DeviceNet Communications Unit

GRT1-DRT

DeviceNet-compliant Interface Unit with up to 1,024 I/O Points at One Node

- Connect up to 64 SmartSlice I/O Units.
- Consolidate a large capacity of I/O points into one Slave (up to 1,024 I/O points).
- Save space by configuring different I/O types using one Slave Unit.
- Easily get the system started simply by setting the node addresses.
- Replace SmartSlice I/O Units online while maintaining communications. This helps minimize equipment downtime.
- Smart functions for monitoring equipment operating status. This helps improve preventive maintenance and the utilization rate.
- Registering SmartSlice I/O for planned future expansion decreases design work when changes are made. (Supported for unit version 2.0 or higher.)

Ordering Information

Name	Specifications	Model
DeviceNet Communications Unit	Up to 64 Slice I/O Units can be connected. (1,024 I/O points max.)	**GRT1-DRT**

General Specifications

Item / Model	GRT1-DRT
Network power supply voltage	11 to 25 V DC (Supplied from the communications connector)
Unit power supply voltage	20.4 to 26.4 VDC (24 VDC -15%/+10%)
I/O power supply voltage	20.4 to 26.4 VDC ✻ (24 V +10%/-15%)
Noise immunity	Conforms to IEC 61000-4-4, 2 kV (power line)
Vibration resistance	10 to 60 Hz, 0.7-mm double amplitude 60 to 150 Hz: 50 m/s^2
Shock resistance	150 m/s^2
Dielectric strength	500 V AC between isolated circuits
Insulation resistance	20 MΩ min. between isolated circuits
Ambient operating temperature	-10°C to 55°C (with no icing or condensation)
Ambient operating humidity	25% to 85%
Ambient operating atmosphere	No corrosive gases
Ambient storage temperature	-25°C to 65°C (with no icing or condensation)
Mounting method	DIN 35 mm-track mounting

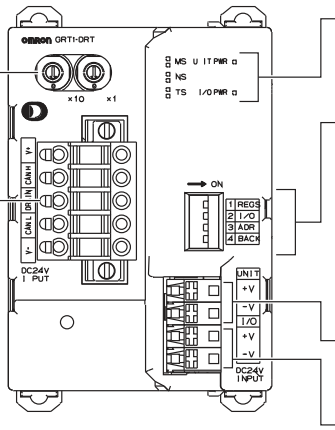
✻ For power supply input to the Slice I/O Units.

DeviceNet Communications Unit Specifications

Item / Model	GRT1-DRT
I/O points	1,024 max. (128 bytes), including inputs and outputs
Connectable Slice I/O Units	64 max.
Communications with Slice I/O Units	64 Units max. in a horizontal connection configuration (for an extension of approx. 2 m max.) Power consumption is limited to 80 W per block, and the extension must be done using Turnback Cables (two 1-m cables max., for a distance of 2 m max.)
Slice I/O Unit data capacity	(1) 0, 2, or 4 bits (2) 0 to 16 words (in word increments)
Status flags	One word is allocated (Communications Unit Status Flags)
Parameter back-up and restore functions	2 KB of data can be backed up and restored per Unit
Message communications function	Supported
Automatic baud rate detection	Supported
Connector	1 DeviceNet open connector with screws Connectable with multi-drop connector
Terminals	2 terminals for I/O power supply, 2 terminals for Unit power supply
Power supply per 1 block	80 W max. (Unit power supply)
I/O power supply consumption current	4 A max.
Weight	137 g

Nomenclature and Functions

GRT1-DRT



Rotary Switches
Used to set the node address for the DeviceNet Slave. (Set in decimal.)
Node addresses from 0 to 63 can be set.

DeviceNet Communications Connector
Connects to the communications cable for a DeviceNet network.

Indicators
Indicate the condition of the DeviceNet Communications Unit and DeviceNet network, and the communications condition with the Slice I/O Units.

DIP Switch
Used to set the I/O allocation method, and to read and write configuration data from and to Slice I/O Units connected to the Communications Unit.
SW1 (REGS): Create/Enable registered table
SW2 (I/O): Enable/Disable I/O allocation mode ✻
SW3 (ADR): Automatic restore
SW4 (BACK): Backup trigger
✻ Unit version 2.0 or later.

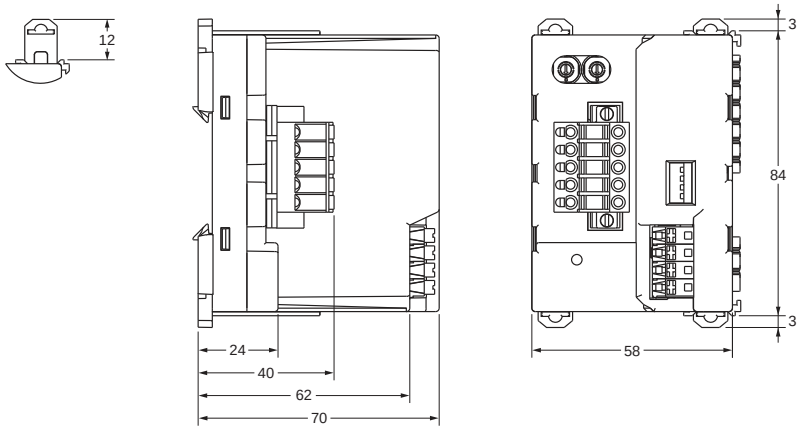
Unit Power Supply Terminals
Supply power to the internal circuits of the Unit, and to the internal circuits of connected Slice I/O Units.

I/O Power Supply Terminals
Supply power to external inputs and outputs connected to the Slice I/O Units.

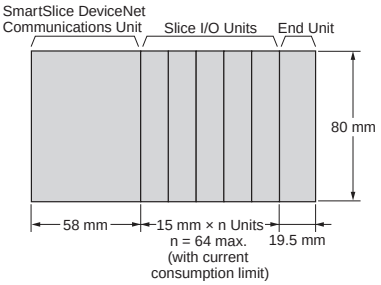
Dimensions

(Unit: mm)

GRT1-DRT



Overall System



Ordering Information

Name		Appearance	Specifications	Model
DeviceNet Communications Unit			Up to 64 SmartSlice I/O Units can be connected (1,024 I/O points).	**GRT1-DRT**
SmartSlice I/O Units	Digital I/O Units		4 inputs, NPN	**GRT1-ID4**
			4 inputs, PNP	**GRT1-ID4-1**
			4 outputs, NPN	**GRT1-OD4**
			4 outputs, PNP	**GRT1-OD4-1**
			8 inputs, NPN	**GRT1-ID8**
			8 inputs, PNP	**GRT1-ID8-1**
			8 outputs, NPN	**GRT1-OD8**
			8 outputs, PNP	**GRT1-OD8-1**
			2 relay outputs	**GRT1-ROS2**
			4 AC inputs	**GRT1-IA4-1**
				GRT1-IA4-2
	Analog I/O Units		2 inputs (current or voltage)	**GRT1-AD2**
			2 outputs (current)	**GRT1-DA2C**
			2 outputs (voltage)	**GRT1-DA2V**
	Temperature Input Unit (resistance thermometer)		2 temperature inputs (Pt100 resistance thermometer)	**GRT1-TS2P**
			2 temperature inputs (Pt1000 resistance thermometer)	**GRT1-TS2PK**
			2 thermocouple inputs	**GRT1-TS2T**
	Counter Units		1 counter input, 1 external output, NPN	**GRT1-CT1**
			1 counter input, 1 external output, PNP	**GRT1-CT1-1**
System Units	Turnback Units		For right-side turnback (Used to divide a SmartSlice I/O Terminal into blocks)	**GRT1-TBR**
			For left-side turnback (Used to divide a SmartSlice I/O Terminal into blocks)	**GRT1-TBL**
	Turnback Cable	--	Length: 1 m	**GCN2-100**
	I/O Power Feed Unit		Used if the total current consumption of the I/O Power Supply exceeds 4 A or to use a separate I/O power supply.	**GRT1-PD2**
				GRT1-PD2G
				GRT1-PD8
				GRT1-PD8-1
			Used to add V and G terminals for the I/O power supply.	**GRT1-PC8**
				GRT1-PC8-1
	End Unit ✻1		Required at the end of SmartSlice I/O Terminals.	**GRT1-END**
Option	Terminal blocks	--	Terminal blocks (5 blocks)	**GRT1-BT1-5**

✻1. The End Unit is sold separately. (End Units are not included with Communications Units.)
✻2. Use the GCN2-100 as a set with the GRT1-TBR and GRT1-TBL.

Read and Understand This Catalog

Please read and understand this catalog before purchasing the products. Please consult your OMRON representative if you have any questions or comments.

Warranty and Limitations of Liability

WARRANTY

OMRON's exclusive warranty is that the products are free from defects in materials and workmanship for a period of one year (or other period if specified) from date of sale by OMRON.

OMRON MAKES NO WARRANTY OR REPRESENTATION, EXPRESS OR IMPLIED, REGARDING NON-INFRINGEMENT, MERCHANTABILITY, OR FITNESS FOR PARTICULAR PURPOSE OF THE PRODUCTS. ANY BUYER OR USER ACKNOWLEDGES THAT THE BUYER OR USER ALONE HAS DETERMINED THAT THE PRODUCTS WILL SUITABLY MEET THE REQUIREMENTS OF THEIR INTENDED USE. OMRON DISCLAIMS ALL OTHER WARRANTIES, EXPRESS OR IMPLIED.

LIMITATIONS OF LIABILITY

OMRON SHALL NOT BE RESPONSIBLE FOR SPECIAL, INDIRECT, OR CONSEQUENTIAL DAMAGES, LOSS OF PROFITS OR COMMERCIAL LOSS IN ANY WAY CONNECTED WITH THE PRODUCTS, WHETHER SUCH CLAIM IS BASED ON CONTRACT, WARRANTY, NEGLIGENCE, OR STRICT LIABILITY.

In no event shall the responsibility of OMRON for any act exceed the individual price of the product on which liability is asserted.

IN NO EVENT SHALL OMRON BE RESPONSIBLE FOR WARRANTY, REPAIR, OR OTHER CLAIMS REGARDING THE PRODUCTS UNLESS OMRON'S ANALYSIS CONFIRMS THAT THE PRODUCTS WERE PROPERLY HANDLED, STORED, INSTALLED, AND MAINTAINED AND NOT SUBJECT TO CONTAMINATION, ABUSE, MISUSE, OR INAPPROPRIATE MODIFICATION OR REPAIR.

Application Considerations

SUITABILITY FOR USE

OMRON shall not be responsible for conformity with any standards, codes, or regulations that apply to the combination of products in the customer's application or use of the products.

At the customer's request, OMRON will provide applicable third party certification documents identifying ratings and limitations of use that apply to the products. This information by itself is not sufficient for a complete determination of the suitability of the products in combination with the end product, machine, system, or other application or use.

The following are some examples of applications for which particular attention must be given. This is not intended to be an exhaustive list of all possible uses of the products, nor is it intended to imply that the uses listed may be suitable for the products:

- Outdoor use, uses involving potential chemical contamination or electrical interference, or conditions or uses not described in this catalog.
- Nuclear energy control systems, combustion systems, railroad systems, aviation systems, medical equipment, amusement machines, vehicles, safety equipment, and installations subject to separate industry or government regulations.
- Systems, machines, and equipment that could present a risk to life or property.

Please know and observe all prohibitions of use applicable to the products.

NEVER USE THE PRODUCTS FOR AN APPLICATION INVOLVING SERIOUS RISK TO LIFE OR PROPERTY WITHOUT ENSURING THAT THE SYSTEM AS A WHOLE HAS BEEN DESIGNED TO ADDRESS THE RISKS, AND THAT THE OMRON PRODUCTS ARE PROPERLY RATED AND INSTALLED FOR THE INTENDED USE WITHIN THE OVERALL EQUIPMENT OR SYSTEM.

PROGRAMMABLE PRODUCTS

OMRON shall not be responsible for the user's programming of a programmable product, or any consequence thereof.

Disclaimers

CHANGE IN SPECIFICATIONS

Product specifications and accessories may be changed at any time based on improvements and other reasons.

It is our practice to change model numbers when published ratings or features are changed, or when significant construction changes are made. However, some specifications of the products may be changed without any notice. When in doubt, special model numbers may be assigned to fix or establish key specifications for your application on your request. Please consult with your OMRON representative at any time to confirm actual specifications of purchased products.

DIMENSIONS AND WEIGHTS

Dimensions and weights are nominal and are not to be used for manufacturing purposes, even when tolerances are shown.

PERFORMANCE DATA

Performance data given in this catalog is provided as a guide for the user in determining suitability and does not constitute a warranty. It may represent the result of OMRON's test conditions, and the users must correlate it to actual application requirements. Actual performance is subject to the OMRON Warranty and Limitations of Liability.

ERRORS AND OMISSIONS

The information in this document has been carefully checked and is believed to be accurate; however, no responsibility is assumed for clerical, typographical, or proofreading errors, or omissions.

2012.6

In the interest of product improvement, specifications are subject to change without notice.

OMRON Corporation
Industrial Automation Company

http://www.ia.omron.com/

(c)Copyright OMRON Corporation 2012 All Right Reserved.