

DRT2-ID32B/ID32B-1
 DRT2-ID32BV/ID32BV-1
 DRT2-OD32B/OD32B-1
 DRT2-OD32BV/OD32BV-1
 DRT2-MD32B/MD32B-1
 DRT2-MD32BV/MD32BV-1
 Remote I/O Terminals

OMRON

INSTRUCTION SHEET

Thank you for purchasing this OMRON product. Please read this instruction sheet and thoroughly familiarize yourself with the functions and characteristics of the product before use. Please retain this sheet for future reference.

To ensure safe operation, please also read the following manuals:
 DeviceNet Operation Manual (W267)
 DRT2-series DeviceNet Slaves Operation Manual (W404)

OMRON Corporation

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1632665-2B

General Precautions

You must allow sufficient leeway in ratings and performance and provide proper fail-safe and other safety measures when using the Unit in any of the following applications. Be sure also to consult with your OMRON representative before actually attempting any of these applications.

- Applications under conditions or environments not specified in the relevant manuals.
- Applications for nuclear reactor control, train facilities, aviation facilities, motorized vehicles, furnaces, medical equipment, amusement equipment, and safety equipment.
- Applications strongly related to human life or property, particularly those requiring safety.

Safety Precautions

Definition of Precautionary Information

WARNING Indicates a potentially hazardous situation which, if not avoided, could result in death or serious injury.

Caution Indicates a potentially hazardous situation which, if not avoided, may result in minor or moderate injury, or property damage.

Warnings

WARNING Do not attempt to take the Unit apart and do not touch any internal parts while the power is being supplied. Doing either of these may result in electric shock.

Caution Make sure that communications connector screws are tightened to a torque of 0.5 to 0.6 N·m. Incorrect tightening torque may result in malfunction.

Application Precautions

- Do not attempt to disassemble, repair, or modify the Units in any way. Doing so may result in electric shock.
- Always turn OFF the power supply before attempting either of the following. Not turning OFF the power supply may result in malfunction or electric shock.
 - Connecting or wiring the cables
 - Connecting or disconnecting the connectors
- Do not drop the product or subject it to excessive shocks or vibrations. Doing so may result in malfunction.
- Tighten all product mounting screws to the specified torque.
- Keep within the specified ranges when performing wiring for communications. Incorrect wiring may result in burning.
- Separate communications cables from power lines or high-voltage lines.
- Do not pull on the cables or bend the cables beyond their natural limit. Doing either of these may break the cables.
- Fail-safe measures must be taken by the customer to ensure safety in the event of incorrect, missing, or abnormal signals caused by broken signal lines, momentary power interruptions, or other causes. Failing to take appropriate measures may result in injury.
- Double-check all the wiring before turning ON the power supply. Incorrect wiring may result in burning.
- Pay attention to the terminal polarity and voltage ranges for I/O connections when wiring the communications lines and power supply lines. Not doing so may result in malfunction.
- Always use the power supply voltage specified in this document. An incorrect voltage may result in malfunction or burning.
- Take appropriate measures to ensure that the specified power with the rated voltage and frequency is supplied in places where the power supply is unstable. An incorrect power supply may result in malfunction.
- Before touching the board, be sure to first touch a grounded metallic object in order to discharge any static built-up. Not doing so may result in malfunction or damage.
- When wiring the MIL Board Terminal, take countermeasures to prevent wiring cuttings from coming into contact with the product, such as covering the whole product with a dustproof cover. If wiring cuttings adhere to the PCB or circuit elements, they may cause short-circuiting.
- When transporting or storing the MIL Board Terminal, cover the circuit board in antistatic material to protect it from static electricity and maintain the proper storage temperature.
- When transporting the MIL Board Terminal, always pack it in the box specially designed for it, and do not subject it to excessive vibration or shock during transportation. Also, do not drop the MIL Board Terminal.
- Do not touch the MIL Board Terminal or the components mounted to it with your bare hands. There are sharp leads and other parts on the board that may cause injury if handled improperly.

Operating Environment Precautions

- Install the Unit properly as specified in the relevant manuals. Improper installation of the Unit may result in malfunction.
- Do not install the Unit in the following places:
 - Locations subject to direct sunlight

- Locations subject to temperatures or humidity outside the range specified in the specifications
- Locations subject to condensation as the result of severe changes in temperature
- Locations subject to corrosive or flammable gases
- Locations subject to dust (especially iron dust) or salts
- Locations subject to exposure to water, oil, or chemicals
- Locations subject to shock or vibration
- Take appropriate and sufficient countermeasures when installing systems in the following locations:
 - Locations subject to static electricity or other forms of noise
 - Locations subject to strong electromagnetic fields
 - Locations subject to possible exposure to radioactivity
 - Locations close to power supplies
- Never use volatile solvents, such as benzene or thinners, or chemical dusters. Otherwise the Unit may malfunction.
- Separate communications power lines from power lines used for driving loads.

Specifications

Ratings

- Input Terminals: DRT2-ID32B/ID32B-1
DRT2-ID32BV/ID32BV-1
- Output Terminals: DRT2-OD32B/OD32B-1
DRT2-OD32BV/OD32BV-1
- I/O Terminals: DRT2-MD32B/MD32B-1
DRT2-MD32BV/MD32BV-1

Item	ID32B/ID32B-1 ID32BV/ID32BV-1	OD32B/OD32B-1 OD32BV/OD32BV-1	MD32B/MD32B-1 MD32BV/MD32BV-1
Communications power supply voltage	11 to 25 VDC		
I/O power supply voltage	20.4 to 26.4 VDC		
Communications power supply current consumption	100 mA max.	110 mA max.	120 mA max.
Ambient operating temperature	-10 to 55°C		
Ambient operating humidity	25% to 85% (with no condensation)		
Storage temperature	-25 to 65°C		
Storage humidity	25% to 85% (with no condensation)		
Installation	In-panel installation (M4 Screw mounting)		
Weight	50 g max.		

Input Specifications

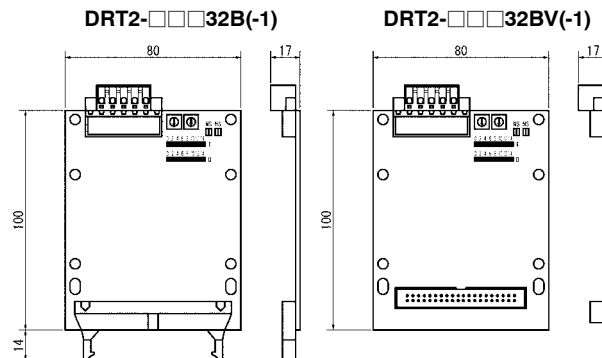
Item	ID32B/ ID32BV	MD32B/ MD32BV	ID32B-1/ ID32BV-1	MD32B-1/ MD32BV-1
ON voltage	17 VDC min. (between each input terminal and V terminal)		17 VDC min. (between each input terminal and G terminal)	
OFF voltage	5 VDC min. (between each input terminal and V terminal)		5 VDC min. (between each input terminal and G terminal)	
OFF current	1.0 mA max.			
Input current	6.0 mA max. at 24 VDC 3.0 mA min. at 17 VDC (between each input terminal and V terminal)		6.0 mA max. at 24 VDC 3.0 mA min. at 17 VDC (between each input terminal and G terminal)	
ON delay time	1.5 ms max.			
OFF delay time	1.5 ms max.			
Number of circuits	32 points/common, 1 common circuit	16 points/common, 1 common circuit	32 points/common, 1 common circuit	16 points/common, 1 common circuit

Output Specifications

Item	OD32B/ OD32BV	MD32B/ MD32BV	OD32B-1/ OD32BV-1	MD32B-1/ MD32BV-1
Output current	0.3 A/point 4A/common (See notes 1 and 3.)	0.3 A/point 2A/common (See notes 2 and 3.)	0.3 A/point 4A/common (See notes 1 and 3.)	0.3 A/point 2A/common (See notes 1 and 3.)
Residual voltage	1.2 V max. (0.3 A DC between each output terminal and G terminal)		1.2 V max. (0.3 A DC between each output terminal and V terminal)	
Leakage current	0.1 mA max. (24 VDC between each output terminal and G terminal)		0.1 mA max. (24 VDC between each output terminal and V terminal)	
ON delay time	0.5 ms max.			
OFF delay time	1.5 ms max.			
Number of circuits	32 points/common, 1 common circuit	16 points/common, 1 common circuit	32 points/common, 1 common circuit	16 points/common, 1 common circuit

- Note**
1. The total of the external load currents must not exceed 4A.
 2. The total of the external load currents must not exceed 2A.
 3. The V or G terminal current must not exceed 1 A per terminal.

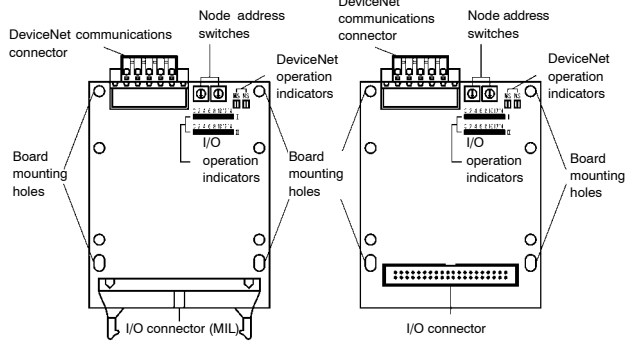
External Dimension



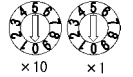
Nomenclature

DRT2-□□□32B(-1)

DRT2-□□□32BV(-1)



Rotary Switch Setting



Note

1. Factory setting: 00
2. If the address is set to 64 or higher, the node address set from the Configurator will be used.

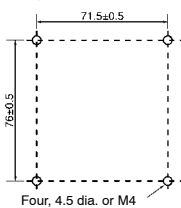
Indicators

The meanings of the MS and NS indicators are given in the following table.

Indicator	Color	Status	Meaning
MS	Green	Lit	Normal operation
MS	Green	Flashing	Not set
MS	Red	Lit	Fatal error
		Flashing	Non-fatal error
		Not lit	No power supply
NS	Green	Lit	Online/communications connection established
		Flashing	Online/communications connection not established
	Red	Lit	Fatal communications error
		Flashing	Non-fatal communications error
		Not lit	Offline/power supply OFF
I/O	Yellow	Lit	Input signal ON
		Not lit	Input signal OFF

Mounting and Mounting Dimensions

Mounting Dimensions



Mounting

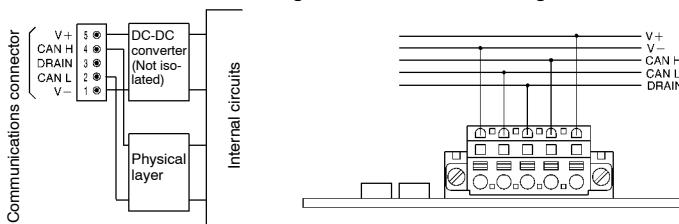
Use screws to mount the MIL Board Terminal in the Control Panel. MIL Board Terminals cannot be mounted on DIN Track.

Drill the mounting holes in the control panel according to the mounting dimensions and secure the Terminal with M4 screws using spacers. The appropriate tightening torque is 0.6 to 0.8 N·m.

The MIL Board Terminal can be mounted in any direction.

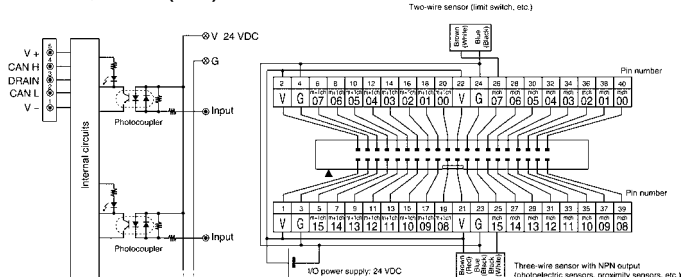
Wiring

Communications Circuit Configuration and External Wiring

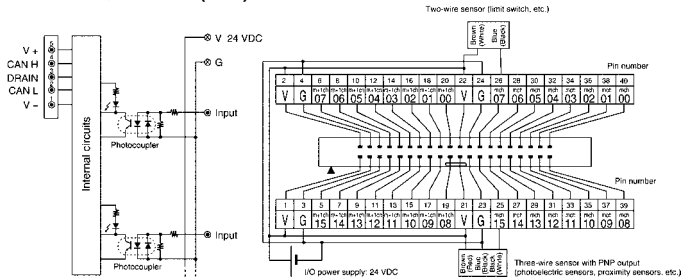


I/O Configuration and External Wiring

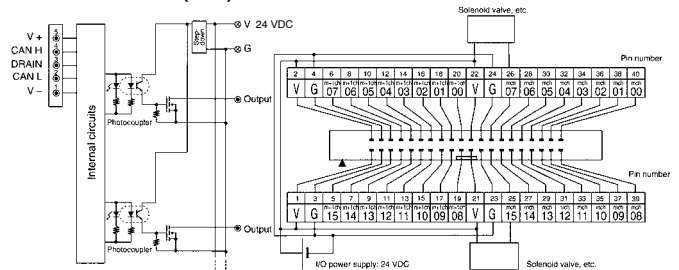
DRT2-ID32B/ID32BV (NPN)



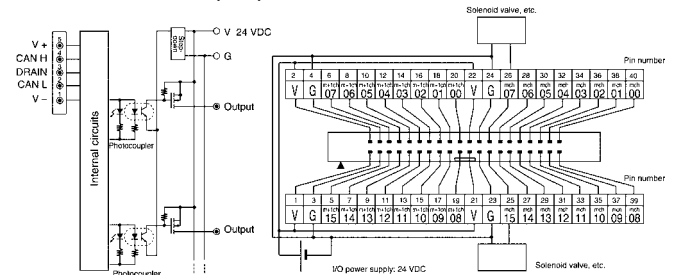
DRT2-ID32B-1/ID32BV-1 (PNP)



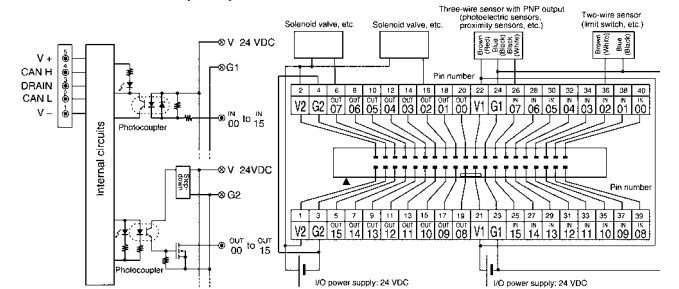
DRT2-OD32B/OD32BV (NPN)



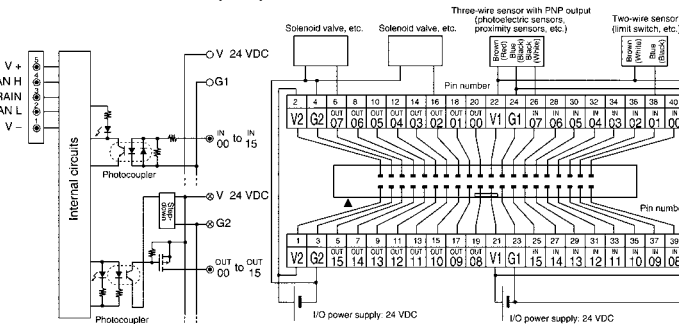
DRT2-OD32B-1/OD32BV-1 (PNP)



DRT2-MD32B/MD32BV (NPN)



DRT2-MD32B-1/MD32BV-1 (PNP)



This equipment is suitable for use in Class I, Div. 2, Group A, B, C, D or Non-Hazardous Location Only.
WARNING – Explosion Hazard – Substitution of Components May Impair Suitability For Class I, Div. 2.
WARNING – Explosion Hazard – Do not Disconnect Equipment Unless Power Has Been Switched Off Or The Area Is Known To Be Non-Hazardous.

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Note: Specifications subject to change without notice.
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