

Digital I/O Modules

GT1-ID/OD

Digital I/O Modules Compatible with MULTIPLE I/O TERMINAL

- Terminal block, connector, and high-density connector models are available.
- The circuit block of the terminal block model can be mounted or dismounted for ease of maintenance without disconnecting the wires.
- Dimensions of terminal block model:
140 x 80 x 65 (W x H x D)
Dimensions of connector model:
110 x 60 x 65 (W x H x D)
Dimensions of high-density connector model:
110 x 60 x 65 (W x H x D)
- DIN track mounting.



Ordering Information

Module	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 VDC	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)	16	Molex connector	24 VDC	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)		32		D-sub 25-pin connector	24 VDC	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	24 VDC	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				

Note: A connector cable, GCN1-004, is included with each module.

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
OFF voltage	5 V min. between each input terminal and V
OFF current	1 mA max.
Insulation method	Photocoupler
Input 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

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)

■ Characteristics

I/O power supply voltage	24 VDC +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 VAC		
Noise immunity	±1,500 V (p-p) with a pulse with of 0.1 to 1 μs		
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 track mounting		
Mounting strength	No damage when 100 N pull load was applied in all directions (10 N min. in the DIN track 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%		

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 Module and the current consumption of the load connected to the Output Module.

■ Connectors

	Type		Model	Remarks	
Molex connector	IDC (Use Press-fit tool.)	Housing	GCN1-MX25-B*	(25 piece bag from OMRON) 22 AWG	
	Solderless terminal	Housing	50-57-9403		
		Chain terminal		16-02-0069	24 to 30 AWG
				16-02-0086	22 to 24 AWG
		Loose terminal		16-02-0096	24 to 30 AWG (see note)
	Press-fit tool		11-01-0209	(See note.)	
Fujitsu connector (16 points)	Solder terminal		C500-CE241*	---	
	Press-fit terminal		C500-CE243*	---	
	Solderless terminal		C500-CE242*	---	
Fujitsu connector (32 points)	Solder terminal		C500-CE401*	---	
	Press-fit terminal		C500-CE403*	---	
	Solderless terminal		C500-CE402*	---	
OMRON D-sub Connector	Plug		XM2A-2501	---	
	Hood		XM2S-2513	#4-40UNC inch screws	

Note: Contact your OMRON representatives for the above connectors.

* Stocked by OMRON.

Cables with High-density Connectors

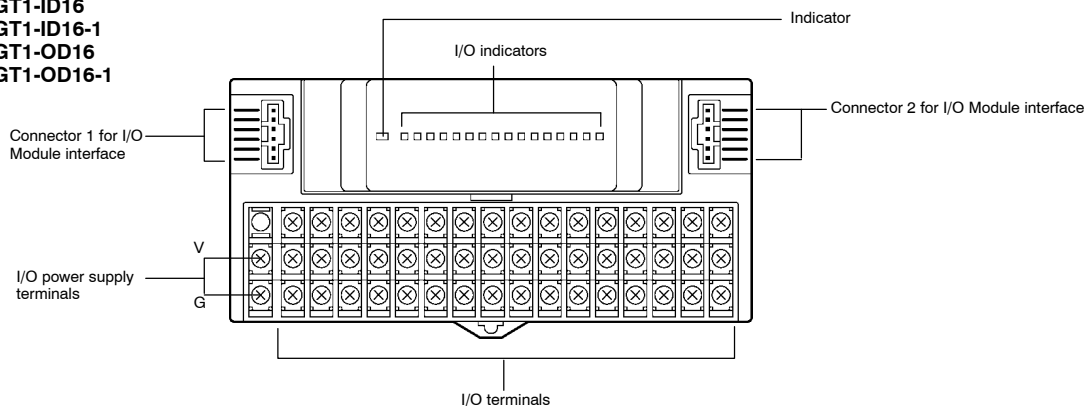
I/O type	Model
Digital input (16 points)	XW2Z-□□□A
	G79-□C
Digital output (16 points)	XW2Z-□□□A
	G79-□C
Digital input (32 points)	XW2Z-□□□B
	G79-I□C□
Digital output (32 points)	XW2Z-□□□B
	G79-O□C-□

Note: Refer to the *Ordering Information Section* located at the end of this catalog.

Nomenclature

• Terminal Block Model

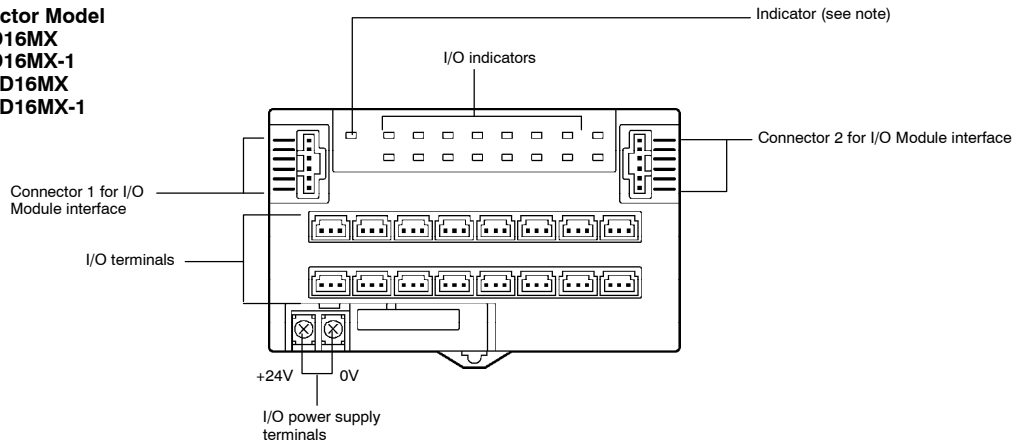
- GT1-ID16
- GT1-ID16-1
- GT1-OD16
- GT1-OD16-1



Indicator

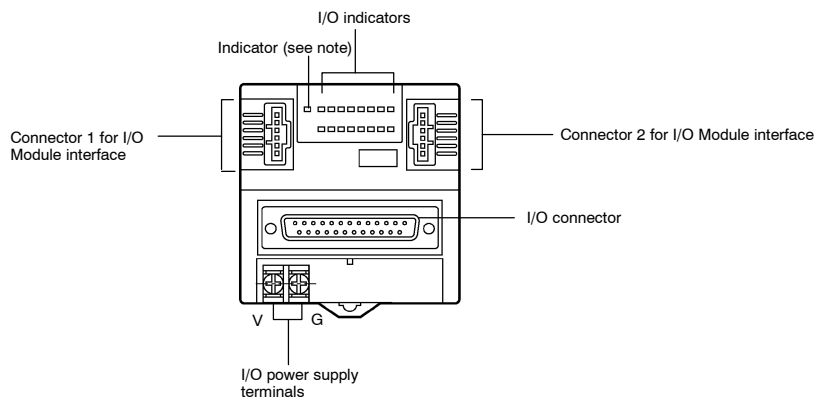
Indicator	Display	Color	Meaning
TS	Lit	Green	The Module is normal.
	Lit	Red	The I/O Module Interface has an error.
	Not lit	---	No power is supplied to the Module or the Module is being initialized.

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

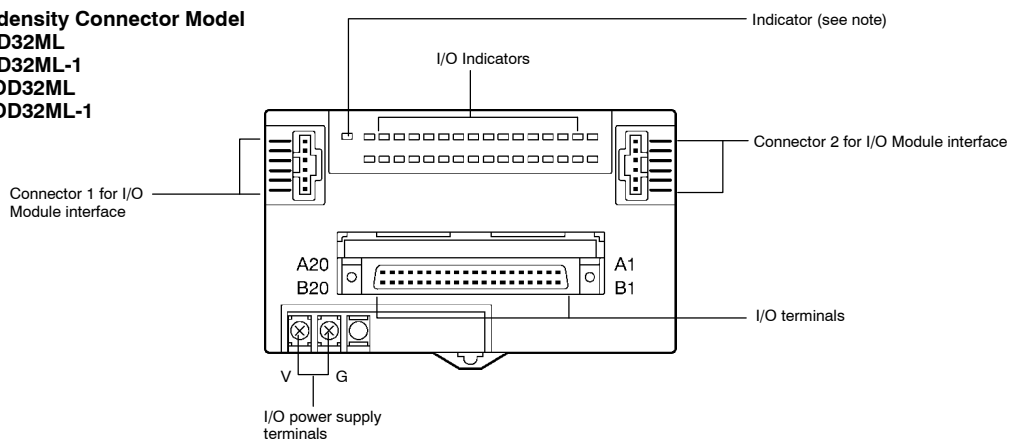


Note: The indicator display for the connector model and high-density connector model is the same as for the terminal block model.

- **Connector Model**
 GT1-ID16ML
 GT1-ID16ML-1
 GT1-OD16ML
 GT1-OD16ML-1
 GT1-ID16DS
 GT1-ID16DS-1
 GT1-OD16DS
 GT1-OD16DS-1



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

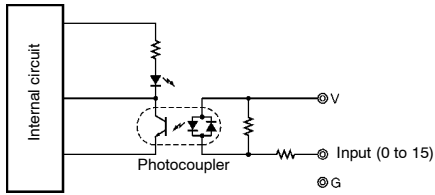


Note: The indicator display for the high-density connector model and the connector model is the same as for the terminal block model.

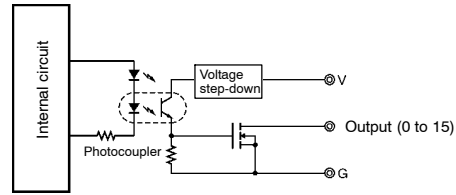
Operation

Internal Circuit Configuration

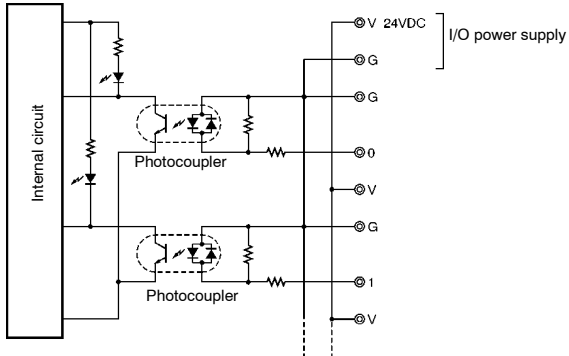
GT1-ID16



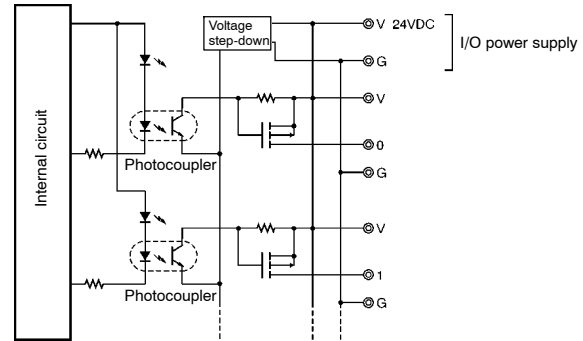
GT1-OD16



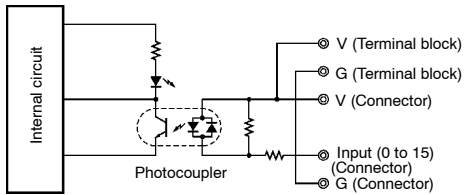
GT1-ID16-1



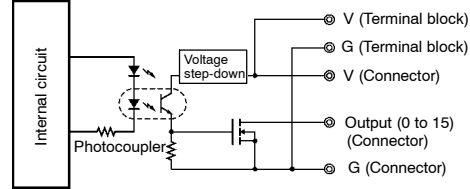
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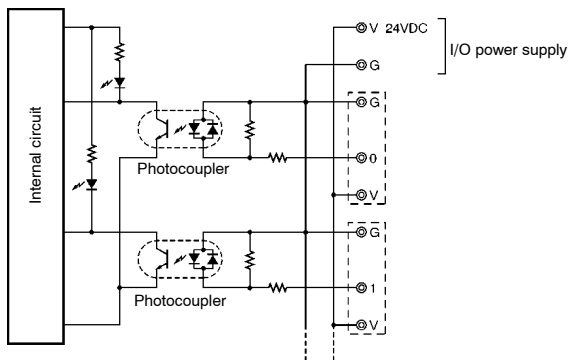
GT1-ID16MX



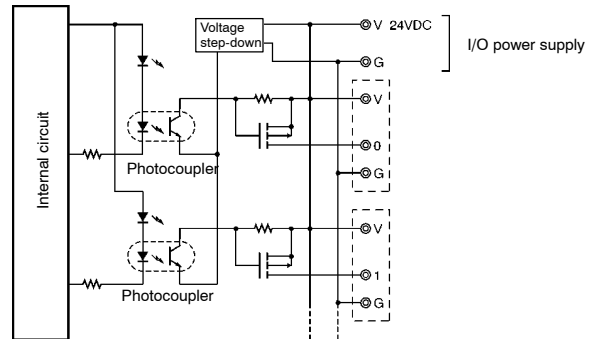
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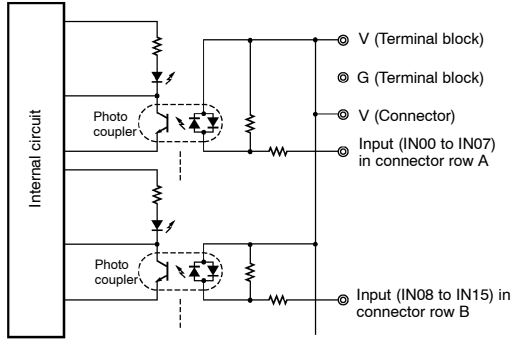
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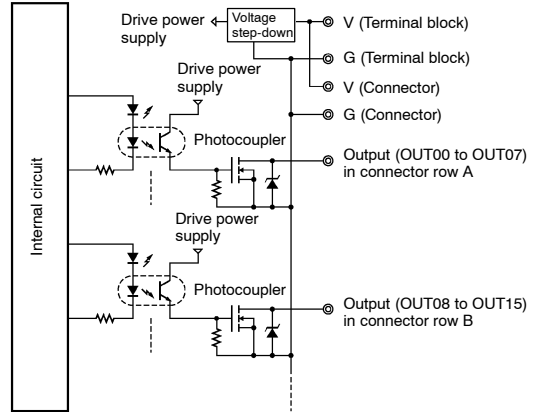
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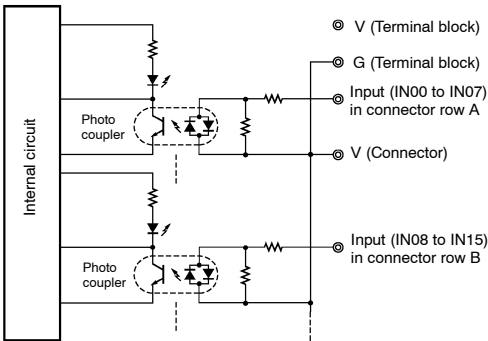
GT1-ID16ML



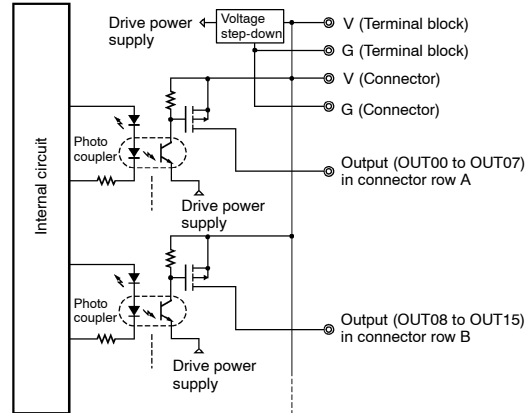
GT1-OD16ML



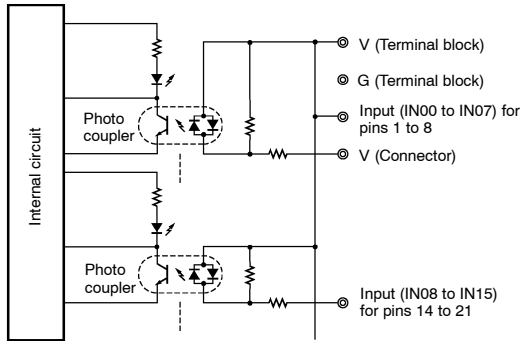
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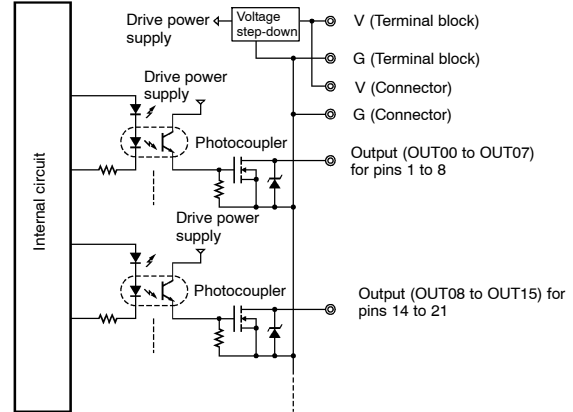
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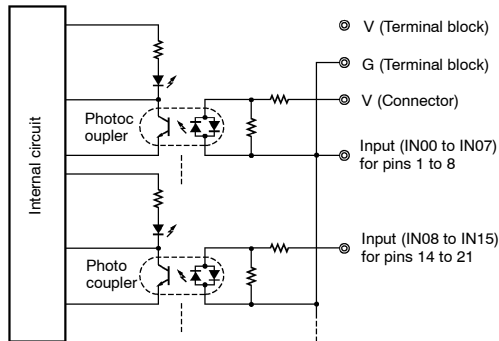
GT1-ID16DS



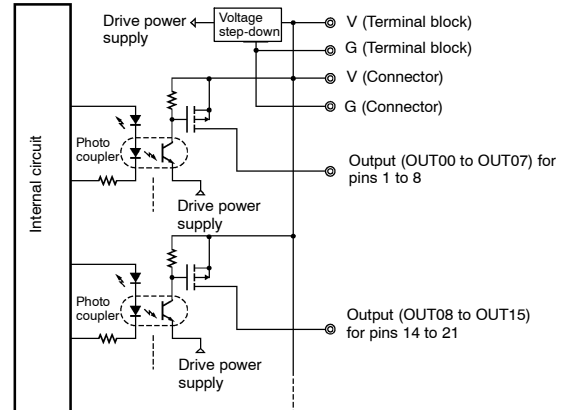
GT1-OD16DS



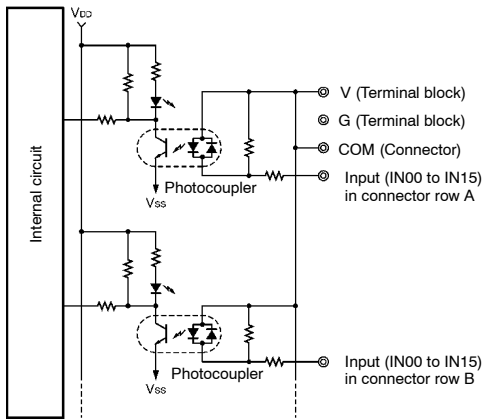
GT1-ID16DS-1



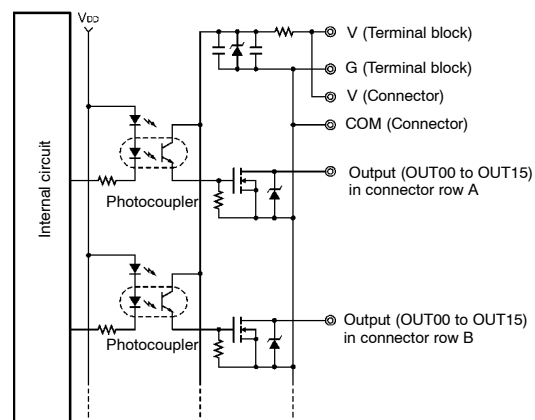
GT1-OD16DS-1



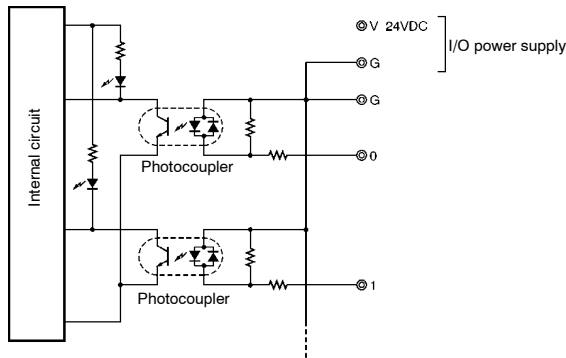
GT1-ID32ML



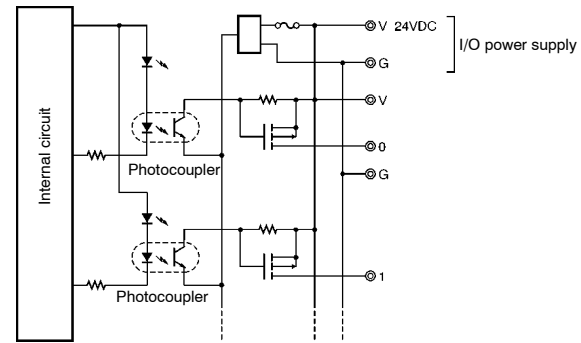
GT1-OD32ML



GT1-ID32ML-1



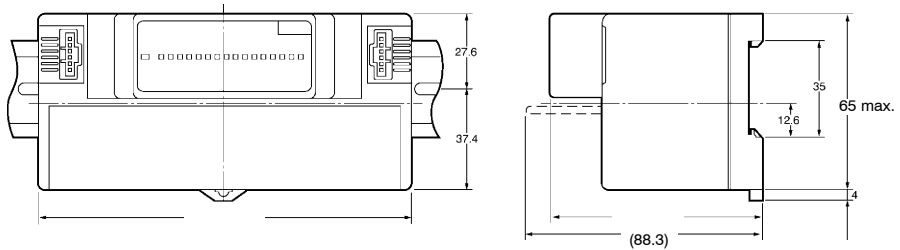
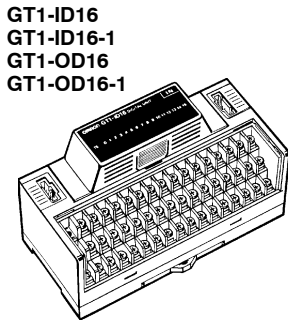
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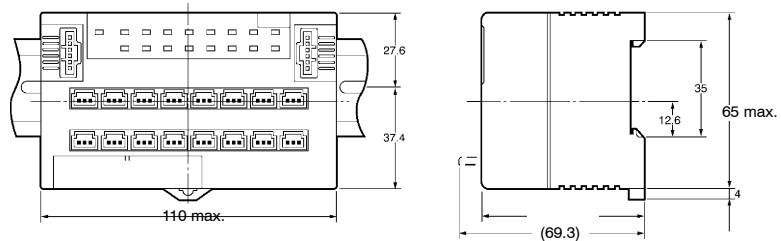
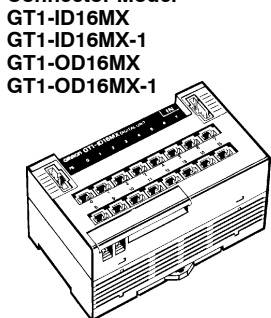
Dimensions

Note: All units are in millimeters unless otherwise indicated.

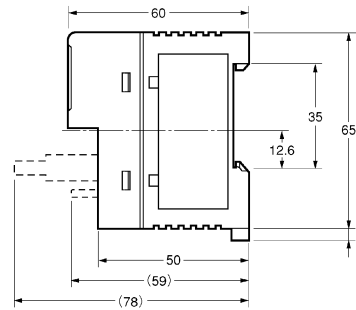
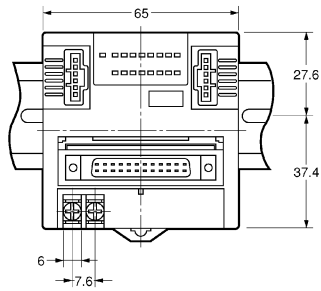
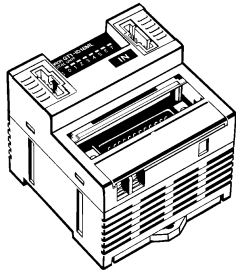
• Terminal Block Model



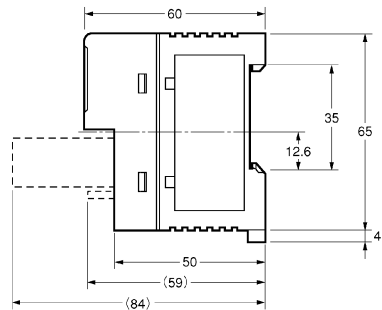
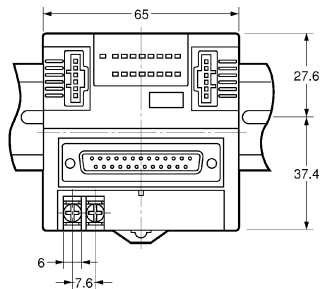
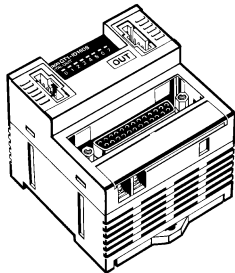
• Connector Model



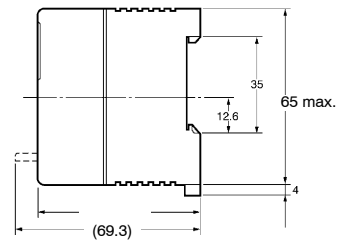
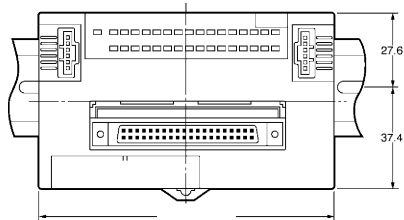
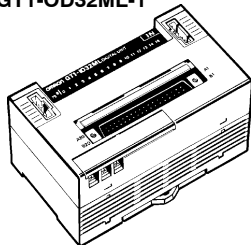
- Connector Model
 GT1-ID16ML
 GT1-ID16ML-1
 GT1-OD16ML
 GT1-OD16ML-1



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



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

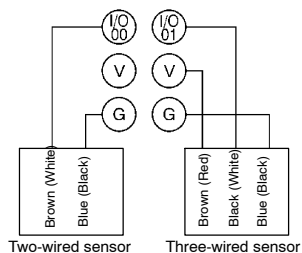


Installation

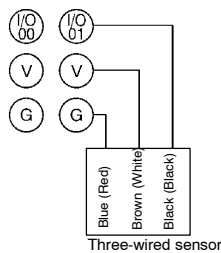
■ Wiring

• Terminal Block Models

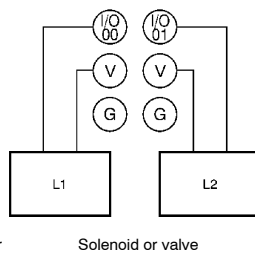
GT1-ID16 Input Unit



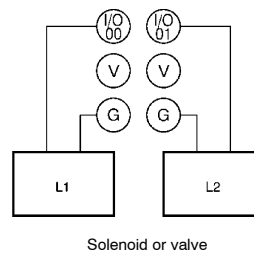
GT1-ID16-1 Input Unit



GT1-OD16 Output Unit

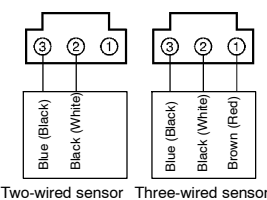


GT1-OD16-1 Output Unit

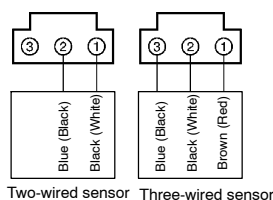


• Connector Models

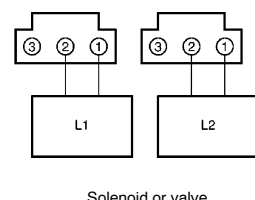
GT1-ID16MX Input Unit



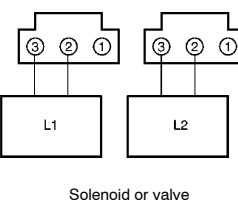
GT1-ID16MX-1 Input Unit



GT1-OD16MX Output Unit



GT1-OD16MX-1 Output Unit



• Connector Model Terminal Arrangement

GT1-ID16ML Input Unit

A12	A11	A10	A9	A8	A7	A6	A5	A4	A3	A2	A1
NC	NC	NC	V	7	6	5	4	3	2	1	0
B12	B11	B10	B9	B8	B7	B6	B5	B4	B3	B2	B1
NC	NC	NC	V	15	14	13	12	11	10	9	8

GT1-ID16ML-1 Input Unit

A12	A11	A10	A9	A8	A7	A6	A5	A4	A3	A2	A1
NC	NC	NC	G	7	6	5	4	3	2	1	0
B12	B11	B10	B9	B8	B7	B6	B5	B4	B3	B2	B1
NC	NC	NC	G	15	14	13	12	11	10	9	8

GT1-OD16ML (-1) Output Unit

A12	A11	A10	A9	A8	A7	A6	A5	A4	A3	A2	A1
NC	NC	V	G	7	6	5	4	3	2	1	0
B12	B11	B10	B9	B8	B7	B6	B5	B4	B3	B2	B1
NC	NC	V	G	15	14	13	12	11	10	9	8

GT1-ID16DS (-1)/OD16DS (-1) I/O Unit

13	12	11	10	9	8	7	6	5	4	3	2	1
NC	NC	NC	V	G	7	6	5	4	3	2	1	0

25	24	23	22	21	20	19	18	17	16	15	14
NC	NC	V	G	15	14	13	12	11	10	9	8

• High-density Connector Model Terminal Arrangement

GT1-ID32ML Input Unit

Pin number	B1	B2	B3	B4	B5	B6	B7	B8	B9	B10	B11	B12	B13	B14	B15	B16	B17	B18	B19	B20
Function	IN 00	IN 01	IN 02	IN 03	IN 04	IN 05	IN 06	IN 07	V	IN 08	IN 09	IN 10	IN 11	IN 12	IN 13	IN 14	IN 15	V	NC	NC

Pin number	A1	A2	A3	A4	A5	A6	A7	A8	A9	A10	A11	A12	A13	A14	A15	A16	A17	A18	A19	A20
Function	IN 00	IN 01	IN 02	IN 03	IN 04	IN 05	IN 06	IN 07	V	IN 08	IN 09	IN 10	IN 11	IN 12	IN 13	IN 14	IN 15	V	NC	NC

GT1-ID32ML-1 Input Unit

Pin number	B1	B2	B3	B4	B5	B6	B7	B8	B9	B10	B11	B12	B13	B14	B15	B16	B17	B18	B19	B20
Function	IN 00	IN 01	IN 02	IN 03	IN 04	IN 05	IN 06	IN 07	G	IN 08	IN 09	IN 10	IN 11	IN 12	IN 13	IN 14	IN 15	G	NC	NC

Pin number	A1	A2	A3	A4	A5	A6	A7	A8	A9	A10	A11	A12	A13	A14	A15	A16	A17	A18	A19	A20
Function	IN 00	IN 01	IN 02	IN 03	IN 04	IN 05	IN 06	IN 07	G	IN 08	IN 09	IN 10	IN 11	IN 12	IN 13	IN 14	IN 15	G	NC	NC

GT1-OD32ML (-1) Output Unit

Pin number	B1	B2	B3	B4	B5	B6	B7	B8	B9	B10	B11	B12	B13	B14	B15	B16	B17	B18	B19	B20
Function	OUT 00	OUT 01	OUT 02	OUT 03	OUT 04	OUT 05	OUT 06	OUT 07	G	V	OUT 08	OUT 09	OUT 10	OUT 11	OUT 12	OUT 13	OUT 14	OUT 15	G	V

Pin number	A1	A2	A3	A4	A5	A6	A7	A8	A9	A10	A11	A12	A13	A14	A15	A16	A17	A18	A19	A20
Function	OUT 00	OUT 01	OUT 02	OUT 03	OUT 04	OUT 05	OUT 06	OUT 07	G	V	OUT 08	OUT 09	OUT 10	OUT 11	OUT 12	OUT 13	OUT 14	OUT 15	G	V

NOTE: DIMENSIONS SHOWN ARE IN MILLIMETERS. To convert millimeters to inches divide by 25.4.

OMRON[®]

OMRON ELECTRONICS, INC.

One East Commerce Drive
Schaumburg, IL 60173

1-800-55-OMRON

OMRON CANADA, INC.

885 Milner Avenue
Scarborough, Ontario M1B 5V8

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