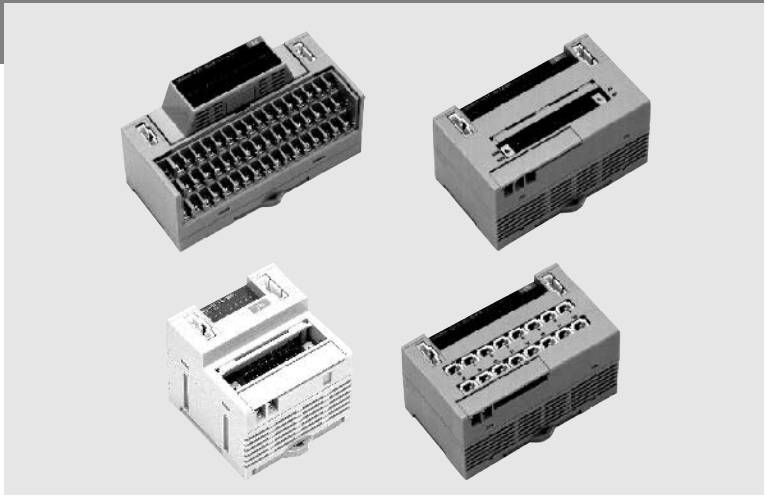
To connect the units to each other, use the with the I/O unit supplied connecting cable. Insert the end connector, which is delivered with the communication unit in the second communications connector of the last I/O unit as bus terminator.

Note: The connecting cable for the I/O Unit is shown below.



GT1-ID/OD

Digital I/O Units



Digital I/O units

- Several connectivity methods are available:
  - screw terminal
  - sensor connector
  - high-density connector
- The screw terminal models have a detachable I/O electronic ciruits block that can be removed for maintenance purposes.
- DIN rail mounting

Ordering Information

Unit	I/O classification	Internal I/O circuit common	I/O points	Terminal	Power supply voltage	I/O specification	Model
Terminal block model	Digital input	NPN (+ common)	16	M3 terminal board	24 V DC	DC/transistor	GT1-ID16
		PNP (– common)					GT1-ID16-1
	Digital output	NPN (– common)				0.5 A, DC/transistor	GT1-OD16
		PNP (+ common)					GT1-OD16-1
Connector model	Digital input	NPN (+ common)		Molex connector		DC/transistor	GT1-ID16MX
		PNP (– common)					GT1-ID16MX-1
	Digital output	NPN (– common)				0.5 A, DC/transistor	GT1-OD16MX
		PNP (+ common)					GT1-OD16MX-1
	Digital input	NPN (+ common)		Fujitsu connector		DC/transistor	GT1-ID16ML
		PNP (– common)					GT1-ID16ML-1
	Digital output	NPN (– common)				0.5 A, DC/transistor	GT1-OD16ML
		PNP (+ common)					GT1-OD16ML-1
	Digital input	NPN (+ common)		D-sub 25-pin connector		DC/transistor	GT1-ID16DS
		PNP (– common)					GT1-ID16DS-1
	Digital output	NPN (– common)				0.5 A, DC/transistor	GT1-OD16DS
		PNP (+ common)					GT1-OD16DS-1
High-density connector model	Digital input	NPN (+ common)	32	Fujitsu connector		DC/transistor	GT1-ID32ML
		PNP (– common)					GT1-ID32ML-1
	Digital output	NPN (– common)				0.5 A, DC/transistor	GT1-OD32ML
		PNP (+ common)					GT1-OD32ML-1

Specifications

Ratings

Input

Item	GT1-ID□□
ON delay time	1.5 ms max.
OFF delay time	1.5 ms max.
ON voltage	15 V min. between each input terminal and V or G
OFF voltage	5 V max. between each input terminal and V or G
OFF current	1 mA max.
Insulation method	Photocoupler
Input indicators	LED (yellow)

Output

Item	GT1-OD□□
Rated output current	0.5 A/point (See note.)
ON delay time	0.5 ms max.
OFF delay time	1.0 ms max.
Residual voltage	1.2 V max.
Leakage current	0.1 mA max.
Insulation method	Photocoupler
Output indicators	LED (yellow)

Note: Ensure that the total external load current does not exceed the values given in the following table.

Model	Total external load current
GT1-OD16/16MX/32ML (-1)	4 A
GT1-OD16ML/16DS (-1)	2.5 A

Characteristics

I/O power supply voltage	20.4 to 26.4 V DC (24 V DC +10%/–15%)		
Current consumption (See note.)	**Model**	**I/O Interface**	**Internal circuit**
	GT1-ID16 (-1)	35 mA max.	---
	GT1-OD16 (-1)	35 mA max.	9 mA max.
	GT1-ID16MX (-1)	35 mA max.	---
	GT1-OD16MX (-1)	35 mA max.	9 mA max.
	GT1-ID16ML (-1)	35 mA max.	---
	GT1-OD16ML (-1)	35 mA max.	9 mA max.
	GT1-ID16DS (-1)	35 mA max.	---
	GT1-OD16DS (-1)	35 mA max.	9 mA max.
	GT1-ID32ML (-1)	55 mA max.	---
	GT1-OD32ML (-1)	65 mA max.	11 mA max.
Dielectric strength	500 V AC		
Noise immunity	Conforms to IEC61000-4-4 2 kV (power line)		
Vibration resistance	10 to 150 Hz, 1.0-mm double amplitude or 70 m/s^2		
Shock resistance	200 m/s^2		
Mounting method	35-mm DIN rail mounting		
Mounting strength	No damage when 100 N pull load was applied in all directions (10 N min. in the DIN rail direction)		
Terminal strength	No damage when 100 N pull load was applied		
Screw tightening torque	0.3 to 0.5 N • m		
Ambient temperature	Operating:–10°C to 55°C (with no icing or condensation) Storage:–25°C to 65°C (with no icing or condensation)		
Ambient humidity	Operating: 25% to 85%		
Accessories	I/O Unit Connecting Cable (40 mm)		

Note: The above current consumption is a value with all 16 and 32 points turned ON excluding the current consumption of the external sensor connected to the Input Unit and the current consumption of the load connected to the Output Unit.

Connectors

Type			Model	Remarks
Molex connector	Press-fit terminal	Housing	52109-0390	Corresponding to 24 AWG
	Solderless terminal	Housing	51030-0330	
		Chain terminal	50083-8014	Corresponding to 24 to 30 AWG
			50084-8014	Corresponding to 22 to 24 AWG
		Loose terminal	50083-8114	Corresponding to 24 to 30 AWG
			50084-8114	Corresponding to 22 to 24 AWG
		Press-fit tool	57037-5000	
Fujitsu connector (16 points)	Solder terminal		FCN361J024-AU	---
	Press-fit terminal		FCN367J024-AU/F	---
	Solderless terminal		FCN363J024-AU	---
Fujitsu connector (32 points)	Solder terminal		FCN361J040-AU	---
	Press-fit terminal		FCN367J040-AU/F	---
	Solderless terminal		FCN363J040-AU	---
OMRON D-sub Connector	Plug		XM2A-2501	---
	Hood		XM2S-2513	#4-40UNC inch screws

Cables with High-density Connectors (Fujitsu-compatible Connectors)

I/O type	Model
Digital input (16 points)	XW2Z-□□□A
	G79-□C
Digital output (16 points)	XW2Z-□□□A
	G79-□C
Digital input (32 points)	XW2Z-□□□B
	G79-I□C□
Digital output (32 points)	XW2Z-□□□B
	G79-O□C-□

Cables for I/O Connector

Cables for Connector Terminal Conversion Units (16 Points)

I/O classification	Model (Digital I/O Unit)	Applicable cable	Connected product	Remarks
For digital input (16 points)	GT1-ID16ML (-1)	XW2Z-□□□A	XW2D-20G6	Slim-type Connector Terminal Conversion Unit
			XW2E-20G5-IN16	Common terminal (3-tier input type)
For digital output (16 points)	GT1-OD16ML (-1)		XW2D-20G6	Slim-type Connector Terminal Conversion Unit

Cables for Connector Terminal Conversion Units (32 Points)

I/O classification	Model (Digital I/O Unit)	Applicable cable	Connected product	Remarks
For digital input (32 points)	GT1-ID32ML (-1)	XW2Z-□□□B	XW2D-40G6	Slim-type Connector Terminal Conversion Unit
For digital output (32 points)	GT1-OD32ML (-1)			

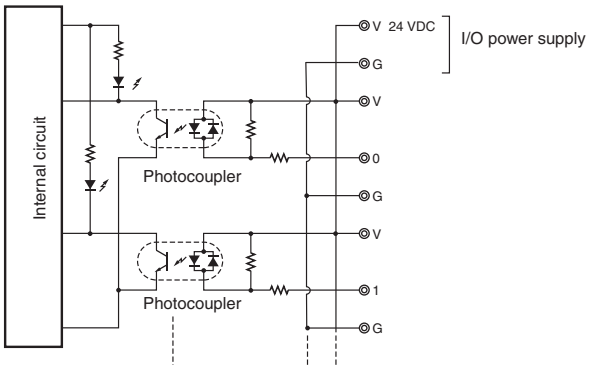
Cables for I/O Blocks (16 Points)

I/O classification	Model (Digital I/O Unit)	Applicable cable	Connected product	Remarks
For digital input (16 points) NPN	GT1-ID16ML	G79-□C	G7TC-ID16 G7TC-IA16	For I/O Block input
For digital input (16 points) PNP	GT1-ID16ML-1		G7TC-ID16-1 G7TC-IA16-1	For I/O Block output
For digital output (16 points) NPN	GT1-OD16ML		G7TC-OC16 G7TC-OC08 G70D-SOC16 G70D-FOM16 G70D-VSOC16 G70D-VFOM16 G70A-ZOC16-3	For I/O Block output
			M7E Series M7F-□N□□□	Digital Display Unit
For digital output (16 points) PNP	GT1-OD16ML-1		G7TC-OC16-1 G70D-SOC16-1 G70A-ZOC16-4	For I/O Block output
			M7E-01MB□-□□ M7F-□P□□□	Digital Display Unit

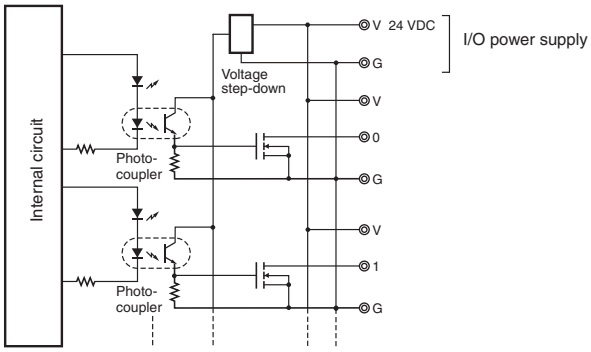
Cables for I/O Blocks (32 Points)

I/O classification	Model (Digital I/O Unit)	Applicable cable	Connected product	Remarks
For digital input (32 points) NPN	GT1-ID32ML	G79-I□C-□	G7TC-ID16 G7TC-IA16	For I/O Block input
For digital input (32 points) PNP	GT1-ID32ML-1		G7TC-ID16-1 G7TC-IA16-1	For I/O Block input
For digital output (32 points) NPN	GT1-OD32ML	G79-O□C-□	G7TC-OC16 G7TC-OC08 G70D-SOC16 G70D-FOM16 G70D-VSOC16 G70D-VFOM16 G70A-ZOC16-3	For I/O Block output
For digital output (32 points) PNP	GT1-OD32ML-1		G7TC-OC16-1 G70D-SOC16-1 G70D-FOM16-1 G70A-ZOC16-4	For I/O Block output

GT1-ID16



GT1-OD16



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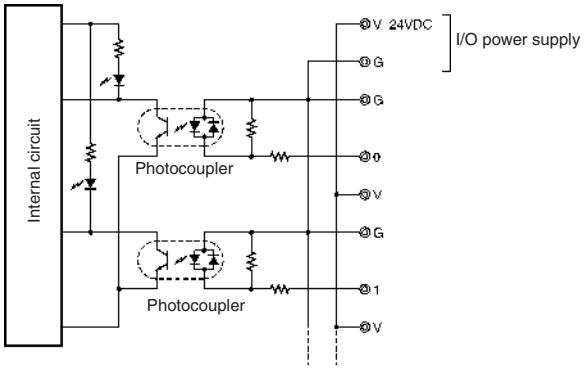

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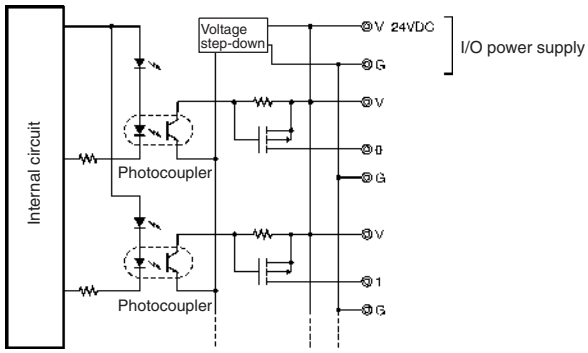
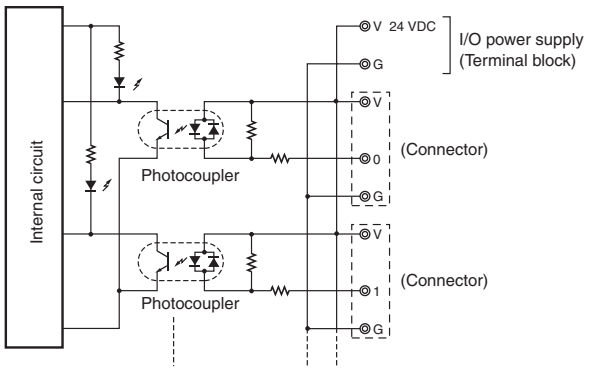
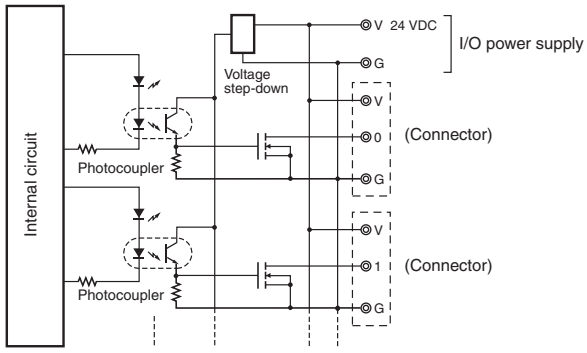


GT1-ID16MX



GT1-OD16MX



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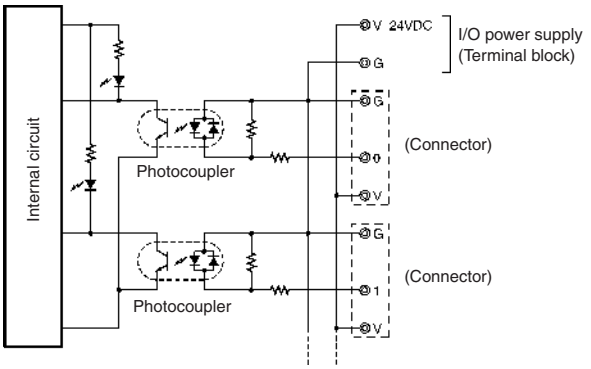

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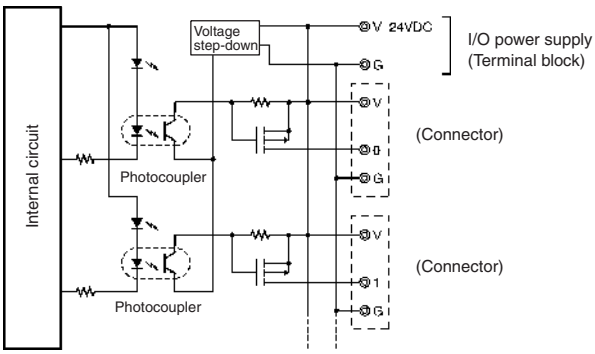
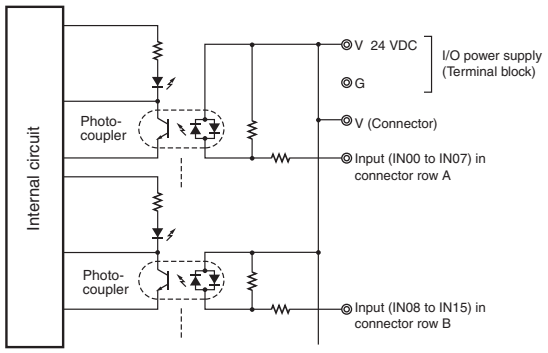
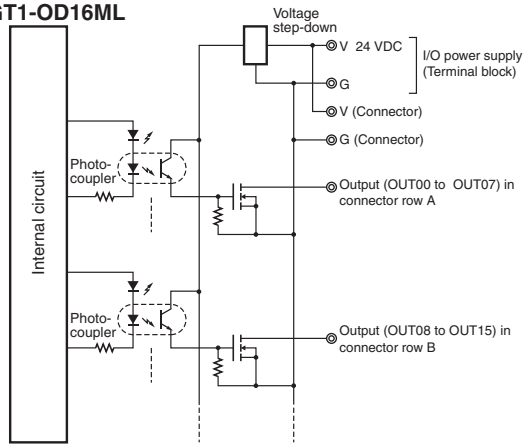


GT1-ID16ML



GT1-OD16ML



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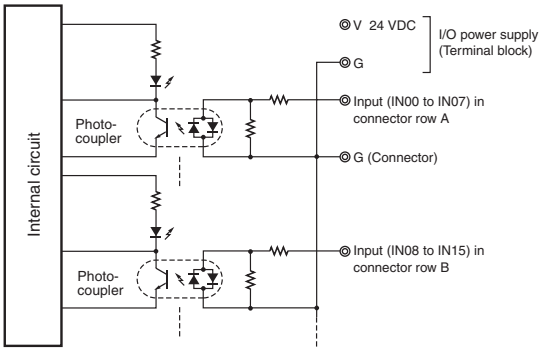

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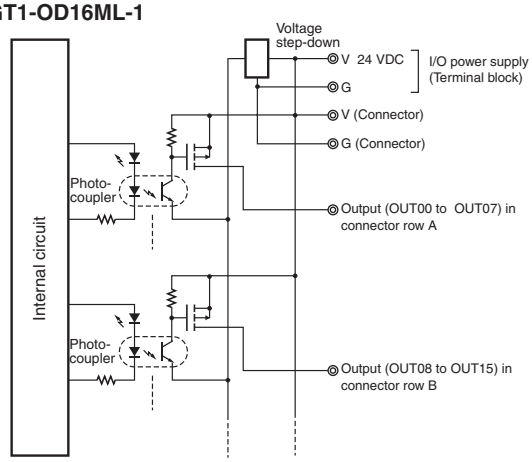
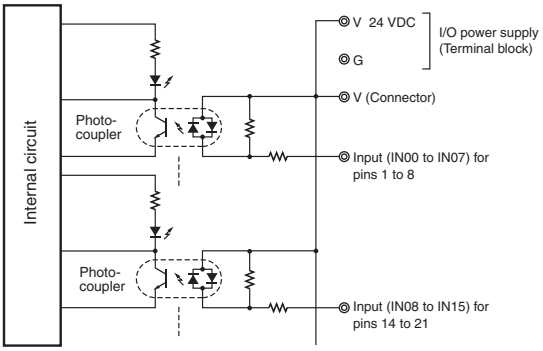
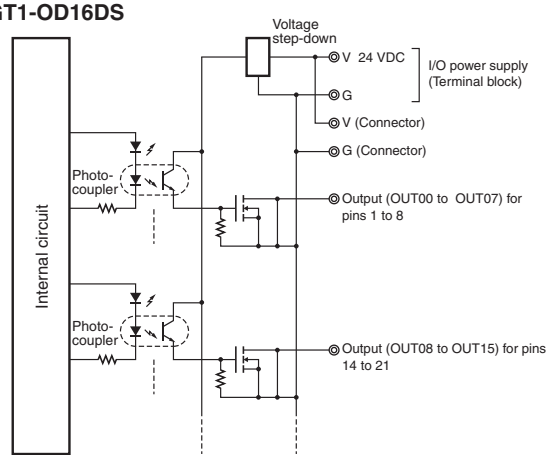


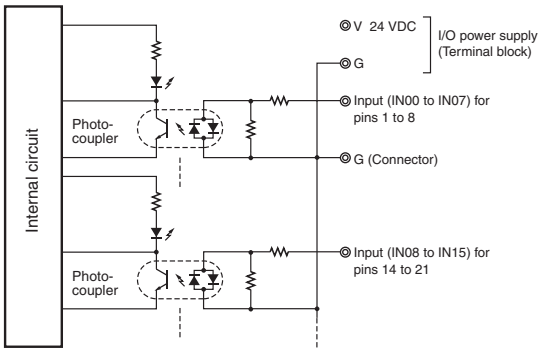
GT1-ID16DS



GT1-OD16DS



GT1-ID16DS-1



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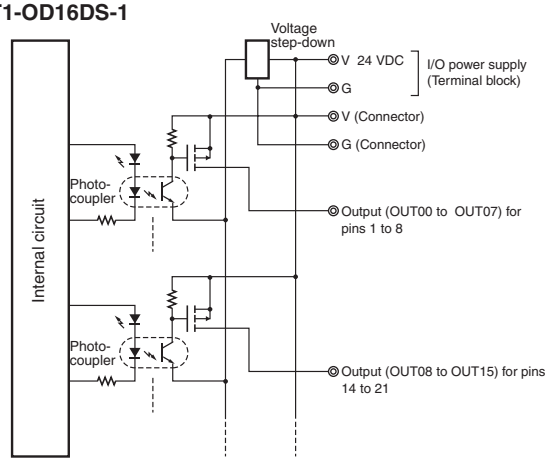
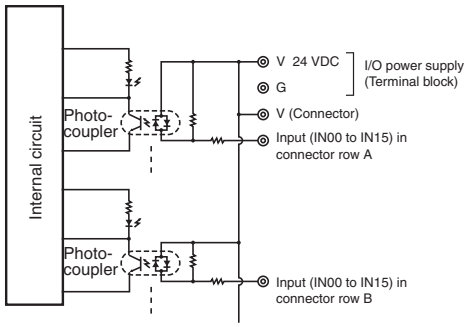
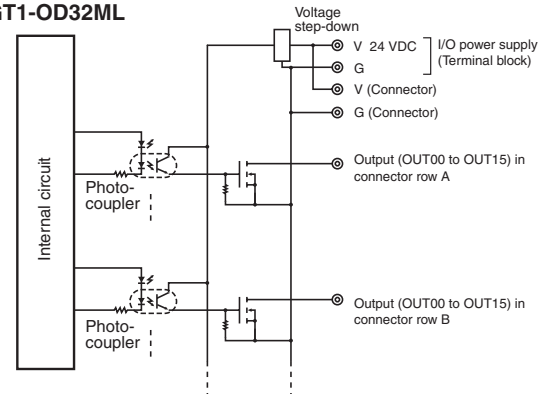


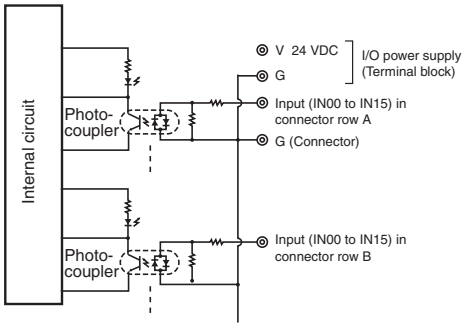
GT1-ID32ML



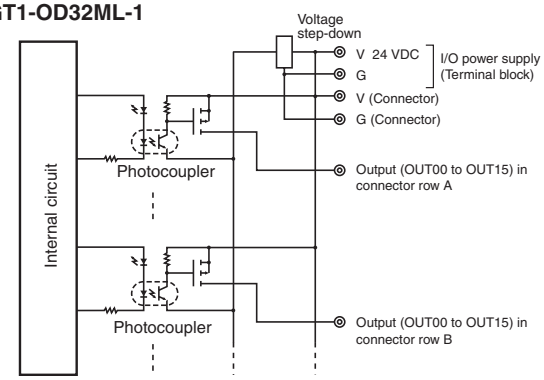
GT1-OD32ML



GT1-ID32ML-1



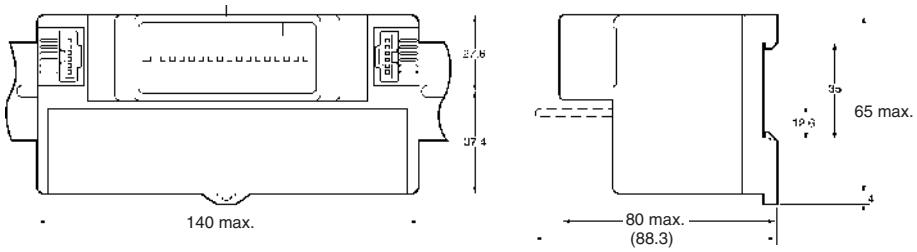
GT1-OD32ML-1



Dimensions

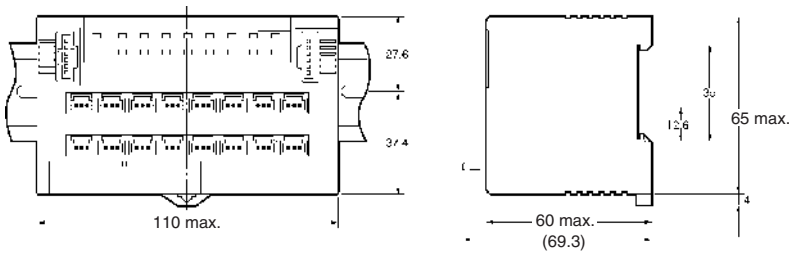
Note: All units are in millimeters unless otherwise indicated.

- Terminal Block Model
  GT1-ID16
  GT1-ID16-1
  GT1-OD16
  GT1-OD16-1



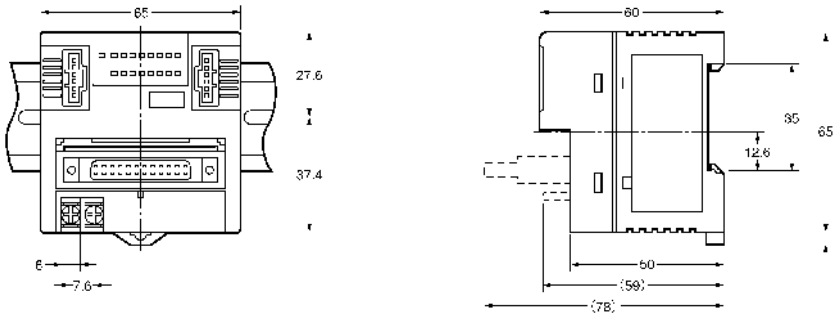
Note: Accessory cable included.

- Connector Model
  GT1-ID16MX
  GT1-ID16MX-1
  GT1-OD16MX
  GT1-OD16MX-1



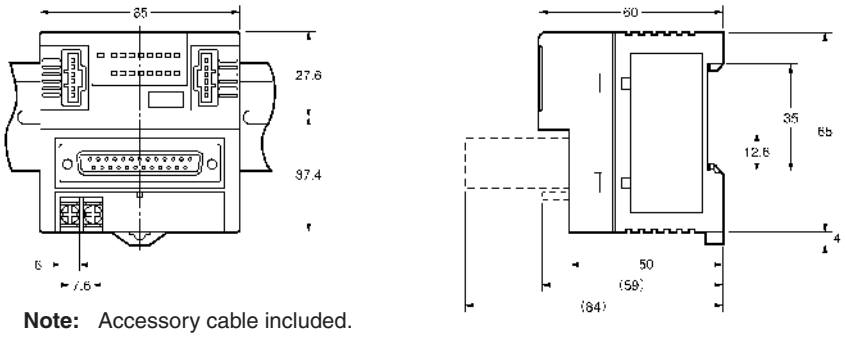
Note: Accessory cable included.

- Connector Model
  GT1-ID16ML
  GT1-ID16ML-1
  GT1-OD16ML
  GT1-OD16ML-1



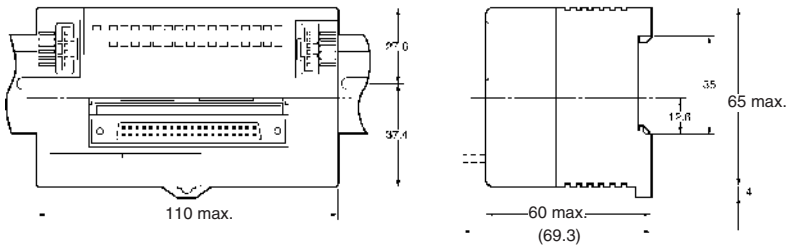
Note: Accessory cable included.

- Connector Model
  GT1-ID16DS
  GT1-ID16DS-1
  GT1-OD16DS
  GT1-OD16DS-1



Note: Accessory cable included.

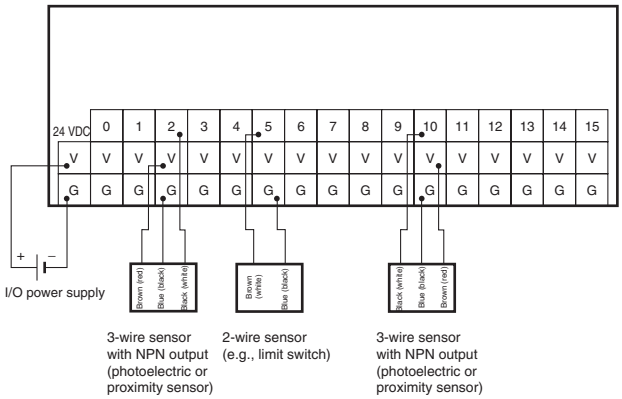
- High-density Connector Model
  GT1-ID32ML
  GT1-ID32ML-1
  GT1-OD32ML
  GT1-OD32ML-1



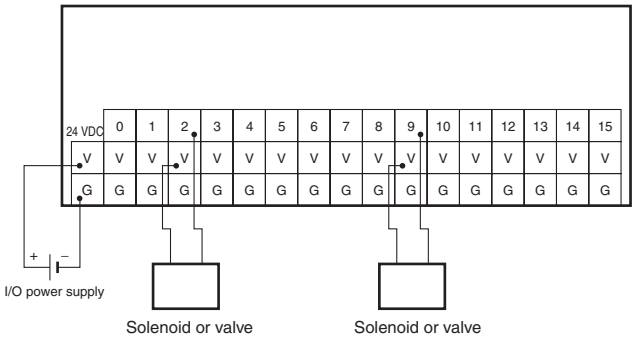
Note: Accessory cable included.

Wiring

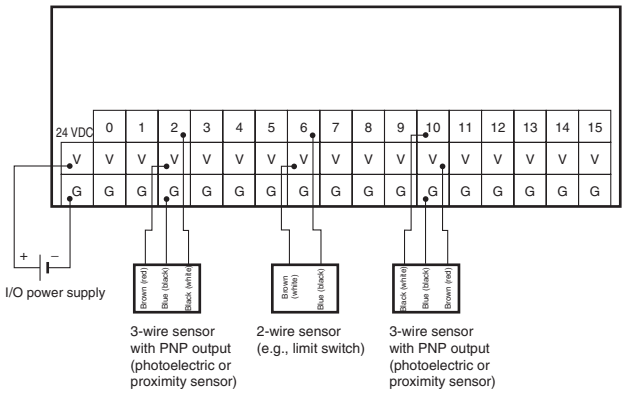
GT1-ID16



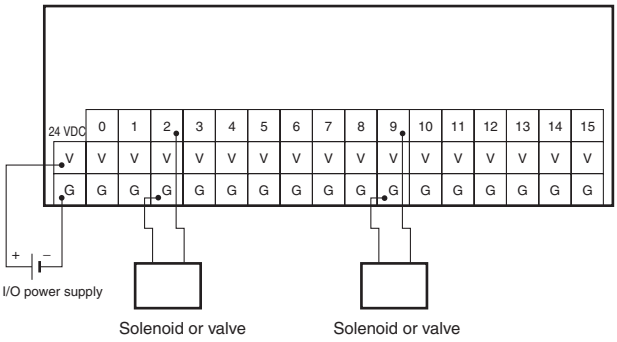
GT1-OD16



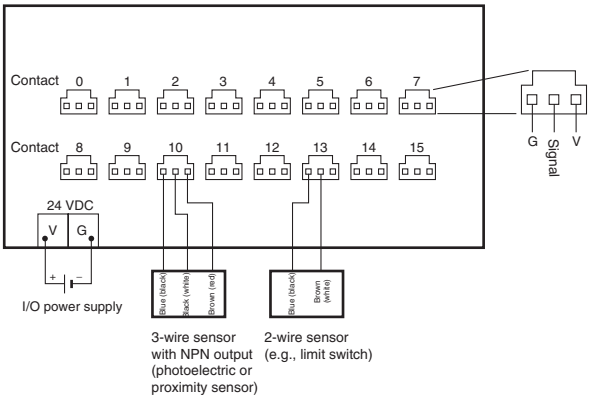
GT1-ID16-1



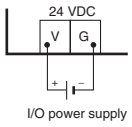
GT1-OD16-1



GT1-ID16MX



GT1-ID16ML

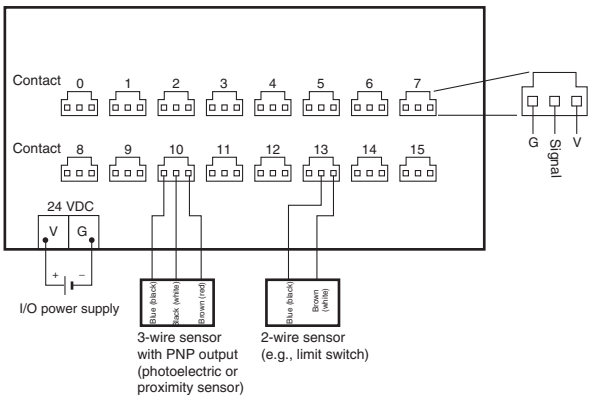


Connector Pin Arrangement

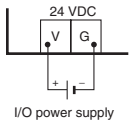
Pin No.	A12	A11	A10	A9	A8	A7	A6	A5	A4	A3	A2	A1
Function	NC	NC	NC	V	IN 07	IN 06	IN 05	IN 04	IN 03	IN 02	IN 01	IN 00

Pin No.	B12	B11	B10	B9	B8	B7	B6	B5	B4	B3	B2	B1
Function	NC	NC	NC	V	IN 15	IN 14	IN 13	IN 12	IN 11	IN 10	IN 09	IN 08

GT1-ID16MX-1



GT1-ID16ML-1

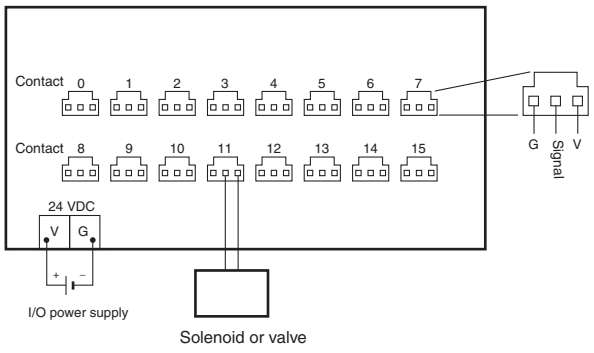


Connector Pin Arrangement

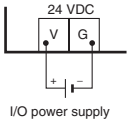
Pin No.	A12	A11	A10	A9	A8	A7	A6	A5	A4	A3	A2	A1
Function	NC	NC	NC	G	IN 07	IN 06	IN 05	IN 04	IN 03	IN 02	IN 01	IN 00

Pin No.	B12	B11	B10	B9	B8	B7	B6	B5	B4	B3	B2	B1
Function	NC	NC	NC	G	IN 15	IN 14	IN 13	IN 12	IN 11	IN 10	IN 09	IN 08

GT1-OD16MX



GT1-OD16ML

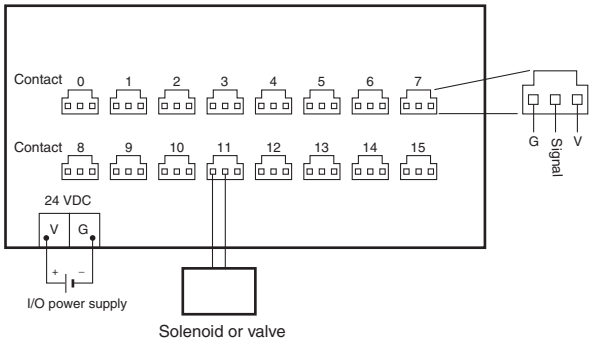


Connector Pin Arrangement

Pin No.	A12	A11	A10	A9	A8	A7	A6	A5	A4	A3	A2	A1
Function	NC	NC	V	G	OUT 07	OUT 06	OUT 05	OUT 04	OUT 03	OUT 02	OUT 01	OUT 00

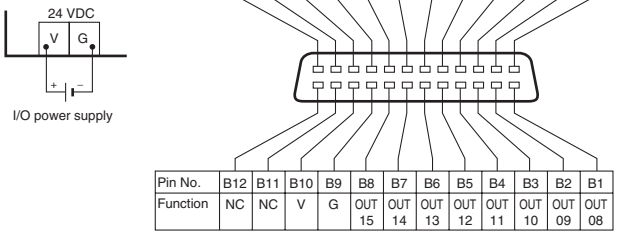
Pin No.	B12	B11	B10	B9	B8	B7	B6	B5	B4	B3	B2	B1
Function	NC	NC	V	G	OUT 15	OUT 14	OUT 13	OUT 12	OUT 11	OUT 10	OUT 09	OUT 08

GT1-OD16MX-1



GT1-OD16ML-1

Connector Pin Arrangement

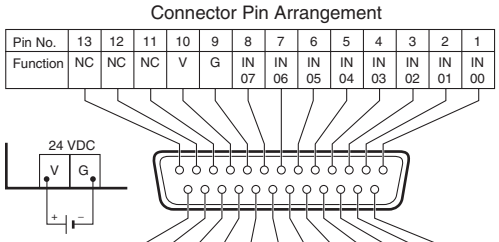


Pin No.	A12	A11	A10	A9	A8	A7	A6	A5	A4	A3	A2	A1
Function	NC	NC	V	G	OUT 07	OUT 06	OUT 05	OUT 04	OUT 03	OUT 02	OUT 01	OUT 00

Pin No.	B12	B11	B10	B9	B8	B7	B6	B5	B4	B3	B2	B1
Function	NC	NC	V	G	OUT 15	OUT 14	OUT 13	OUT 12	OUT 11	OUT 10	OUT 09	OUT 08

GT1-ID16DS

Connector Pin Arrangement

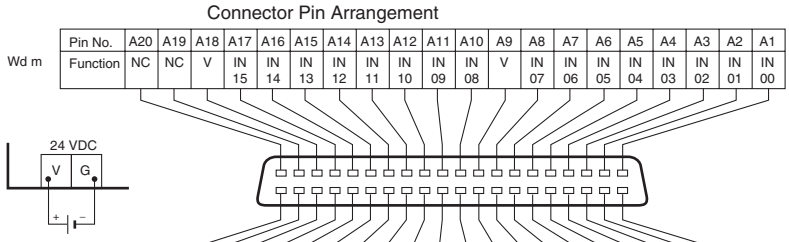


Pin No.	13	12	11	10	9	8	7	6	5	4	3	2	1
Function	NC	NC	NC	V	G	IN 07	IN 06	IN 05	IN 04	IN 03	IN 02	IN 01	IN 00

Pin No.	25	24	23	22	21	20	19	18	17	16	15	14
Function	NC	NC	V	G	IN 15	IN 14	IN 13	IN 12	IN 11	IN 10	IN 09	IN 08

GT1-ID32ML

Connector Pin Arrangement

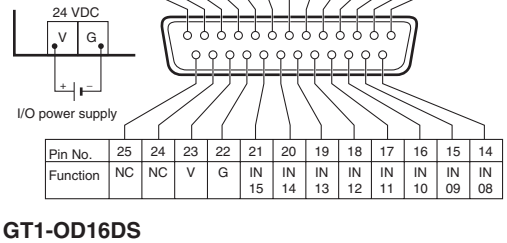


	Pin No.	A20	A19	A18	A17	A16	A15	A14	A13	A12	A11	A10	A9	A8	A7	A6	A5	A4	A3	A2	A1
Wd m	Function	NC	NC	V	IN 15	IN 14	IN 13	IN 12	IN 11	IN 10	IN 09	IN 08	V	IN 07	IN 06	IN 05	IN 04	IN 03	IN 02	IN 01	IN 00

	Pin No.	B20	B19	B18	B17	B16	B15	B14	B13	B12	B11	B10	B9	B8	B7	B6	B5	B4	B3	B2	B1
Wd m+1	Function	NC	NC	V	IN 15	IN 14	IN 13	IN 12	IN 11	IN 10	IN 09	IN 08	V	IN 07	IN 06	IN 05	IN 04	IN 03	IN 02	IN 01	IN 00

GT1-ID16DS-1

Connector Pin Arrangement

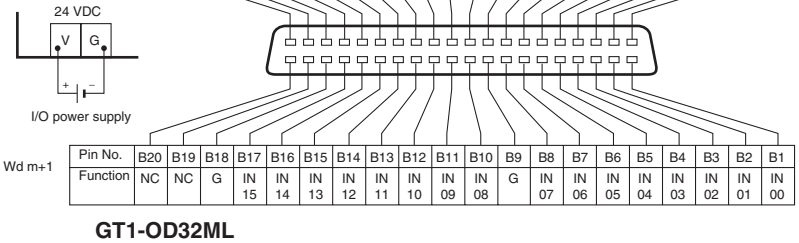


Pin No.	13	12	11	10	9	8	7	6	5	4	3	2	1
Function	NC	NC	NC	V	G	IN 07	IN 06	IN 05	IN 04	IN 03	IN 02	IN 01	IN 00

Pin No.	25	24	23	22	21	20	19	18	17	16	15	14
Function	NC	NC	V	G	IN 15	IN 14	IN 13	IN 12	IN 11	IN 10	IN 09	IN 08

GT1-ID32ML-1

Connector Pin Arrangement

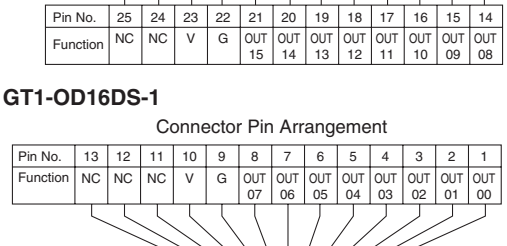


	Pin No.	A20	A19	A18	A17	A16	A15	A14	A13	A12	A11	A10	A9	A8	A7	A6	A5	A4	A3	A2	A1
Wd m	Function	NC	NC	G	IN 15	IN 14	IN 13	IN 12	IN 11	IN 10	IN 09	IN 08	G	IN 07	IN 06	IN 05	IN 04	IN 03	IN 02	IN 01	IN 00

	Pin No.	B20	B19	B18	B17	B16	B15	B14	B13	B12	B11	B10	B9	B8	B7	B6	B5	B4	B3	B2	B1
Wd m+1	Function	NC	NC	G	IN 15	IN 14	IN 13	IN 12	IN 11	IN 10	IN 09	IN 08	G	IN 07	IN 06	IN 05	IN 04	IN 03	IN 02	IN 01	IN 00

GT1-OD16DS

Connector Pin Arrangement

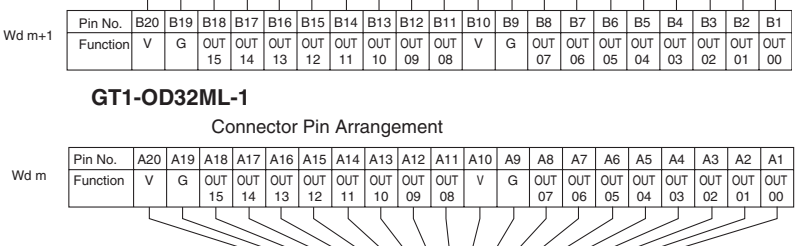


Pin No.	13	12	11	10	9	8	7	6	5	4	3	2	1
Function	NC	NC	NC	V	G	OUT 07	OUT 06	OUT 05	OUT 04	OUT 03	OUT 02	OUT 01	OUT 00

Pin No.	25	24	23	22	21	20	19	18	17	16	15	14
Function	NC	NC	V	G	OUT 15	OUT 14	OUT 13	OUT 12	OUT 11	OUT 10	OUT 09	OUT 08

GT1-OD32ML

Connector Pin Arrangement



	Pin No.	A20	A19	A18	A17	A16	A15	A14	A13	A12	A11	A10	A9	A8	A7	A6	A5	A4	A3	A2	A1
Wd m	Function	V	G	OUT 15	OUT 14	OUT 13	OUT 12	OUT 11	OUT 10	OUT 09	OUT 08	V	G	OUT 07	OUT 06	OUT 05	OUT 04	OUT 03	OUT 02	OUT 01	OUT 00

	Pin No.	B20	B19	B18	B17	B16	B15	B14	B13	B12	B11	B10	B9	B8	B7	B6	B5	B4	B3	B2	B1
Wd m+1	Function	V	G	OUT 15	OUT 14	OUT 13	OUT 12	OUT 11	OUT 10	OUT 09	OUT 08	V	G	OUT 07	OUT 06	OUT 05	OUT 04	OUT 03	OUT 02	OUT 01	OUT 00

GT1-OD16DS-1

Connector Pin Arrangement

Pin No.	13	12	11	10	9	8	7	6	5	4	3	2	1
Function	NC	NC	NC	V	G	OUT 07	OUT 06	OUT 05	OUT 04	OUT 03	OUT 02	OUT 01	OUT 00

Pin No.	25	24	23	22	21	20	19	18	17	16	15	14
Function	NC	NC	V	G	OUT 15	OUT 14	OUT 13	OUT 12	OUT 11	OUT 10	OUT 09	OUT 08

GT1-OD32ML-1

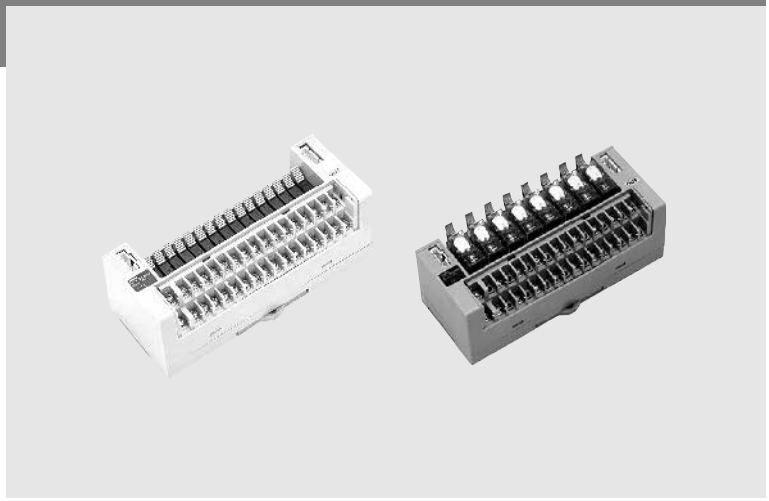
Connector Pin Arrangement

	Pin No.	A20	A19	A18	A17	A16	A15	A14	A13	A12	A11	A10	A9	A8	A7	A6	A5	A4	A3	A2	A1
Wd m	Function	V	G	OUT 15	OUT 14	OUT 13	OUT 12	OUT 11	OUT 10	OUT 09	OUT 08	V	G	OUT 07	OUT 06	OUT 05	OUT 04	OUT 03	OUT 02	OUT 01	OUT 00

	Pin No.	B20	B19	B18	B17	B16	B15	B14	B13	B12	B11	B10	B9	B8	B7	B6	B5	B4	B3	B2	B1
Wd m+1	Function	V	G	OUT 15	OUT 14	OUT 13	OUT 12	OUT 11	OUT 10	OUT 09	OUT 08	V	G	OUT 07	OUT 06	OUT 05	OUT 04	OUT 03	OUT 02	OUT 01	OUT 00

GT1-ROS16/-ROP08/-FOP08

Relay Output Units



Relay output units

- 8- and 16-point relay output models are available.
- Either 2, or 5 Amp maximum
- DIN rail mounting.

Ordering Information

I/O classification	Relay model	I/O points	Terminal	Power supply voltage	I/O specification	Model
Relay output	G6D-1A (24 V DC)	16	M3 terminal block	24 V DC	2 A, SPST-NO	GT1-ROS16
	G2R-1-SN (24 V DC)	8			5 A, SPST-NO	GT1-ROP08
SSR	G3RD-X02SN-US-E	8			---	GT1-FOP08

Specifications

Characteristics

I/O power supply voltage	20.4 to 26.4 V DC (24 V DC +10%/–15%)			
Current consumption (See note.)	**I/O Unit interface**		**I/O power supply**	
	GT1-ROP08	40 mA max.	GT1-ROP08	350 mA max.
	GT1-FOP08		GT1-FOP08	
	GT1-ROS16	50 mA max.	GT1-ROS16	250 mA max.
Connectable Units	8			
Dielectric strength	500 V AC (between isolated circuits)			
Noise immunity	Conforms to IEC61000-4-4, 2 kV (power line)			
Vibration resistance	10 to 55 Hz, 1.0-mm double amplitude or 70 m/s^2			
Shock resistance	200 m/s^2			
Mounting method	35-mm DIN rail mounting			
Mounting strength	No damage when 100 N pull load was applied in all directions			
Terminal strength	No damage when 100 N pull load was applied			
Screw tightening torque	0.3 to 0.5 N • m			
Ambient temperature	Operating:–10°C to 55°C (with no icing or condensation) Storage:–25°C to 65°C (with no icing or condensation)			
Ambient humidity	Operating:25% to 85%			
Accessories	I/O Unit Connecting Cable (40 mm)			

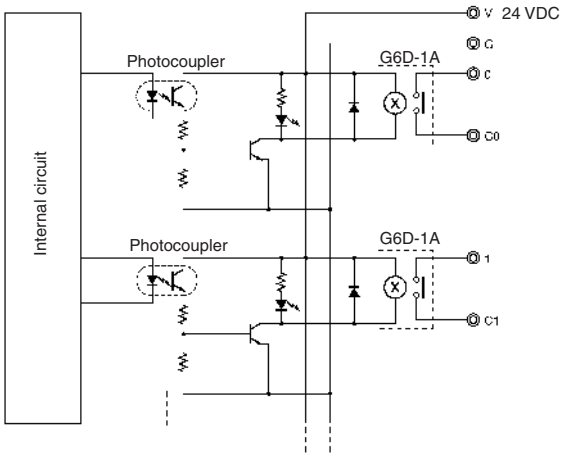
Note: The above current consumption is a value with all the points turned ON including the current consumption of the relay coils.

Relay Output Specifications

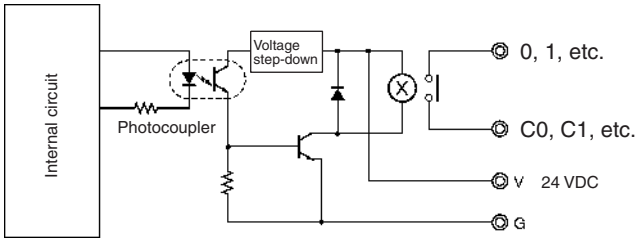
Item	G6D-1A	G2R-1-SN	G3RD-X02SN-US-E
Maximum contact current	2 A	5 A	0.01 to 1.5 A
Minimum applicable load (reference values)	5 V DC, 10 mA	5 V DC, 100 mA	4 to 48 V DC
Electrical life expectancy	100,000 operations min. with switching frequency of 1,800 operations per hour (at ambient temperature of 23°C with rated load)		---
Mechanical life expectancy	20,000,000 operations min. with switching frequency of 18,000 operations per hour (at ambient temperature of 23°C with rated load)		---

Internal Circuit Configuration

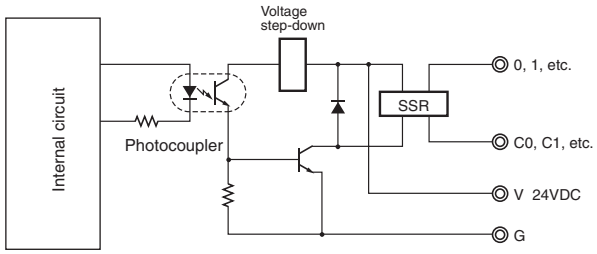
GT1-ROS16



GT1-ROP08



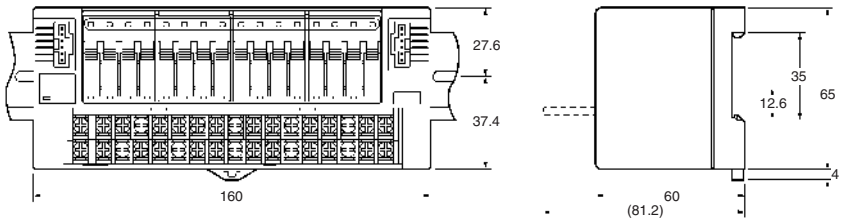
GT1-FOP08



Dimensions

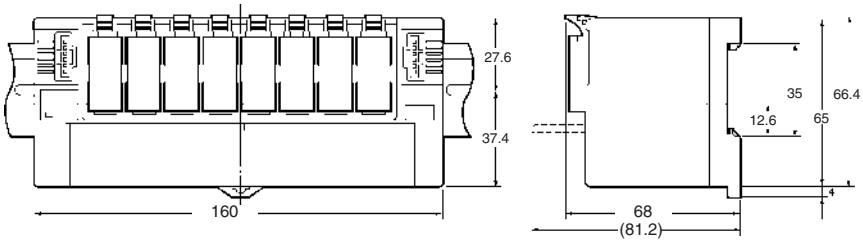
Note: All units are in millimeters unless otherwise indicated.

- GT1-ROS16



Note: Accessory cable included.

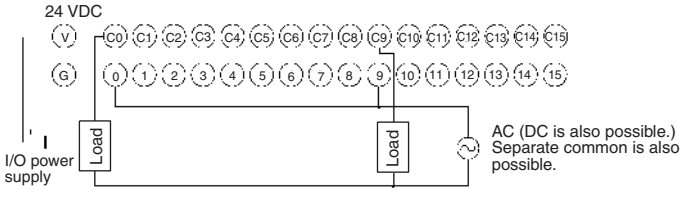
- GT1-ROP08
- GT1-FOP08



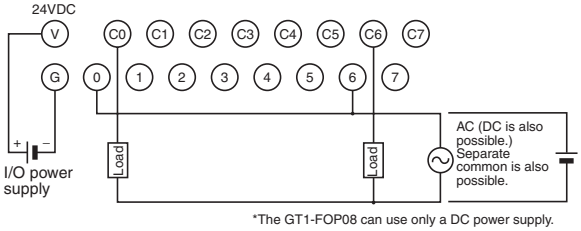
Note: Accessory cable included.

Wiring

GT1-ROS16



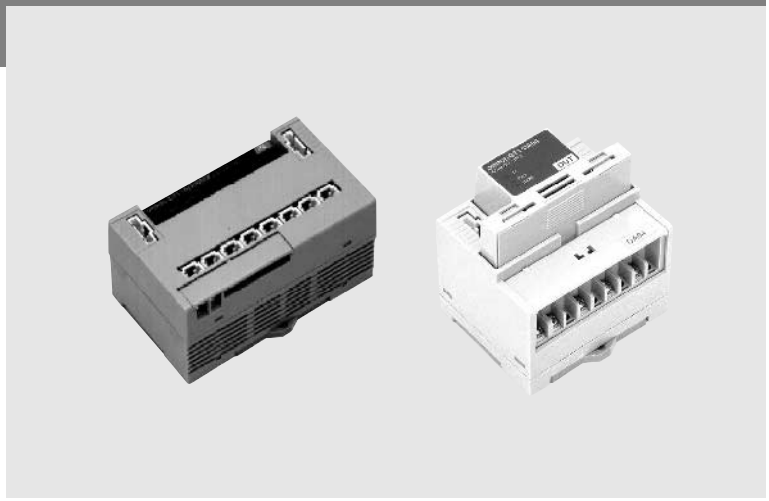
GT1-ROP08/GT1-FOP08



*The GT1-FOP08 can use only a DC power supply.

GT1-AD/-DA

Analog I/O Units



Analog input units

- Available either with screw terminals or easy to use connectors (GT1-AD08MX)
- 8 or 4 inputs
- High resolution: 1/6,000
- High conversion speed: 8 ms/8 points or 4 ms/4 points.
- DIN rail mounting.

Analog output units

Available either with screw terminals or easy to use connectors (GT1-DA04MX)

- 4 inputs
- High resolution: 1/6,000.
- High conversion speed: of 4 ms/4 points.
- DIN rail mounting

Ordering Information

I/O classification	I/O points	Terminal	Power supply voltage	I/O specification	Model
Analog input	8	Molex connector	24 V DC	4 to 20 mA, 0 to 20 mA, 0 to 5 V, 1 to 5 V, 0 to 10 V, –10 to 10 V	GT1-AD08MX
	4	Terminal block			GT1-AD04
Analog output	4	Molex connector	24 V DC	0 to 5 V, 1 to 5 V, 0 to 10 V, –10 to 10 V	GT1-DA04MX
		Terminal block		0 to 5 V, 1 to 5 V, 0 to 10 V, –10 to 10 V, 4 to 20 mA	GT1-DA04

Specifications

Input

Item		Voltage input	Current input
Input type		0 to 5 V, 1 to 5 V, 0 to 10 V, –10 to 10 V	0 to 20 mA, 4 to 20 mA
Max. signal input		±15 V	±30 mA
Input impedance		1 MΩ min.	Approx. 250 Ω
Resolution		1/6,000 (FS)	
Overall accuracy	**25°C**	±0.3% FS	±0.4% FS
	–10°C to 55°C	±0.6% FS	±0.8% FS
Conversion speed		8 ms/8 points, 4 ms/4 points	
Conversion output data		Binary data –10- to 10-V range: F448 to 0BB8 full scale Other signal ranges: 0000 to 1770 full scale	
Insulation method		Transistor or photocoupler insulation between inputs and power lines.	

Output

Item		Voltage output	Current output
Output type		0 to 5 V, 1 to 5 V, 0 to 10 V, –10 to 10 V	4 to 20 mA
Output permissible load resistance		5 kΩ min.	600 Ω max.
Output impedance		0.5 Ω max.	---
Resolution		1/6,000 (full scale)	
Overall accuracy	**25°C**	±0.4% full scale	
	–10°C to 55°C	±0.8% full scale	
Conversion speed		4 ms/4 points	
DA output data		Binary data –10 to 10 V range: F448 to 0BB8 full scale Other signal ranges: 0000 to 1770 full scale	
Insulation method		Transistor or photocoupler insulation between outputs and power lines.	

Characteristics

I/O power supply voltage	20.4 to 26.4 V DC (24 V DC +10%/–15%) (See note.)	
Current consumption	**I/O Unit interface**	**Internal circuitry power supply**
	50 mA max.	GT1-AD08MX:100 mA max. GT1-AD04:100 mA max. GT1-DA04MX:100 mA max. GT1-DA04:150 mA max.
Noise immunity	Conforms to IEC61000-4-4 2 kV (power line)	
Vibration resistance	10 to 150 Hz, 1.0-mm double amplitude or 70 m/s^2	
Shock resistance	200 m/s^2	
Dielectric strength	500 V AC	
Mounting method	35-mm DIN rail mounting	
Mounting strength	No damage when 100 N pull load was applied in all directions (10 N min. in the DIN rail direction)	
Terminal strength	No damage when 100 N pull load was applied	
Ambient temperature	Operating:–10°C to 55°C (with no icing or condensation) Storage:–25°C to 65°C (with no icing or condensation)	
Ambient humidity	Operating:25% to 85% (with no condensation)	
Accessories	I/O Unit Connecting Cable (40 mm)	

Note: Power for analog I/O is provided from the internal power supply.

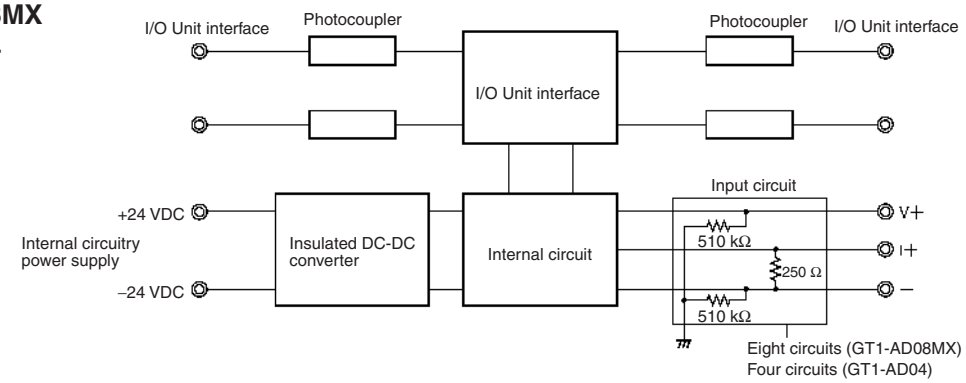
Connector (GT1-AD08MX, GT1-DA04MX)

Type			**Model**	**Remarks**
Molex connector	Press-fit terminal	Housing	52109-390	Corresponding to 24 AWG
	Solderless terminal	Housing	51030-0330	(See note.)
		Chain terminal	50083-8014	Corresponding to 24 to 30 AWG
			50084-8014	Corresponding to 22 to 24 AWG
		Loose terminal	50083-8114	Corresponding to 24 to 30 AWG (See note.)
			50084-8114	Corresponding to 22 to 24 AWG
		Press-fit tool	57037-5000	(See note.)

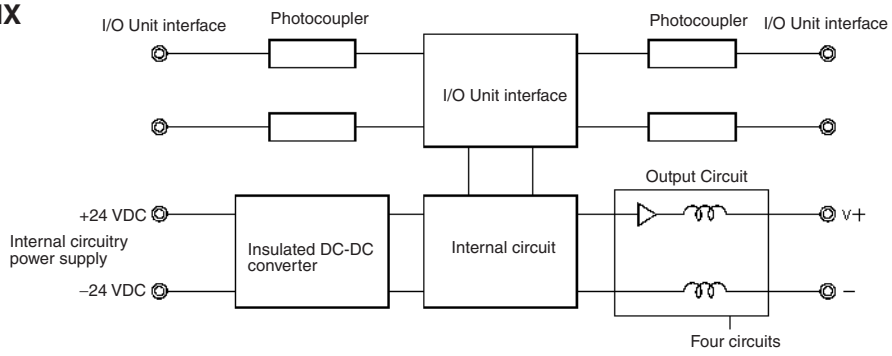
Note: Contact your OMRON representatives for the above connectors.

Internal Circuit Configuration

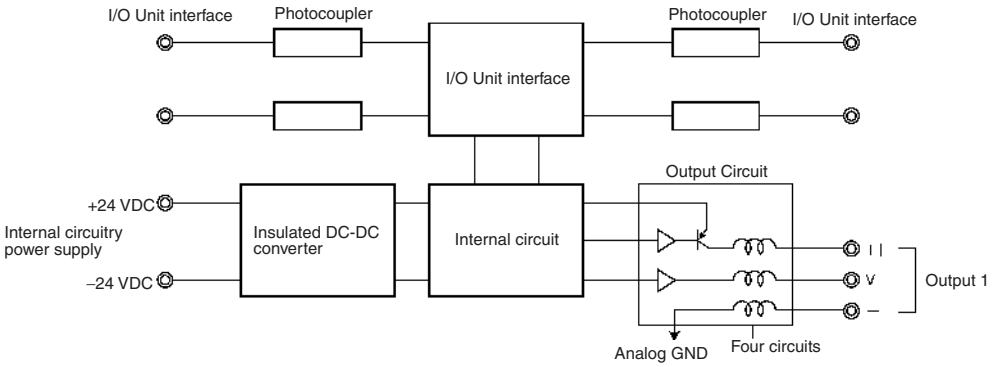
GT1-AD08MX
GT1-AD04



GT1-DA04MX



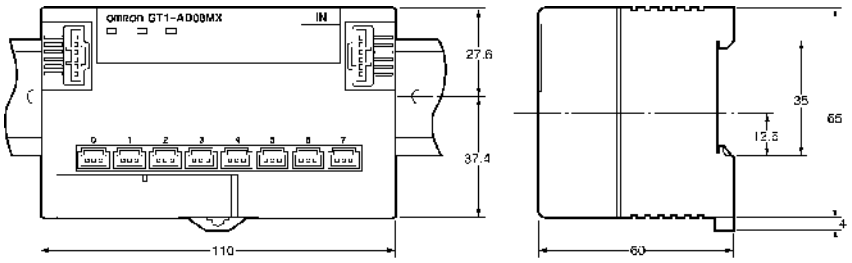
GT1-DA04



Dimensions

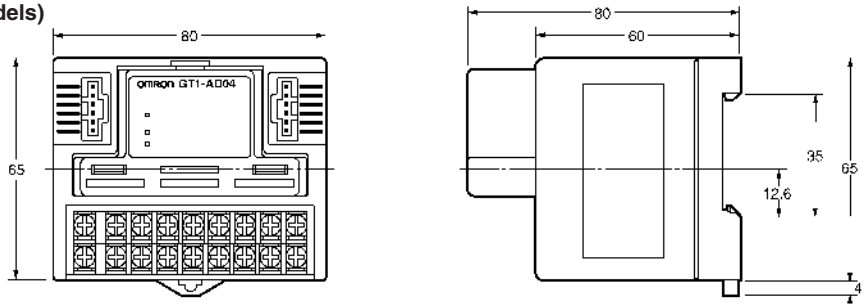
Note: All units are in millimeters unless otherwise indicated.

GT1-AD08MX
GT1-DA04MX
(Molex Connector Models)



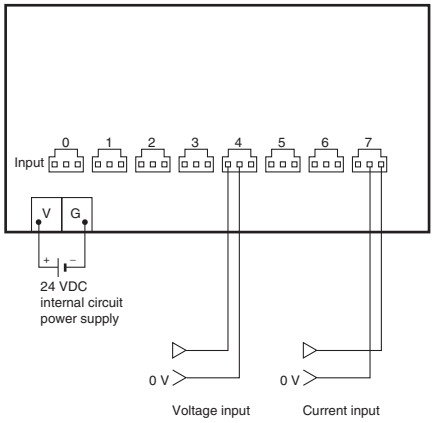
Note: Accessory cable included.

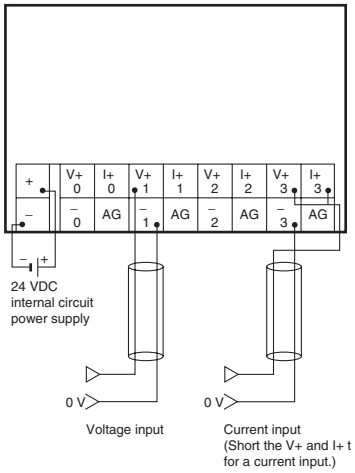
GT1-AD04
GT1-DA04
(Terminal Block Models)



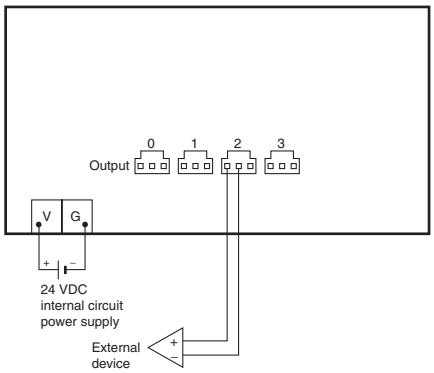
Note: Accessory cable included.

Wiring

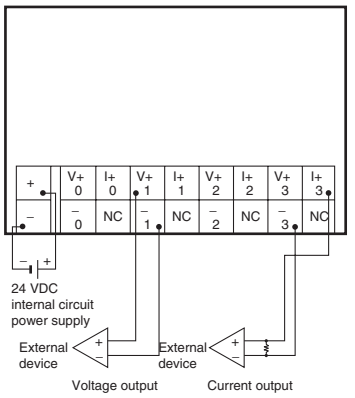




GT1-DA04MX



GT1-DA04



GT1-TS04□

Temperature Input Units

Temperature input units

- Four inputs.
- Two different models are available.
  One for thermocouples and one for platinum resistance thermometer.
- Conversion time is only 250 ms for 4 inputs.
- The DeviceNet configurator can be used to calibrate temperature inputs..
- The electorinic circuit section can be removed, so there is no need to disconnect wires during maintenance.
- DIN rail mounting.

Ordering Information

I/O type	I/O points	Connection	Rated voltage	Input specification	Model
Temperature inputs	Four inputs	Terminal Block	24 V DC	Thermocouple	GT1-TS04T
				Platinum resistance thermometer	GT1-TS04P

Specifications

General Specifications

Supply voltage	20.4 to 26.4 V DC (24 V DC –15% to 10%)
Current consumption	I/O Unit Interface: 50 mA max. Internal power supply: 80 mA max.
Vibration resistance	10 to 150 Hz, 0.7-mm amplitude or 50 m/s^2
Shock resistance	150 m/s^2
Dielectric strength	500 V AC
Mounting method	35-mm DIN rail mounting
Ambient temperature	Operating: –10 to 55 °C Storage:–25 to 65 °C
Ambient humidity	Operating: 25 to 85% (with no condensation)
Accessories	I/O Unit Connecting Cable (40 mm)

Input Specifications

Item	GT1-TS04T	GT1-TS04P
Input type	Switchable: R, S, K, J, T, L, or B	Switchable: Pt100 or JPt100
Indicated accuracy	(The larger of ±0.3% of the indicated value or ±1°C. See note.) ±1 digit max.	When the range is –200.0 to 650.0: (The larger of ±0.3% of the indicated value or ±0.8°C) ±1 digit max. When the range is –200.0 to 200.0: (The larger of ±0.3% of the indicated value or ±0.5°C) ±1 digit max.
Conversion interval	250 ms/4 inputs	
Isolation method	Photocoupler isolation between inputs and communications lines Photocoupler isolation between each temperature input signal	

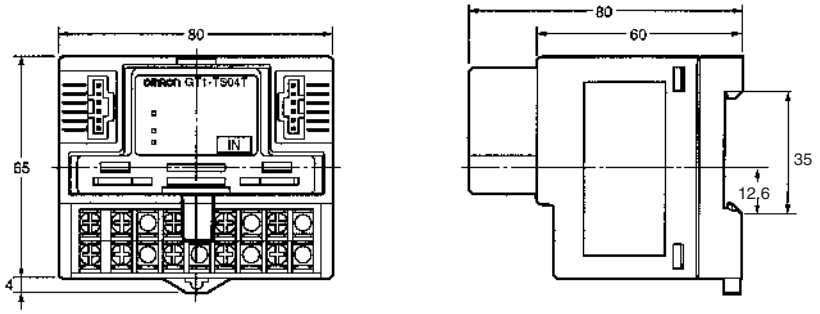
Note: K or T below –100°C:+2°C ±1 digit max.
L:±2°C ±1 digit max.
R or S below 200°C:±3°C ±1 digit max.
B below 400°C: No standard set

Dimensions

Note: All units are in millimeters unless otherwise indicated.

GT1-TS04T
GT1-TS04P

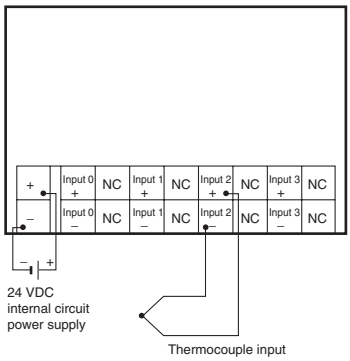
(Example: GT1-TS04T)



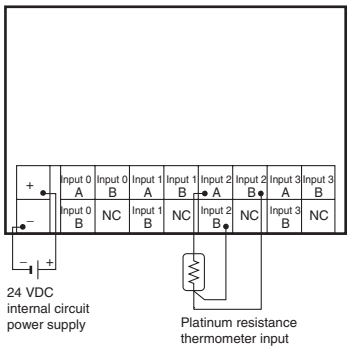
Note: Accessory cable included.

Wiring

GT1-TS04T

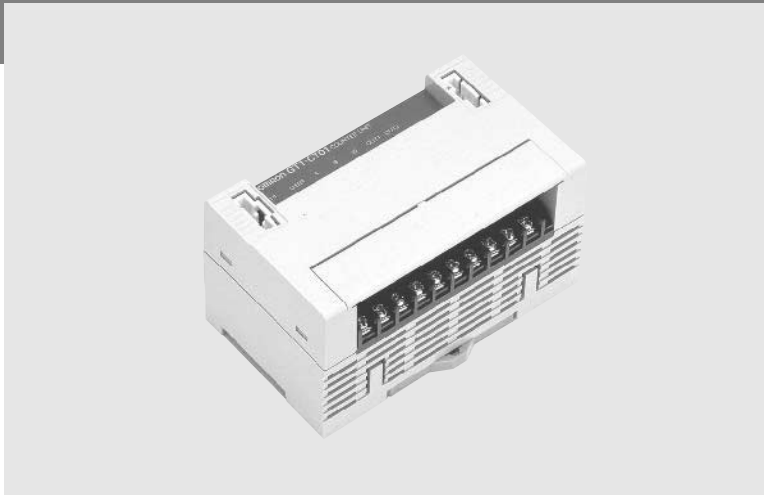


GT1-TS04P



GT1-CT01

Counter Unit



Counter unit supporting encoder input

- High-speed pulse with counting speeds up to 50 kHz.
- Counting can be set to a multiplication factor of 1 or 4.
- Wide range of measurement: –8,388,608 to 8,388,607.
- One external input and two external outputs are available.
- DIN rail mounting.

Ordering Information

I/O classification	External I/O points	Terminal	Operating mode	Model
Counter Unit	Inputs: 1 Outputs: 2	Terminal block	Linear counter	GT1-CT01

Specifications

Output

Output current	0.5 A per point max.
Residual voltage	1.2 V max. (0.5 A DC, between each output terminal and ground)
Leakage current	0.1 mA max. (24 V DC, between each output terminal and G)
ON delay time	0.5 ms max.
OFF delay time	1.5 ms max.
Number of circuits	2

Ratings

Current consumption	90 mA max.
Connection distance	Total length: 3 m Maximum length between Units: 1 m
I/O power supply voltage	20.4 to 26.5 V DC (24 V DC –15%/+10%)
Ambient temperature	–10°C to 55°C
Ambient humidity	Operating: 25% to 85% (with no condensation)
Weight	Approx. 250 g
Dimensions	110 × 60 × 65 (W × H × D)
Accessories	I/O Unit connecting cable (40 mm)

Characteristics

Number of counters			1
Operating mode			Linear counter
Count input	Input signal		Encoder input (A, B, Z)
	Signal level		24 V DC
	Input type		Differential phase pulse input Pulse and direction input
	Maximum counting speed		50 kHz (kcps)
	Counting range		–8,388,608 to +8,388,607
	Other		Differential phase pulse input can be set to a multiplication factor of 1 or 4.
External input	Input signal		External input (IN)
	Signal level		24 V DC
External output	Output		2 external outputs (OUT1 and OUT2)
	Maximum switching capacity		24 V DC 0.5 A
Allocated words		IN	3 words
		OUT	3 words

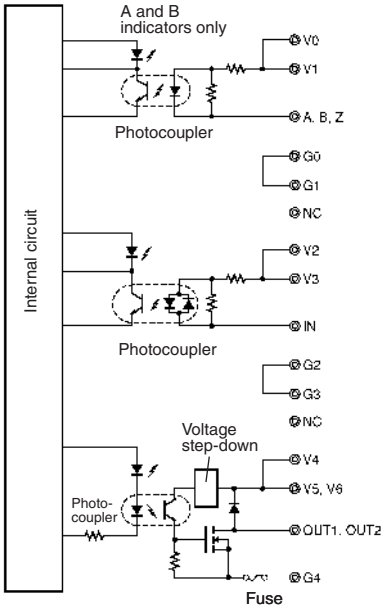
Encoders

Output type	Open-collector output
Power supply voltage	24 V DC
Models	E6B2-CWZ6C E6H-CWZ6C

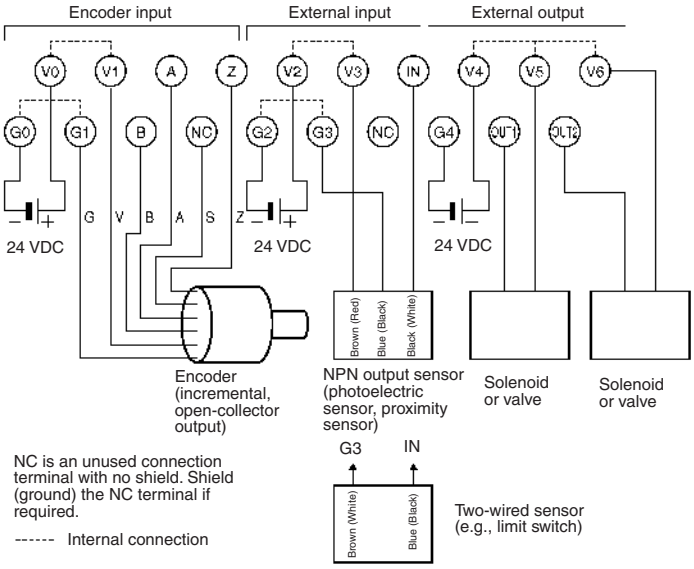
Operation

Internal Circuit Configuration

Wiring



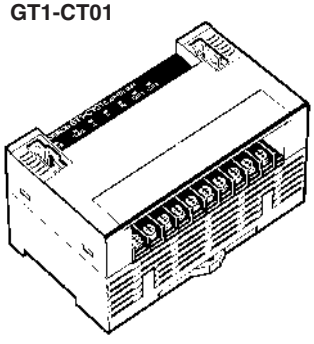
Be sure to connect Molex connectors for analog output wires and connect the wires as shown below.

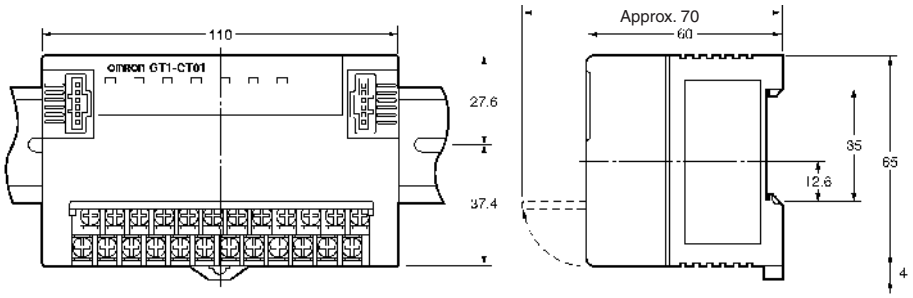


Dimensions

Note: All units are in millimeters unless otherwise indicated.

GT1-CT01





Note: Accessory cable included.

Smart Slaves

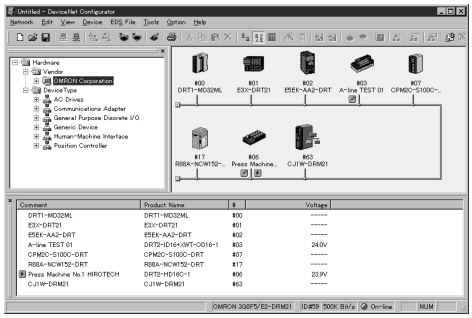
DRT Series

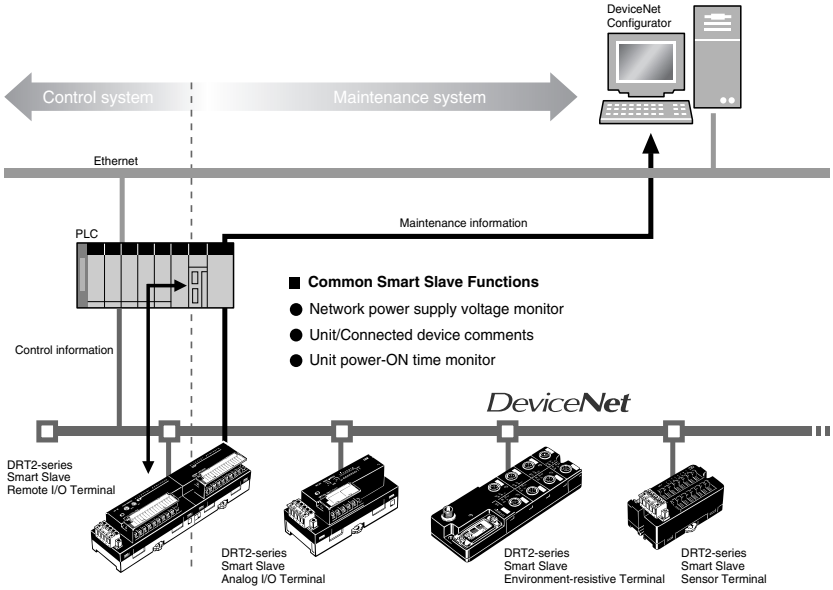
DRT2-series Smart Slaves provide you the necessary maintenance and product quality information.

DRT2-series Smart Slave Features

The DRT2-series Smart Slaves do not just handle the I/O information of field devices. They can also deliver a variety of information to improve the operating efficiency of the producion equipment. With this information a maintenance system can be fed with information to schedule preventive maintenence actions. This will reduce machine downtime caused by unscheduled repairs during production.

The control system and the maintenance system both use the same DeviceNet wiring. The benefits are:
reduced equipment setup time, reduced downtime in the event of a problem, provides preventive maintenance information.





Reduce Setup Time

- Network power supply monitor function
- Input filter function
- Power-ON inrush current protection function
- Communications speed auto-detect function
- Scaling function
- Analog I/O adjustment function
- Number of A/D conversion points (conversion cycle) setting

Reduce Downtime

- Unit comments function
- Connected device comments function
- I/O power supply monitor function
- Sensor power supply short-circuit detection function
- External load short-circuit detection function
- Disconnected sensor detection function

Improve Maintenance

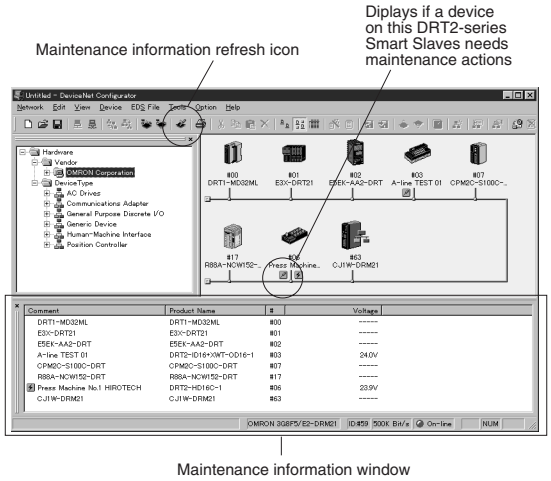
- Operation time monitor function
- Contact operations counter (See note.)
- Unit ON time monitor function
- Total ON time monitor function (See note.)
- Network power supply voltage monitor function
- Communications error log function
- Last maintenance date
- Comparator function
- Selectable output value after error
- Cumulative counter
- Moving average processing function
- Peak/bottom hold function

Note: The number of contact operations monitor function and the cumulative ON time monitor function cannot be used simultaneously for the same contact.

Configurator Maintenance Window

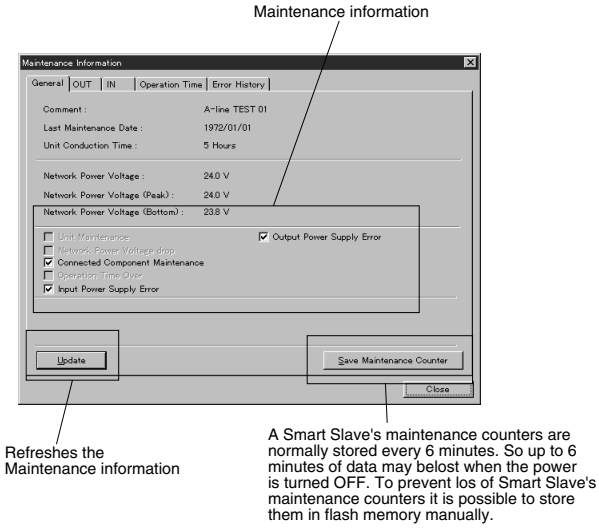
Various equipment information can be monitored from the following Configurator window throughDRT2-series Smart Slaves.

Maintenance Mode Window

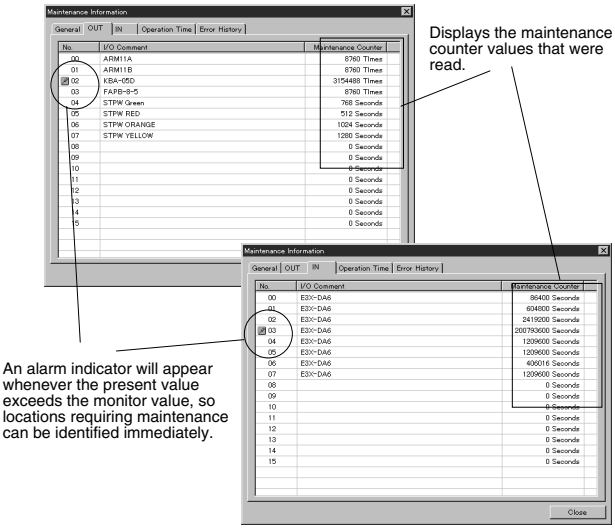


Individual Slave's Maintenance Information Window

A DRT2-series Smart Slave's maintenance information window can be opened by double-clicking the Slave's icon. If an alarm indicator appears next to the Slave's icon then equipment connected to this DRT2-series Smart Slave needs maintenance.



More details can be viewed by clicking the OUT tab, IN tab, or Operation Time tab.



Please refer to the software chapter on page 671 for more information on DeviceNet software.

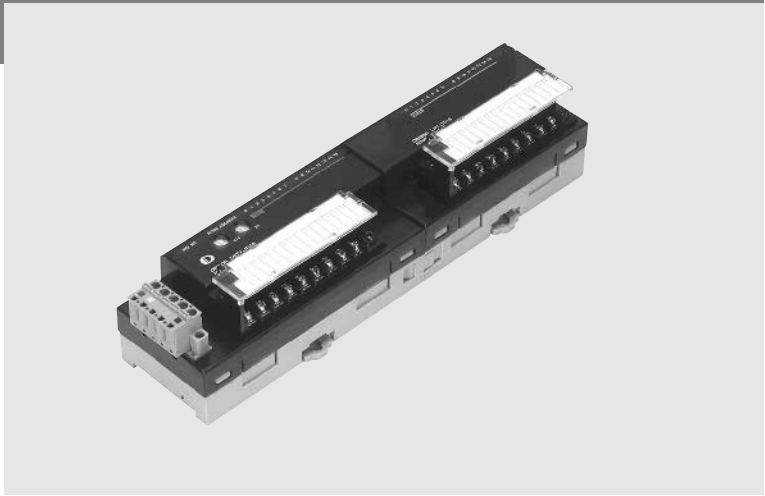
Functions Supported by Smart Slaves

Type of Slave	Remote I/O Terminals		Environment-resistive Terminals		Sensor Connector Terminals	Analog Slaves	
Function	**Input**	**Output**	**Input**	**Output**	**Input**	**Input**	**Output**
Network power supply voltage monitor function	Supported	Supported	Supported	Supported	Supported	Supported	Supported
Unit comments function	Supported	Supported	Supported	Supported	Supported	Supported	Supported
Connected device comments function	Supported	Supported	Supported	Supported	Supported	Supported	Supported
Unit ON time monitor function	Supported	Supported	Supported	Supported	Supported	Supported	Supported
Operation time monitor function	Supported (Input & Output only)		---	---	---	---	---
Contact operation counter function (See note.)	Supported	Supported	Supported	Supported	Supported	---	---
Total ON time monitor function (See note.)	Supported	Supported	Supported	Supported	Supported	---	---
I/O power supply monitor function	Supported	Supported	---	Supported	---	---	---
Communications error log function	Supported	Supported	Supported	Supported	Supported	Supported	Supported
Input filter function	Supported	---	Supported	---	Supported	---	---
Power-ON inrush current protection function	Supported	---	Supported	---	Supported	---	---
Sensor power supply short-circuit detection function	---	---	Supported	---	Supported	---	---
External load short-circuit detection function	---	---	---	Supported	---	---	---
Disconnected sensor detection function	---	---	Supported	---	---	---	---
Communications speed auto-detect function	Supported	Supported	Supported	Supported	Supported	Supported	Supported
Scaling function	---	---	---	---	---	Supported	Supported
User adjustment	---	---	---	---	---	Supported	Supported
Last maintenance date	Supported	Supported	Supported	Supported	Supported	Supported	Supported
Cumulative counter	---	---	---	---	---	Supported	Supported
Moving average processing function	---	---	---	---	---	Supported	---
Number of A/D conversion points (conversion cycle) setting	---	---	---	---	---	Supported	---
Peak/bottom hold function	---	---	---	---	---	Supported	---
Top/valley hold function	---	---	---	---	---	Supported	---
Percentage change calculation function	---	---	---	---	---	Supported	---
Comparator function	---	---	---	---	---	Supported	---
Selectable output value after error	---	---	---	---	---	---	Supported

* The contact operation counter function and the total ON time monitor function cannot be used simultaneously for the same contact.

DRT2-□D16(-1)

Digital I/O Terminals



I/O Device with DC-inputs and transistor outputs.

- Maintenance data can be collected without affecting the functionality of the control system.
- Valuable information can be collected and managed through the network, including information on the communications power supply voltage level, unit wear and tear, and equipment operating information.
- Easily locate trouble spots in the system.
- Setup has been simplified with features like auto-detection of the communication speed.

Smart Slave Functions

Compact unit

Basic Units are just 115-mm wide (just 77% of DRT1-series) and the Expansion Units are just 94-mm wide, so the overall width is 209 mm.

Detachable Terminal Block

The terminal block can be detached.

Expansion I/O Units

One Expansion Unit can be attached to the Basic Unit. Different I/O Terminals can be combined to suit the system requirements, for example, 16 inputs + 8 outputs or 24 inputs (16 inputs + 8 inputs.)

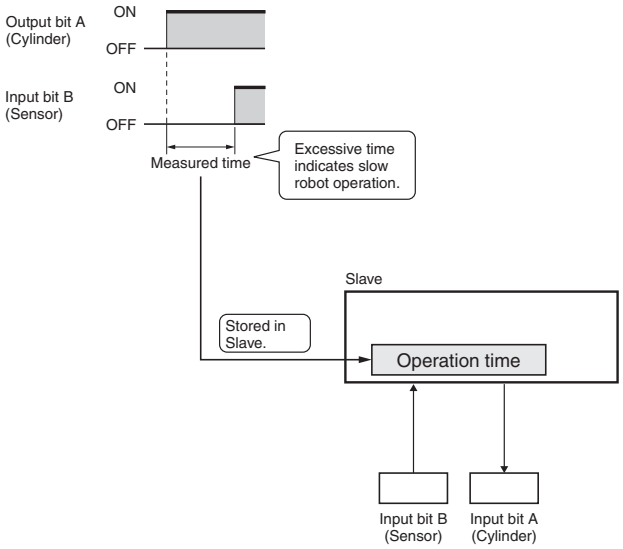
Operation Time Monitor Function

The device can measure the time it takes for an input to go

ON after a corresponding output is set (independent of the ladder program).

If this time exceeds the value that was preset in the device the master is notified through the status bits.

Note: This function is only supported in a device that has both inputs and outputs.

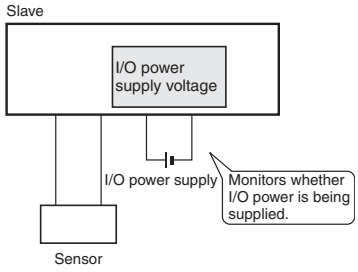


No Wiring Required for Internal Circuits

Power for the device's internal circuits is supplied from the communications power supply.

I/O Power Supply Status Monitor Function

This function checks if I/O power is being supplied. If I/O power is not present this is indicated in the status information.

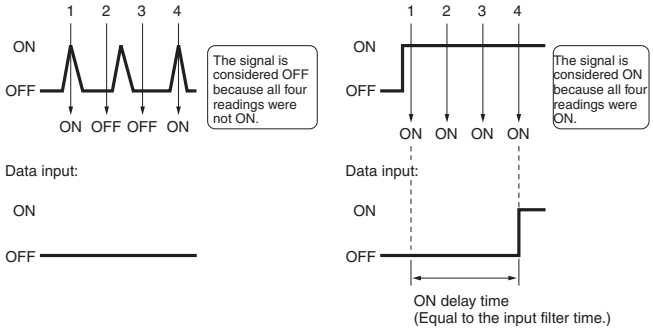


Input Filter Function

To eliminate incorrect signal interpretation due to contact bouncing or signal corruption by noise a filter is needed.

This filter is implemented by reading the input value several times within a preset period. If the input value is within the preset period for all measurements of the same state the input value is presumed to be of that state.

The input filter function can also be used to create a ON and OFF delay.



Power-ON Inrush Current Protection Function

When this function is set the inputs are not being read for 100 ms afer the I/O power supply is turned ON. This gives the power supply time to stabilize after being turned ON. The 100-ms delay is used to eliminate false inputs generated by inrush currents.

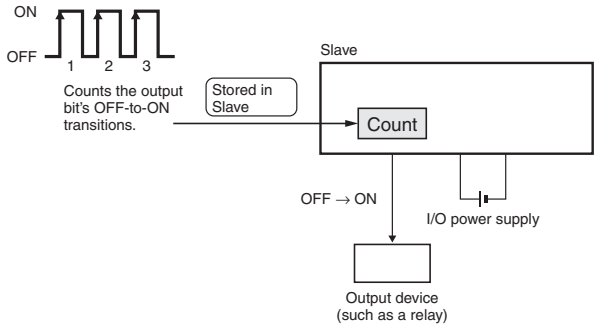
Contact Operation Counter

The number of times an input or output is switched ON is counted and stored in the device.

When the counter reaches a set value than this is indicated in the status information.

The maximum frequency that can be measured is 50 Hz.

Note: The contact operation counter function and the total ON time monitor function cannot be used simultaneously for the same contact.

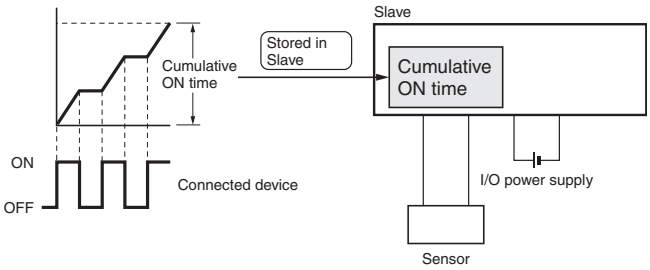


Total ON Time Monitor Function

The device keeps track of the total time an input or output is switch ON. This total On time is stored in the device.

When the counter reaches a set value than this is indicated in the status information.

Note: The contact operation counter function and the total ON time monitor function cannot be used simultaneously for the same contact.



Ordering Information

Basic Units

I/O type	Internal I/O common	Number of I/O points	I/O connections	Internal circuit power	Rated I/O power supply voltage	Model
Inputs	NPN (+ common)	16	Screw terminals	Supplied from communications connector.	24 V DC	DRT2-ID16
	PNP (– common)					DRT2-ID16-1
Outputs	NPN (– common)					DRT2-OD16
	PNP (+ common)					DRT2-OD16-1

Expansion Units

I/O type	Internal I/O common	Number of I/O points	I/O connections	Internal circuit power	Rated I/O power supply voltage	Model
Inputs	NPN (+ common)	8	Screw terminals	Supplied from Basic Unit.	24 V DC	XWT-ID08
	PNP (– common)					XWT-ID08-1
Outputs	NPN (– common)					XWT-OD08
	PNP (+ common)					XWT-OD08-1
Inputs	NPN (+ common)	16				XWT-ID16
	PNP (– common)					XWT-ID16-1
Outputs	NPN (– common)					XWT-OD16
	PNP (+ common)					XWT-OD16-1

Specifications

General Specifications

Communications power supply voltage	11 to 25 V DC
Unit power supply voltage	Not required (Supplied from the communications connector.)
I/O power supply voltage	20.4 to 26.4 V DC (24 V DC $^{+10\%}/_{-15\%}$)
Current consumption	Communications:Basic Unit:60 mA max. With 16-point expansion:70 mA max. With 8-input expansion:65 mA max. With 16-output expansion:64.5 mA max.
Dielectric strength	500 V AC (between isolated circuits)
Noise immunity	Conforms to IEC61000-4-4, 2 kV (power line)
Vibration resistance	10 to 56 Hz, 0.7-mm double amplitude 56 to 150 Hz, 50 m/s^2
Shock resistance	150 m/s^2
Mounting method	35-mm DIN rail mounting
Screw tightening torque	M3 (power supply and I/O terminals): 0.3 to 0.5 Nm
Ambient temperature	Operating:–10°C to 55°C Storage:–25°C to 65°C
Ambient humidity	Operating:25% to 85% (with no condensation)
Weight	Basic Unit:140 g max. 16-point Expansion Unit:120 g max. 8-point Expansion Unit:80 g max.

Ratings

Inputs

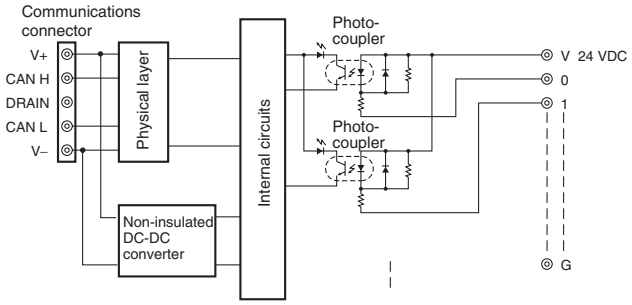
Input current		6 mA max./point (at 24 V DC)
ON delay time		1.5 ms max.
OFF delay time		1.5 ms max.
ON voltage	NPN	15 V DC min. between each input terminal and V
	PNP	15 V DC min. between each input terminal and G
OFF voltage	NPN	5 V DC max. between each input terminal and V
	PNP	5 V DC max. between each input terminal and G
OFF current		1 mA max.
Insulation method		Photocoupler
Input indicators		LED (yellow)

Outputs

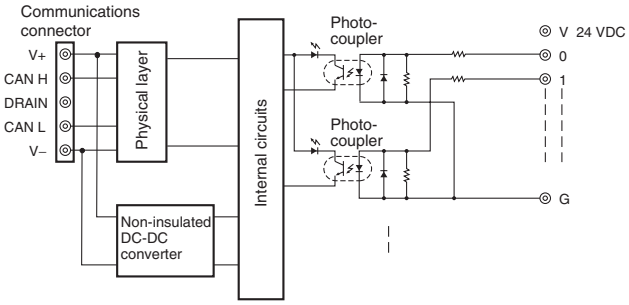
Rated output current	0.5 A/point, 4.0 A/common
ON delay time	0.5 ms max.
OFF delay time	1.5 ms max.
Residual voltage	1.2 V max.
Leakage current	0.1 ms max.
Isolation method	Photocoupler
Output indicators	LED (yellow)

Internal Circuit Configuration

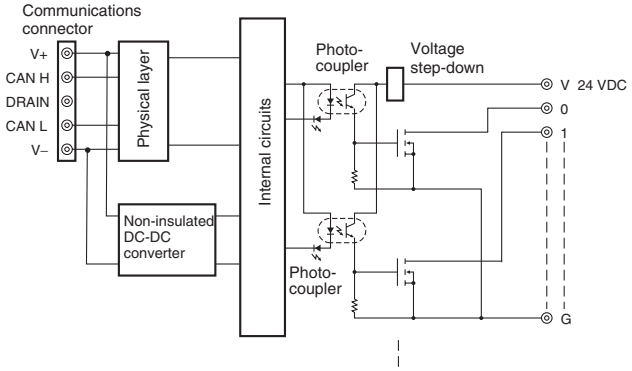
DRT2-ID16 (NPN)



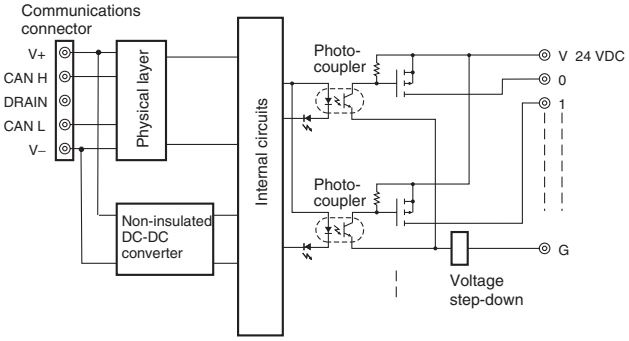
DRT2-ID16-1 (PNP)



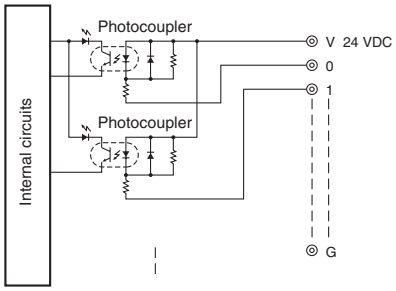
DRT2-OD16 (NPN)



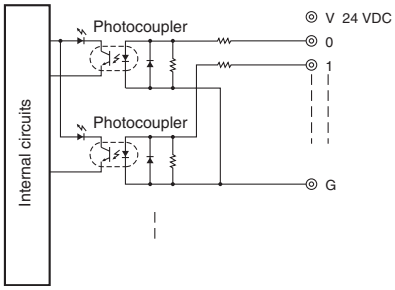
DRT2-OD16-1 (PNP)



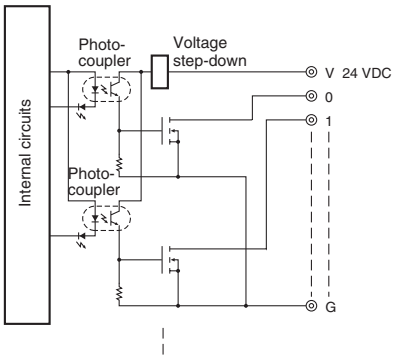
XWT-ID08 (NPN)
XWT-ID16 (NPN)



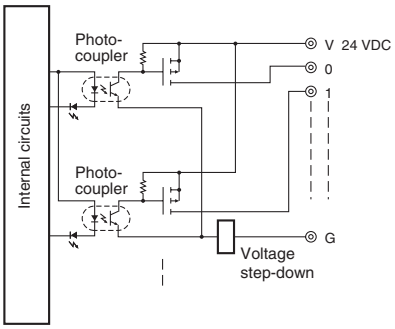
XWT-ID08-1 (PNP)
XWT-ID16-1 (PNP)



XWT-OD08 (NPN)
XWT-OD16 (NPN)



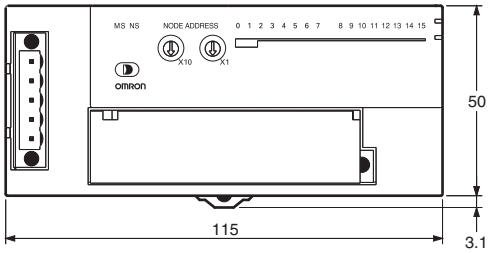
XWT-OD08-1 (PNP)
XWT-OD16-1 (PNP)

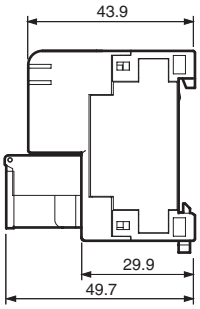


Dimensions

Remote I/O Terminals: Basic Units

DRT2-ID16
DRT2-ID16-1
DRT2-OD16
DRT2-OD16-1

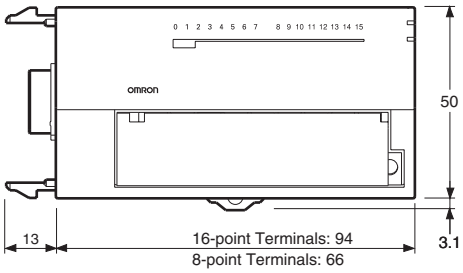


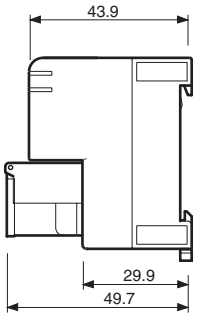


Remote I/O Terminals: Expansion Units

XWT-ID16
XWT-ID16-1
XWT-OD16
XWT-OD16-1

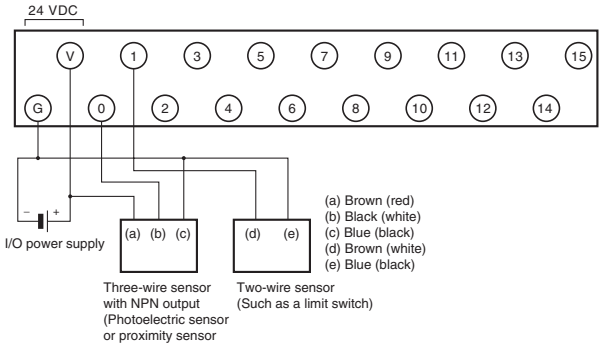
XWT-ID08
XWT-ID08-1
XWT-OD08
XWT-OD08-1



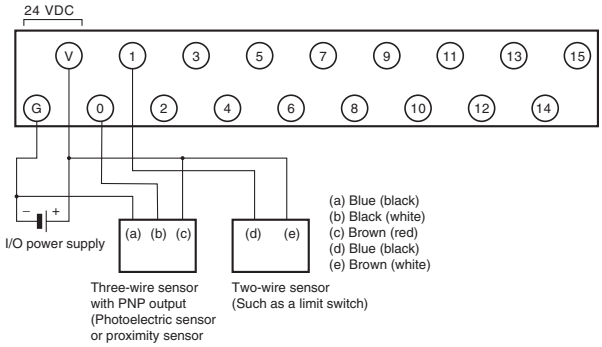


Wiring

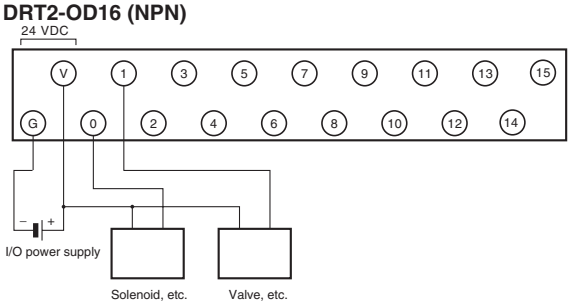
DRT2-ID16 (NPN)



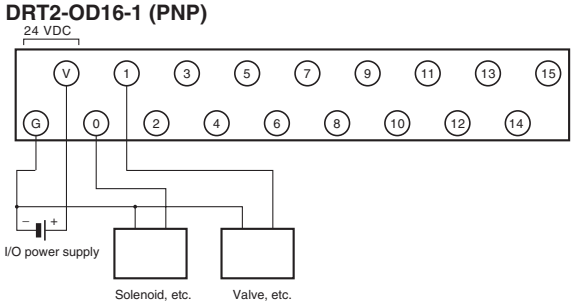
DRT2-ID16-1 (PNP)



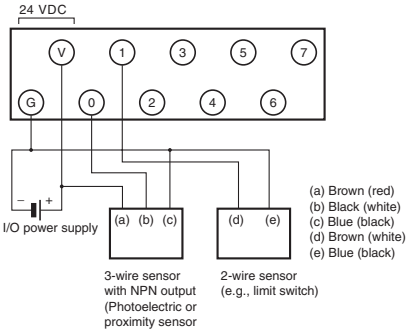
DRT2-OD16 (NPN)



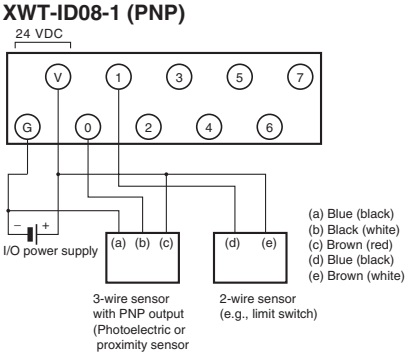
DRT2-OD16-1 (PNP)



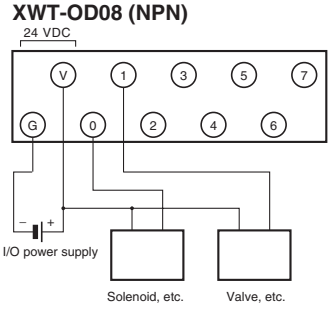
XWT-ID08 (NPN)



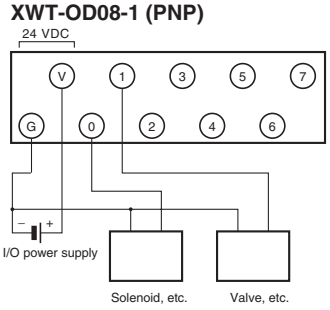
XWT-ID08-1 (PNP)



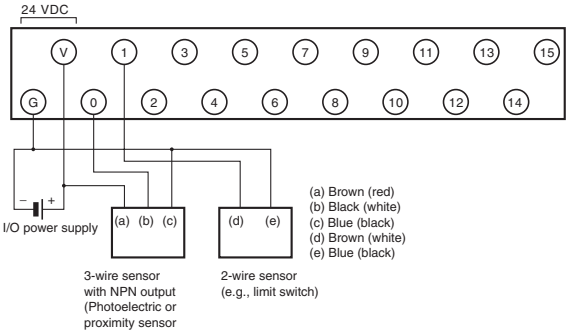
XWT-OD08 (NPN)



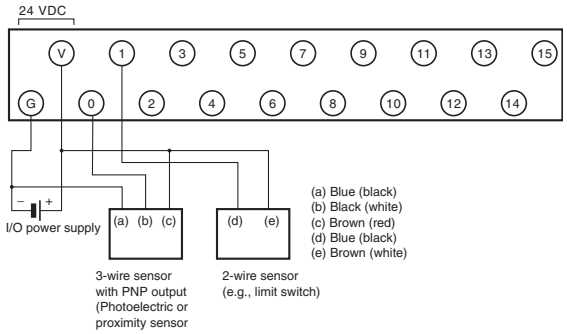
XWT-OD08-1 (PNP)



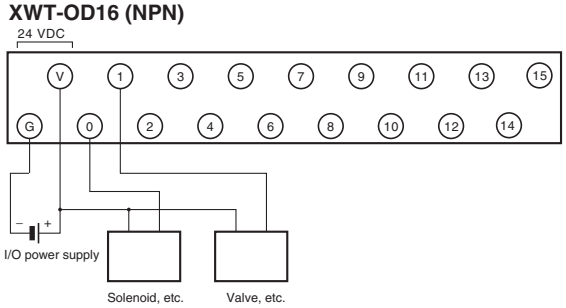
XWT-ID16 (NPN)



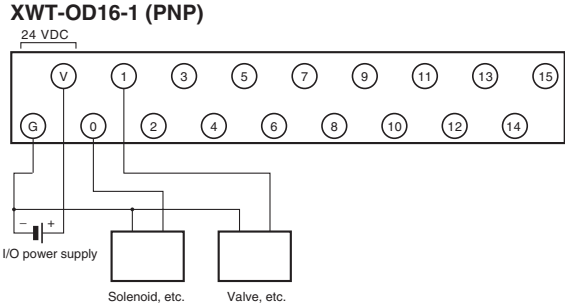
XWT-ID16-1 (PNP)



XWT-OD16 (NPN)



XWT-OD16-1 (PNP)



DRT2-□D08C(-1)/-□D16C(-1)

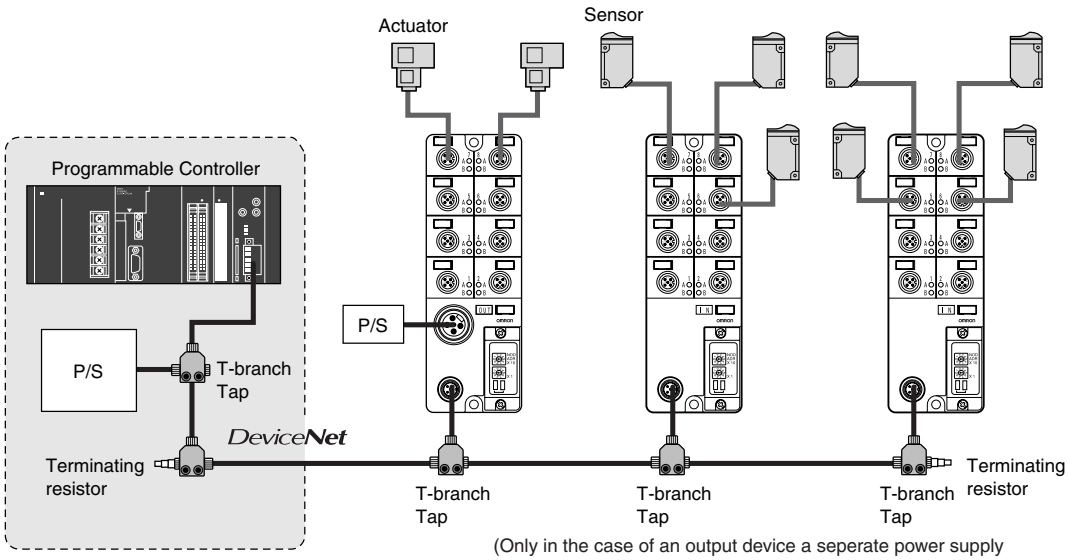
Harsh Environment Terminals

Environment-resistive (IP67) I/O terminals with fault-detection and maintenance functions

- Equipped with the standard Smart Slave functions for preventive maintenance and troubleshooting.
- Conforms to IP67 standards. The terminal housing is also oil- and spatter-resistant.
- The DeviceNet power supply is used by input devices to power the sensors. A extra power supply is not needed for this. (An extra power supply is required for output devices.)
- The terminal detects shortcircuits and broken wires in the cables of the sensors and actuators. In case of a fault the terminal notifies the master.

System Configuration

The communications and internal electronics of the terminal and in case of a input device also the sensors are fed by the DeviceNet power supply.



(Only in the case of an output device a seperate power supply must be use to power the actuators.)

Smart Slave Functions

Superior Dust-tight, Drip-proof Construction (IP67)

The environment-resistive terminals are rated IP67, so they can be used in severe environments and subjected to direct oil and water spray without a protective enclosure. Because a enclosure is not needed space is saved and installation and wiring time is reduced.

Power Supply Wiring not required for Input Devices

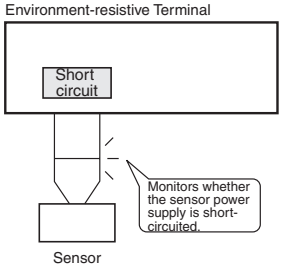
The same power supply is shared for communications, internal circuits, and input devices. Only the communications power supply needs to be wired.

High-load Devices (1.5 A max.) can be connected

The rated output current is 1.5 A, so even output devices with relatively large loads can be connected directly.

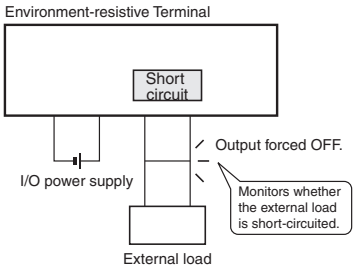
Sensor Power Supply Short-circuit Detection Function

The Slave monitors the I/O power supply current and detects a “sensor power supply short-circuit” if a connector’s current exceeds 100 mA. If a sensor power supply short circuit is detected, the sensor power supply output is turned OFF.



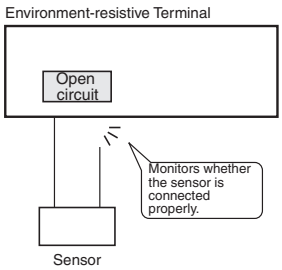
External Load Short-circuit Detection Function (Output Units Only)

The Slave monitors the Output Unit's load current and detects an "external load short-circuit" if the current to the Output Unit exceeds the rated maximum of 1.5A. If an external load short circuit is detected, the output is turned OFF in order to prevent damage to the Unit's output circuit.



Disconnected Sensor Detection Function (Input Units Only)

The Slave monitors the I/O power supply current and detects a "disconnected sensor" if a connector's current falls below 0.5 mA. The DeviceNet configurator or Explicit message communication can be used to read which sensor has been disconnected.

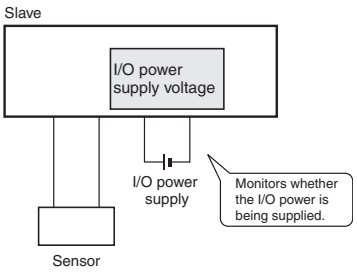


Power Supply Wiring not required for the Slave's Internal Circuits

Power is supplied to the Unit's internal circuits from the communications power supply, so there is no need for a extra power supply tpo power the units internal circuits.

I/O Power Supply Monitor Function

The Slave detects whether or not the I/O power supply is being supplied and notifies the Master through the status bits.

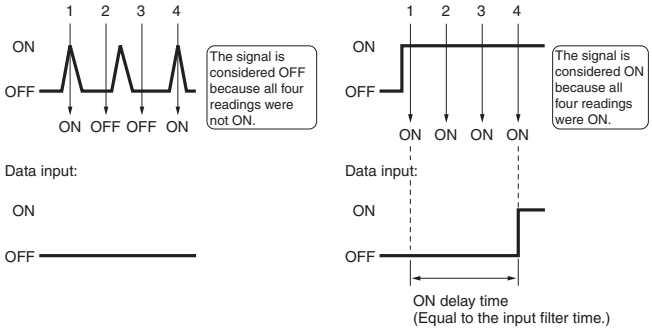


Input Filter Function (Input Units Only)

To eliminate incorrect signal interpretation due to contact bouncing or signal corruption by noise a filter is needed.

This filter is implemented by reading the input value several times within a preset period. If the input value is within the preset period for all measurements of the same state the input value is presumed to be of that state.

The input filter function can also be used to create a ON and OFF delay.



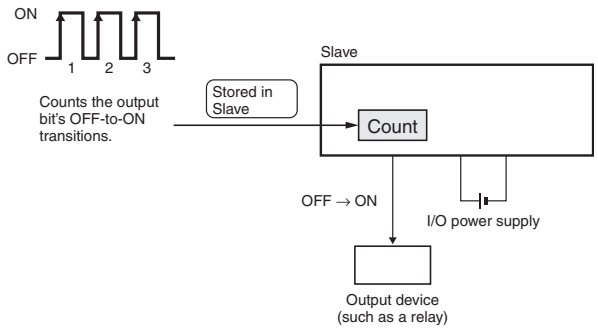
Contact Operation Counter

The number of times an input or output is switched ON is counted and stored in the device.

When the counter reaches a set value than this is indicated in the status information.

The maximum frequency that can be measured is 50 Hz.

Note: The contact operation counter function and the total ON time monitor function cannot be used simultaneously for the same contact.

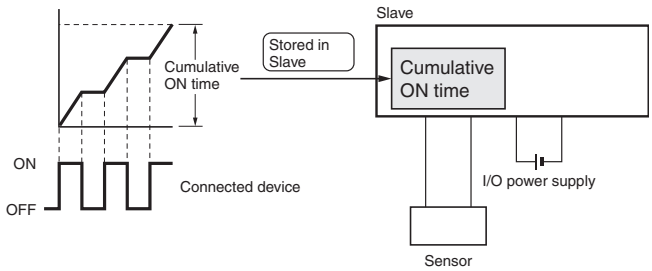


Total ON Time Monitor Function

The device keeps track of the total time an input or output is switch ON. This total On time is stored in the device.

When the counter reaches a set value than this is indicated in the status information.

Note: The contact operation counter function and the total ON time monitor function cannot be used simultaneously for the same contact.



Ordering Information

I/O type	Internal I/O common	Number of I/O points	I/O connections	Internal circuit power	Rated I/O power supply voltage	Model
Input	NPN (+ common)	8	Sensor I/O connector	Supplied from the communications connector.	Supplied from the communications connector.	DRT2-ID08C
	PNP (– common)					DRT2-ID08C-1
Output	NPN (– common)				24 V DC	DRT2-OD08C
	PNP (+ common)					DRT2-OD08C-1
Input	NPN (+ common)	16			Supplied from the communications connector.	DRT2-HD16C
	PNP (– common)					DRT2-HD16C-1

Specifications

Ratings

Inputs

Input current		11 mA max./point (at 24 V DC) 3 mA min./point (at 11 V DC)
ON delay time		1.5 ms max.
OFF delay time		1.5 ms max.
ON voltage	NPN	9 V DC min. between each input terminal and V
	PNP	9 V DC min. between each input terminal and G
OFF voltage	NPN	5 V DC max. between each input terminal and V
	PNP	5 V DC max. between each input terminal and G
OFF current		1 mA max.
Isolation method		Not isolated.
Input indicators		LED indicators (yellow)

Outputs

Rated output current	1.5 A/point, 8.0 A/common
ON delay time	0.5 ms max.
OFF delay time	1.5 ms max.
Residual voltage	1.2 V DC max.
Leakage current	0.1 mA max.
Isolation method	Photocoupler
Output indicators	LED indicators (yellow)

Characteristics

Item	DRT2-ID08C(-1) DRT2-HD16C(-1)	DRT2-OD08C(-1)
Communications power supply voltage	11 to 25 V DC	
Internal power supply voltage	Not required (Supplied from the communications connector.)	
I/O power supply voltage	Supplied from the communications connector.	20.4 to 26.4 V DC (24 V DC $^{+10\%}/_{-15\%}$)
Current consumption	Communications power supply DRT2-ID08C(-1):115 mA max. DRT2-OD08C(-1):60 mA max. DRT2-HD16C(-1):190 mA max.	
Dielectric strength	500 V AC between insulated circuits	
Noise immunity	Conforms to IEC61000-4-4, 2 kV (power line)	
Vibration resistance	10 to 56 Hz, 0.7-mm double amplitude 56 to 150 Hz, 50 m/s^2	
Shock resistance	150 m/s^2	
Mounting method	M5 screw mounting	
Screw tightening torque	M5 screws: 1.47 to 1.96 N • m Round connectors: 0.39 to 0.49 N • m	
Ambient temperature	Operating:–10°C to 55°C Storage:–25°C to 65°C	
Ambient humidity	Operating:25% to 85% (with no condensation)	
Weight	340 g max.	390 g max.

Connectors

Communications Cables

Thin Cable

Thin cable with attached Micro Connectors (formerly M12).

Model	Specifications
DCA1-5CN□□W1	Cable with shielded connectors on both ends
DCA1-5CN□□F1	Cable with shielded connector socket (female) on one end
DCA1-5CN□□H1	Cable with shielded connector plug (male) on one end
DCA1-5CN□□W5	Cable with shielded connectors on both ends (a Mini-size male connector plug on one end and a Micro-size female connector socket on the other end)
DCN2-1	Shielded T-branch Connector (1 branch)

Thick Cable

Thick cable with attached Mini Connectors

Model	Specifications
DCA2-5CN□□W1	Cable with shielded connectors on both ends
DCA2-5CN□□F1	Cable with shielded connector socket (female) on one end
DCA1-5CN□□H1	Cable with shielded connector plug (male) on one end
DCN3-11	Shielded T-branch Connector (1 branch)
DCN3-12	Shielded T-branch Connector (1 branch) The branch connector is M12 (Micro) size.

Terminating Resistors

Model	Specifications
DRS2-1	Micro-size male connector plug with terminating resistance
DRS2-2	Micro-size female connector socket with terminating resistance
DRS3-1	Mini-size male connector plug with terminating resistance

I/O Wiring Cables

I/O Power Supply Wiring

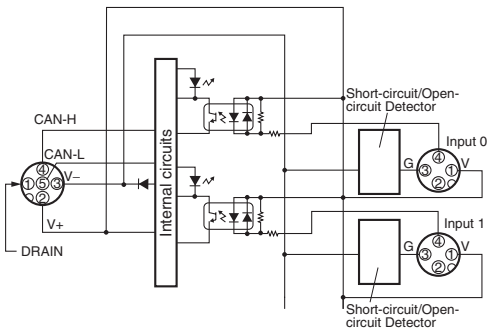
Model	Specifications
XS4W-D421-1□□-A	Cable with connectors on both ends (one socket and one plug)
XS4F-D421-1□□-A	Cable with female connectors (sockets) on both ends
XS4H-D421-1□□-A	Cable with male connectors (plugs) on both ends
XS4R-D424-5T	T-shaped Joint

I/O Wiring

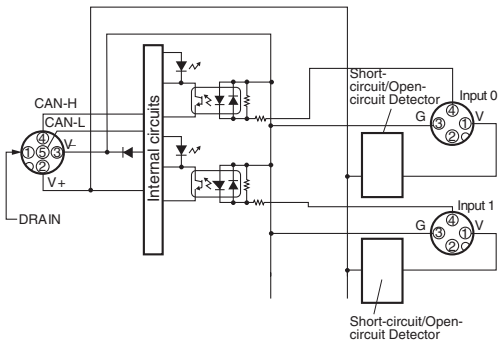
Model	Specifications
XS2H-D421-□80-A	Cable with male connector plug on one end
XS2W-D42□-□81-A	Cable with connectors on both ends (one socket and one plug)
XS2G-D4□□	Male connector plug for assembly (Crimp connection or solder connection)

Internal Circuit Configuration

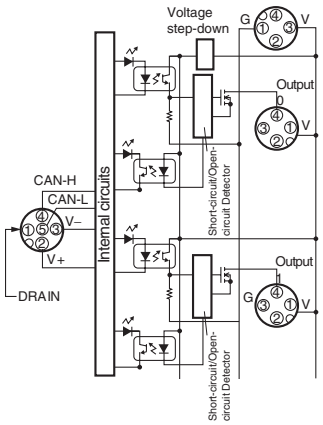
DRT2-ID08C (NPN)



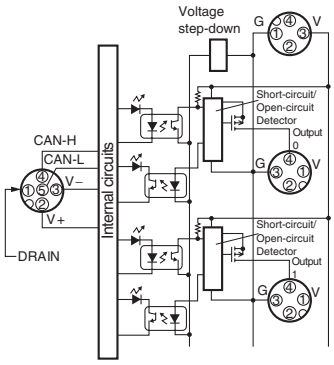
DRT2-ID08C-1 (PNP)



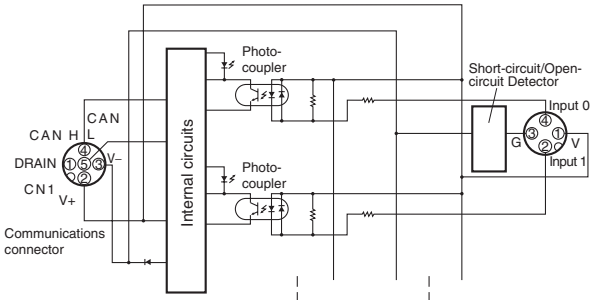
DRT2-OD08C (NPN)



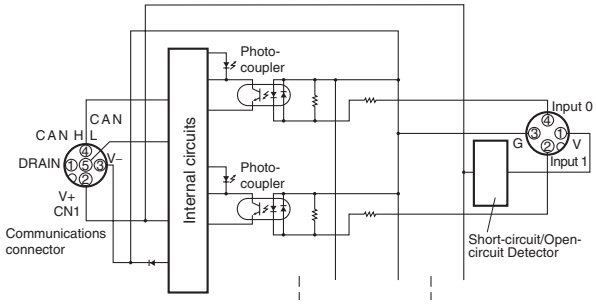
DRT2-OD08C-1 (PNP)



DRT2-HD16C (NPN)



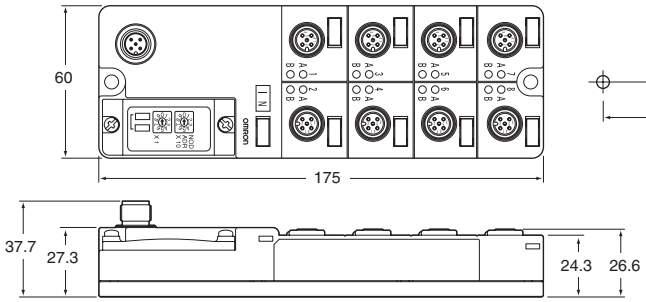
DRT2-HD16C-1 (PNP)



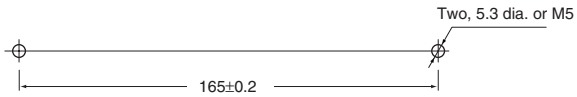
Dimensions

Environment-resistive Terminals (8 or 16 Inputs)

DRT2-ID08C
DRT2-ID08C-1
DRT2-IDHD16C
DRT2-ID16C-1

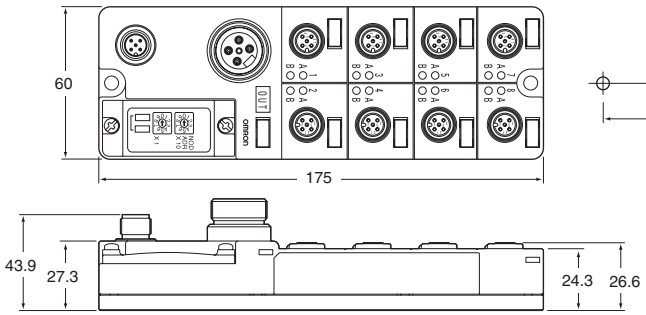


Mounting Hole Dimensions

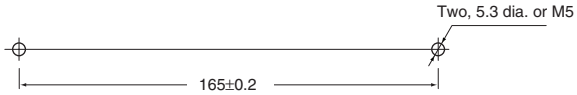


Environment-resistive Terminals (8 Outputs)

DRT2-OD08C
DRT2-OD08C-1

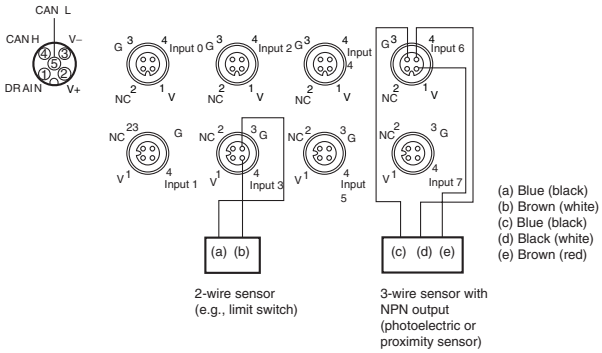


Mounting Hole Dimensions

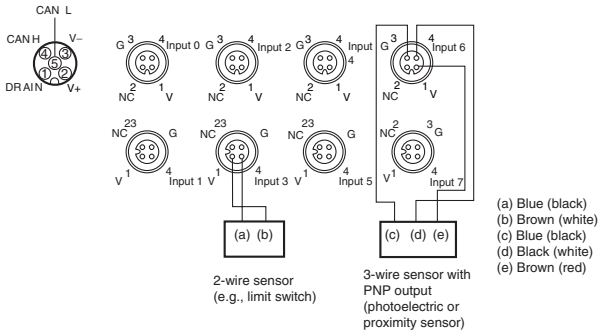


Wiring

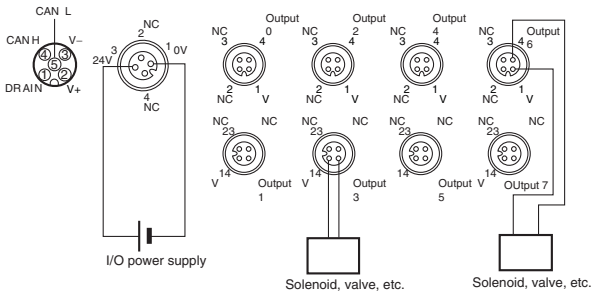
DRT2-ID08C (NPN)



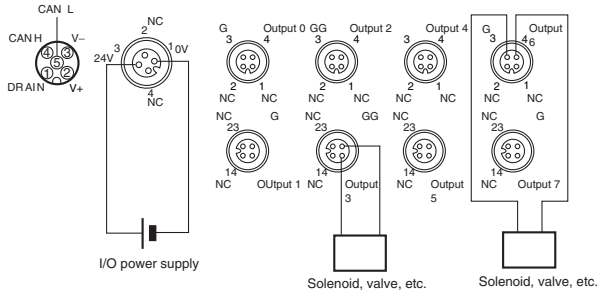
DRT2-ID08C-1 (PNP)



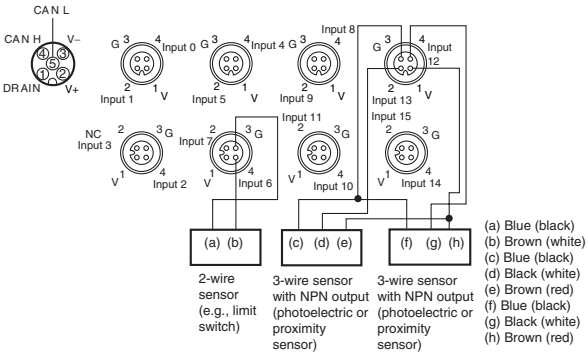
DRT2-OD08C (NPN)



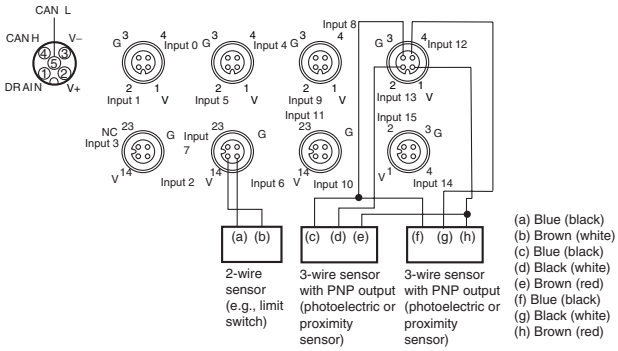
DRT2-OD08C-1 (PNP)



DRT2-HD16C (NPN)



DRT2-HD16C-1 (PNP)



DRT2-AD04/-DA02

Analog I/O Terminals

Calculations on Analog Values Can Be Performed within the Slave Itself

- Equipped with the standard Smart Slave functions for preventive maintenance and troubleshooting.
- Equipped with functions such as the scaling function, peak/bottom hold; top/valley hold; comparator function, cumulative counter, and rate of change.
- Two I/O values can be allocated to any two of the following values: analog input, peak/bottom, top, valley, or rate-of-change. Values without an allocated I/O point can be read with message communications.

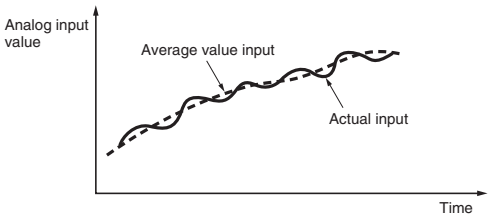
Smart Slave Functions

Number of A/D Conversion Points can be Selected (Input Terminals Only)

The conversion cycle is just 4 ms max. when all 4 analog inputs are being used. The conversion cycle can be made even shorter by reducing the number of inputs used (the number of A/D conversion points.)

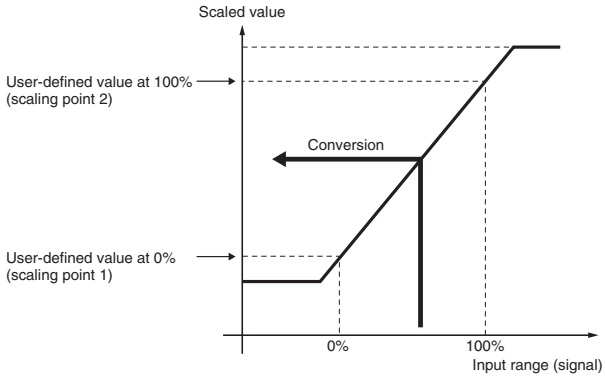
Moving Average Processing Function (Input Terminals Only)

The average of the last 8 inputs (the moving average) can be calculated in the Analog Input Terminal and used as the conversion data. The moving average can be used to obtain a smooth input value when the actual input value is fluctuating slightly.



Scaling Function

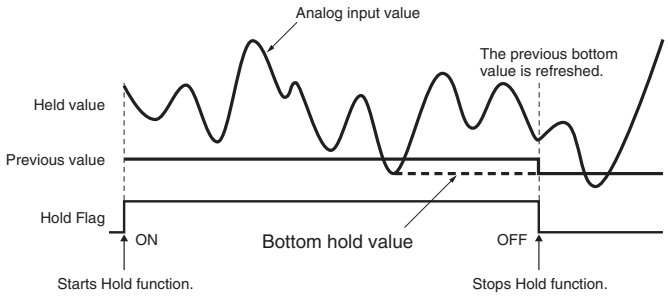
The analog input's raw data can be scaled to engineering value's. Using the scaling function in the Slave can reduce the ladder program processing load for the Master. If an offset is required, the offset value function can be used to offset the analog value calculated by the scaling function.



Note: The Output Terminals also support scaling.

Peak/Bottom Hold Function (Input Terminals Only)

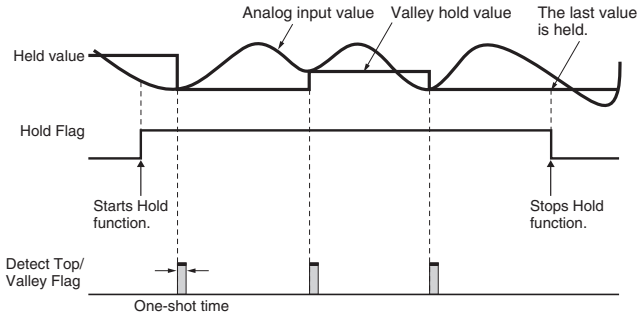
Holds the maximum (peak) value or minimum (bottom) value read by the Analog Input Terminal. In addition, the comparator function can be used to compare the peak value or bottom value to a preset alarm value and turn ON a flag in the status bits when the alarm value is exceeded.



Top/Valley Hold Function (Input Terminals Only)

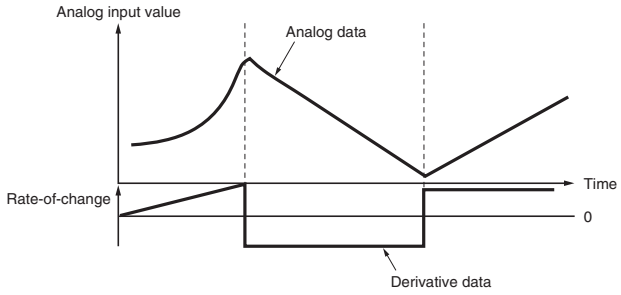
Holds the top value or valley value read by the Analog Input Terminal. The Top/Valley Detection Timing Flags can be used to set the timing for detection of the top/valley. In addition, the comparator function can be used to compare the top value or valley value to a preset alarm value and turn ON a flag in the status bits when the alarm value is exceeded.

Example: Valley Hold Operation



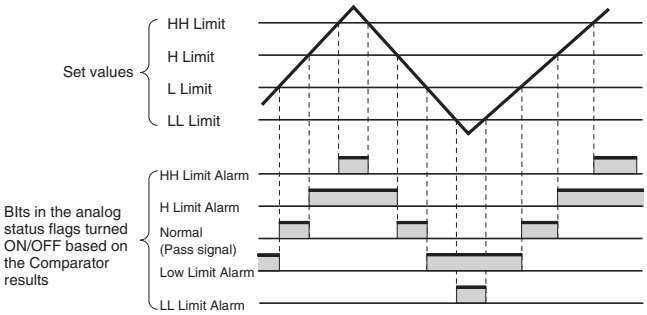
Rate-of-change Calculation Function (Input Terminals Only)

The rate-of-change in the analog input value data can be calculated for the data read by the Analog Input Terminal during each sampling period.



Comparator Function (Input Terminals Only)

Compares the raw data or processed data read by the Analog Input Terminal with the alarm SVs (High-High Limit, High Limit, Low Limit, and Low-Low Limit) and can reflect the result of the comparison in the status bits. The Normal Flag (Pass signal) will be turned ON if the value is within the set range.



Disconnection Detection Function (Input Terminals Only)

The disconnection detection function checks for open circuits in the analog input wiring (voltage inputs or current inputs) of channels for which A/D conversion is enabled. If an open circuit is detected, the Master can be notified through that channel's Disconnection Detection Flag. The input range must be set to 1 to 5 V (voltage input) or 4 to 20 mA (current input) in order to use this function.

User Adjustment Function

Depending on an input or output device's characteristics and connection method, it may be necessary to compensate for an offset in the value. This function can adjust the input or an output and compensate if an offset is required in the input or output's voltage or current. The conversion line can be compensated at two points: the 0% value and the 100% value.

Cumulative Counter

This function calculates the time integral of the input or output's analog value and reads the cumulative value. Also, a monitor value can be set in the Terminal so that the general-purpose status bits' Analog Cumulative Counter Flag will be turned ON when the cumulative value exceeds the monitor value.

Selectable Output Value after Error (Output Terminals Only)

This function can be used to set the Output Unit's output values that will be output from each channel when a communications error has occurred.

Ordering Information

Classification	I/O points	Model
Analog input	4 points	DRT2-AD04
Analog output	2 points	DRT2-DA02

Specifications

Ratings

Input

Item	DRT2-AD04	
	Voltage input	Current input
Input points	4 points (inputs 0 to 3)	
Input type	0 to 5 V 1 to 5 V 0 to 10 V –10 to 10 V	0 to 20 mA 4 to 20 mA
Max. signal input	±15 V	±30 mA
Input impedance	1 MΩ min.	Approx. 250 Ω
Resolution	1/6,000	
Accuracy	25°C: ±0.3% FS –10°C to 55°C: ±0.6% FS	25°C: ±0.4% FS –10°C to 55°C: ±0.8% FS
Conversion time	4 ms max. for 4 inputs (when calculation functions are not used and the DeviceNet communications cycle is 4 ms)	
Converted data	Input ranges other than –10 to 10 V: Full scale is 0000 to 1770 hexadecimal (0 to 6,000). –10 to 10 V input range: Full scale is F448 to 0BB8 hexadecimal (–3,000 to 3,000). A/D conversion range: ±5% FS	
Isolation method	Photocoupler isolation between inputs and communications lines (There is no isolation between input signals.)	
Insulation resistance	20 MΩ min. at 250 V DC (between isolated circuits)	
Accessories	Four shorting bars for use with current inputs.	

Output

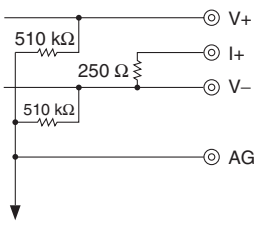
Item	DRT2-DA02	
	Voltage output	Current output
Output points	2 points	
Output type	0 to 5 V 1 to 5 V 0 to 10 V –10 to 10 V	0 to 20 mA 4 to 20 mA
Allowable output load resistance	1 KΩ min.	600 Ω max.
External output impedance	0.5 Ω max.	---
Resolution	1/6,000	
Accuracy	25°C: ±0.4% full scale –10°C to 55°C: ±0.8% full scale	
Conversion time	2 ms/2 points	
Converted data	Output ranges other than –10 to 10 V: Full scale is 0000 to 1770 hexadecimal (0 to 6,000). –10 to 10 V output range: Full scale is F448 to 0BB8 hexadecimal (–3,000 to 3,000). D/A conversion range: ±5% FS	
Isolation method	Photocoupler isolation between outputs and communications lines (There is no isolation between output signals.)	
Insulation resistance	20 MΩ min. at 250 V DC (between isolated circuits)	
Accessories	None	

Characteristics

Item	DRT2-AD04	DRT2-DA02
Communications power supply voltage	11 to 25 V DC	
Internal power supply voltage	Not required. (Supplied from the communications connector.)	
Current consumption	90 mA max. at 24 V DC	120 mA max. at 24 V DC
Dielectric strength	500 V AC for 1 min between the communications circuit and analog circuit (1-mA sensing current)	
Noise immunity	Conforms to IEC61000-4-4, 2 kV (power line)	
Vibration resistance	10 to 150 Hz, 0.7-mm double amplitude	
Shock resistance	150 m/s^2	
Mounting strength	50 N (10 N in the DIN rail direction)	
Screw tightening torque	0.3 to 0.5 N·m (terminal screws) 0.25 to 0.3 N·m (communications connector screws)	
Ambient temperature	Operating:–10°C to 55°C Storage:–25°C to 65°C	
Ambient humidity	Operating:25% to 85% (with no condensation)	
Ambient environment	No corrosive gases	
Weight	170 g max.	150 g max.

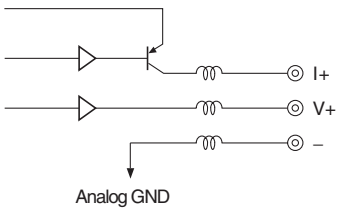
Internal Circuit Configuration

DRT2-AD04



Analog GND

DRT2-DA02

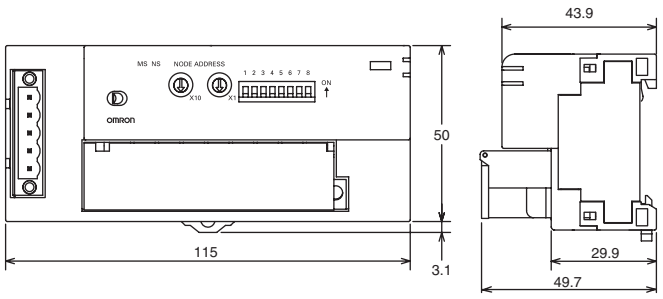


Analog GND

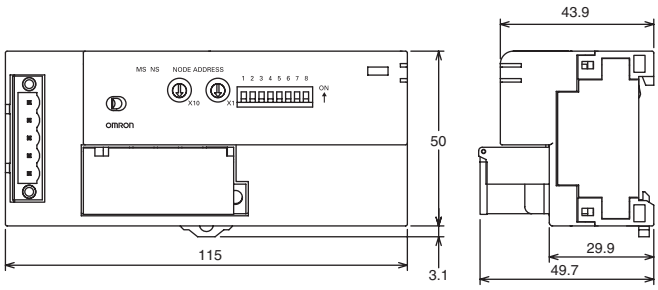
The – terminals of outputs 0 and 1 are connected internally.

Dimensions

DRT2-AD04

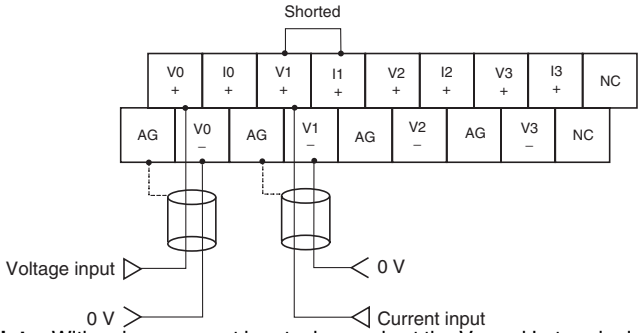


DRT2-DA02



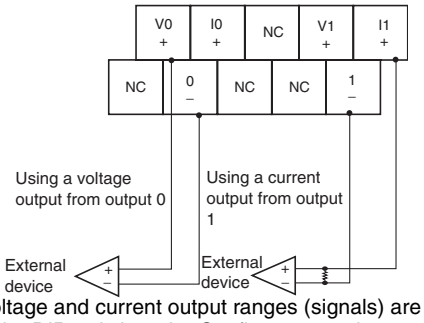
Wiring

DRT2-AD04



Note: With using a current input, always short the V+ and I+ terminals. (Use the shorting bar provided with the Unit.)

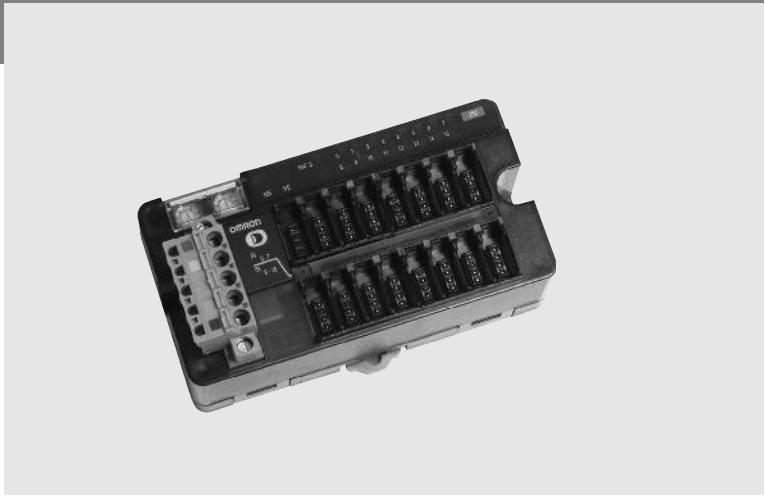
DRT2-DA02



Note: The voltage and current output ranges (signals) are set with either the DIP switch or the Configurator settings.

DRT2-ID16S(-1)

Sensor Connector Terminals



New slave equipped with industry-standard e-con sensor connectors

- Equipped with the standard Smart Slave functions for preventive maintenance and troubleshooting.
  Digital I/O Terminal compatible with industry-standard e-con sensor connectors.
- Connect sensors easily without special tools. Reduce time required for wiring.

Ordering Information

I/O type	Internal I/O common	Number of I/O points	I/O connections	Internal circuit power	Rated I/O power supply voltage	Model
Input	NPN (+ common)	16	e-con sensor connector	Supplied from the communications connector	Supplied from the communications connector	DRT2-ID16S
	PNP (– common)					DRT2-ID16S-1

Specifications

Ratings

Input

Item	DRT2-ID16S	DRT2-ID16S-1
Internal I/O common	NPN	PNP
Number of inputs	16 inputs	
ON voltage	15 V DC min. between each input terminal and V	15 V DC min. between each input terminal and G
OFF voltage	5 V DC max. between each input terminal and V	5 V DC max. between each input terminal and G
OFF current	1 mA max.	
Input current	11 mA max./point (at 24 V DC) 3 mA min./point (at 11 V DC)	
ON delay time	1.5 ms max.	
OFF delay time	1.5 ms max.	
Number of circuits/common	16 points/common	

Characteristics

Item	DRT2-ID16S DRT2-ID16S-1
Communications power supply voltage	11 to 25 V DC
Unit power supply voltage	Not required. (Supplied from the communications connector.)
I/O power supply voltage	Supplied from the communications connector.
Current consumption	Communications power supply: 230 mA max.
Dielectric strength	500 V AC between isolated circuits
Noise immunity	Conforms to IEC61000-4-4, 2 kV (power line)
Vibration resistance	10 to 56 Hz: 0.7-mm double amplitude 56 to 150 Hz: 50 m/s^2
Shock resistance	150 m/s^2
Mounting method	M4 screw mounting or 35-mm DIN rail mounting
Screw tightening torque	M4: 0.6 to 0.98 N·m
Ambient temperature	Operating:–10°C to 55°C Storage:–25°C to 65°C
Ambient humidity	Operating:35% to 85% (with no condensation)
Weight	90 g max.

Connectors

OMRON Connectors

Model	Specifications	Compatible wire size
XN2A-1430	Spring-clamp style	28 to 20 AWG (0.08 to 0.5 mm^2) wire, 1.5 mm max. outer diameter including insulation

Tyco Electronics Connectors

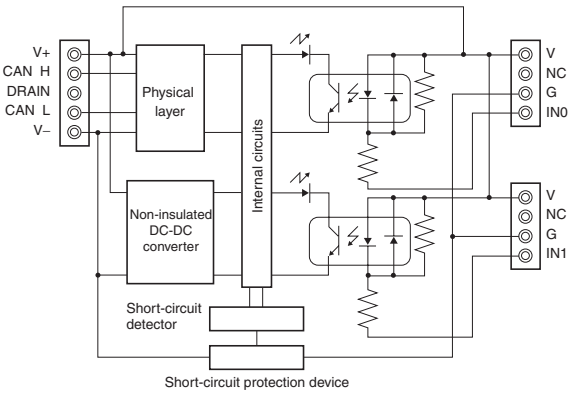
Model	Specifications	Compatible wire size
1-1473562-4	Red	27 to 20 AWG (0.1 to 0.5 mm^2) wire, 0.9 to 1.0 mm max. outer diameter including insulation
1473562-4	Yellow	27 to 20 AWG (0.1 to 0.5 mm^2) wire, 1.0 to 1.15 mm max. outer diameter including insulation
2-1473562-4	Blue	27 to 20 AWG (0.1 to 0.5 mm^2) wire, 1.15 to 1.35 mm max. outer diameter including insulation

Sumitomo 3M Connectors

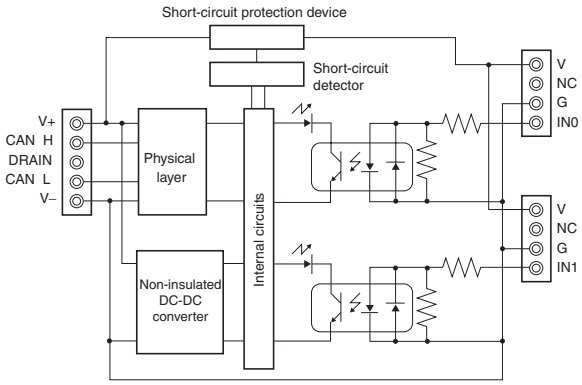
Model	Specifications	Compatible wire size
37104-3101-000FL	Red	26 to 24 AWG (0.14 to 0.2 mm^2) wire, 0.8 to 1.0 mm max. outer diameter including insulation
37104-3122-000FL	Yellow	26 to 24 AWG (0.14 to 0.2 mm^2) wire, 1.0 to 1.2 mm max. outer diameter including insulation
37104-3163-000FL	Orange	26 to 24 AWG (0.14 to 0.2 mm^2) wire, 1.2 to 1.6 mm max. outer diameter including insulation
37104-2124-000FL	Green	22 to 20 AWG (0.3 to 0.5 mm^2) wire, 1.0 to 1.2 mm max. outer diameter including insulation
37104-2165-000FL	Blue	22 to 20 AWG (0.3 to 0.5 mm^2) wire, 1.2 to 1.6 mm max. outer diameter including insulation
37104-2206-000FL	Gray	22 to 20 AWG (0.3 to 0.5 mm^2) wire, 1.6 to 2.0 mm max. outer diameter including insulation

Internal Circuit Configuration

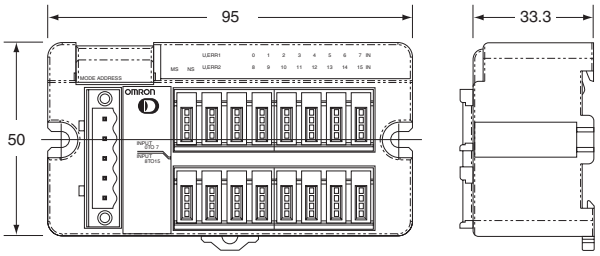
DRT2-ID16S (NPN)



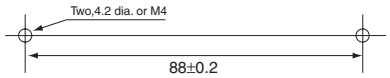
DRT2-ID16S-1 (PNP)



Dimensions

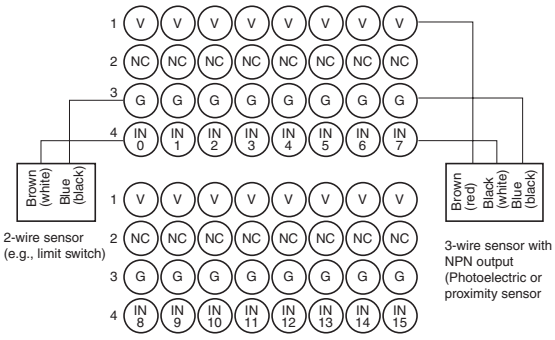


Mounting Hole Dimensions

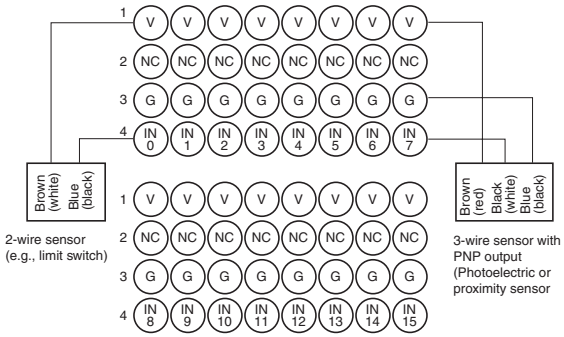


Wiring

DRT2-ID16S



DRT2-ID16S-1

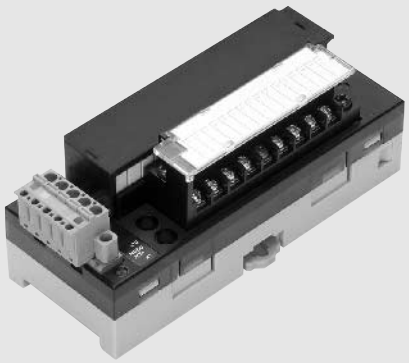


DRT2-ROS16

Relay output Terminal

I/O terminal enhances maintenance capabilities due replaceable relays.

- Smart DeviceNet slave that provides preventive maintenance and trouble shooting information
- 3A replaceable relays
- Relays replaced easily, without special tools needed
- Units can be extended with the XWT I/O blocks, reducing the number of network nodes required



Ordering information

I/O type	Number of I/O	I/O connections	Rated load	Rated carry current	Applicable relay	Model
Output	16	M3 screw terminals	250 V AC, 2 A, 8-A common 30 V DC, 2 A, 8-A common	3 A	NY-5W-K-IE	DRT2-ROS16

Specifications

Common Specifications

Item	Specifications
Communication power supply voltage	11 to 25 V DC (Supplied from the communications connector)
Noise immunity	Conforms to IEC61000-4-4. 2kV (power lines)
Vibration resistance	10 to 55 Hz, 0.7-mm double amplitude
Shock resistance	100 m/s²
Dielectric strength	500 V AC (between isolated circuits)
Insulation resistance	20 MΩ min. at 250 V DC
Ambient temperature	-10 to +55°C
Ambient humidity	25% to 85% (with no condensation)
Operating environment	No corrosive gases
Storage temperature	-25 to +65°C
Mounting	35-mm DIN Track mounting
Screw thightening torque	M2 (communications connector without set screws): 0.26 to 0.3 Nm M3 (screw terminals): 0.3 to 0.5 Nm

Output Specifications (for One Relay)

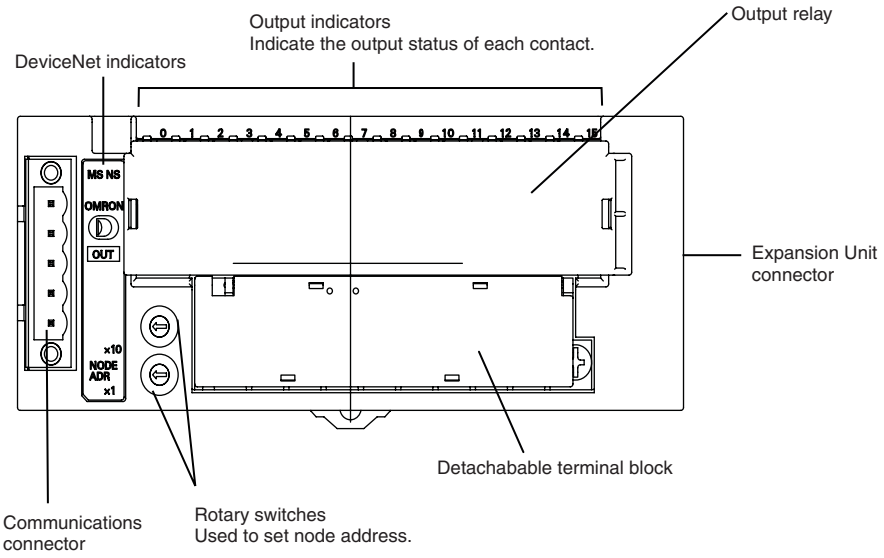
Item	Specifications
Relay	NY-5W-K-IE (Fujitsu component)
Rated load	Resistive load 250 V AC, 2 A, 8-A common 30 V DC, 2 A, 8-A common
Rated carry current	3 A[1]
Maximum switching voltage	250 V AC, 125 V DC
Maximum switching current	3 A
Maximum switching capacity	75o V AC, 90 V DC
Maximum applicable load (reference value)	5 V DC at 1 mA

1. The rated carry current can be as high as 3 A (10-A common) if the number of terminal that turn ON simultaneously is four or less per common, or if the ambient temperature is 45°C or lower.

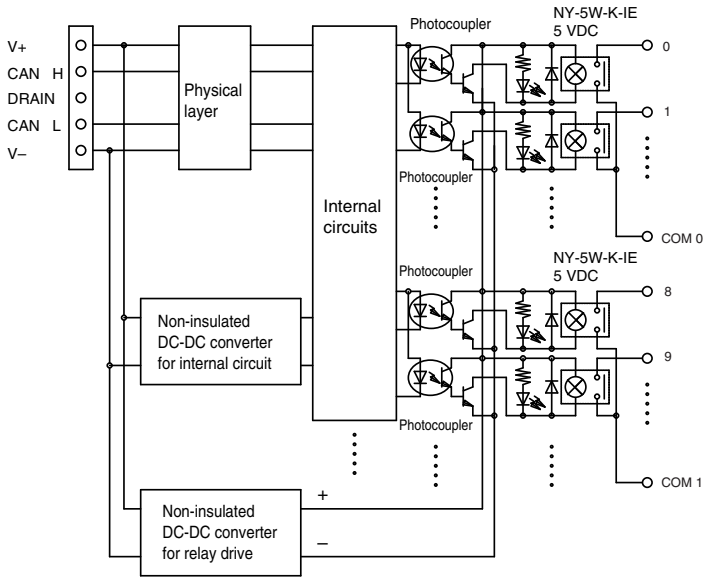
Real Life Expectancy

Item	Specifications
Mechanical life expectancy	20,000,000 times min.
Electrical life expectancy	100,000 times min.

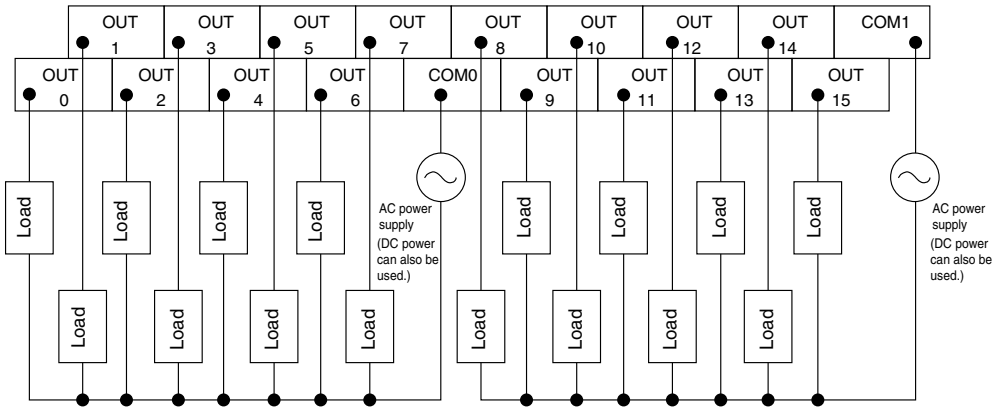
Nomenclature



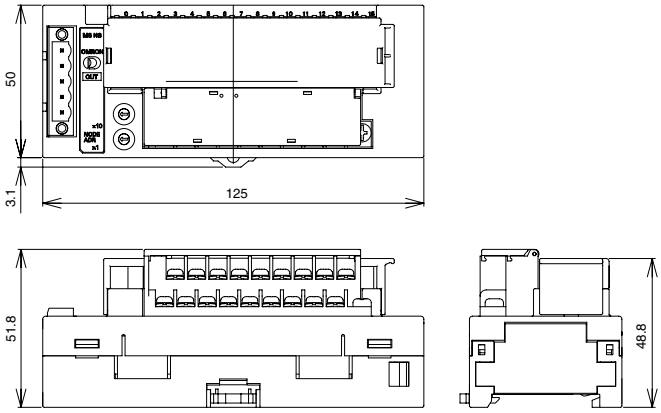
Internal Circuit Diagrams



Wiring



Dimensions



Engeneering Data

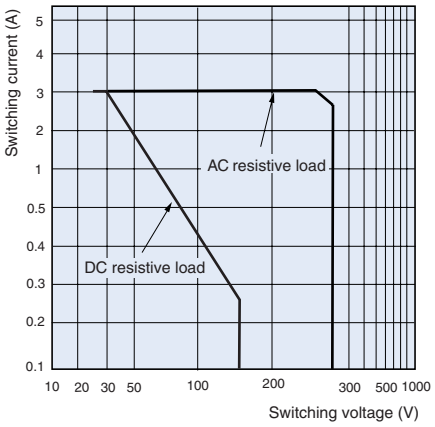
Reference Data

The data shown below is based on actual measurements of samples taken from the production line. There is some degree of variation in relay characteristics and so this data should be used only for reference purposes.

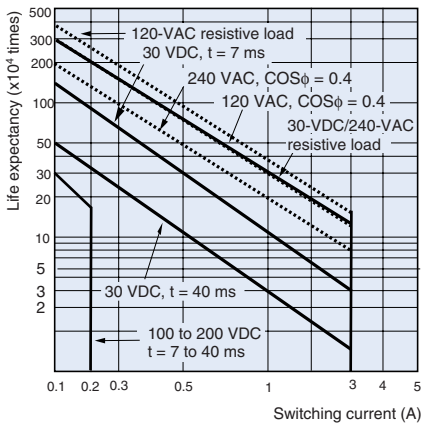
Note: 1. With a current between 2 and 3 A (common: 8 to 10 A), either ensure that the number of points per common that simultaneously turn ON does not exceed 4 or ensure that the temperature does not exceed 45°C. There are no restrictions if the current does not exceed 2 A (common: 8 A).

2. Using at the rated current value assures normal unit operation but does not assure the life expectancy of the relay itself. The relay's life expectancy varies greatly with the operating temperature, type of load, and switching conditions, and so be sure to check the relay characteristics under the actual conditions.

Maximum Switching Capacity

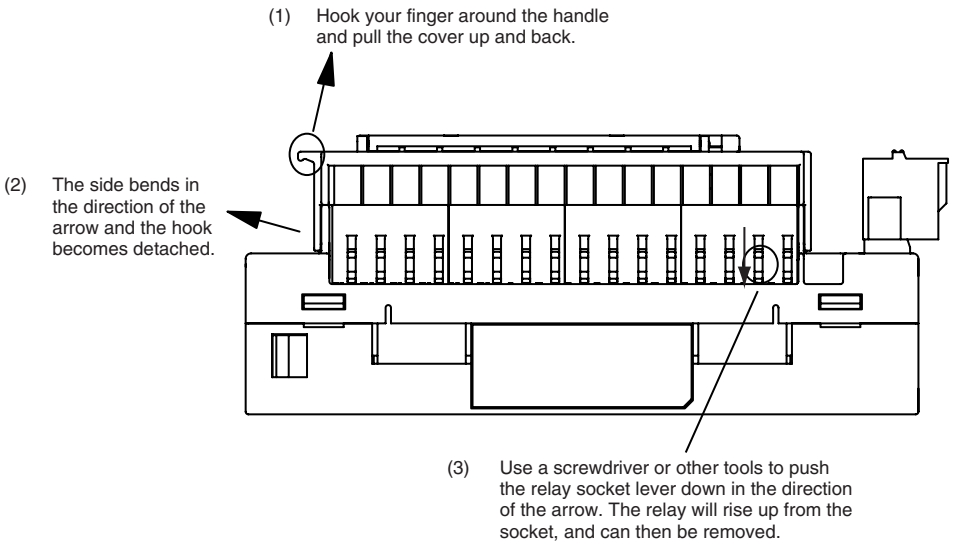


Life Expectancy Curve



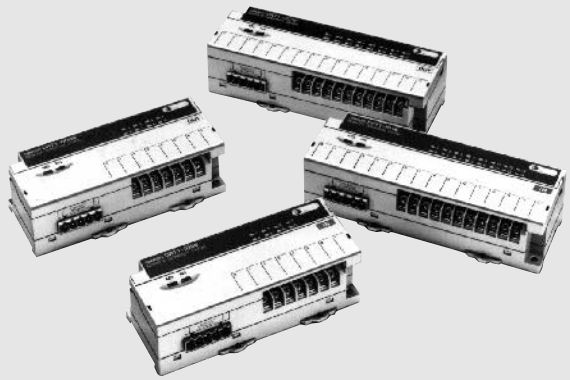
Relay Replacement Method

When replacing output relays, remove the cover as shown below.



DRT1-□D08(-1)/-MD16

8 Points I/O Terminals



Compact 8-point and 16-point Transistorized Terminals

- Compact
  (8-point models: 125 x 40 x 50 mm (W x H x D),
  16-point models: 150 x 40 x 50 mm (W x H x D))
- Two independent power supplies can be used because the I/O terminals are insulated from the internal circuits.
- DIN rail mounting and screw mounting are available.
- Approved by UL and CSA.

Ordering Information

I/O classification	Internal I/O circuit common	I/O points	I/O connections	Internal circuit rated voltage	I/O rated voltage	Model
Input	NPN (+ common)	8	M3 terminal block	24 V DC	24 V DC	DRT1-ID08
	PNP (– common)					DRT1-ID08-1
Output	NPN (– common)					DRT1-OD08
	PNP (+ common)					DRT1-OD08-1
I/O	NPN inputs (inputs: + common; outputs: – common)	8 inputs and 8 outputs				DRT1-MD16

Specifications

Ratings

Input

Item		DRT1-ID(-1)/DRT1-MD
Input current		10 mA max./point
ON delay time		1.5 ms max.
OFF delay time		1.5 ms max.
ON voltage	NPN	15 V DC min. between each input terminal and V
	PNP	15 V DC min. between each input terminal and G
OFF voltage	NPN	5 V DC max. between each input terminal and V
	PNP	5 V DC max. between each input terminal and G
OFF current		1 mA max.
Insulation method		Photocoupler
Input indicators		LED (yellow)

Output

Item	DRT1-OD(-1)/DRT1-MD
Rated output current	0.3 A/point (See note.)
Residual voltage	1.2 V max.
Leakage current	0.1 mA max.
Insulation method	Photocoupler
Output indicators	LED (yellow)

Note: Do not connect the DRT1-OD16 (-1) to loads consuming a total current exceeding 2.4 A.

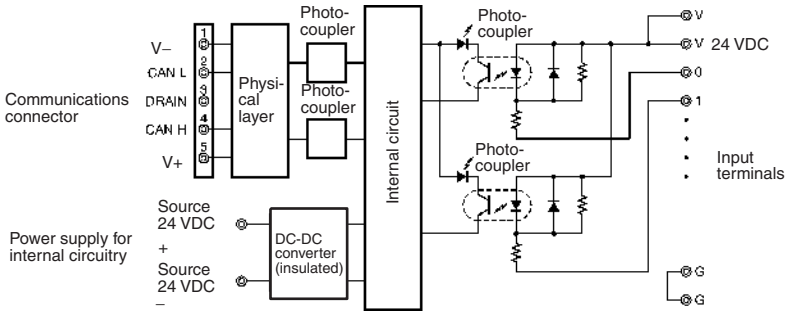
Characteristics

Communications power supply voltage	11 to 25 V DC
Internal power supply voltage	20.4 to 26.4 V DC (24 V DC $^{+10\%}/_{-15\%}$)
I/O power supply voltage	
Current consumption (See note.)	Communications:30 mA max. (25 mA max. for DRT1-MD16) Internal circuit:50 mA max. at 24 V DC (See note.)
Dielectric strength	500 V AC for 1 min (1-mA sensing current between insulated circuits)
Noise immunity	Conforms to IEC61000-4-4, 2 kV (power line)
Vibration resistance	10 to 55 Hz, 1.5-mm double amplitude
Shock resistance	Malfunction:200 m/s^2 Destruction:300 m/s^2
Mounting strength	No damage when 50 N pull load was applied for 10 s in all directions (10 N min. in the DIN rail direction)
Terminal strength	No damage when 50 N pull load was applied for 10 s
Screw tightening torque	0.6 to 1.18 N • m
Ambient temperature	Operating:0°C to 55°C (with no icing or condensation) Storage:–20°C to 65°C (with no icing or condensation)
Ambient humidity	Operating:35% to 85%
Weight	8-point model:135 g max. 16-point model:170 g max.

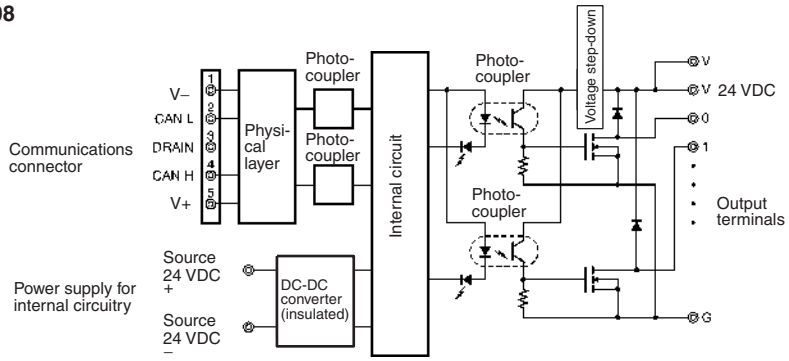
Note: The above current consumption is a value with all 8 and 16 points turned ON excluding the current consumption of the external sensor connected to the input Remote Terminal and the current consumption of the load connected to the output Remote Terminal.

Internal Circuit Configuration

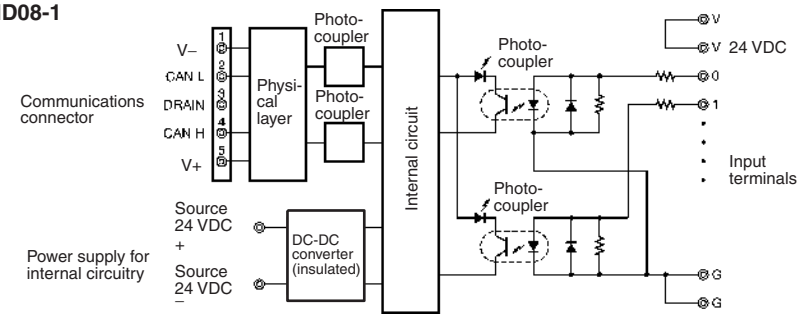
DRT1-ID08



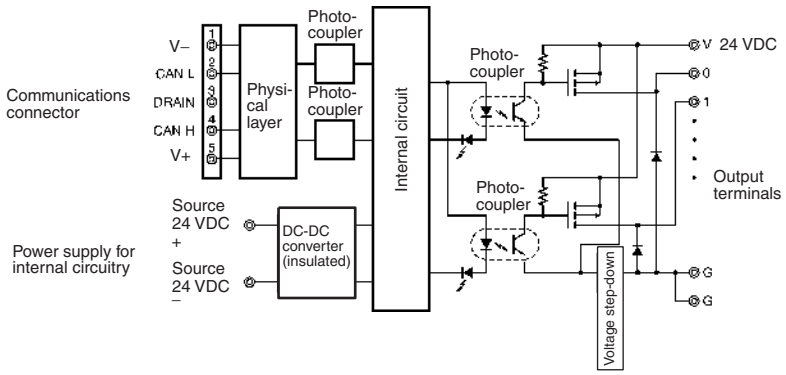
DRT1-OD08



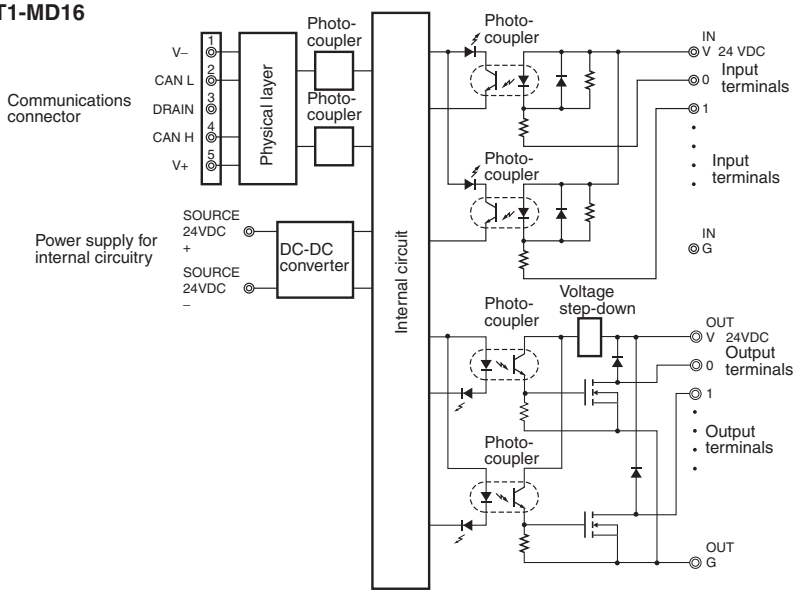
DRT1-ID08-1



DRT1-OD08-1



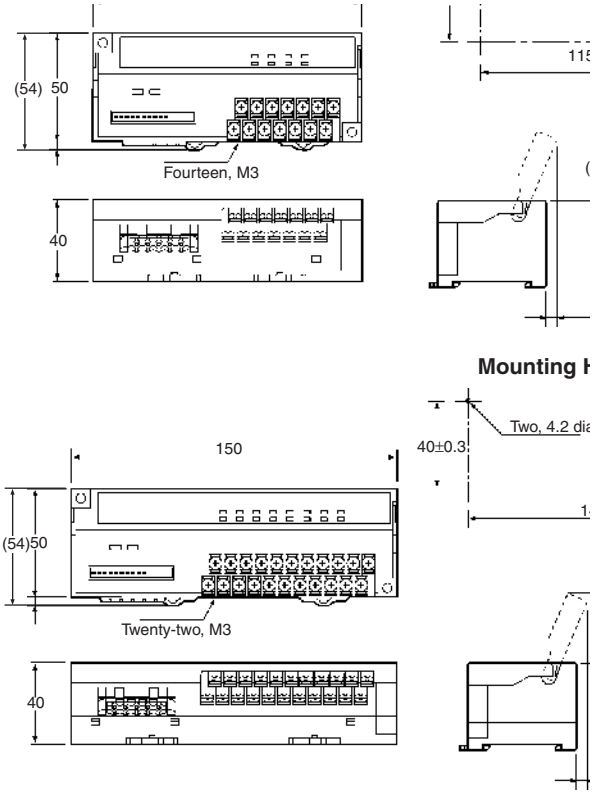
DRT1-MD16



Dimensions

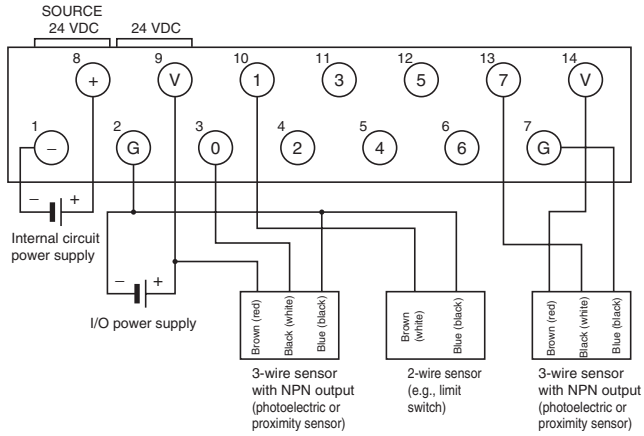
Note: All units are in millimeters unless otherwise indicated.

DRT1-MD16

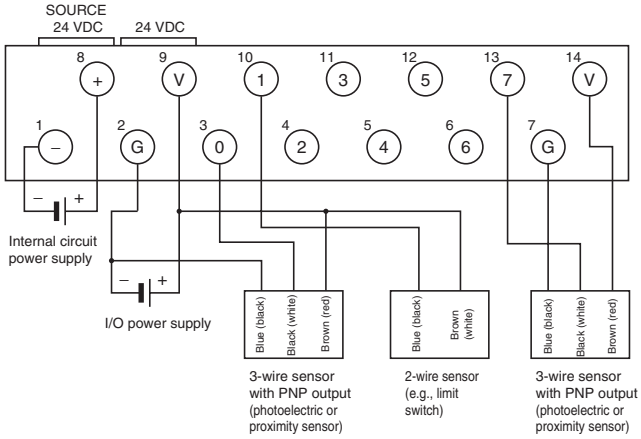


Wiring

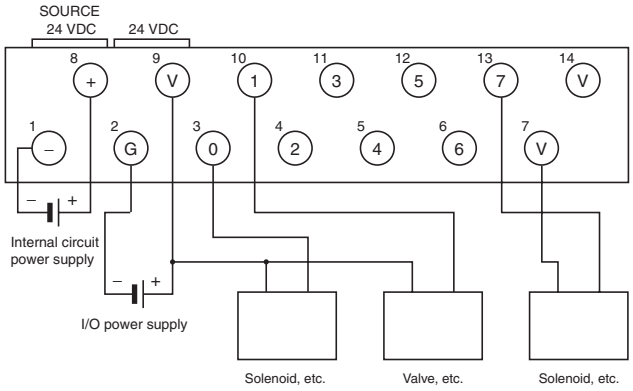
DRT1-ID08 (NPN)



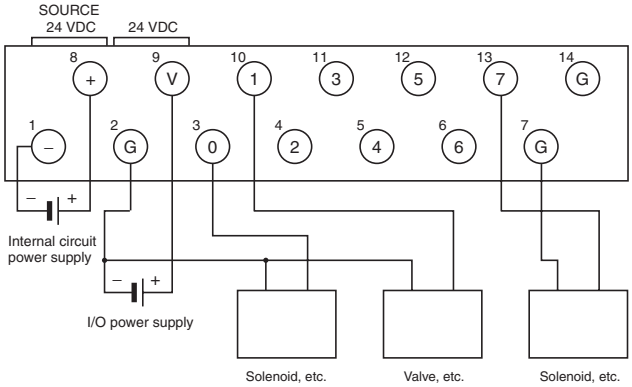
DRT1-ID08-1 (PNP)



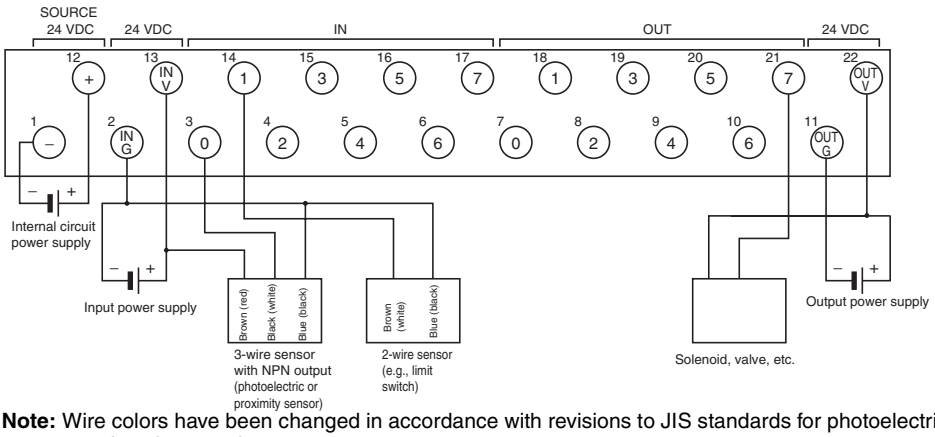
DRT1-OD08 (NPN)



DRT1-OD08-1 (PNP)



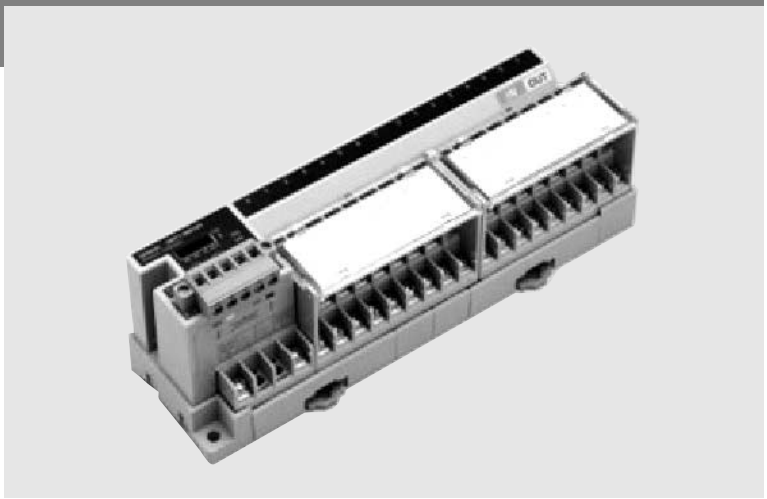
DRT1-MD16



Note: Wire colors have been changed in accordance with revisions to JIS standards for photoelectric and proximity sensors. The previous colors are given in parentheses.

DRT1-□D16T□(-1)

3-tier Connection Terminals



These new I/O Terminals have a 3-tier Terminal Block (16 I/O points). Six models are available: Input Terminals, I/O Terminals, and Output Terminals with NPN and PNP variations.

- Simplified wiring (Wires do not need be wired to the same terminal and terminal locations are clearer.)
- Reduced design and wiring time.
- Uses detachable cassette-type circuit construction.
- With DRT1-□D16TA(-1) models, internal circuit power supply is supplied from the communications power supply side.

Ordering Information

Unified Communications/Internal Circuit Power Supply

I/O type	Internal I/O common	Number of I/O points	I/O connections	Internal circuit power	Model
Input	NPN (⊕ common)	16 points	M3 terminal blocks	Supplied from communications connector.	DRT1-ID16TA
	PNP (⊖ common)				DRT1-ID16TA-1
I/O	NPN (Input: ⊕ common; Output: ⊖ common)	8 input points/8 output points			DRT1-MD16TA
	PNP (Input: ⊖ common; Output: ⊕ common)				DRT1-MD16TA-1
Output	NPN (⊖ common)	16 points			DRT1-OD16TA
	PNP (⊕ common)				DRT1-OD16TA-1

Separate Communications and Internal Circuit Power Supplies

I/O type	Internal I/O common	Number of I/O points	I/O connections	Internal circuit power	Model
Input	NPN (⊕ common)	16 points	M3 terminal blocks	24 V DC	DRT1-ID16T
	PNP (⊖ common)				DRT1-ID16T-1
I/O	NPN (Input: ⊕ common; Output: ⊖ common)	8 input points/8 output points			DRT1-MD16T
	PNP (Input: ⊖ common; Output: ⊕ common)				DRT1-MD16T-1
Output	NPN (⊖ common)	16 points			DRT1-OD16T
	PNP (⊕ common)				DRT1-OD16T-1

Specifications

General Specifications

Item	DRT1-□D16TA(-1)	DRT1-□D16T(-1)
Communications power supply voltage	11 to 25 V DC	
Internal circuit power supply voltage	Supplied from the communications connector.	20.4 to 26.4 V DC (24 V DC +10%/–15%)
I/O power supply voltage	20.4 to 26.4 V DC (24 V DC +10%/–15%)	
Current consumption	Communications:50 mA max.	Communications:30 mA max. Internal circuitry:90 mA max. at 24 V DC
Inrush current	30 A max.	
Insulation resistance	20 MΩ (at 500 V DC)	
Dielectric strength	500 V AC for 1 minute between isolated circuits	
Vibration resistance	10 to 150 Hz, 0.7-mm double amplitude or 50 m/s^2	
Shock resistance	150 m/s^2	
Screw tightening torque	0.3 to 0.5 N • m	
Ambient temperature	Operating:–10°C to 55°C Storage:–25°C to 65°C	
Ambient humidity	Operating: 25% to 85% (with no icing or condensation)	
Ground	None	
Structure	For mounting inside a panel	
Mounting methods	Mount on 35-mm DIN rail or use M4 screws.	
Weight	Approx. 315 g	
Dimensions	180 × 50 × 58 mm	

Input Specifications

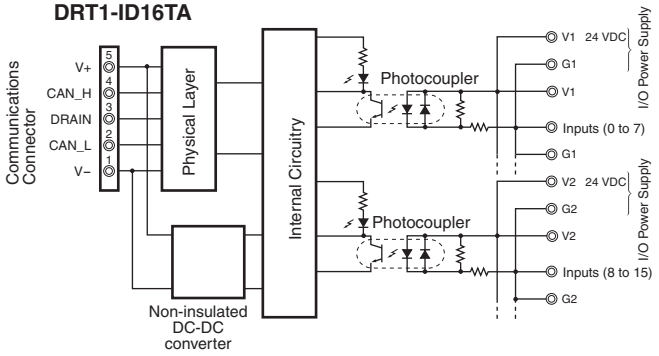
Input current		6.0 mA max. at 24 V DC
ON delay time		1.5 ms max.
OFF delay time		1.5 ms max.
ON voltage	NPN	15 V DC min. between each input terminal and V
	PNP	15 V DC min. between each input terminal and G
OFF voltage	NPN	5 V DC max. between each input terminal and V
	PNP	5 V DC max. between each input terminal and G
OFF current		1 mA max.
Isolation method		Photocoupler

Output Specifications

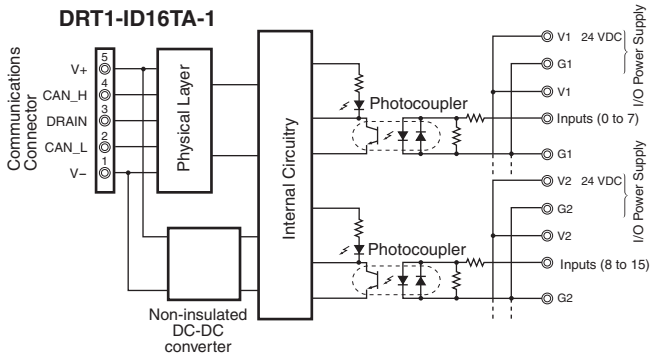
Rated output current	0.5 A/output max.
Residual voltage	1.2 V max. at 0.5 A (between output terminal and G)
ON delay time	0.5 ms max.
OFF delay time	1.5 ms max.
Leakage current	0.1 mA max. at 24 V DC (between each output terminal and G)
Isolation method	Photocoupler

Internal Circuit Diagrams

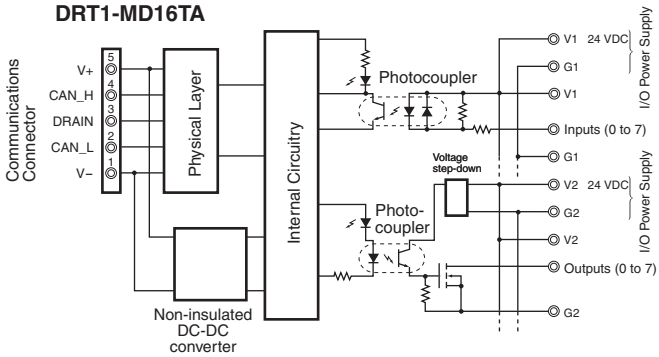
DRT1-ID16TA



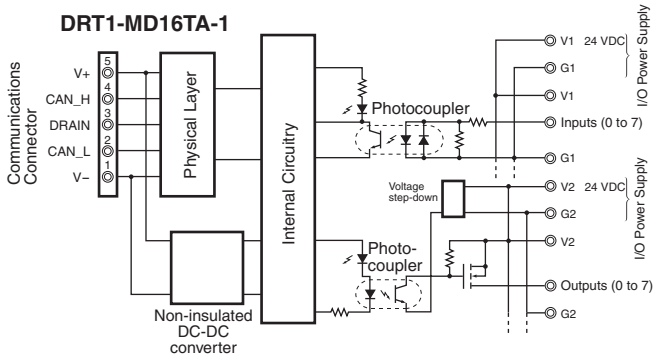
DRT1-ID16TA-1



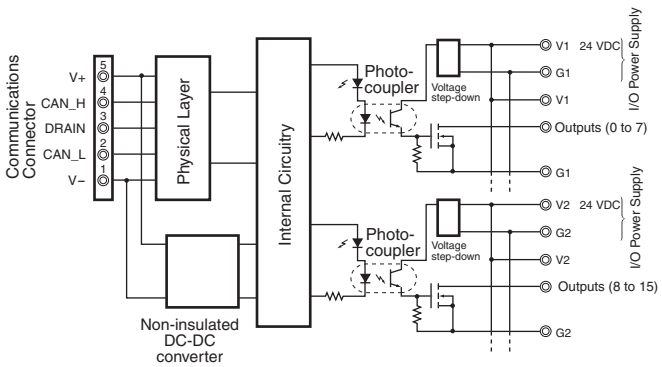
DRT1-MD16TA



DRT1-MD16TA-1



DRT1-OD16TA



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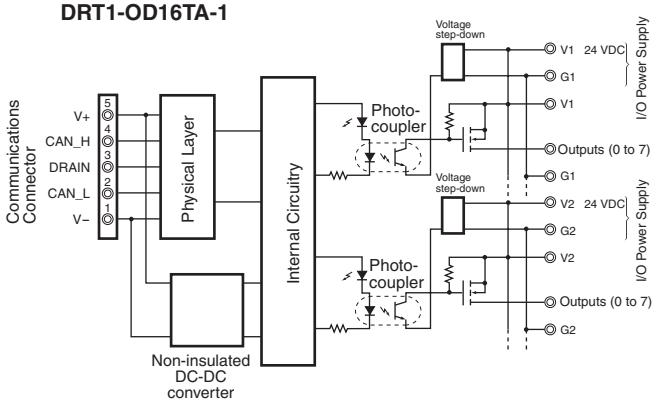
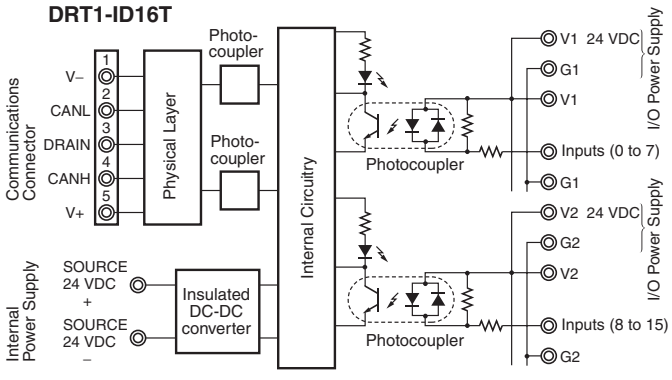
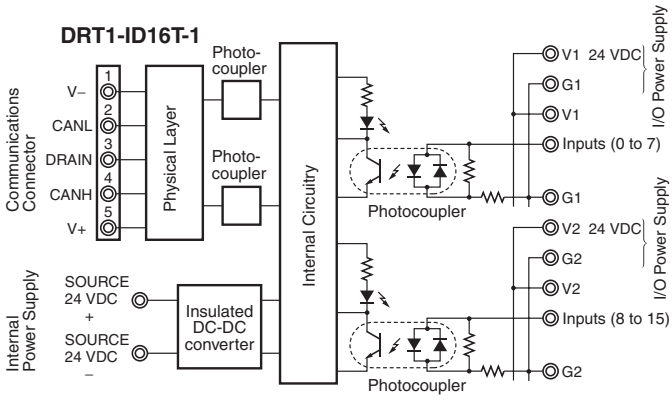
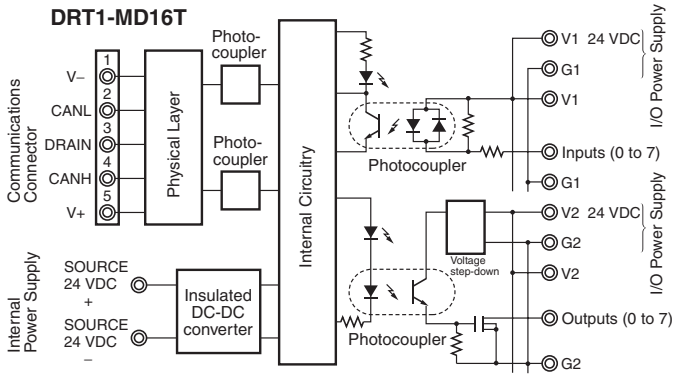


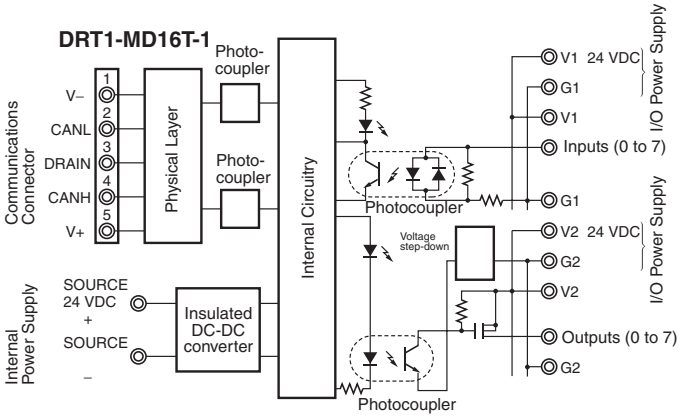
DRT1-ID16T

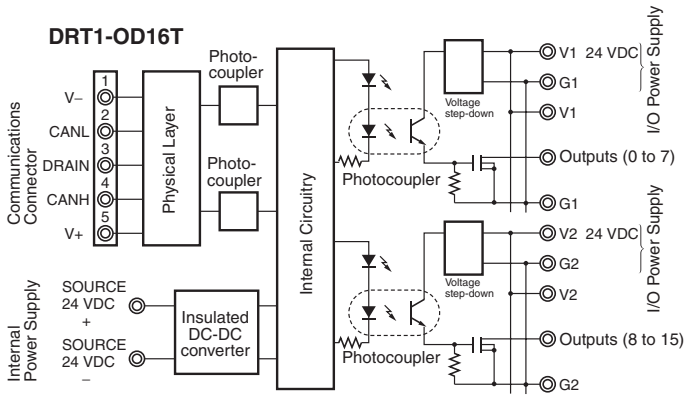


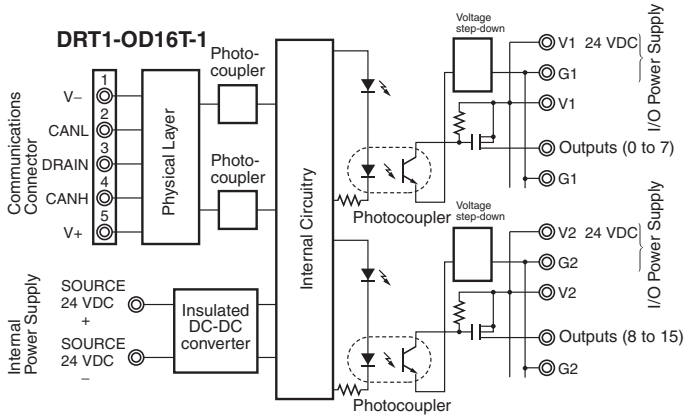
DRT1-ID16T-1







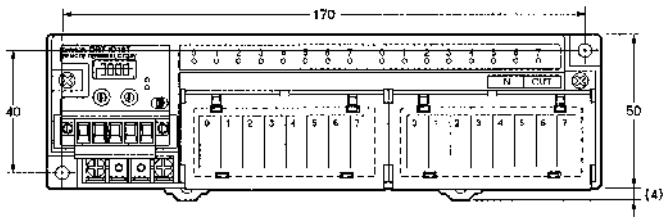




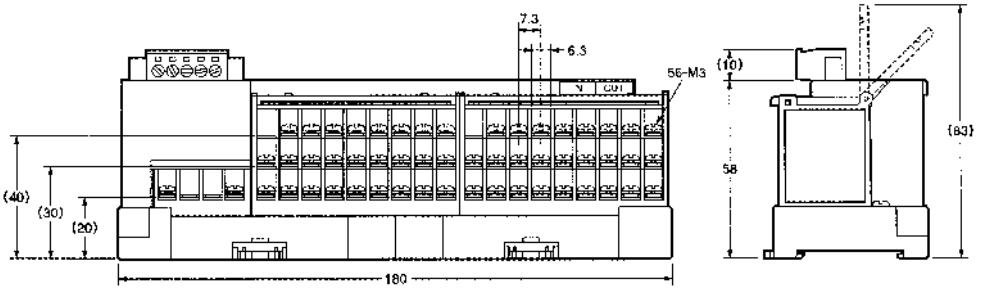
Dimensions

Note: All units are in millimeters unless otherwise indicated.

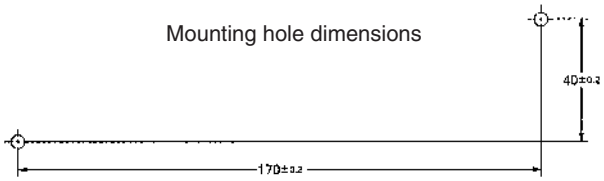
DRT1-□D16TA(-1)
DRT1-□D16T(-1)



Dimensions with connector attached.

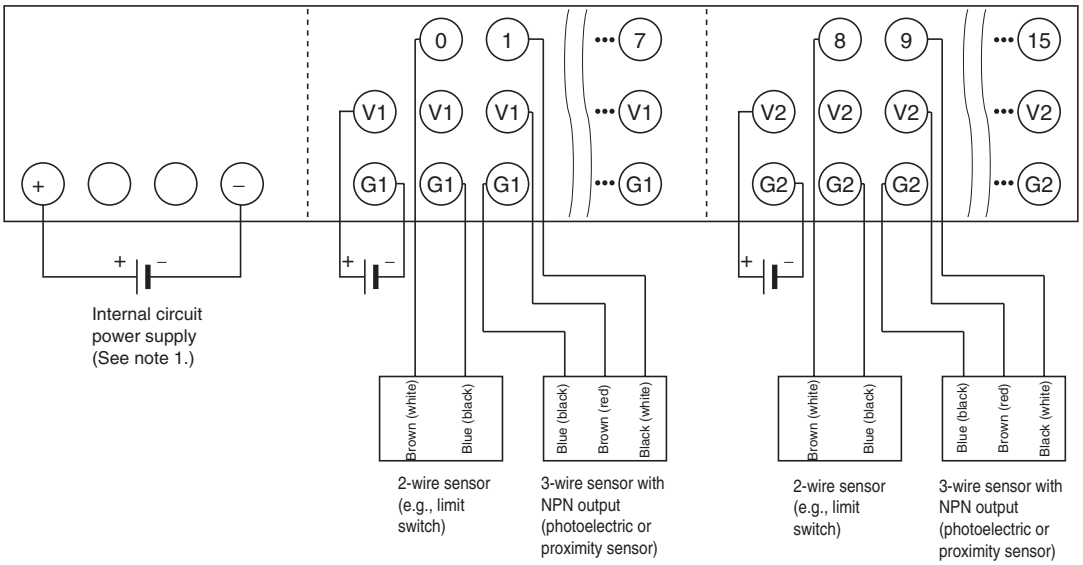


Mounting hole dimensions

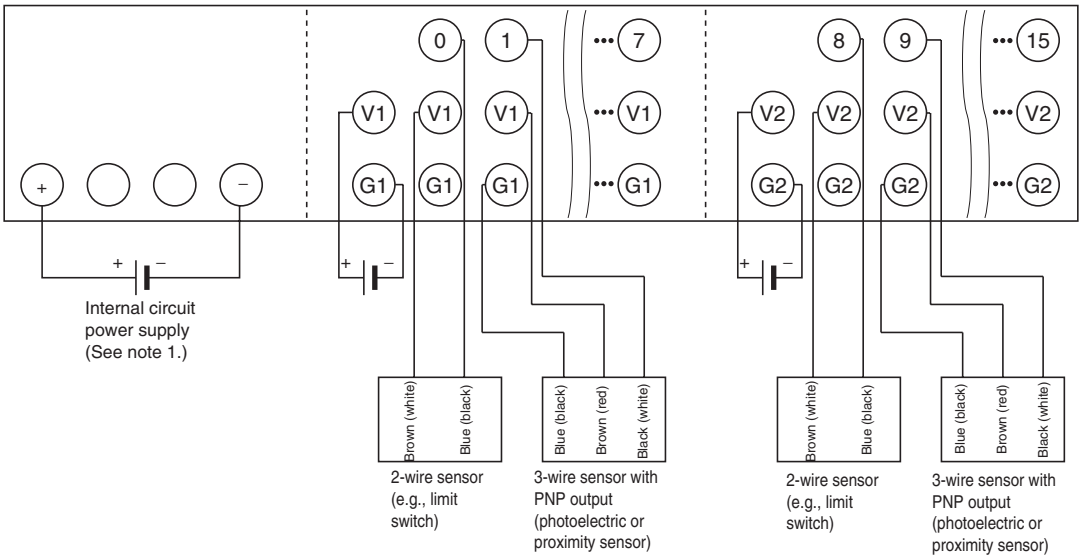


Wiring

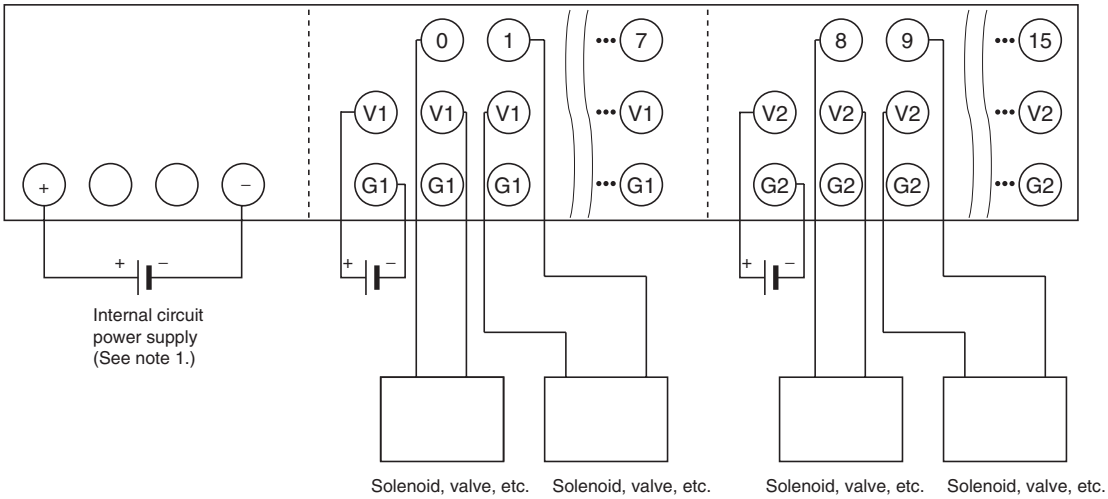
DRT1-ID16TA
DRT1-ID16T
(NPN)



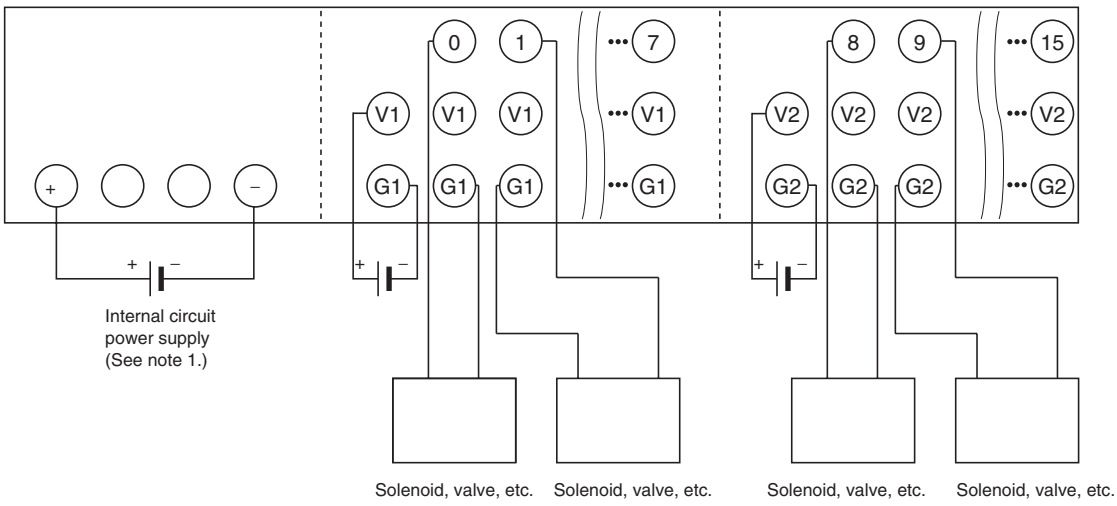
DRT1-ID16TA-1
DRT1-ID16T-1
(PNP)



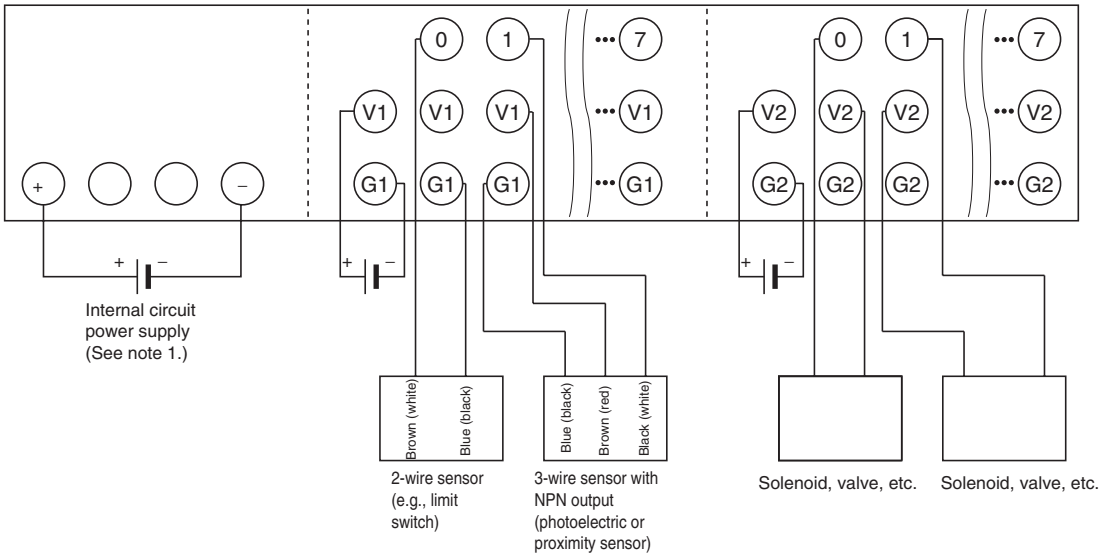
DRT1-OD16TA
DRT1-OD16T
(NPN)



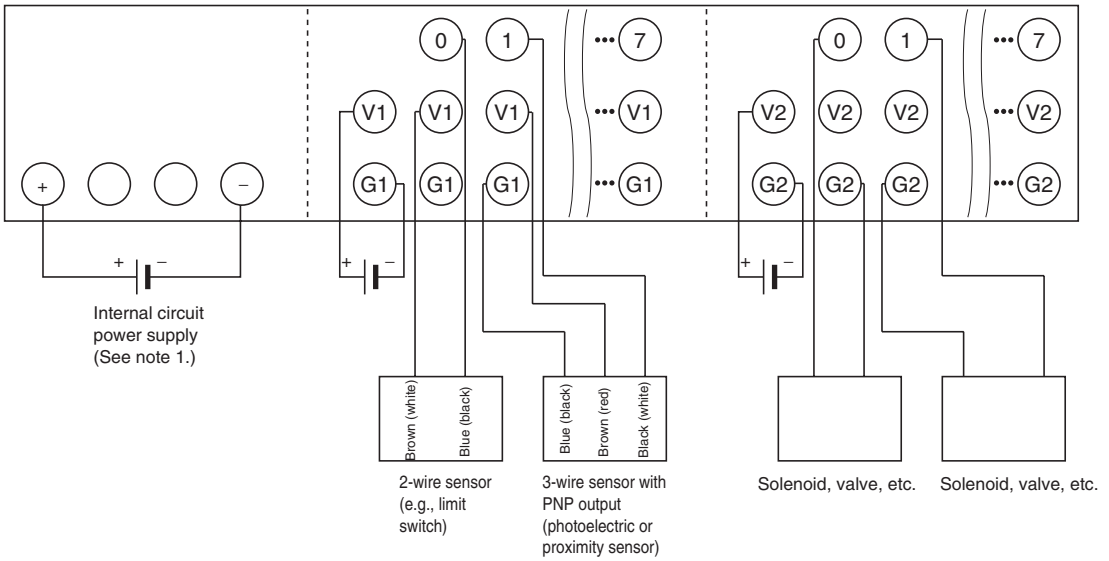
DRT1-OD16TA-1
DRT1-OD16T-1
(PNP)



DRT1-MD16TA
DRT1-MD16T
(NPN)



DRT1-MD16TA-1
DRT1-MD16T-1
(PNP)



Note: 1. Internal circuit power supply wiring is not required for DRT1-□D16TA(-1) models.

2. Wire colors have been changed in accordance with revisions to JIS standards for photoelectric and proximity sensors. The previous colors are given in parentheses.

DRT1-TS04□

Temperature Input Terminals

Measure temperatures. A wide range of temperature sensors is supported

- Four inputs
- Models for platinum resistance thermometers or thermocouples are available.
- Incorporating wire burnout detecting function.
- All inputs are insulated to one another.

Ordering Information

Classification	I/O points	Model
Temperature Input Terminal	4 inputs (Occupies 4 input words of the Master Unit)	DRT1-TS04T
		DRT1-TS04P

Specifications

Ratings

Input

Item	DRT1-TS04T	DRT1-TS04P
Input type	R, S, K1, K2, J1, J2, T, E, B, N, L1, L2, U, W, and PLII	Pt100, JPt100
Indicator accuracy	(±0.5% of indication value or ±2°C, whichever is larger) ± 1 digit max.	(±0.5% of indication value or ±1°C, whichever is larger) ± 1 digit max.
Conversion time	250 ms/4 points	
Insulation system	Between the input and communications lines: Photocoupler insulation Between temperature input signals: Photocoupler insulation	

Note: The following are exceptions.
K1, T, and N at –100°C max., U, L1, and L2 at ±4°C ± 1 digit max. and R and S at 200°C max.: ±6°C±1 digit max.
B at 400°C max.:Not specified.
W:(±0.5% of indication value or 6°C, whichever is larger) ± 1 digit max.
PL2:(±0.5% of indication value or 4°C, whichever is larger) ± 1 digit max.

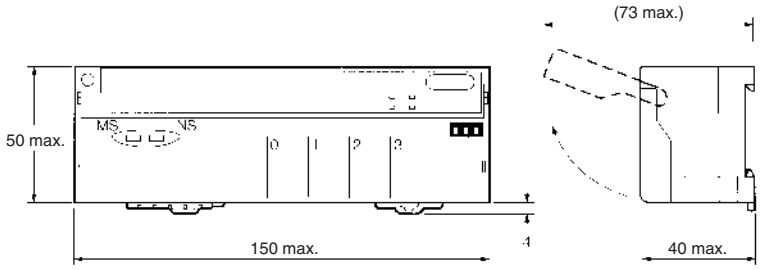
Characteristics

Item	DRT1-TS04T	DRT1-TS04P
Communications power supply voltage	11 to 25 V DC	
Internal power supply voltage	20.4 to 26.4 V DC (24 V DC $^{+10\%}_{-15\%}$)	
Current consumption	Communications:30 mA max. Internal circuit:130 mA max. at 24 V DC	
Noise immunity	Conforms to IEC61000-4-4, 2 kV (power line)	
Vibration resistance	10 to 55 Hz, 1.5-mm double amplitude	
Shock resistance	Malfunction:200 m/s^2 Destruction:300 m/s^2	
Dielectric strength	500 V AC for 1 min between insulated circuits	
Mounting method	M4 screw mounting or 35-mm DIN rail mounting	
Mounting strength	50 N for 10 s In the DIN rail direction: 10 N for 10 s	
Terminal strength	Pulling:50 N for 10 s	
Ambient temperature	Operating:0°C to 55°C (with no icing or condensation) Storage:–25°C to 65°C (with no icing or condensation)	
Ambient humidity	Operating:35% to 85% (no condensation)	
Weight	230 g	160 g

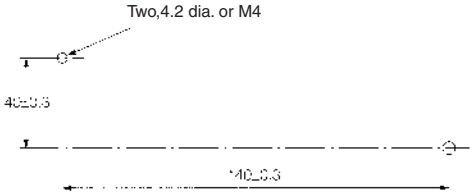
Dimensions

Note: All units are in millimeters unless otherwise indicated.

DRT1-TS04□

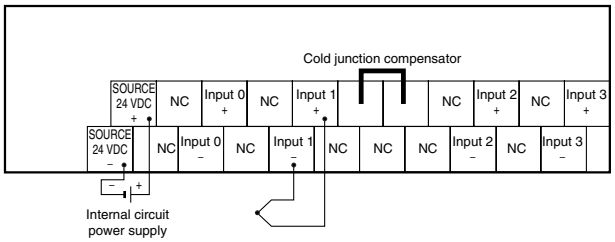


Mounting Holes

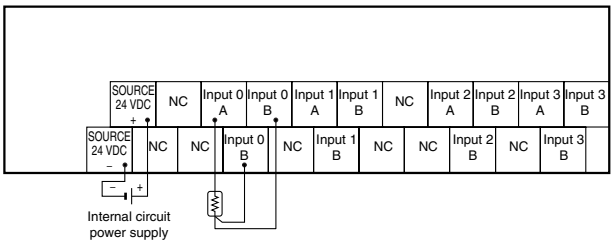


Wiring

DRT1-TS04T



DRT1-TS04P



Note: The inputs of the DRT1-TS04□ are insulated from one another and so consideration of input circuits is not required.

DRT1-□D0□CL(-1)

Waterproof Terminals

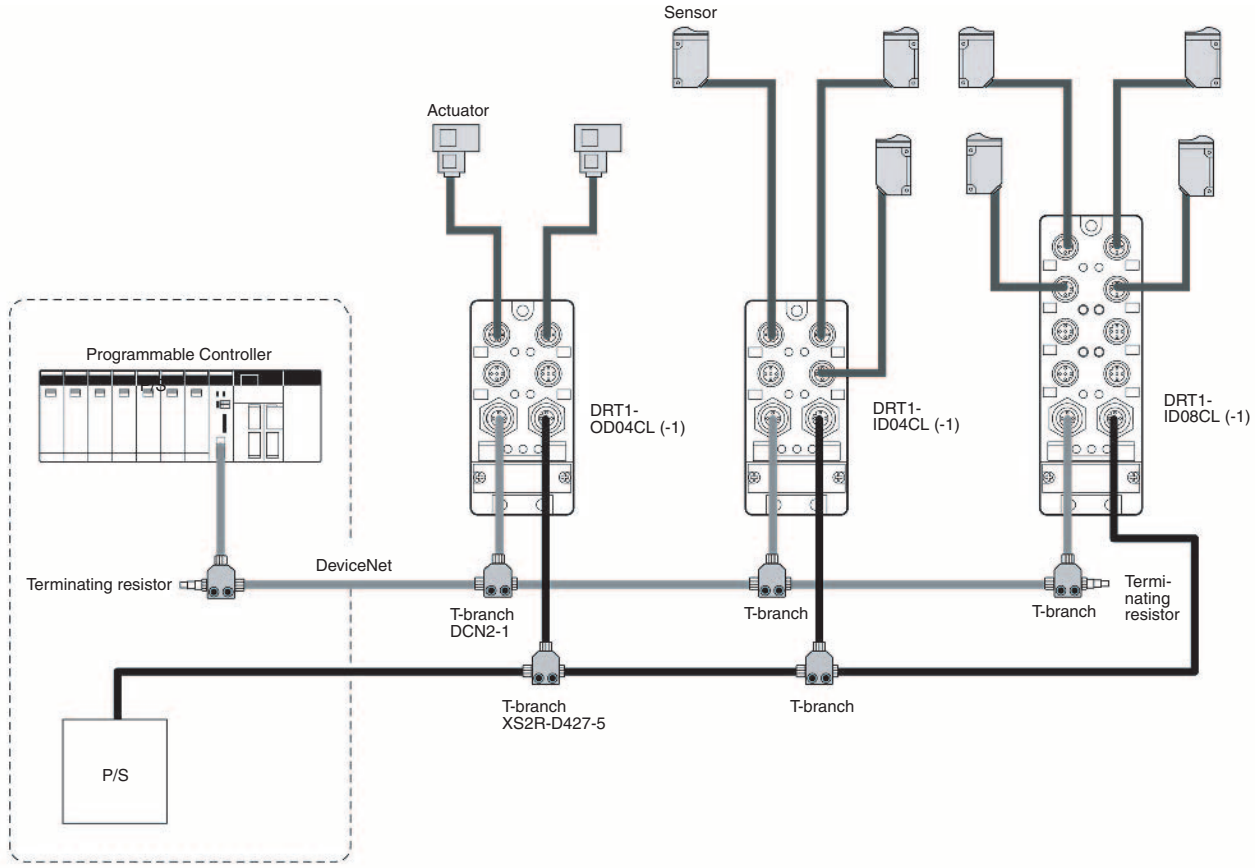
Economical Waterproof Terminals Available in 8 Different Models

- **Reduced Labor**
  Connectors eliminate the need for connection tools.
- **Reduced Wiring**
  The Terminals can be mounted closer to Sensors and so less wiring is required for signal lines.
- **Relay Box Not Required**
  Waterproof, dust-tight, drip-proof construction (IP67) enables direct, on-site mounting.
- **Easier Maintenance**
  Significant reductions not only in setup time but also maintenance time.
- **Reduced Space, Improved Operability**
  Compact design: 160 × 54 (W × H) (8-point models)
  Connect to devices using connectors on front side.
  Switch settings also available.

Ordering Information

I/O classification	Internal I/O circuit common	I/O points	I/O connection method	Rated voltage for I/O power supply	Model
Input	NPN (+ common)	4 points	Sensor I/O connector	24 V DC	DRT1-ID04CL
		8 points			DRT1-ID08CL
	PNP (– common)	4 points			DRT1-ID04CL-1
		8 points			DRT1-ID08CL-1
Output	NPN (– common)	4 points			DRT1-OD04CL
		8 points			DRT1-OD08CL
	PNP (+ common)	4 points			DRT1-OD04CL-1
		8 points			DRT1-OD08CL-1

System Configuration



Specifications

General Specifications

Item	DRT1-ID04CL DRT1-ID04CL-1	DRT1-OD04CL DRT1-OD04CL-1	DRT1-ID08CL DRT1-ID08CL-1	DRT1-OD08CL DRT1-OD08CL-1
Communications power supply voltage	11 to 25 V DC			
I/O power supply voltage	20.4 to 26.4 V DC (24 V DC –15%/+10%)			
Communications power supply current consumption	25 mA max.	35 mA max.	30 mA max.	40 mA max.
Ambient operating temperature	–10 to 55°C (with no icing)			
Ambient operating humidity	25% to 85% (with no condensation)			
Ambient storage temperature	–25 to 65°C			
Ambient storage humidity	25% to 85% (with no condensation)			
Connector tightening torque	0.39 to 0.49 Nm			
Construction	IEC IP67			
Mounting method	M5 screw mounting			
Weight	180 g max.		240 g max.	

Input Specifications

Item	DRT1-ID04CL DRT1-ID04CL-1	DRT1-ID08CL DRT1-ID08CL-1
Input current	For input voltage of 24 V DC: 6 mA max. per point For input voltage of 17 V DC: 3 mA min. per point	
Input impedance	4.4 kΩ	
ON delay time	1.5 ms max.	
OFF delay time	1.5 ms max.	
ON voltage	15 V DC min.	
OFF voltage	5 V DC max.	
OFF current	1 mA max.	
Number of circuits	4 points with 1 common	8 points with 1 common

Output Specifications

Item	DRT1-OD04CL DRT1-OD04CL-1	DRT1-OD08CL DRT1-OD08CL-1
Rated output current	0.5 A per point (2 A per common)	0.5 A per point (2.4 A per common)
Residual voltage	1.2 V max.	
Leakage current	0.1 mA max.	
ON delay time	0.5 ms max.	
OFF delay time	1.5 ms max.	
Number of circuits	4 points with 1 common	8 points with 1 common

Applicable Connectors

Communications Connectors

Model	Specifications
DCA1-5CN□□W1	Cable with a connector at both ends
DCA1-5CN□□F1	Cable with a connector at one end (socket)
DCA1-5CN□□H1	Cable with a connector at one end (plug)
DCN2-1	T-branch connector
DRS2-1	Connector with terminating resistor (plug)

I/O Connectors

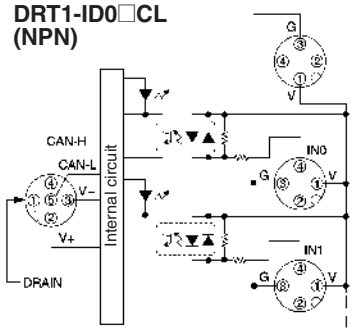
Model	Specifications
XS2G-D4□□	Assembling-type connector (crimp, solder, or screw)
XS2H-D421-□□□-□	Cable with connector at one end (plug)
XS2W-D42□-□□□-□	Cable with connector at both ends
XS2Z-12	Waterproof cover
XS2Z-15	Dust cover

Power Supply Connectors

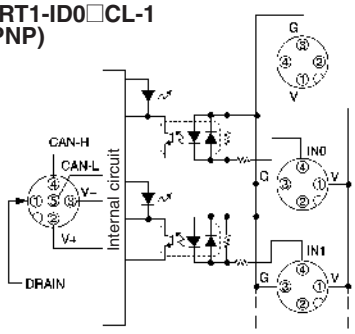
Model	Specifications
XS2C-D4□□	Assembling-type socket (crimp, solder, or screw)
XS2W-D42□-□□□-□	Cable with connector at both ends
XS2F-D42□-□80-□	Cable with connector at one end (socket)
XS2R-D427-5	T-branch connector

Internal Circuit Diagrams

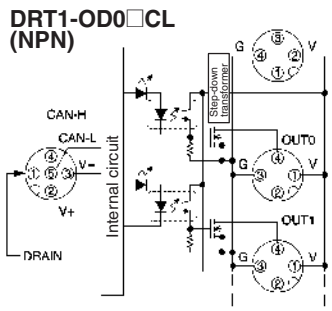
DRT1-ID0□CL (NPN)



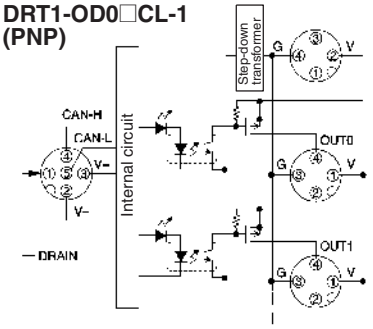
DRT1-ID0□CL-1 (PNP)



DRT1-OD0□CL (NPN)



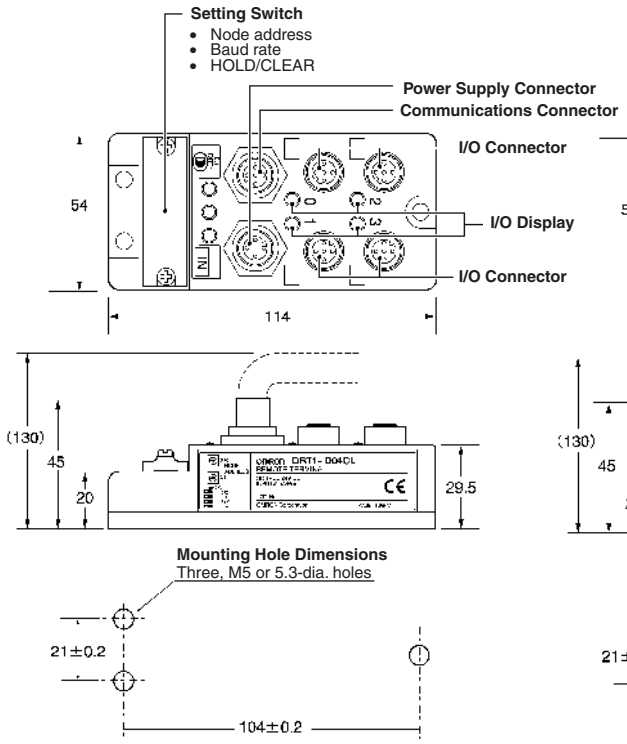
DRT1-OD0□CL-1 (PNP)



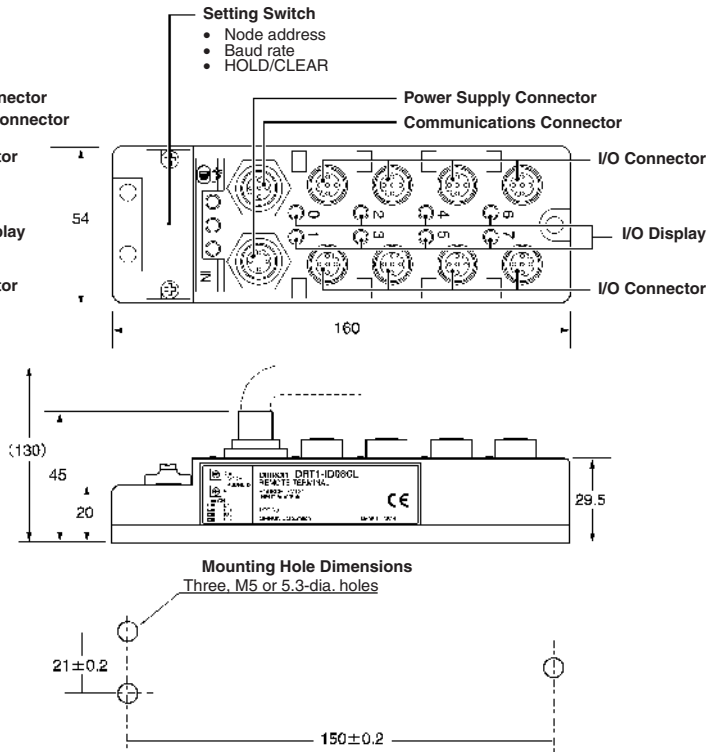
Dimensions

Note: All units are in millimeters unless otherwise indicated.

Models with 4 Points
DRT1-ID04CL/DRT1-ID04CL-1
DRT1-OD04CL/DRT1-OD04CL-1



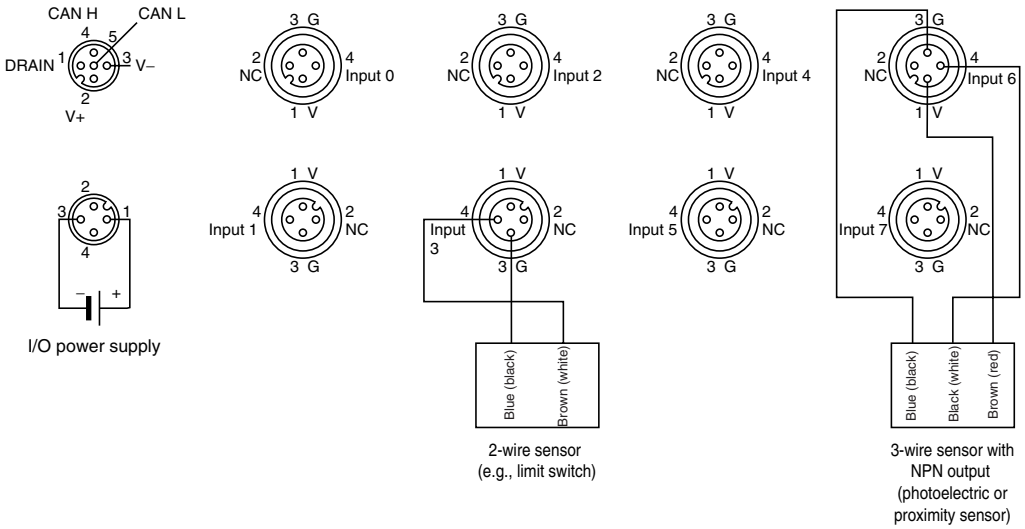
Models with 8 Points
DRT1-ID08CL/DRT1-ID08CL-1
DRT1-OD08CL/DRT1-OD08CL-1



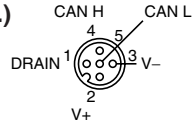
Wiring

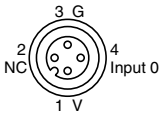
DRT1-ID04CL (See note.)
DRT1-ID08CL
(NPN)

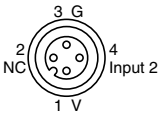
Note: The DRT1-ID04CL has only inputs 0 to 3

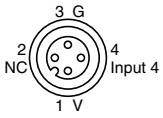


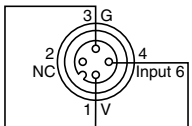
DRT1-ID04CL-1 (See note.)
DRT1-ID08CL-1
(PNP)



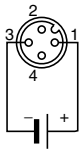


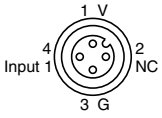


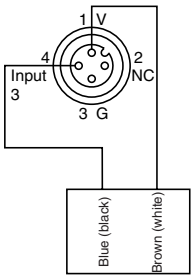


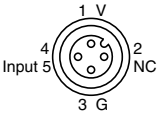


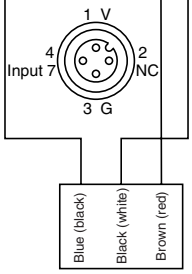
Note: The DRT1-ID04CL-1 has only inputs 0 to 3.



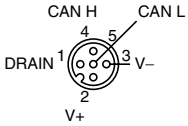


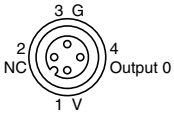


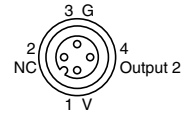


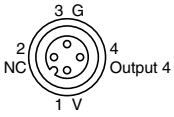


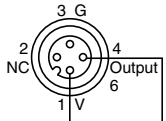
DRT1-OD04CL (See note.)
DRT1-OD08CL
(NPN)



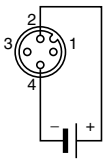


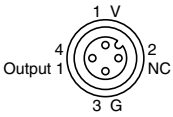


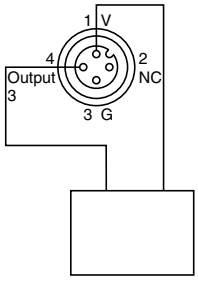


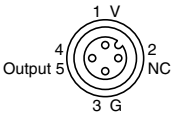


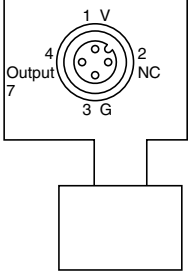
Note: The DRT1-OD04CL has only outputs 0 to 3.



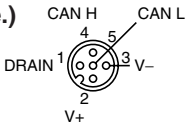


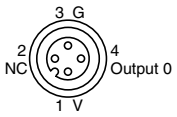


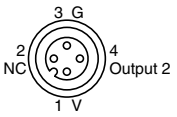


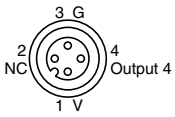


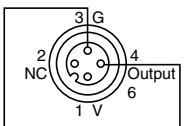
DRT1-OD04CL-1 (See note.)
DRT1-OD08CL-1
(PNP)



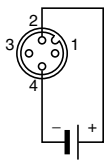


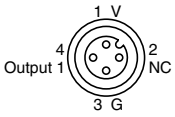


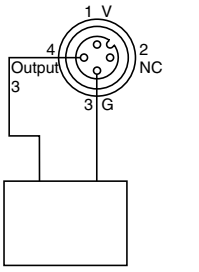


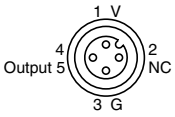


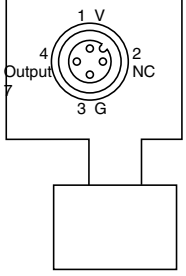
Note: The DRT1-OD04CL-1 has only outputs 0 to 3.











DRT1-B7AC

B7AC Interface Unit

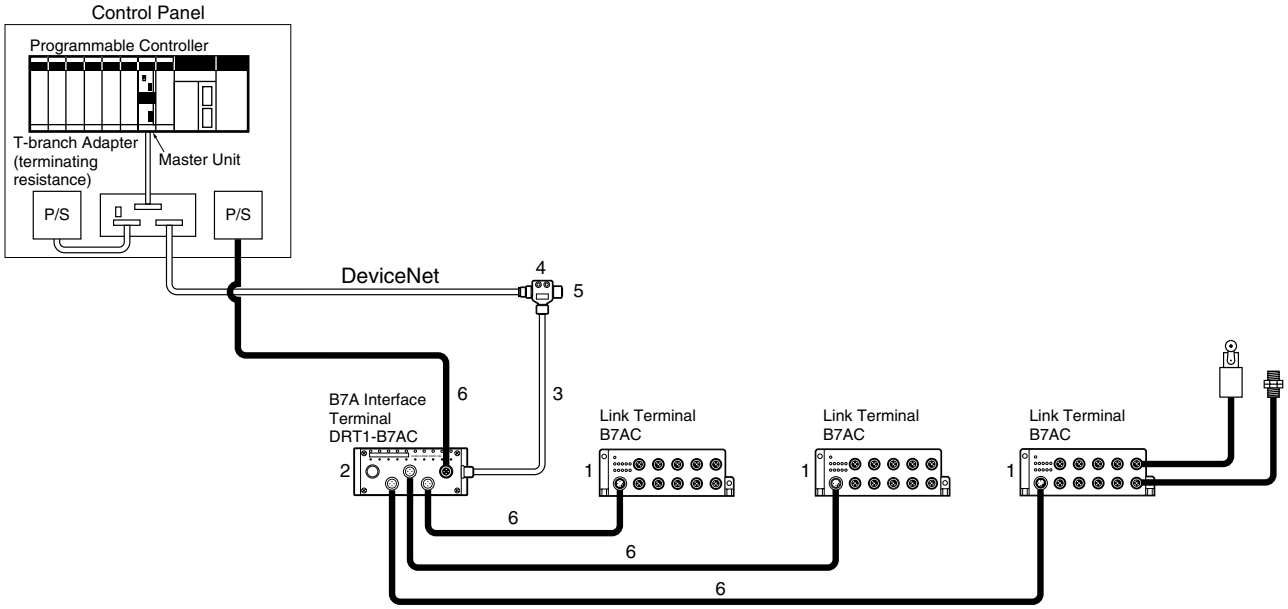
Up to Three Sensor I/O Connector-type B7AC Link Terminal Units can be connected to the DeviceNet via the B7AC Interface Unit: 10 Inputs × 3 Units

- Three B7AC Link Terminal Units can be connected.
- Incorporates connectors, thus not requiring any tools to connect devices.
- Environment-resistive, dust-proof and drip-proof construction satisfies IP66.
- As compact as 135 × 56 × 51 mm (W × H × D).

Ordering Information

Name	Number of ports	Terminal	I/O points	Model
B7AC Interface Unit	3	Sensor I/O connector	10 inputs × 3 Units	DRT1-B7AC

System Configuration



No.	Name
1	Link Terminal
2	DeviceNet B7AC Interface Terminal
3	DCA1 DeviceNet Connecting Cable
4	DCN2-1 DeviceNet T-branch Connector
5	DRS2 DeviceNet Terminator
6	XS2W Connecting Cable

Specifications

General

Communications power supply voltage	11.0 to 25.0 V DC
External power supply voltage	20.4 to 26.4 V DC (24 V DC −15%/+10%)
Current consumption	Unit power supply: 500 mA max. (when B7AC input is OFF)
Dielectric strength	500 V AC for 1 min. (detection current of 1 mA between insulated circuits)
Noise immunity	Conforms to IEC61000-4-4, 2 kV (power line)
Vibration resistance	Malfunction:10 to 150 kHz, 0.5-mm single-amplitude or 70 m/s^2 Destruction:10 to 150 kHz, 0.75-mm single-amplitude or 100 m/s^2
Shock resistance	Malfunction:200 m/s^2 Destruction:300 m/s^2
Ambient temperature	Operating:–10°C to 55°C Storage:–25°C to 65°C
Ambient humidity	25% to 85% (with no condensation)
Ambient environment	No corrosive gases.
Degree of protection	IEC IP66
Mounting method	M5 mounting screws
Mounting strength	No damage when 100 N pull load applied for 10 s
Connector strength	No damage when 100 N pull load applied for 10 s
Weight	500 g max.
Dimensions	135 × 56 × 51 (W × H × D)

Applicable Cables/Connectors

DeviceNet Communications

DCA1-5CN□□W1	Cable with connectors at both ends.
DCA1-5CN□□F1	Cable with connector at socket-end only.
DCA1-5CN□□H1	Cable with connector at plug-end only.
DCN2-1	T-branch connector
DRS2-1	Connector plug with terminating resistance

Power Supply

XS2C-D4□□	Combination connector (solderless/soldered/wired type) socket
XS2W-D42□-□□□-□	Cable with connectors at both ends.
XS2F-D42□-□80	Cable with connector at socket-end only
XS2R-D427-5	T-branch connector

I/O (B7A Communications)

XS2G-D4□□	Combination connector (solderless/soldered/wired type) plug
XS2H-D421-□□□-□	Cable with connector at plug-end only
XS2W-D42□-□□□-□	Cable with connectors at both ends
XS2Z-12	Waterproof cover
XS2Z-15	Dustproof cover

Communications

B7A

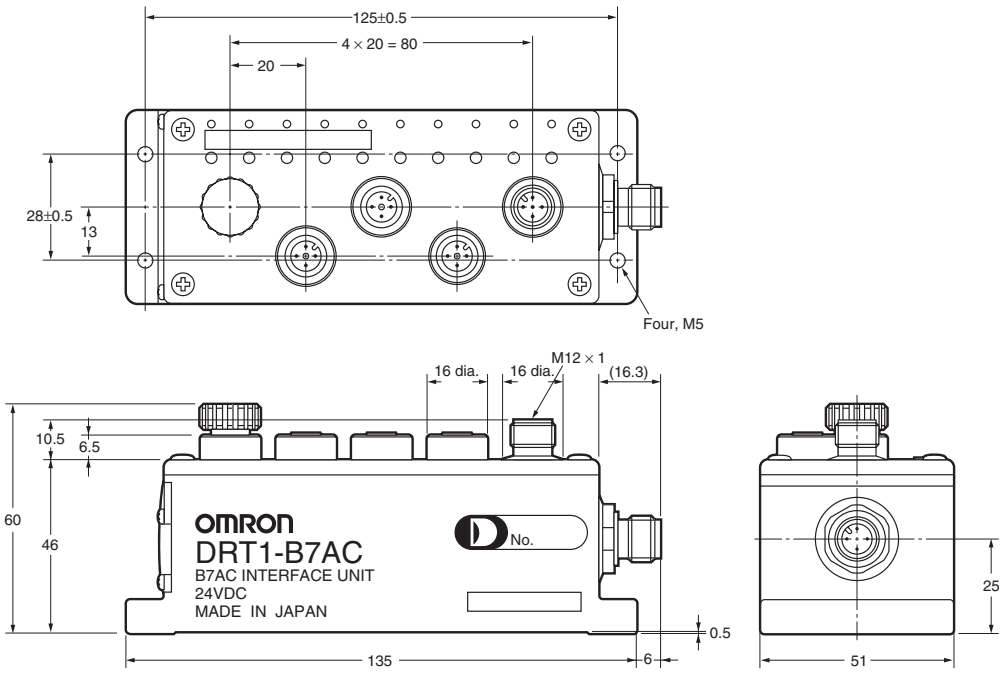
Transmission method	Split multiplex transmission in one direction.
Transmission distance	50 m max. (standard model), 30 m max (high-speed model)
Transmission extension time (See note.)	High-speed model:Average time 3 ms Maximum time 5 ms standard model:Average time 19.2 ms Maximum time 31 ms
Number of ports	3
Terminal	Sensor I/O connector
I/O points	30 inputs (10 inputs × 3 ports)

Note: The transmission extension time is set to high-speed or standard according to the DIP switch setting.

Dimensions

Note: All units are in millimeters unless otherwise indicated.

DRT1-B7AC



DRT1-232C2

RS-232C Unit

Enables Data Exchange between DeviceNet and Peripheral Devices, Such as Bar Code Readers with an RS-232C Port

- Equipped with two RS-232C ports that can be set and controlled independently.
- Data exchanged using explicit message communications.
- Allows reading and writing of up to 151 bytes.

Ordering Information

Name	No. of words	Model
RS-232C Unit (DeviceNet-compatible)	One input word as status area	DRT1-232C2

Specifications

Ratings/Characteristics

General Specifications

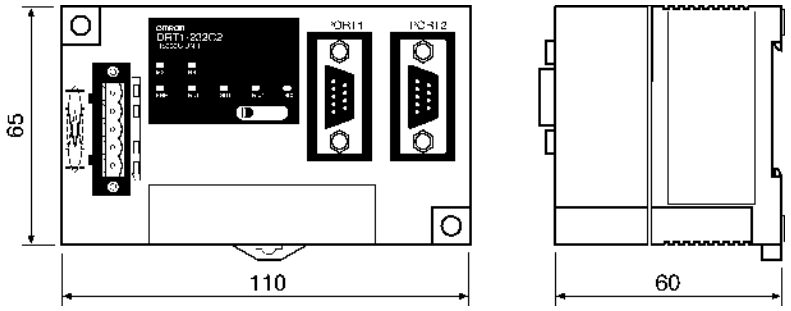
Item	Specification
Communications power supply voltage	11.0 to 25.0 V DC
Internal circuit power supply voltage	20.4 to 26.4 V DC (24 V DC +10%/–15%)
Current consumption	Communications power supply: 50 mA max. Internal circuit power supply: 100 mA max.
Insulation resistance	20 MΩ max. (at 100 V DC) between all DC power supply terminals and FG
Dielectric strength	500 V AC at 50/60 Hz for 1 min between all DC power supply terminals and FG with a leakage current of less than 1 mA
Noise immunity	Conforms to IEC61000-4-4, 2 kV (power line)
Vibration resistance	10 to 57.7 Hz, 0.75-mm single amplitude and 57.7 to 150 Hz at 98 m/s^2 acceleration
Shock resistance	Malfunction: 196 m/s^2 three times each in X, Y, and Z directions Destruction: 294 m/s^2 three times each in X, Y, and Z directions
Ambient temperature	Operating: –10°C to 55°C (with no icing or condensation)
Ambient temperature	Storage: –25°C to 65°C
Ambient humidity	25% to 85% (with no icing or condensation)
Operating environment	With no corrosive gas
Mounting method	M4 screw or 35-mm DIN rail mounting
Mounting strength	100 N: 10 s 10 N in track direction: 10 s
Terminal strength	Pulling force: 100 N: 10 s
Weight	250 g max.
External dimensions	110 x 65 x 60 mm

RS-232C Communications Specifications

Item	Specification
Communications method	Full duplex, start-stop synchronization communications control
Transmission distance	15 m max.
Baud rate	1,200/2,400/4,800/9,600/19,200 bps
Transmission code	ASCII (7 bits)
Parity check	Even, odd, or none
Stop bit length	1/2 bit
No. of ports	2
Connector	9-pin D-sub connector (male) x 2 ports
Communications memory capacity	1,024 bytes x 2 ports
Header code	Enabled (1 byte)/Disabled (selectable)
Delimiter code	Enabled (1 byte)/Disabled (selectable)
Flow control	Enabled/Disabled (selectable) for RS/CS control only

Dimensions

Note: All units are in millimeters unless otherwise indicated.



Field Network

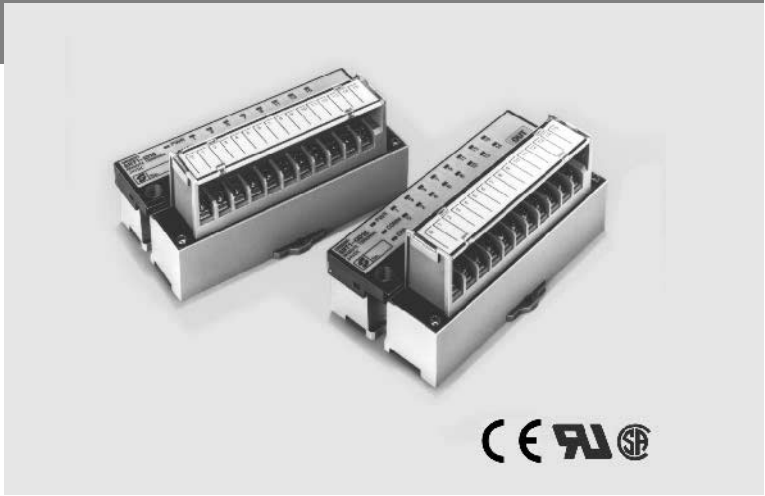
SRT Series

Digital I/O Terminals	596
3-tier Connection Terminals	601
Relay output terminals	604
Waterproof Terminals	608
Sensor Terminals	614
Analog Input Terminal	619
Analog Output Terminal	621
Digital I/O Terminals	623

SRT2-ID/-OD(-1)

Digital I/O Terminals

- The standard in/output models
- Very compact at 80 x 48 x 50 (W x H x D) mm for 4- and 8-point terminals and 105 x 48 x 50 (W xH x D) mm for 16-point terminals.
- Two independent power supplies can be used because the I/O terminals are insulated from the internal circuits.
- DIN rail mounting and screw mounting are both supported.



Ordering Information

I/O classification	Internal I/O circuit common	I/O points	Rated voltage	I/O rated voltage	Model
Input	NPN (+ common)	4	24 V DC	24 V DC	SRT2-ID04
	PNP (– common)				SRT2-ID04-1
Output	NPN (– common)				SRT2-OD04
	PNP (+ common)				SRT2-OD04-1
Input	NPN (+ common)	8			SRT2-ID08
	PNP (– common)				SRT2-ID08-1
Output	NPN (– common)				SRT2-OD08
	PNP (+ common)				SRT2-OD08-1
Input	NPN (+ common)	16			SRT2-ID16
	PNP (– common)				SRT2-ID16-1
Output	NPN (– common)				SRT2-OD16
	PNP (+ common)				SRT2-OD16-1

Note: For more details about connections supported by the Master Unit, refer to page 345.

Specifications

Ratings

Inputs

Input current	6 mA max./point
ON delay time	1.5 ms max.
OFF delay time	1.5 ms max.
ON voltage	15 V DC min. between each input terminal and V
OFF voltage	5 V DC max. between each input terminal and V
OFF current	1 mA max.
Insulation method	Photocoupler
Input indicators	LED (yellow)

Outputs

Rated output current	0.3 A/point
Residual voltage	0.6 V max.
Leakage current	0.1 mA max.
Insulation method	Photocoupler
Output indicators	LED (yellow)

Characteristics

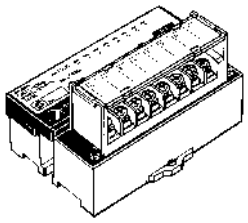
Communications power supply voltage	14 to 26.4 V DC
I/O power supply voltage	24 V DC $^{+10\%}/_{-15\%}$
I/O power supply current	1 A max.
Current consumption (see note)	50 mA max. at 24 V DC
Connection method	Multi-drop method and T-branch method
Connecting Units	4-point and 8-point Terminals:16 Input Terminals and 16 Output Terminals per Master 16-point Terminals: 8 Input Terminals and 8 Output Terminals per Master
Dielectric strength	500 V AC for 1 min (1-mA sensing current between insulated circuits)
Noise immunity	Conforms to IEC61000-4-4, 2 kV (power lines)
Vibration resistance	10 to 55 Hz, 1.5-mm double amplitude
Shock resistance	Malfunction:200 m/s^2 Destruction:300 m/s^2
Mounting strength	No damage when 50 N pull load was applied for 10 s in all directions
Terminal strength	No damage when 50 N pull load was applied for 10 s
Screw tightening torque	0.6 to 1.18 Nm
Ambient temperature	Operating:0°C to 55°C (with no icing or condensation) Storage:–20°C to 65°C (with no icing or condensation)
Ambient humidity	Operating:35% to 85%
Weight	4-point and 8-point Terminals:80 g max. 16-point Terminals:110 g max.
Approved standards (4/8 points)	UL 508, CSA C22.2 No. 14

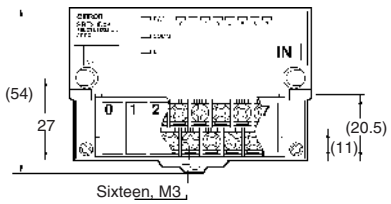
Note: The above current consumption is the value with all 4 and 8 and 16 points turned ON excluding the current consumption of the external sensor connected to the input Remote Terminal and the current consumption of the load connected to the output Remote Terminal.

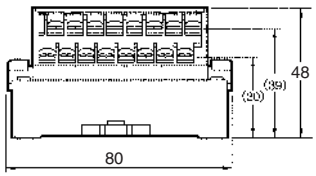
Dimensions

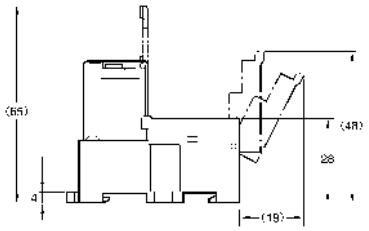
Note: All units are in millimeters unless otherwise indicated.

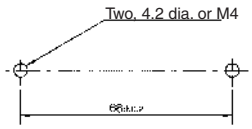
SRT2-ID04 (-1)
SRT2-OD04 (-1)
SRT2-ID08 (-1)
SRT2-OD08 (-1)



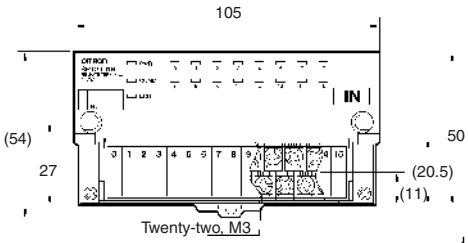


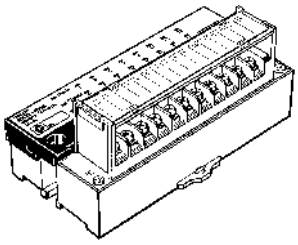


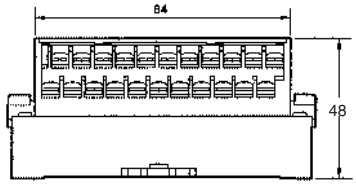


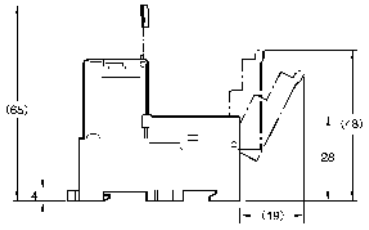


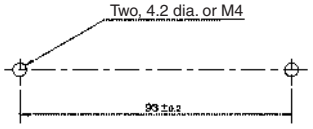
SRT2-ID16 (-1)
SRT2-OD16 (-1)







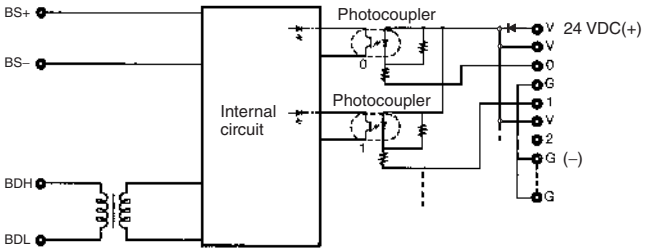




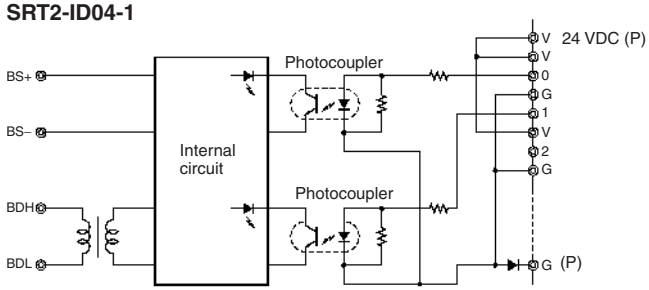
Installation

Internal Circuit Configuration

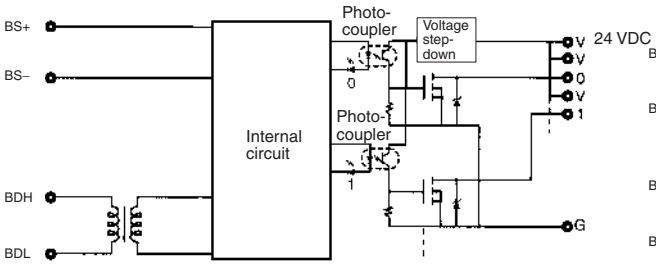
SRT2-ID04



SRT2-ID04-1



SRT2-OD04



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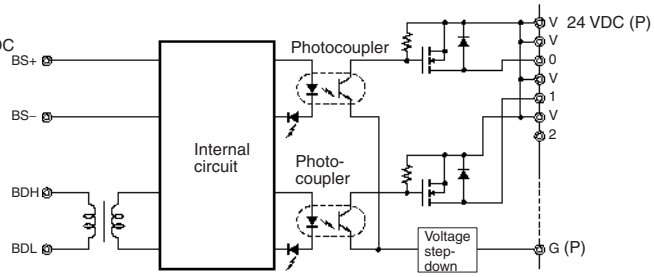

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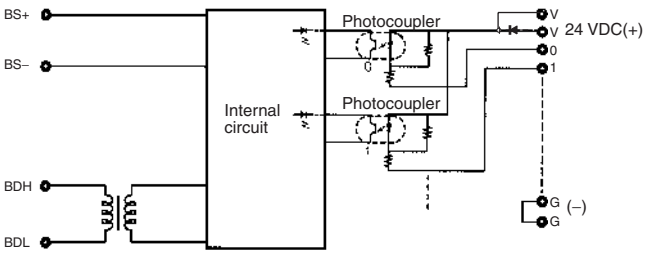

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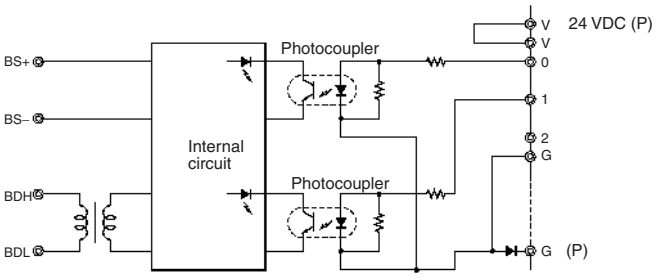

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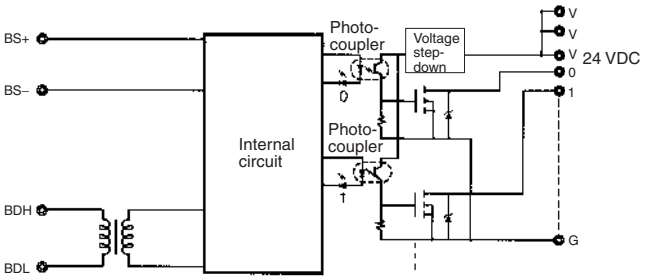

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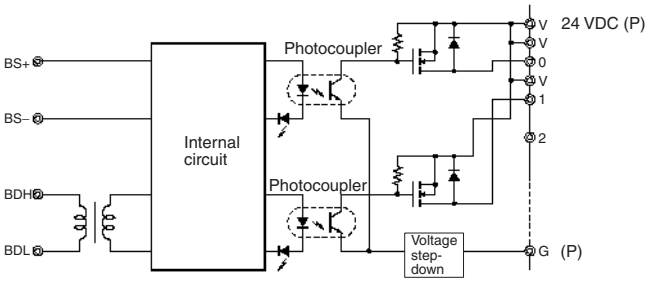
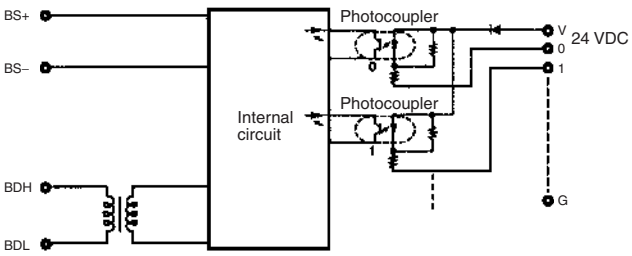
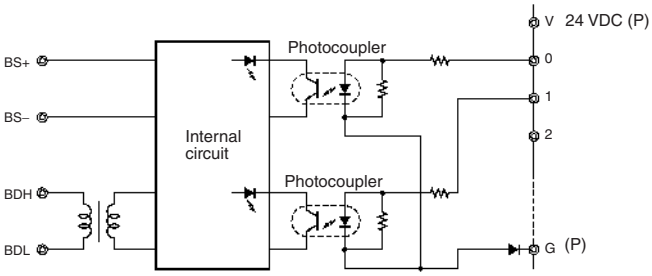


SRT2-ID16



SRT2-ID16-1



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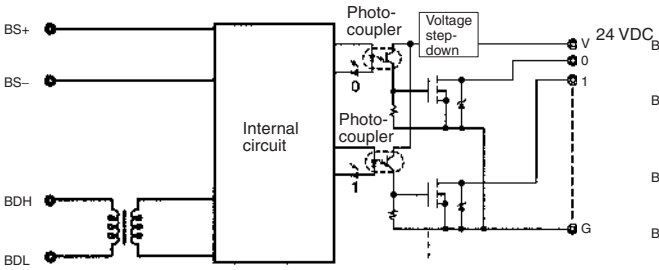
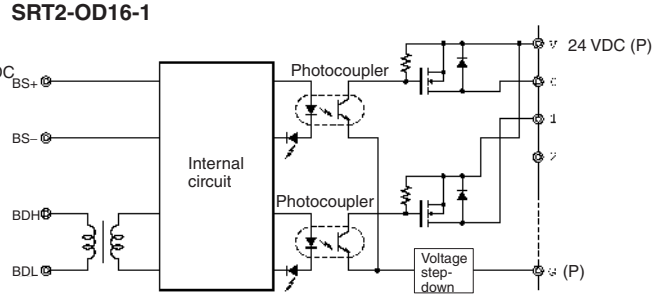


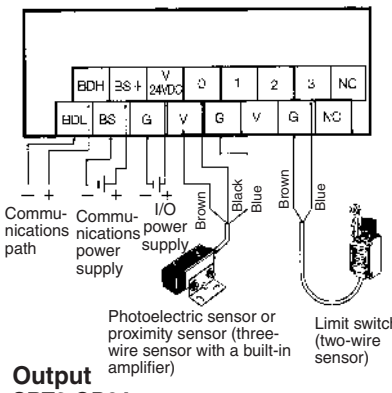
SRT2-OD16-1



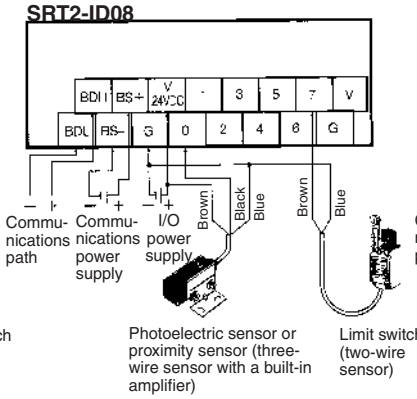
Terminal Arrangement and I/O Device Connection Example (NPN Models)

Input

SRT2-ID04



SRT2-ID08



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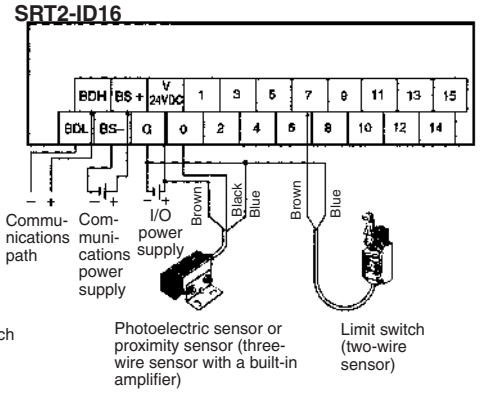
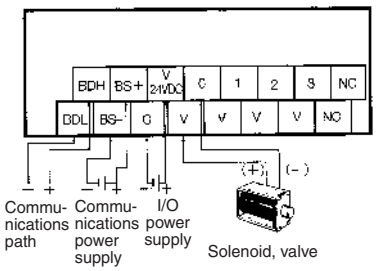


Output

SRT2-OD04



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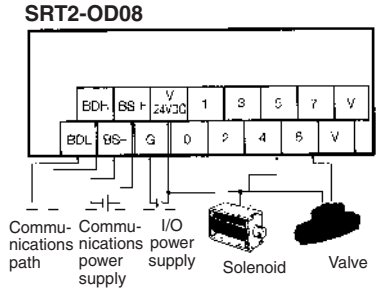

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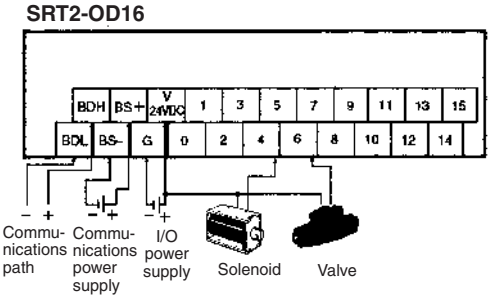
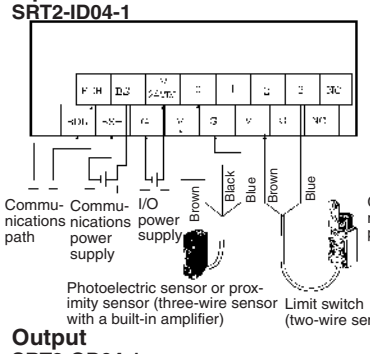


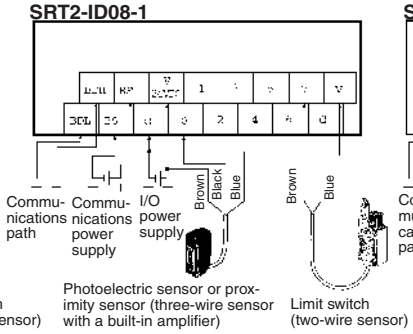
Terminal Arrangement and I/O Device Connection Example (PNP Models)

Input

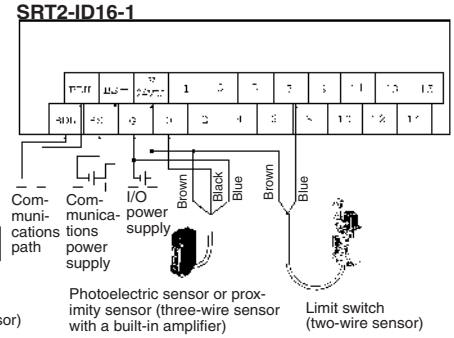
SRT2-ID04-1



SRT2-ID08-1

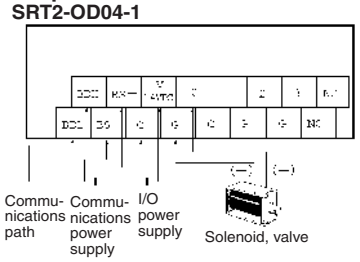


SRT2-ID16-1

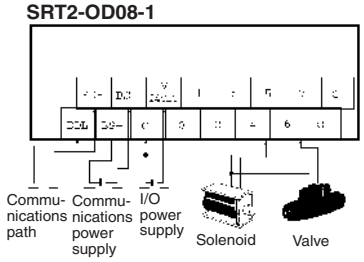


Output

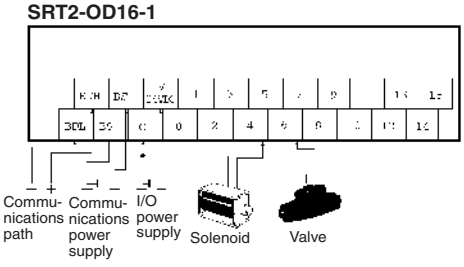
SRT2-OD04-1



SRT2-OD08-1



SRT2-OD16-1



SRT2-□D16T(-1)

3-tier Connection Terminals

- Models with a 3 layer connection terminal (16 Points)
- Reduces designing and wiring effort.
- Incorporates a removable circuit block
- Very compact
- DIN rail mounting and screw mounting are both supported.

Ordering Information

I/O classification	Internal I/O circuit common	I/O points	I/O connection method	Model
Digital input	NPN (+ common)	16	M3 terminal block	SRT2-ID16T
	PNP (– common)			SRT2-ID16T-1
Digital I/O	NPN (– common)			SRT2-MD16T
	PNP (+ common)			SRT2-MD16T-1
Digital output	NPN (– common)			SRT2-OD16T
	PNP (+ common)			SRT2-OD16T-1

Specifications

Ratings

Inputs

Input current	6 mA max./point at 24 V and 3 mA min./point at 17 V
ON delay time	1.5 ms max.
OFF delay time	1.5 ms max.
ON voltage	NPN: 15 V DC min. between V terminals and each input terminal PNP: 15 V DC min. between G terminals and each input terminal
OFF voltage	NPN: 5 V DC max. between V terminals and each input terminal PNP: 5 V DC max. between G terminals and each input terminal
OFF current	1 mA max.
Insulation method	Photocoupler

Outputs

Rated output current	0.5 A max./point
Residual voltage	1.2 V max.
ON delay time	0.5 ms max.
OFF delay time	1.0 ms max.
Leakage current	0.1 mA max.
Insulation method	Photocoupler

Characteristics

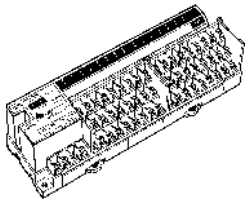
Communications power supply voltage	14 to 26.4 V DC
I/O power supply voltage	24 V DC $^{+10\%}/_{-15\%}$
I/O power supply current	4 A max./common
Current consumption (see note)	50 mA max. at 24 V DC
Connection method	Multi-drop method and T-branch method
Dielectric strength	500 V AC between insulated circuits
Noise immunity	Conforms to IEC61000-4-4, 2 kV (power lines)
Vibration resistance	10 to 150 Hz, 1.0-mm double amplitude or 70 m/s^2
Shock resistance	200 m/s^2
Mounting strength	No damage with 100 N pull load applied in all directions.
Terminal strength	No damage with 100 N pull load applied
Screw tightening torque	0.3 to 0.5 Nm
Ambient temperature	Operating:–10°C to 55°C Storage:–25°C to 65°C
Ambient humidity	Operating:25% to 85% (with no condensation)
Weight	300 g max.

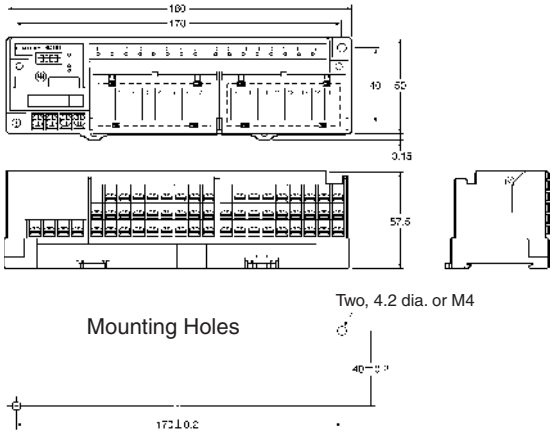
Note: The above current consumption is the value with all points turned ON excluding the current consumption of the external sensor connected to the input Remote Terminal and the current consumption of the load connected to the output Remote Terminal.

Dimensions

Note: All units are in millimeters unless otherwise indicated.

SRT2-ID16T (-1)
SRT2-MD16T (-1)
SRT2-OD16T (-1)

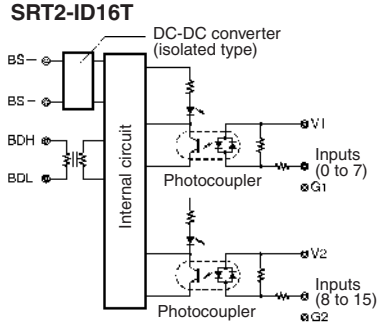




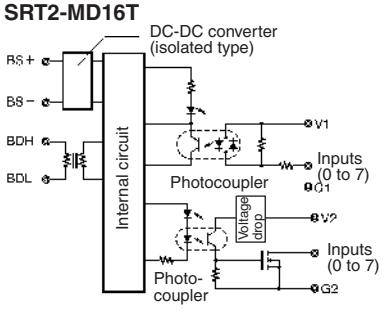
Installation

Internal Circuit Configuration

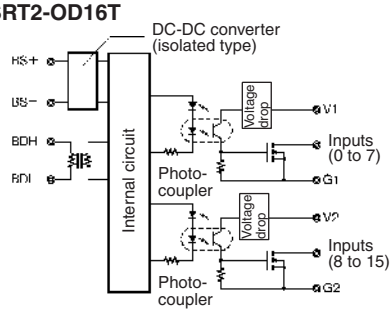
SRT2-ID16T



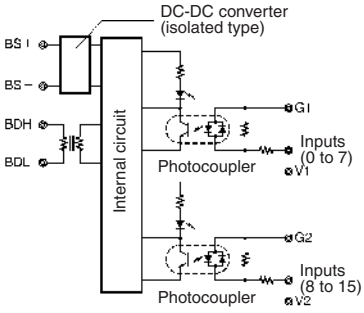
SRT2-MD16T



SRT2-OD16T



SRT2-ID16T-1



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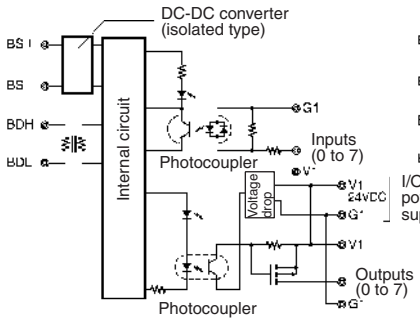
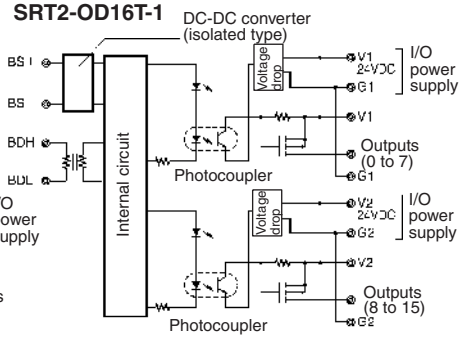


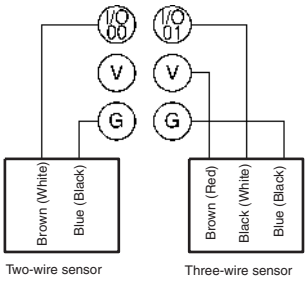
SRT2-OD16T-1



External Connections

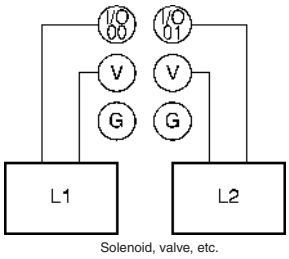
Input (NPN Models)

SRT2-ID16T
SRT2-MD16T



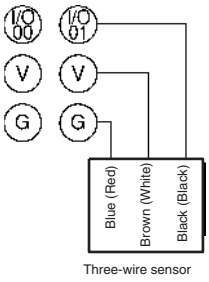
Output (NPN Models)

SRT2-OD16T
SRT2-MD16T



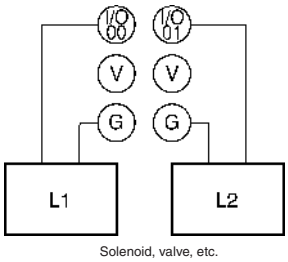
Input (PNP Models)

SRT2-ID16T-1
SRT2-MD16T-1



Output (PNP Models)

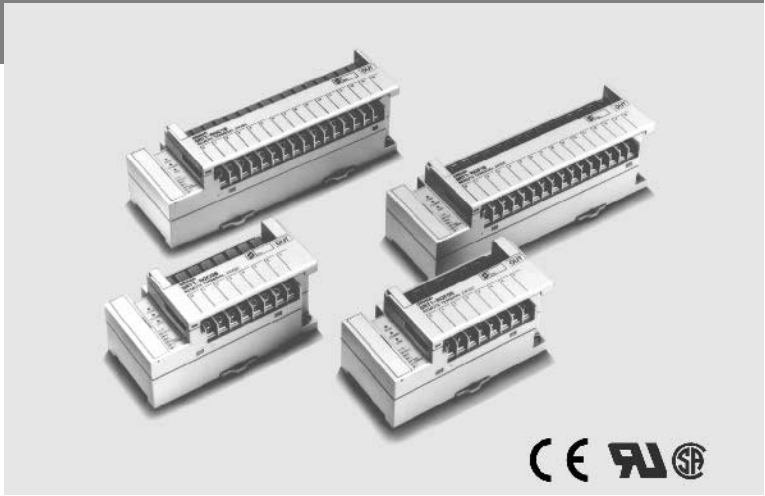
SRT2-OD16T-1
SRT2-MD16T-1



SRT2-R

Relay output terminals

- Power MOS FET Relay and Relay models.
- Very compact
- 8-point models: 101 x 51 x 51 mm (W x H x D);
- 16-point models: 156 x 51 x 51 mm (W x H x D)
- DIN rail mounting and screw mounting are both supported.



Ordering Information

Classification	I/O points	Rated voltage	Relay coil rating	Model	Applicable relay
Relay output	8 points	24 V DC	24 V DC	SRT2-ROC08	G6D-1A
	16 points			SRT2-ROC16	
Power MOS FET relay output	8 points			SRT2-ROF08	G3DZ-2R6PL
	16 points			SRT2-ROF16	

Specifications

Ratings

Relay Output

Item	SRT2-ROC08, SRT2-ROC16
Applicable relay	G6D-1A (one for each output point)
Rated load	3 A at 250 V AC, 3 A at 30 V DC (resistive load)
Rated carry current	3 A (see note 1)
Max. contact voltage	250 V AC, 30 V DC
Max. contact current	3 A
Max. switching capacity	730 VA (AC), 90 W (DC)
Min. permissible load (see note 2)	10 mA at 5 V DC
Life expectancy	Electrical:100,000 operations min. (rated load, at 1,800 operations/h) Mechanical:20,000,000 operations min. (at 18,000 operations/h)

Note: 1. The maximum permissible current of COM0 to COM7 is 3 A.

2. This value fulfills the P reference value of opening/closing at a rate of 120 times per min (ambient operating environment and determination criteria according to JIS C5442).

Power MOS FET Relay Output

Item	SRT2-ROF08, SRT2-ROF16
Applicable relay	G3DZ-2R6PL (one for each output point)
Load voltage	3 to 264 V AC, 3 to 125 V DC
Load current	100 μA to 0.3 A
Inrush current	6 A (10 ms)

Characteristics

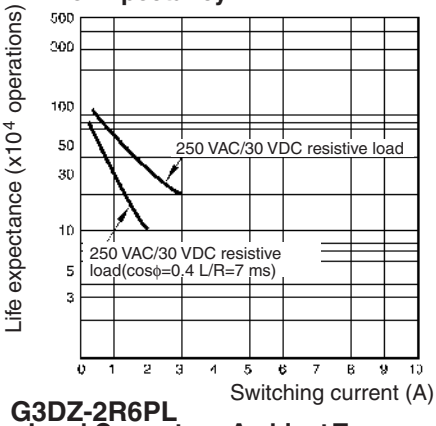
Power supply voltage	24 V DC $^{+10\%}/_{-15\%}$
Current consumption (see note)	350 mA max. at 24 V DC
Connection method	Multi-drop method and T-branch method
Connecting Units	8-point Units:16 per Master 16-point Units:8 per Master
Dielectric strength	2,000 V AC for 1 min (1-mA sensing current) between all output terminals and power supply, between communication terminals, and between contacts of different polarities 500 V AC for 1 min (1-mA sensing current) between all output terminals and power supply, between communication terminals, and between all power supply terminals and communications terminals
Noise immunity	Conforms to IEC61000-4-4, 2 kV (power lines)
Vibration resistance	10 to 55 Hz, 0.75-mm double amplitude
Shock resistance	Malfunction:100 m/s^2 Destruction:300 m/s^2
Mounting strength	No damage when 50 N pull load was applied for 10 s in all directions
Terminal strength	No damage when 50 N pull load was applied for 10 s
Screw tightening torque	0.6 to 1.18 Nm
Ambient temperature	Operating:0°C to 55°C (with no icing or condensation) Storage:–20°C to 65°C (with no icing or condensation)
Ambient humidity	Operating:35% to 85%
Weight	8-point models: 145 g max., 16-point models: 240 g max.
Approved standards	UL 508, CSA C22.2 No. 14

Note: The above current consumption is a value with all the points turned ON including the current consumption of the G6D coil for the Remote Output Terminal, and the G3DZ's input current.

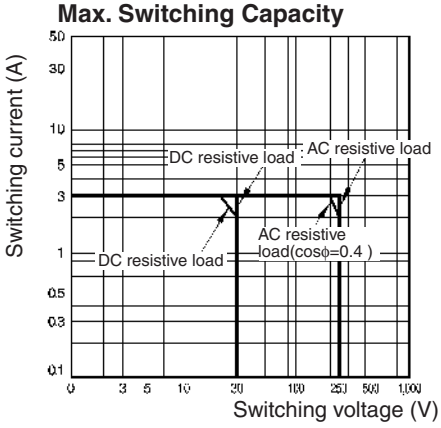
Reference Data

G6D-1A (24 VDC)

Life Expectancy



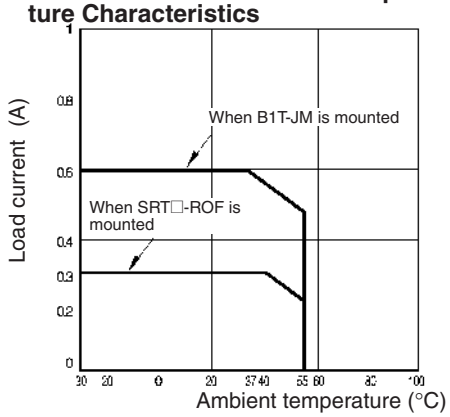
Max. Switching Capacity



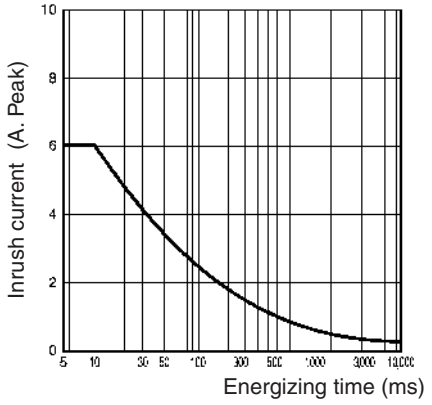
Note: These graphs show the characteristics for when the SRT2-ROC□□ or B1T-JR model is mounted.

G3DZ-2R6PL

Load Current vs. Ambient Temperature Characteristics



Inrush Current Resistivity



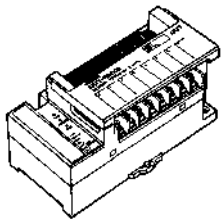
Non-repetitive: (Keep the inrush current to half the rated value if it occurs repetitively.)

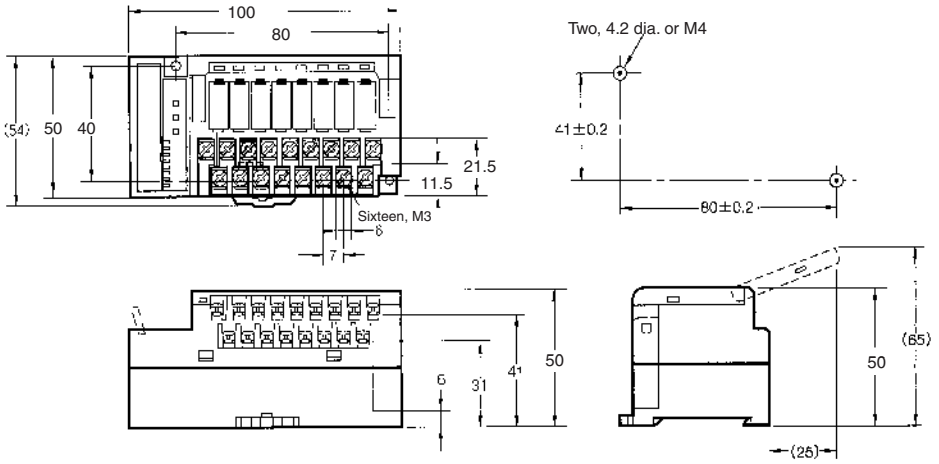
Note: The above graph shows the characteristics for when the SRT2-ROF□□ or B1T-JM model is mounted.

Dimensions

Note: All units are in millimeters unless otherwise indicated.

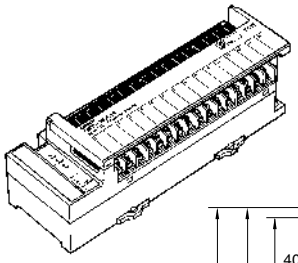
SRT2-ROC08
SRT2-ROF08

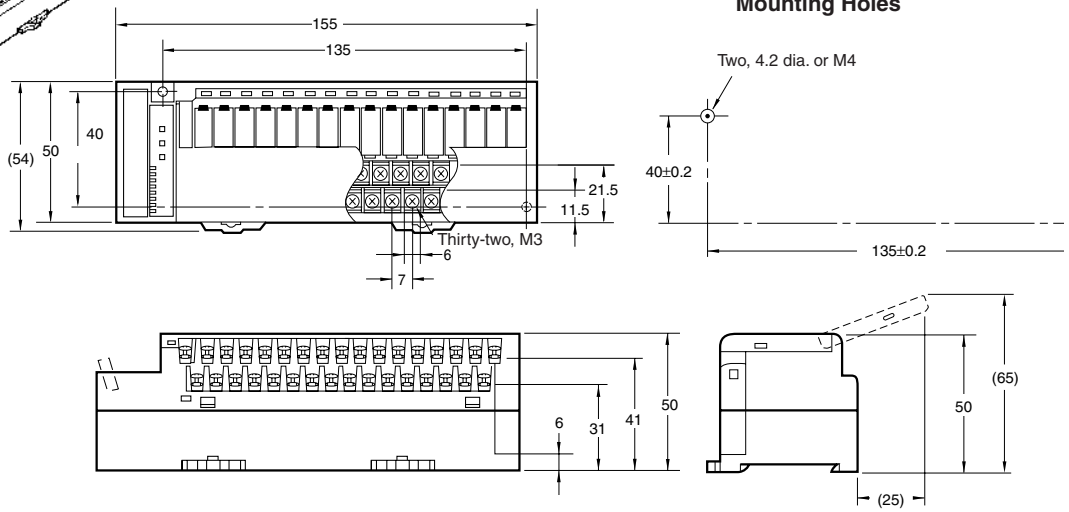




Mounting Holes

SRT2-ROC16
SRT2-ROF16



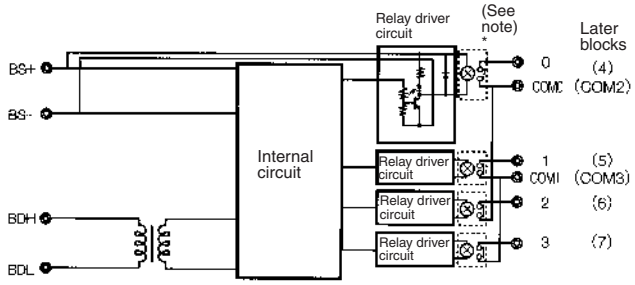


Mounting Holes

Installation

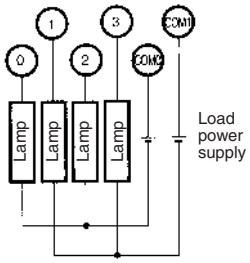
Internal Circuit Configuration

SRT2-ROC08
SRT2-ROC16



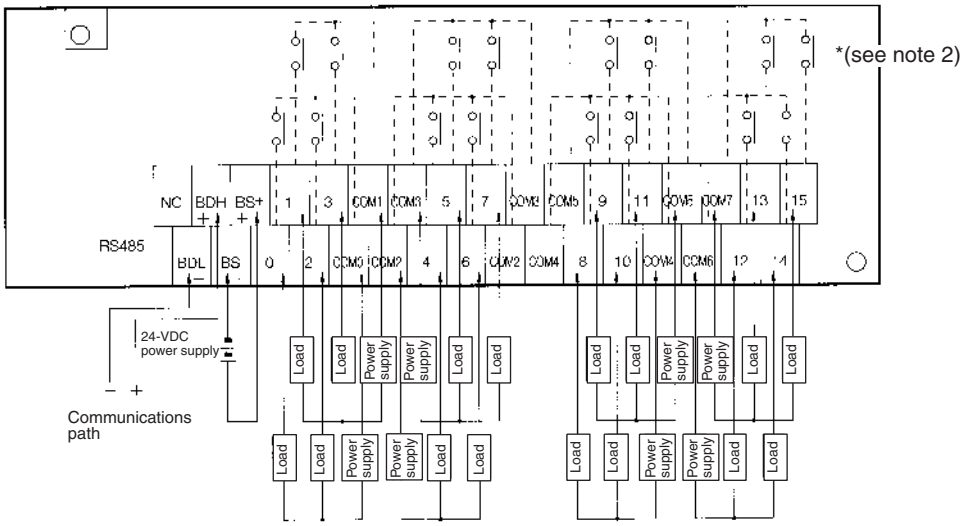
Note: The G3DZ-2R6PL Power MOS FET Relay is inserted into this portion of the SRT2-ROF08 and SRT2-ROF16.

External Connections



Terminal Arrangement and I/O Device Connection Example

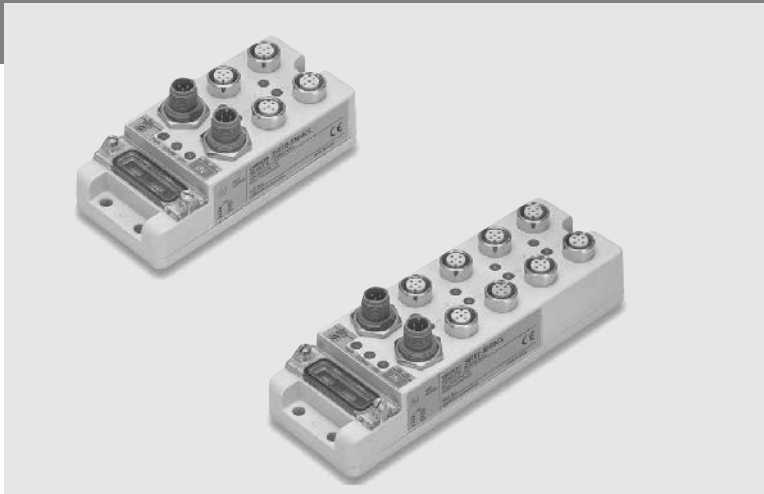
Output
SRT2-ROC16
SRT2-ROF16



Note: 1. Dotted lines indicate internal connections.
SRT2-ROC08 and SRT2-ROF08 have the 0 to 7 and COM0 to COM3 terminals only.
2. The above is a connection example of the SRT2-ROC16 with G6D Relays mounted.
G3DZ Power MOS FET Relays are mounted to the SRT2-ROF08 and SRT2-ROF16.

SRT2-□D0□CL(-1)

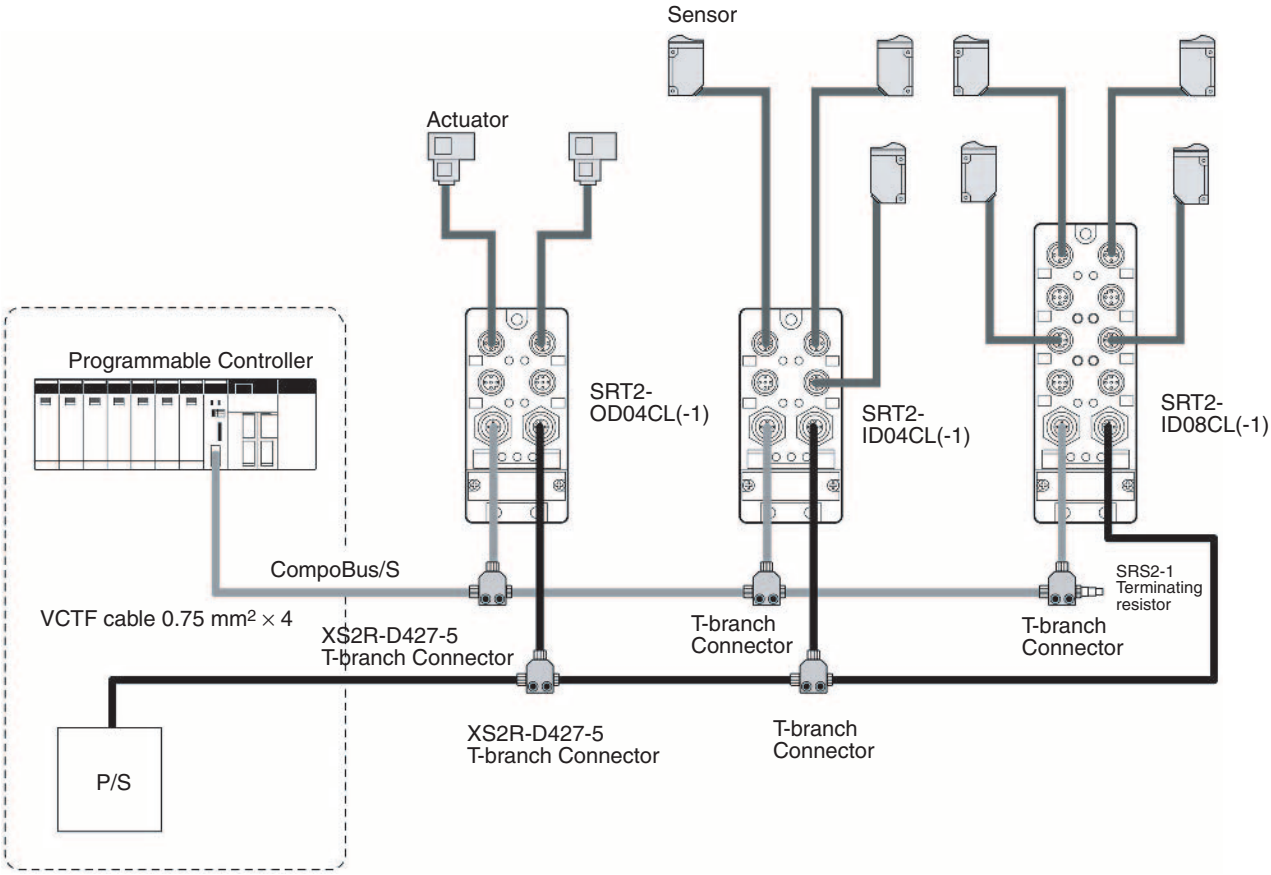
Waterproof Terminals



IP67 rated I/O terminals.
Compact and waterproof.

- Reduced Labor
  The use of standard connectors reduces the installation time
- Reduced Wiring
  The I/O terminal can be mounted closer to sensors and other devices.
- Easier Maintenance
  Significant reductions not only in setup time but also maintenance time.
- Reduced Space, Improved Operability
  Compact design (160 x 54 mm (W x H)) (8-point models)
  Settings and connections can be performed using the switch and connectors on the front side of the Terminal.

System Configuration



Ordering Information

Input/Output	Internal I/O circuit common	I/O points	I/O connections method	Rated voltage for I/O power supply	Model
Inputs	NPN (+ common)	4 points	Sensor I/O connector	24 V DC	SRT2-ID04CL
		8 points			SRT2-ID08CL
	PNP (– common)	4 points			SRT2-ID04CL-1
		8 points			SRT2-ID08CL-1
Outputs	NPN (– common)	4 points			SRT2-OD04CL
		8 points			SRT2-OD08CL
	PNP (+ common)	4 points			SRT2-OD04CL-1
		8 points			SRT2-OD08CL-1

Specifications

General Specifications

Item	SRT2-ID04CL SRT2-ID04CL-1 SRT2-OD04CL SRT2-OD04CL-1	SRT2-ID08CL SRT2-ID08CL-1 SRT2-OD08CL SRT2-OD08CL-1
Communications power supply voltage	14 to 26.4 V DC (supplied via communications connectors)	
I/O power supply voltage	20.4 to 26.4 V DC (24 V DC $_{-15\%}^{+10\%}$)	
Communications current consumption	15 mA max.	20 mA max.
Ambient temperature	Operating:–10°C to 55°C (with no icing) Storage:–25°C to 65°C	
Ambient humidity	Operating:25% to 85% (with no condensation) Storage:25% to 85% (with no condensation)	
Connector tightening torque	0.39 to 0.49 Nm	
Enclosure rating	IEC IP67	
Mounting method	Mounted using M5 screws	
Weight	Approx. 180 g	Approx. 240 g

Communications Media/Distances

Communications medium		4-conductor cable (VCTF, 0.75 mm^2 x 4)
Communications distance	High-speed Communications Mode	4-conductor VCTF cable: Main line length:30 m max. Branch line length:3 m max. Total branch line length:30 m max. (When 4-conductor VCTF cable is used to connect fewer than 16 Slaves, the main line can be up to 100 m long and the total branch line length can be up to 50 m.)
	Long-distance Communications Mode	4-conductor VCTF cable: Variable branch wiring (total cable length 200 m max.) (There are no limits on the branching format or main, branch, or total line lengths. The terminator must be connected to the point in the system farthest from the master.)

Note: Use in combination with two-conductor VCTF cables and special flat cables is not possible.

Input Specifications

Item	SRT2-ID04CL SRT2-ID04CL-1	SRT2-ID08CL SRT2-ID08CL-1
Input current	For input voltage of 24 V DC: 6 mA max. per point For input voltage of 17 V DC: 3 mA min. per point	
Input impedance	4.4 kΩ	
ON delay time	1.5 ms max.	
OFF delay time	1.5 ms max.	
ON voltage	15 V DC min.	
OFF voltage	5 V DC max.	
OFF current	1 mA max.	
Number of circuits	4 points with 1 common	8 points with 1 common

Output Specifications

Item	SRT2-OD04CL SRT2-OD04CL-1	SRT2-OD08CL SRT2-OD08CL-1
Rated output current	0.5 A per point (2 A per common)	0.5 A per point (2.4 A per common)
Residual voltage	1.2 V max.	
Leakage current	0.1 mA max.	
ON delay time	0.5 ms max.	
OFF delay time	1.5 ms max.	
Number of circuits	4 points with 1 common	8 points with 1 common

Applicable Connectors

Power Supply Connectors

Model	Specification
XS2C-D4□□	Assembling-type connector (crimp, soldering, or screw) socket
XS2W-D42□-□□□-□	Cable with connector on each end
XS2F-D42□-□80-□	Cable with connector at one end (socket end)
XS2R-D427-5	T-branch connector

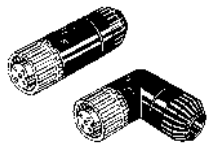
I/O Connectors

Model	Specification
XS2G-D4□□	Assembling type connector (crimp, soldering, or screw) Socket
XS2H-D421-□□□-□	Cable with connector at one end (plug end)
XS2W-D42□-□□□-□	Cable with connector on each end
XS2Z-12	Waterproof cover
XS2Z-15	Dust cover

Communications Connector

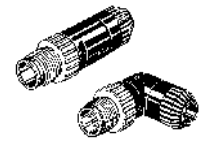
Model	Specification
XS2R-D427-5	T-branch connector
SRS2-1	Connector with terminating resistor (plug)
XS2G-D4S7	Assembling-type connector (for 4-conductor VCTF cable) plug (See note.)
XS2C-D4S7	Assembling-type connector (for 4-conductor VCTF socket) socket (See note.)

Assembling-type Connector Socket
Power Supply and Communications

Model	Applicable cable external dia.	Cable pull-out direction	No. of poles	Connection method		
				Crimp	Solder	Screw
	6 dia. (5 to 6 dia.)	Straight	4	XS2C-D4C1	XS2C-D421	XS2C-D4S1
		L-shaped		XS2C-D4C2	XS2C-D422	XS2C-D4S2
	5 dia. (4 to 5 dia.)	Straight		XS2C-D4C3	XS2C-D423	XS2C-D4S3
		L-shaped		XS2C-D4C4	XS2C-D424	XS2C-D4S4
	3 dia. (3 to 4 dia.)	Straight		XS2C-D4C5	XS2C-D425	XS2C-D4S5
		L-shaped		XS2C-D4C6	XS2C-D426	XS2C-D4S6
	7 dia. (7 to 8 dia.)	Straight		---	---	XS2C-D4S7 (see note)

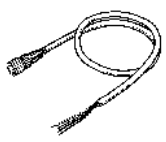
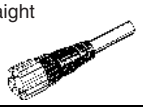
Note: Only the XS2C-D4S7 with a diameter of 7 mm can be used for communications.

Assembling-type Connector Plug — Power Supply and Communications

Appearance	Applicable cable external dia.	Cable pull-out direction	No. of poles	Connection method		
				Crimp	Solder	Screw
	6 dia. (5 to 6 dia.)	Straight	4	XS2G-D4C1	XS2G-D421	XS2G-D4S1
		L-shaped		---	XS2G-D422	XS2G-D4S2
	5 dia. (4 to 5 dia.)	Straight		XS2G-D4C3	XS2G-D423	XS2G-D4S3
		L-shaped		---	XS2G-D424	XS2G-D4S4
	3 dia. (3 to 4 dia.)	Straight		XS2G-D4C5	XS2G-D425	XS2G-D4S5
		L-shaped		---	XS2G-D426	XS2G-D4S6
	7 dia.	Straight		---	---	XS2G-D4S7 (see note)

Note: Only the XS2G-D4S7 with a diameter of 7 mm can be used for communications.

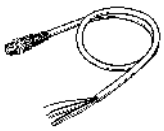
Connectors with Cables (Single-end Socket Each) — Power Supply

Appearance	Cable pull-out direction	No. of cable conductor	Cable length (m)	Standard cable	Robot cable (vibration resistive)
	Straight 	4	1	XS2F-D421-C80-A	XS2F-D421-C80-R
			2	XS2F-D421-D80-A	XS2F-D421-D80-R
			5	XS2F-D421-G80-A	XS2F-D421-G80-R
			10	XS2F-D421-J80-A	XS2F-D421-J80-R
	L-shaped	4	1	XS2F-D422-C80-A	XS2F-D422-C80-R
			2	XS2F-D422-D80-A	XS2F-D422-D80-R
			5	XS2F-D422-G80-A	XS2F-D422-G80-R
			10	XS2F-D422-J80-A	XS2F-D422-J80-R

Connectors with Cables (Sockets and Plugs) — Power Supply and I/O

Appearance	Cable pull-out direction	No. of cable conductor	Cable length (m)	Standard cable	Robot cable (vibration resistive)
	Straight/Straight	4	1	XS2W-D421-C81-A	XS2W-D421-C81-R
			2	XS2W-D421-D81-A	XS2W-D421-D81-R
			5	XS2W-D421-G81-A	XS2W-D421-G81-R
	L-shaped/L-shaped		2	XS2W-D422-D81-A	---
			5	XS2W-D422-G81-A	
	Straight/L-shaped		2	XS2W-D423-D81-A	
			5	XS2W-D423-G81-A	
	L-shaped/Straight		2	XS2W-D424-D81-A	
			5	XS2W-D424-G81-A	

Connectors with Cables (Single-end Connector Each) I/O

Appearance	Cable pull-out direction	No. of cable conductor	Cable length (m)	Standard cable
	Straight	3	0.3	XS2H-D421-AC0-A
		4		XS2H-D421-A80-A
		3	1	XS2H-D421-CC0-A
		4		XS2H-D421-C80-A

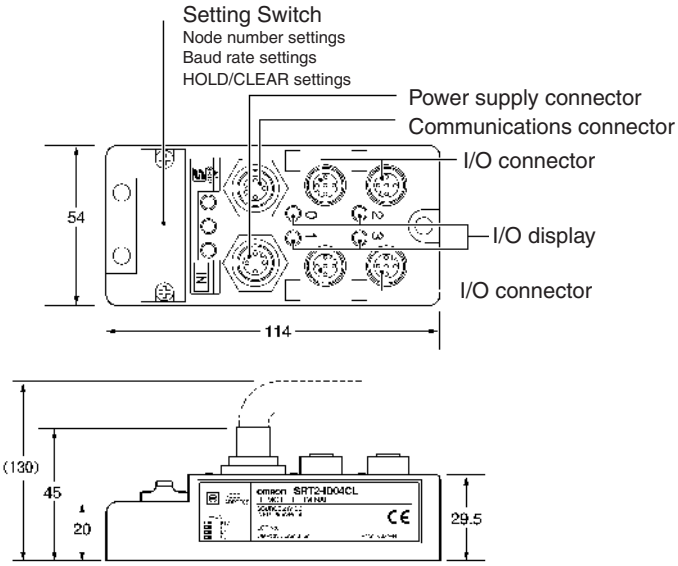
Connector Covers

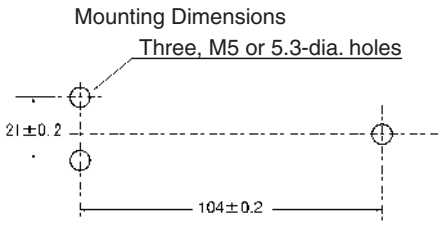
Appearance	Product	Model	Application
	T-branch Connector	XS2R-D427-5	Branching communications lines and power lines
	Connector Terminator (plug)	SRS2-1	Waterproof terminator
	Waterproof cover	XS2Z-12	Covers for unused I/O connectors
	Dust cover	XS2Z-15	

Dimensions

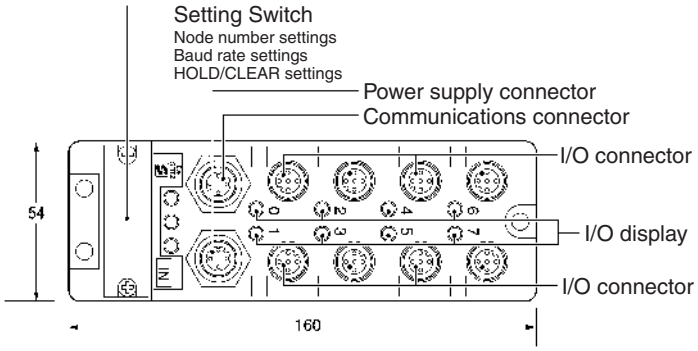
Note: All units are in millimeters unless otherwise indicated.

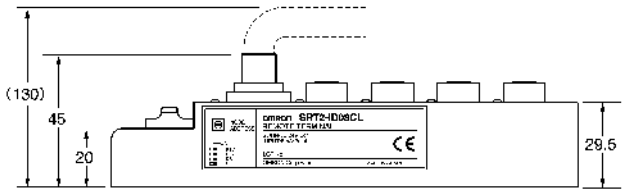
Models with 4 points
SRT2-ID04CL/SRT2-ID04CL-1
SRT2-OD04CL/SRT2-OD04CL-1

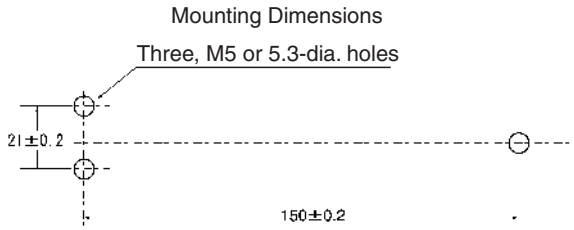




Models with 8 points
SRT2-ID08CL/SRT2-ID08CL-1
SRT2-OD08CL/SRT2-OD08CL-1



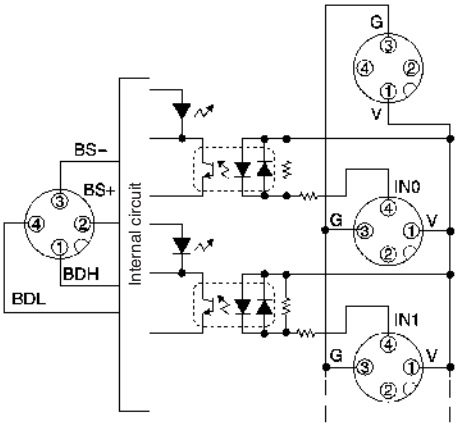




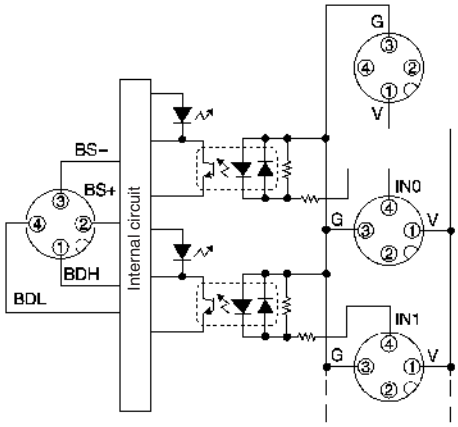
Installation

Internal Circuit Diagrams

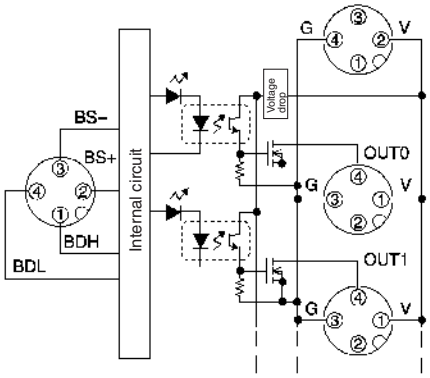
SRT2-ID0□CL (NPN)



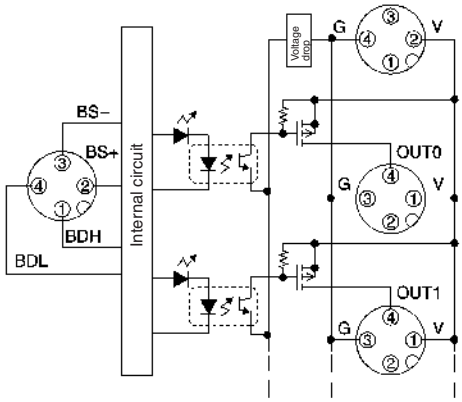
SRT2-ID0□CL-1 (PNP)



SRT2-OD0□CL (NPN)

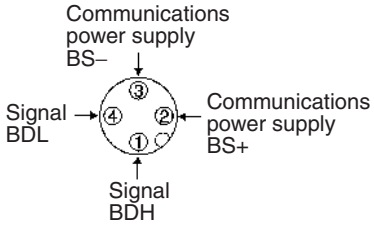


SRT2-OD0□CL-1 (PNP)

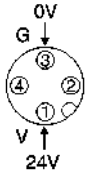


Connections Diagrams for Connectors

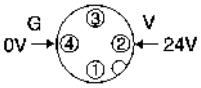
Communications Connector



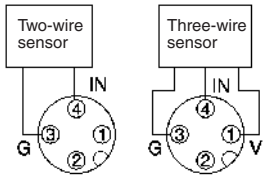
ID0□(-1) Power Supply Connector



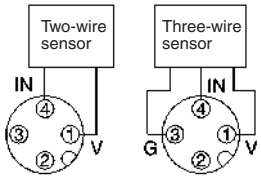
OD0□(-1) Power Supply Connector



ID0□ Input Connector (NPN)

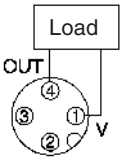


ID0□-1 Input Connector (PNP)



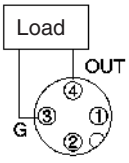
OD0□ Output Connector (NPN)

Solenoid and Voltage



OD0□ Output Connector (PNP)

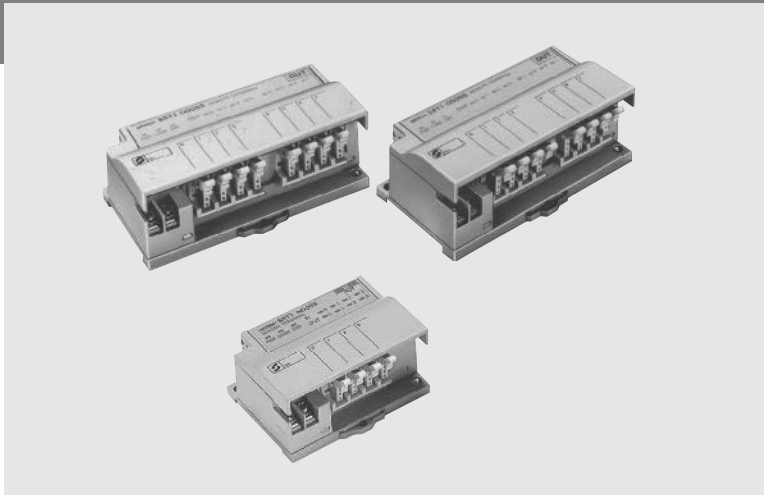
Solenoid and Voltage



SRT2-□D08S

Sensor Terminals

- Sensor connector models
- For sensors with easy-to-wire connectors
- Connects to 2-wire sensors.
- Very compact
- DIN rail mounting and screw mounting are both supported.



Ordering Information

Classification	Internal I/O circuit common	I/O points	Model
For input	NPN (– common)	8 input points	SRT2-ID08S
For I/O	NPN (– common)	4 input/4 output points	SRT2-ND08S
For output	NPN (– common)	8 output points	SRT2-OD08S

Specifications

Ratings

Input

Item	SRT2-ID08S/-ND08S
Input current	10 mA max./point
ON delay time	1 ms max.
OFF delay time	1.5 ms max.
ON voltage	12 V DC min. between each input terminal and V_{CC}, the external sensor power supply
OFF voltage	4 V DC max. between each input terminal and V_{CC}, the external sensor power supply
OFF current	1 mA max.
Insulation method	Photocoupler
Input indicator	LED (yellow)

Output

Item	SRT2-ND08S	SRT2-OD08S
Rated output current	20 mA/point	300 mA/point
Residual voltage	1 V max.	0.6 V max.
ON delay time	1 ms max.	---
OFF delay time	1.5 ms max.	---
Leakage current	0.1 mA max.	
Insulation method	Photocoupler	
Output indicator	LED (yellow)	

Characteristics

Communications power supply voltage (see note 1)	14 to 26.4 V DC
Current consumption (see note 2)	50 mA max. at 24 V DC
Connection method	Multi-drop method and T-branch method
Dielectric strength	500 V AC for 1 min (1-mA sensing current between insulated circuits)
Noise immunity	Conforms to IEC61000-4-4 2kV (power lines)
Vibration resistance	10 to 55 Hz, 1.5-mm double amplitude
Shock resistance	Malfunction:200 m/s^2 Destruction:300 m/s^2
Mounting method	M4 screw mounting or 35-mm DIN rail mounting
Mounting strength	No damage when 50 N pull load was applied for 10 s in all directions (except the DIN rail directions and a pulling force of 10 N)
Terminal strength	No damage when 50 N pull load was applied for 10 s in all directions Tighten each screw to a torque of 0.6 to 1.18 N • m
Ambient temperature	Operating:0°C to 55°C (with no icing or condensation) Storage:–20°C to 65°C (with no icing or condensation)
Ambient humidity	Operating:35% to 85%
Weight	SRT2-ID08S/OD08S: 100 g max., SRT2-ND08S: 80 g max.

Note: 1. The communications power supply voltage must be 20.4 to 26.4 V DC if the Unit is connected to 2-wire proximity sensors.

2. The above current consumption is a value with all the points turned OFF excluding the current consumption of the sensor connected to the Sensor Terminal.

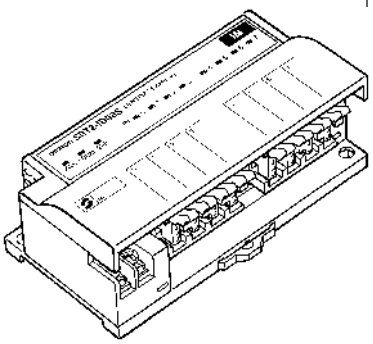
External Sensor Power Supply

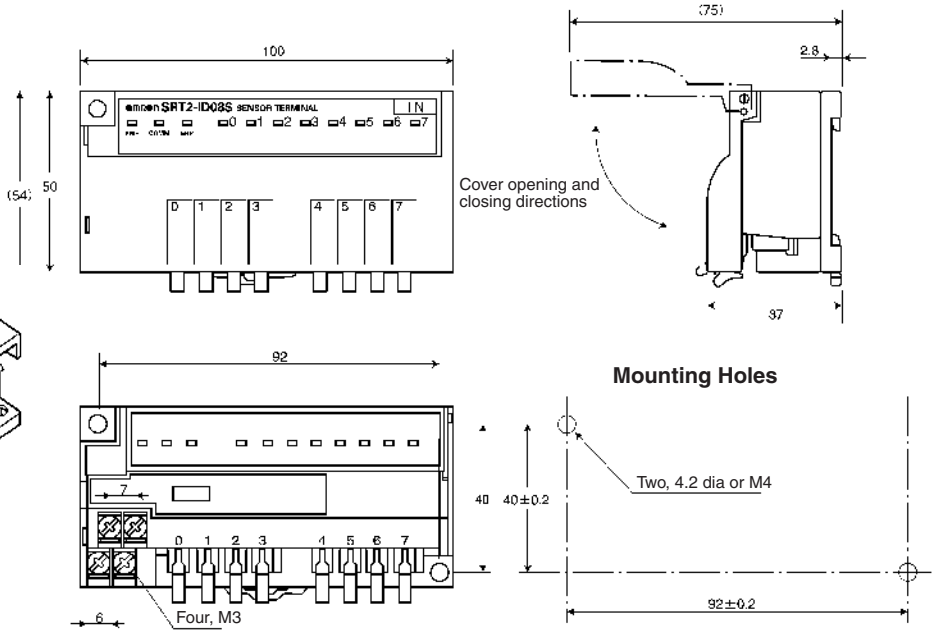
Power supply voltage	13.5 to 26.4 V DC
Current consumption	500 mA max. in total

Dimensions

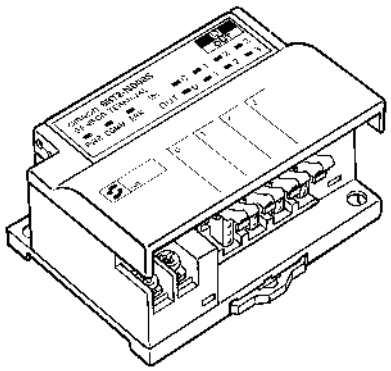
Note: All units are in millimeters unless otherwise indicated.

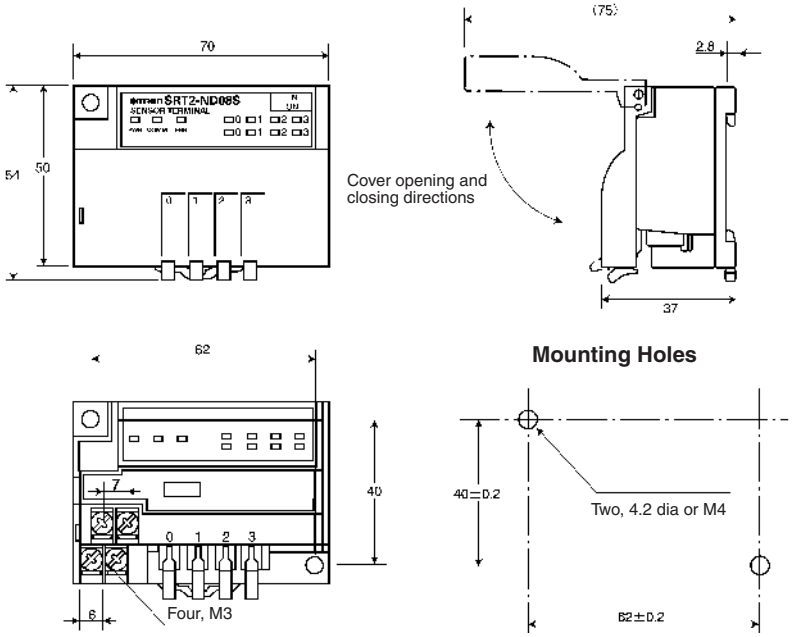
SRT2-ID08S



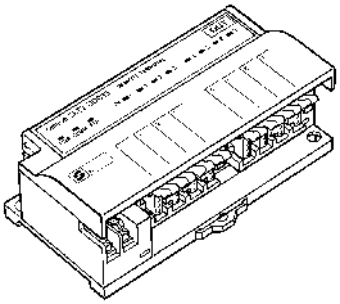


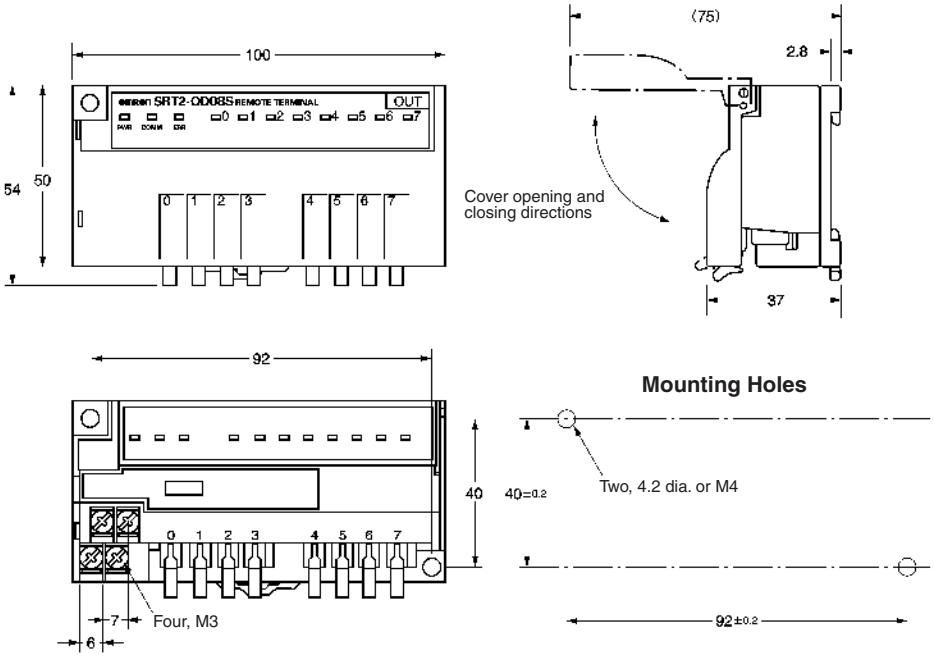
SRT2-ND08S





SRT2-OD08S





Cable Connector for SRT2-□D08S

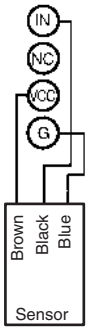
Applicable conductor size (mm^2)	Model
0.3 to 0.5	XS8A-0441
0.14 to 0.2	XS8A-0442
0.3 to 0.5	XS8B-0443

Installation

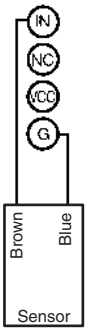
External Connections

SRT2-ID08S

Three-wire Sensor

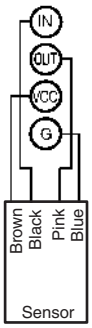


Two-wire Sensor

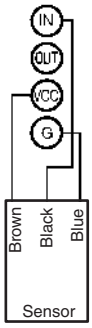


SRT2-ND08S

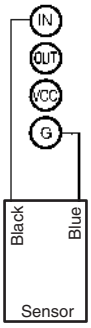
Sensor with Teaching Function
Sensor with External Diagnostic function
Sensor with Bank-switching Function



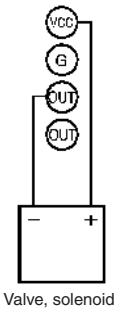
Three-wire Sensor



Two-wire Sensor



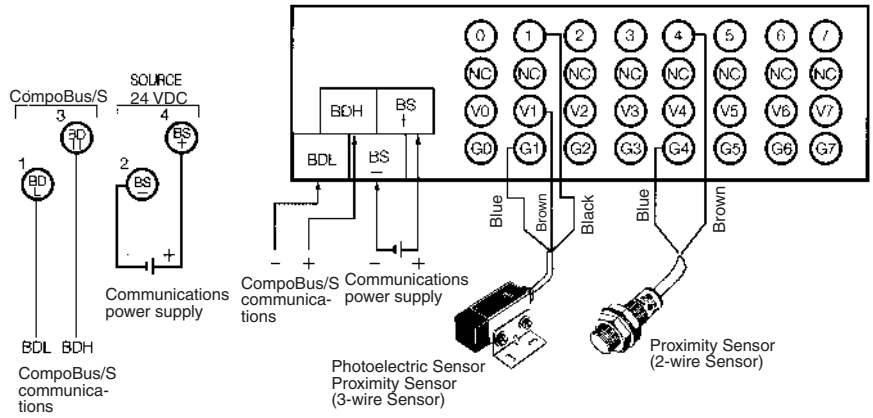
SRT2-OD08S



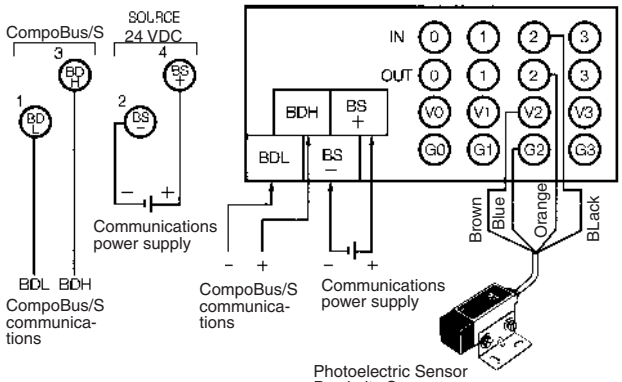
Valve, solenoid

Terminal Arrangement and I/O Device Connection Example

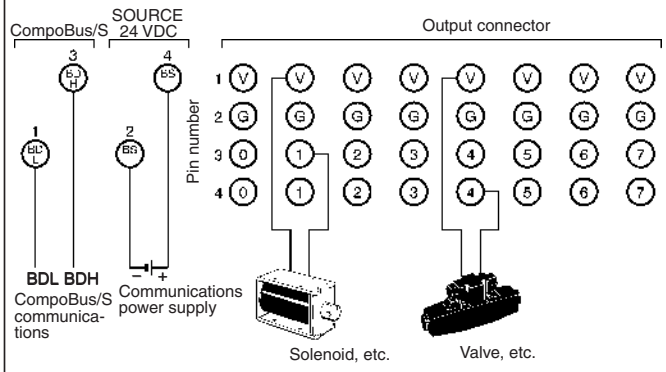
Input
SRT2-ID08S



I/O
SRT2-ND08S



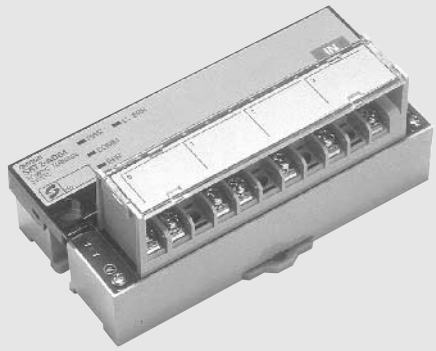
Output
SRT2-OD08S



SRT2-AD04

Analog Input Terminal

- Compact Analog Input Model
- Allows flexible input point settings up to a maximum of four points.
- Resolution: 1/6,000
- Conversion time is 1 ms only
- Wide input ranges available.
- 105 x 48 x 50 (W x H x D)



Ordering Information

Classification	I/O points	Model
Analog Input Terminal	1 to 4 (selectable with DIP switch)	SRT2-AD04

Note: For details about connecting the SRT2-AD04 to the master unit. Refer to page 345.

Specifications

Ratings

Input

Item		Voltage input	Current input
Max. signal input		±15 V	±30 mA
Input impedance		1 MΩ max.	Approx. 250 Ω
Resolution		1/6,000 (FS)	
Total accuracy	**25°C**	±0.3% FS	±0.4% FS
	–10 to 55°C	±0.6% FS	±0.8% FS
Conversion time		4 ms/4 points, 3 ms/3 points, 2 ms/2 points, and 1 ms/1 point	
Dielectric strength		500 V AC for 1 min between communications power supply, analog input, and communications terminals (see note)	

Note: There is no insulation between analog inputs.

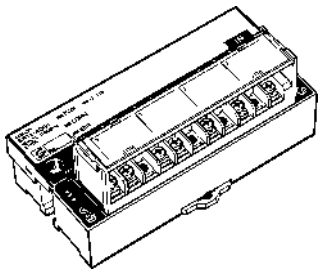
Characteristics

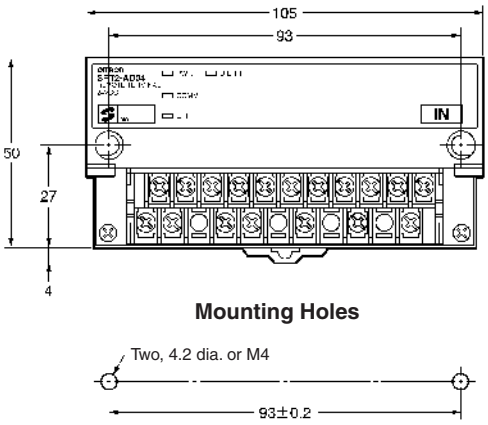
Communications power supply voltage	14 to 26.4 V DC (possible to provide through Special Flat Cable)
Current consumption	100 mA max.
Connection method	Multi-drop method and T-branch method
Dielectric strength	500 V AC (between insulated circuits)
Noise immunity	Conforms to IEC61000-4-4, 2 kV (power lines)
Vibration resistance	10 to 150 Hz, 1.0-mm double amplitude or 70 m/s^2
Shock resistance	200 m/s^2
Mounting strength	No damage with 100 N pull load applied in all directions.
Terminal strength	No damage with 100 N pull load applied
Screw tightening torque	0.3 to 0.5 Nm
Ambient temperature	Operating:–10°C to 55°C Storage:–25°C to 65°C
Ambient humidity	Operating:25% to 85% (with no condensation)
Weight	Approx. 120 g

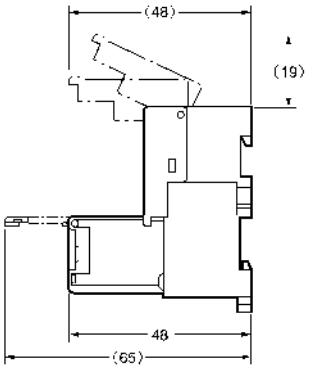
Dimensions

Note: All units are in millimeters unless otherwise indicated.

SRT2-AD04





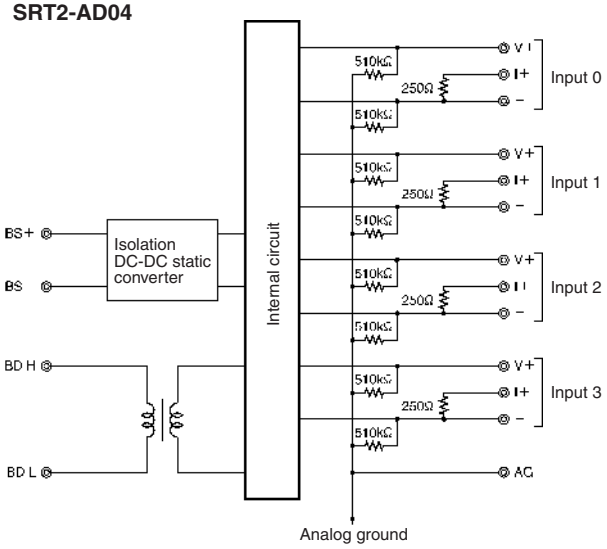


Mounting Holes

Installation

Internal Circuit Configuration

SRT2-AD04



Terminal Arrangement

SRT2-AD04

BD H	BS +	AG	V0 +	I0 +	V1 +	I1 +	V2 +	I2 +	V3 +	I3 +
BD L	BS −	NC	AG	0−	NC	1−	NC	2−	NC	3−

Note: When the input is current input, short-circuit the “V+” terminals and the “I+” terminals. When short-circuiting, use the short-circuiting tool provided as an accessory.

SRT2-DA02

Analog Output Terminal

- Compact Analog Output Model
- Two output points or 1 output point is selectable.
- Resolution: 1/6,000
- 105 x 48 x 50 (W x H x D)

Ordering Information

Classification	I/O points	Model
Analog Output Terminal	1 or 2 (selectable with DIP switch)	SRT2-DA02

Note: For details about connecting the SRT2-DA02 to the master unit, refer to page 345.

Specifications

Ratings

Output

Item		Voltage output	Current output
External output permissible load resistance		5 kΩ min.	600 Ω max.
Output impedance		0.5 Ω max.	---
Resolution		1/6,000 (FS)	
Total accuracy	**25°C**	±0.4% FS	
	–10 to 55°C	±0.8% FS	
Conversion time		2 ms/2 points and 2 ms/1 point	
Dielectric strength		500 V AC for 1 min between communications power supply, analog output, and communications terminals (see note)	

Note: There is no insulation between analog outputs.

Characteristics

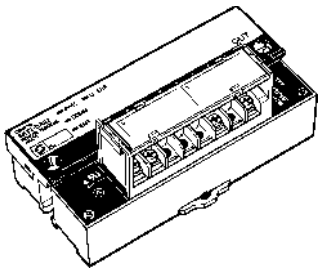
Communications power supply voltage	14 to 26.4 V DC (power supply possible from Special Flat Cable)
Current consumption (see note)	170 mA max.
Connection method	Multi-drop method and T-branch method
Dielectric strength	500 V AC (between insulated circuits)
Noise immunity	Conforms to IEC61000-4-4, 2 kV (power lines)
Vibration resistance	10 to 150 Hz, 1.0-mm double amplitude or 70 m/s^2
Shock resistance	200 m/s^2
Mounting strength	No damage when 100 N pull load was applied in all directions
Terminal strength	No damage when 100 N pull load was applied
Screw tightening torque	0.3 to 0.5 N • m
Ambient temperature	Operating:–10°C to 55°C Storage:–25°C to 65°C
Ambient humidity	Operating:25% to 85% (with no condensation)
Weight	Approx. 100 g

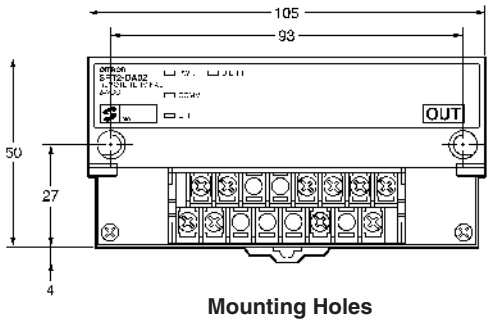
Note: The above current consumption is the value with all points turned ON excluding the current consumption of the external load.

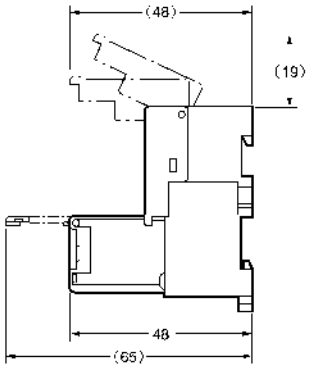
Dimensions

Note: All units are in millimeters unless otherwise indicated.

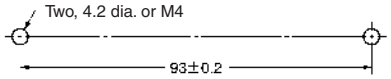
SRT2-DA02







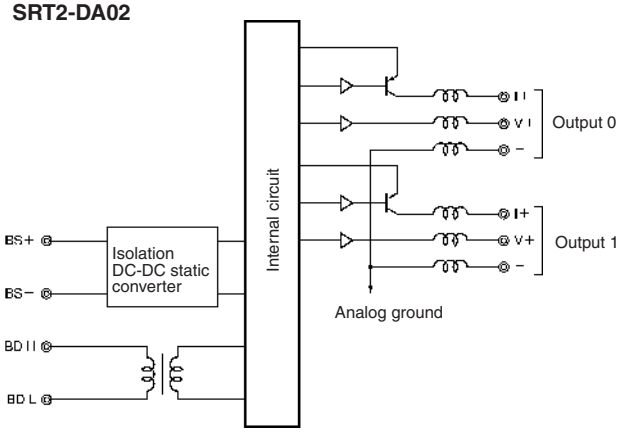
Mounting Holes



Installation

Internal Circuit Configuration

SRT2-DA02



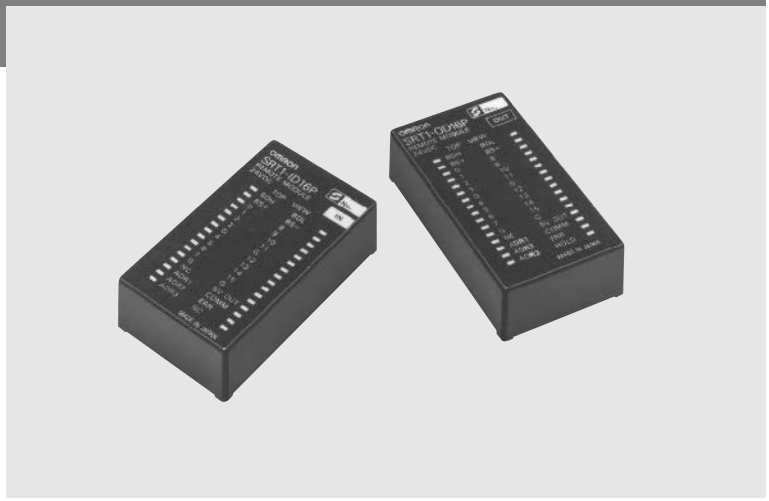
Terminal Arrangement

SRT2-DA02

H	BS +	NC	NC	V0 +	I0 +	V1 +	I1 +
BD L	BS −	NC	NC	NC	0−	NC	1−

SRT2-ID16P/-OD16P

Digital I/O Terminals



Module Type that Allows PCB Mounting

- Compact size at 60 x 16 x 35 (W x H x D)
- Lineup now includes the 16-point input model and 16-point output model.

Ordering Information

I/O classification	Internal I/O circuit common	I/O points	Rated voltage	I/O rated voltage	Model
Input	NPN (+ common)	16	24 V DC	24 V DC	SRT2-ID16P
Output	NPN (– common)				SRT2-OD16P

Specifications

Ratings

Input (SRT2-ID16P)

Input current	2 mA max./point
ON delay time	1.5 ms max.
OFF delay time	1.5 ms max.
ON voltage	15 V DC min. between each input terminal and BS+ terminal
OFF voltage	5 V DC max. between each input terminal and BS + terminal

Output (SRT2-OD16P)

Rated output current	0.2 A/point, 0.6 A/common
Residual voltage	0.6 V max. between each output terminal and G terminal at 0.2 A
Leakage current	0.1 mA max. between each output terminal and G terminal at 24 V DC

Characteristics

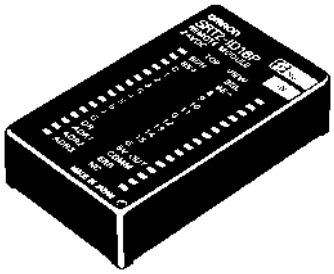
Communications power supply voltage	20.4 to 26.4 V DC
I/O power supply voltage	24 V DC $^{+10\%}/_{-15\%}$
Current consumption (see note)	60 mA max.
Connection method	Multi-drop method and T-branch method
Connecting Units	8 Input Terminals and 8 Output Terminals per Master
Dielectric strength	500 V AC for 1 min (1-mA sensing current between insulated circuits)
5-V output current	20 mA max. (5 V ± 0.5 V)
LED drive current (COMM, ERR)	10 mA max. (5 V DC)
SW carry current (ADR0 to 3, HOLD)	1 mA max.
Ambient temperature	Operating:0°C to 55°C (with no icing or condensation) Storage:–20°C to 65°C (with no icing or condensation)
Ambient humidity	Operating:35% to 85%
Weight	35 g max.

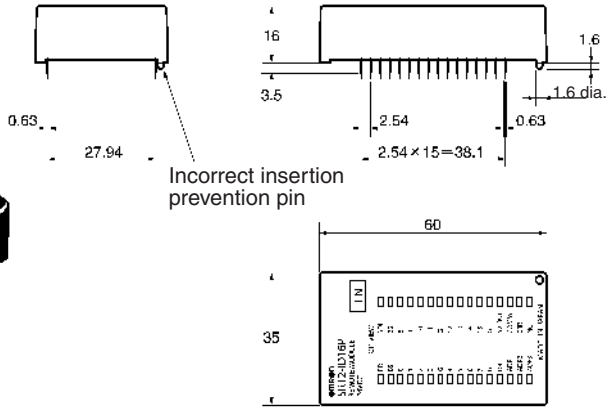
Note: The above current consumption is the value with all points turned ON excluding the current consumption of the external sensor connected to the input model and the current consumption of the load connected to the output model.

Dimensions

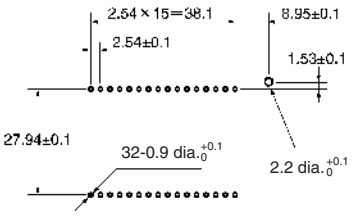
Note: All units are in millimeters unless otherwise indicated.

SRT2-ID16P
SRT2-OD16P





PCB dimensions (top view)

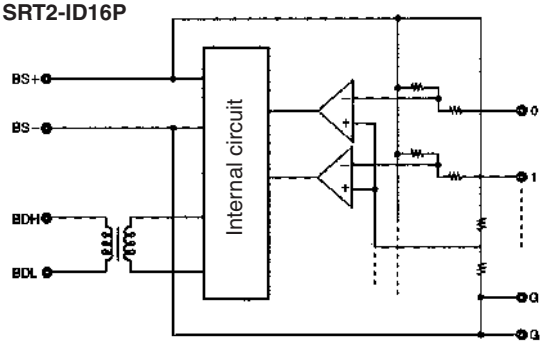


No cumulative tolerance allowed

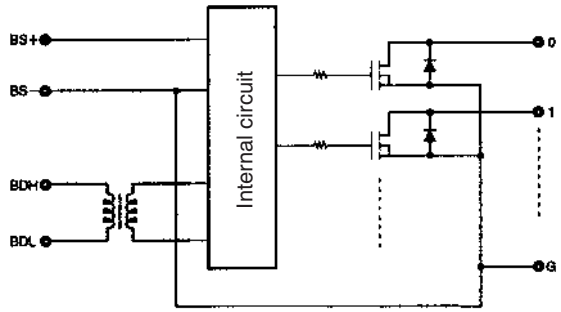
Installation

Internal Circuit Configuration

SRT2-ID16P

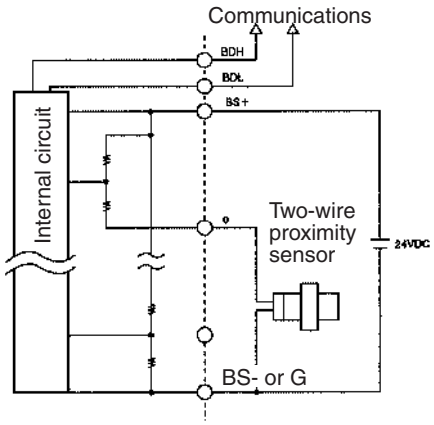


SRT2-OD16P

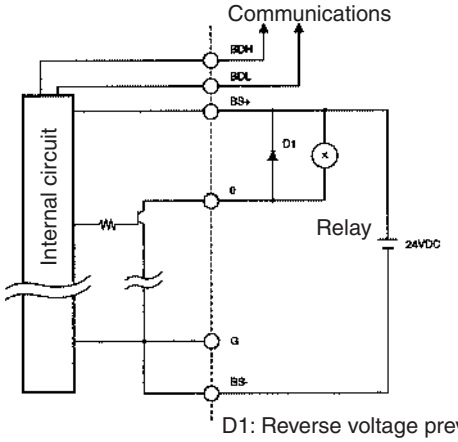


External Connections

Input Module (SRT2-ID16P)

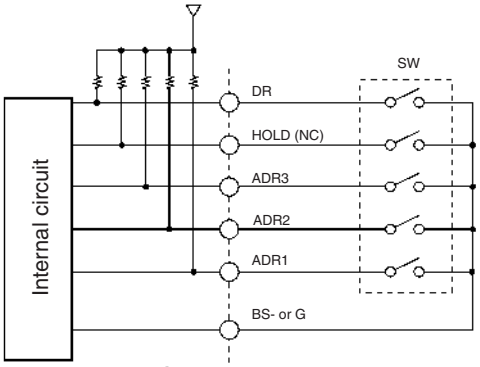


Output Module (SRT2-OD16P)



D1: Reverse voltage prevention diode

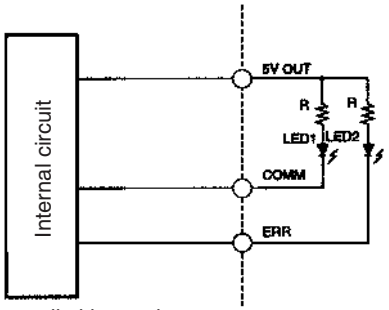
Node Number Settings and Output HOLD/CLEAR Mode



Note: NC in parentheses is for the Input Modules.

Note: Refer to the *CompoBus/S Operation Manual (W266-E1)* for details on the switch.

Indicators



R: LED current limiting resistor
LED1: LED for COMM
LED2: LED for ERR
The maximum current for LED1 and 2 is 10 mA.

The 5-V Output Terminals have positive power supplies (maximum output current of 20 mA) for the ERR and COMM LEDs. Recommended LED colors are red for ERR and yellow for COMM.