

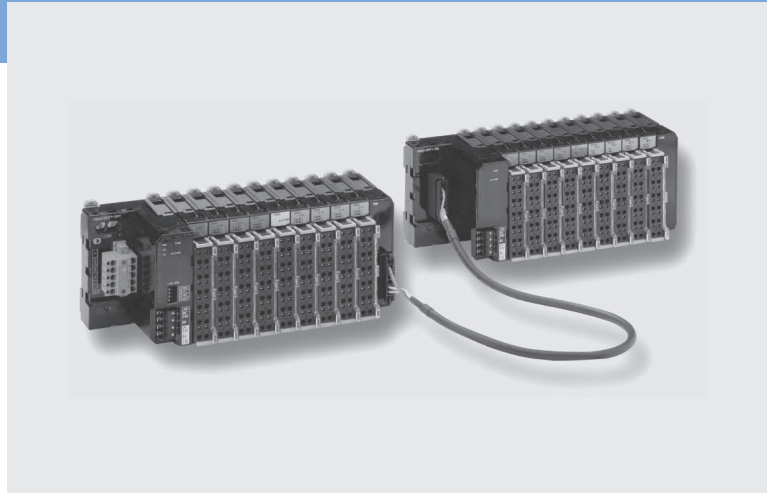
GRT1 Modular I/O

SmartSlice

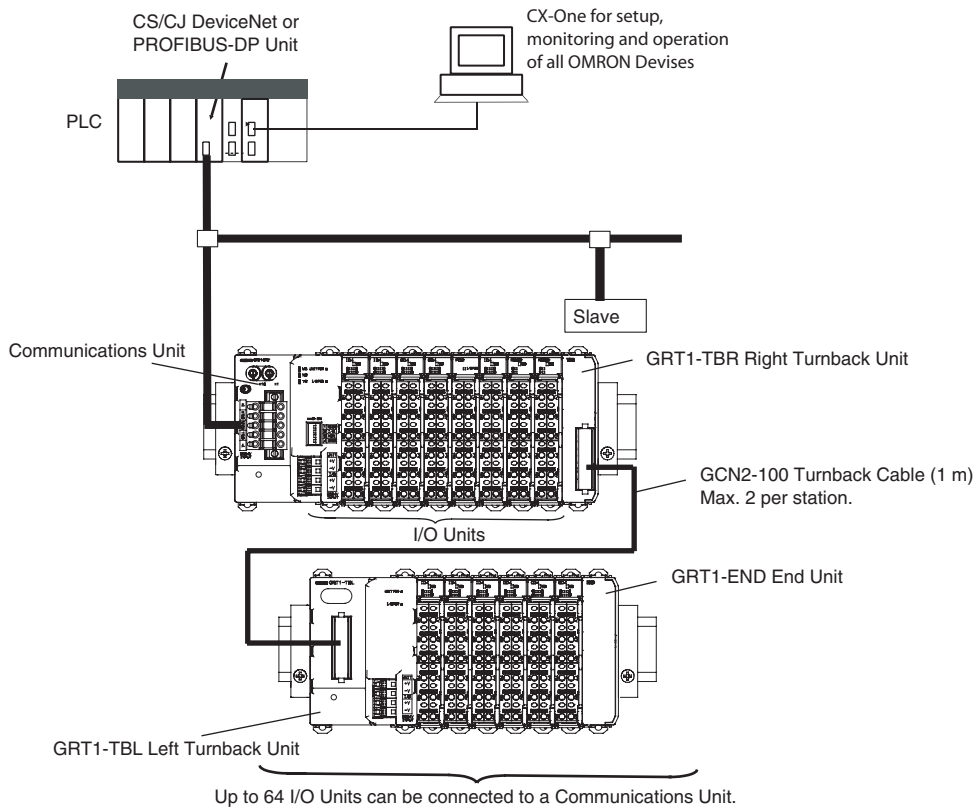
The smartest modular I/O system

OMRON's new SmartSlice I/O system is compact, intelligent and easy. When used with OMRON's CS1/CJ1 DeviceNet master units, no configuration tool is required. By using built-in functions such as pre-scaling, totalising, differentiation and alarming in analog I/O units, PLC programming can be minimised. Preventive maintenance data can be accessed using CX-Integrator software, standard PLC function blocks or NS-series Smart Active Parts.

- Most compact in the market (84 mm high)
- Easy set-up, backup and restore functions
- Diagnostics and preventive maintenance data at I/O level
- Detachable terminal blocks allow hot-swapping without re-wiring
- 3-wire connection with 'push-in' technology, no screwdriver required



System Configuration



Specifications

General Specifications

Common SmartSlice Specifications	
Unit power supply voltage	24 V DC (20.4 to 26.4 V DC)
I/O power supply voltage	24 V DC (20.4 to 26.4 V DC)
I/O connection	Screwless push-in technology
Noise immunity	Conforms to IEC61000-4-4, 2.0 kV (power supply 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 , 3 times in each direction
Dielectric strength	500 VAC (between isolated circuits)
Insulation resistance	20 MΩ min. (between isolated circuits)
Ambient operating temperature	-10 to 55°C (with no icing or condensation)
Ambient operating humidity	25% to 85%
Operating environment	No corrosive gases
Ambient storage temperature	-25 to 65°C (with no icing or condensation)
Mounting	35 mm DIN rail

Communication Units

Model name	GRT1-DRT	GRT1-PRT
Network Specification	DeviceNet	PROFIBUS-DPV1
Network connector	Open-stype DeviceNet connector, dual screwless push-in dual connections.	9-pin D-Sub
Network power supply	11 to 25 V DC, 22 mA	Internal
Number of I/O points	1,024 inputs and outputs max. (128 bytes each)	
Number of connectable Units	64 SmartSlice I/O Units max.	
I/O power supply	24 V DC, 4 A max.	
Status flags	1 word for Communications Unit status flags	
Parameter backup and restore	up to 2 KB of data per Unit.	

I/O Units

Model name	GRT1-ID4	GRT1-ID4-1
Signal type	DC input (for sinking outputs)	DC input (for sourcing outputs)
Number of points	4 inputs (3-wire connection)	
ON voltage	15 V DC min.	
ON current	6 mA max./point (at 24 V DC)	
OFF voltage	5 V DC max.	
OFF current	1 mA max.	
ON delay / OFF delay	1.5 ms max.	

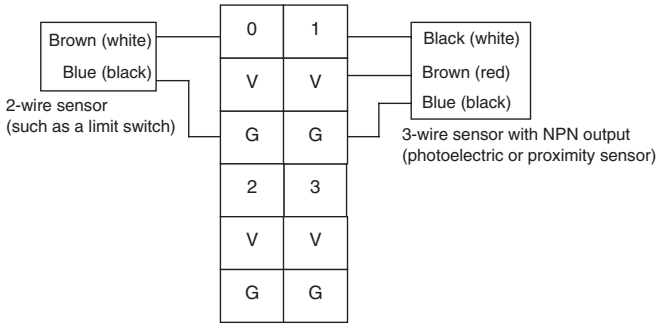
Model name	GRT1-OD4	GRT1-OD4-1	GRT1-ROS2
Signal type	Transistor output (sinking, NPN)	Transistor output (PNP, sourcing)	Relay output (normally open)
Number of points	4 outputs (2-wire connection)		2 outputs (with 2 terminals per connection)
Rated voltage	24 V DC (20.4 to 26.4 V DC)		250 V AC / 24 V DC
Rated output current	500 mA max./point		2 A (min. 1 mA @ 5 V DC)
Residual voltage	1.2 V DC max. (at 500 mA)		-
Leakage current	0.1 mA max.		-
ON delay / Off delay	0.5 / 1.5 ms max.		15 ms max.
Mechanical life expectancy	-		20,000,000 times min.
Electrical life expectancy	-		100,000 times min.

Model name	GRT-AD2	GRT1-DA2V	GRT1-DA2C
Signal type	Analog Input: 0-20mA, 4-20mA, ±10V, 0-10V, 0-5V, 1-5V	Analog Output: ±10V, 0-10V, 0-5V, 1-5V	Analog Output: 0-20mA, 4-20mA,
Number of points	2 inputs	2 outputs	
Resolution	1/6000 full scale		
Conversion time	2ms / 2points		

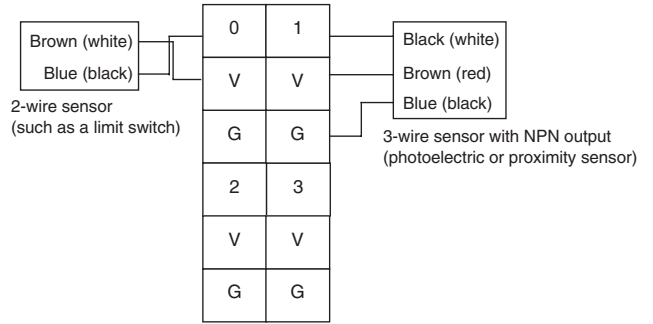
Model name	GRT1-CP1-L
Counter input	A/B/Z incremental encoder, or pulse/direction/reset
Counter signal type	24 V DC, or RS422 Line driver levels
Max. frequency	100 kHz
Counter range	32 bit double signed integer
Comparison values	2 independent ranges
Control Input	IN0, DC input (for sourcing outputs)
Control Input functions	Capture, Preset, Reset, Z enable
Control Outputs	OUT0, OUT1, Transistor Output (sourcing)
Control Output functions	Range comparison, manual override
Additional functions	On-the-fly reconfiguration, Frequency measurement

Connections

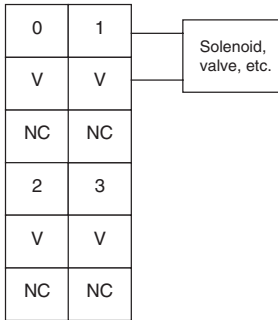
GRT1-ID4



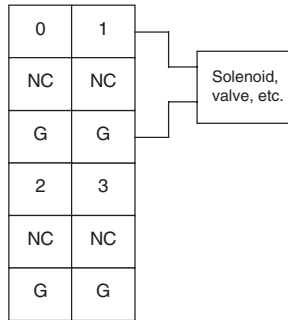
GRT1-ID4-1



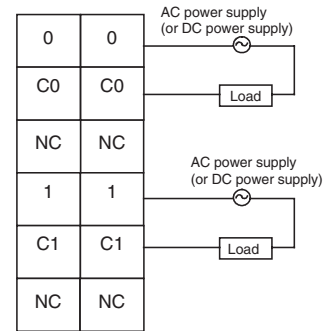
GRT1-OD4



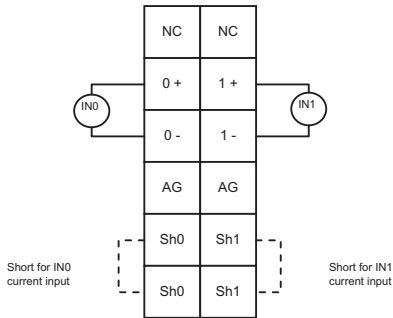
GRT1-OD4-1



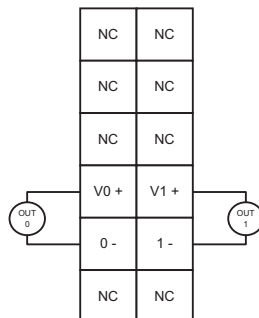
GRT1-ROS2



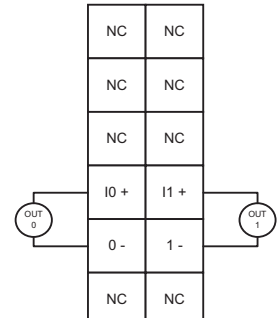
GRT-AD2



GRT1-DA2V

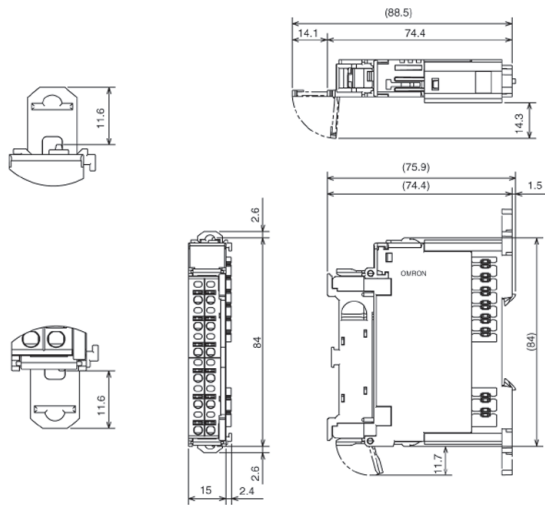


GRT1-DA2C



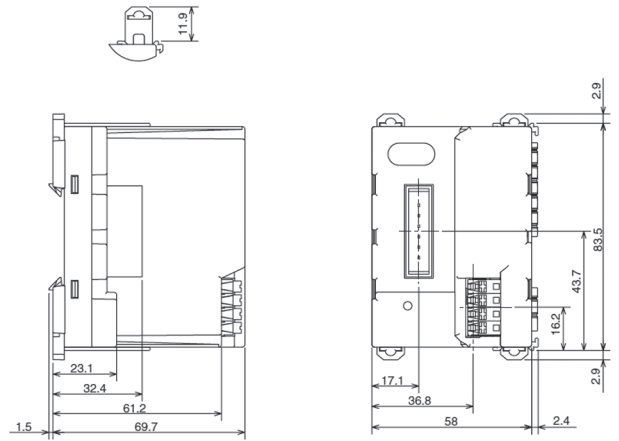
Dimensions

I/O-units



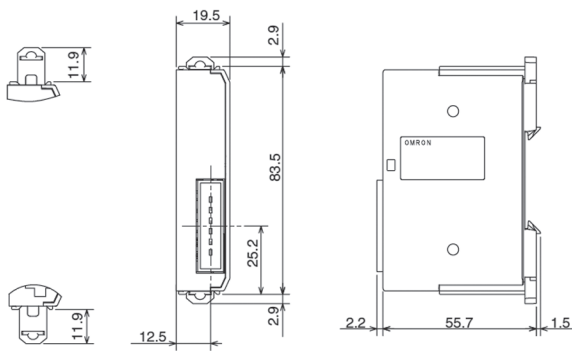
Communication Units

GRT1-DRT
GRT1-PRT
GRT1-TBL



End units

GRT1-END
GRT1-TBR



Remote I/O

Ordering Information

Interface Units

Function	Specification	Model code
DeviceNet Interface Unit	For up to 64 I/O units	GRT1-DRT
Profibus-DP Interface Unit	For up to 64 I/O units	GRT1-PRT

I/O units

Function	Specification	Model code
4 NPN inputs	24 V DC, 7 mA, 3-wire connection	GRT1-ID4
4 PNP inputs	24 V DC, 7 mA, 3-wire connection	GRT1-ID4-1
4 NPN outputs	24 V DC, 500 mA, 2-wire connection	GRT1-OD4
4 PNP outputs	24 V DC, 500 mA, 2-wire connection	GRT1-OD4-1
2 relay outputs	240 V AC, 2A, normally-open contacts	GRT1-ROS2
100 kHz Counter / Positioner unit	A/B/Z encoder input (line driver or 24 V selectable) + 1 control input + 2 outputs (PNP-type)	GRT1-CP1-L*
2 Thermocouple inputs	Type R, S, K, J, T, L, B, U, N, W, E, and PLII selectable	GRT1-TS2T*
2 Pt100 inputs	Pt100 / JPt100 selectable	GRT1-TS2P*
2 analogue inputs, current/voltage	±10 V, 0-10 V, 0-5 V, 1-5 V, 0-20 mA, 4-20 mA	GRT1-AD2
2 analogue outputs, voltage	± 10 V, 0-10 V, 0-5 V, 1-5 V	GRT1-DA2V
2 analogue outputs, current	0-20 mA, 4-20 mA	GRT1-DA2C

Expansion

Function	Model code
I/O power feed unit, separates power supply between groups of I/O units	GRT1-PD2
Turnback Unit, right-hand side	GRT1-TBR
Turnback Unit, left-hand side	GRT1-TBL
Turnback cable, one meter	GCN1-100
End plate, one unit required per bus interface	GRT1-END

PLC Master Units

Function	Model code
DeviceNet Master Unit for CS1-series PLCs	CS1W-DRM21-V1
DeviceNet Master Unit for CJ1-series PLCs	CJ1W-DRM21
PROFIBUS-DP Master Unit for CS1-series PLCs	CS1W-PRM21
PROFIBUS-DP Master Unit for CJ1-series PLCs	CJ1W-PRM21

Software

Function	Model code
CX-One, Omron's integrated software for programming and configuration of all control system components, including PLCs, remote I/O, HMI, servo drives, inverters, temperature controllers and advanced sensors.	CX-ONE-AL□□ C-E □□ = number of licenses (01, 03, 10)

ALL DIMENSIONS SHOWN ARE IN MILLIMETERS.
To convert millimeters into inches, multiply by 0.03937. To convert grams into ounces, multiply by 0.03527.