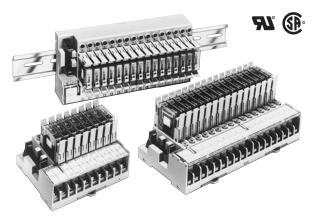
CSM\_G7TC\_DS\_E\_8\_1

## Single Cable Connection to PLC Means Space is Saved and Less Control Panel Wiring is Required.

- Compact size: 182 (W)  $\times$  85 (D)  $\times$  68 (H) mm (8-point Output Block width is 102 mm).
- Connects to the PLC through the connector, and requires only a snap-in operation.
- Surge suppressor circuit built-in.
- Immediate recognition of I/O signal status using LED operation indicators.
- · Mounts easily on a DIN track.
- G3TA I/O Solid-state relay can be mounted instead of G7T.
- Approved by UL, CSA (except for G7TC-OC16-1).



For the most recent information on models that have been certified for safety standards, refer to your OMRON website.

### **Ordering Information**

### I/O Relay Terminal When your order, specify the rated voltage.

I/O classification	I/O points	Internal I/O common	Rated voltage	Model	
			12 VDC		
			24 VDC	G7TC-ID16	
Input	16	NPN (- common)	100 (110) VDC		
			100/(110) VAC	C7TC 184C	
			200/(220) VAC	G7TC-IA16	
	40	NPN (+ common)	12 VDC	G7TC-OC16	
			24 VDC		
Output	16	DND (	12 VDC	0770 0040 4 #	
		PNP (– common)	24 VDC	G7TC-OC16-1 *	
	0	NIDNI (Leamman)	12 VDC	G7TC-OC08	
	8	NPN (+ common)	24 VDC	G/10-0008	

Note: 1. When ordering, add the rated coil voltage to the model number. Example: G7TC-ID16 24 VDC

2. When the G7TC is used with an AC rated voltage, three rated currents can be used. If a coil voltage of 110 or 220 VAC is used, 50 Hz cannot be used.

\* Not approved by UL, CSA.

· MIL connectors

# Accessories (Order Separately) Cable for I/O Relay Terminals XW2Z-R

•	
• Cable with Loose Wire and Crimp Terminals:	XW2Z-RY□C
Cable with Loose Wires:	XW2Z-RA□C

Cable with Loose Wires:
Cable with connectors
Fujitsu/Otax connectors (1:1):

nectors (1:1): XW2Z-R□C

(1:2): XW2Z-R□C-□

XW2Z-R□C-□

XW2Z-R□C-□-□

(1:3): XW2Z-R□C

(1:1): XW2Z-R□C

XW2Z-R□C

XW2Z-R□C

XW2Z-R□□C

XW2Z-RM□-□-D□ XW2Z-RO□-□-D1

- Rated coil voltage

Refer to Connecting Cables on page 14 for details.

#### **Short Bar**

Model
G78-04
Output Short-Circuit Module
Model
G77-S
Socket
Model
P7TF-05

### Mounted Relays and I/O Terminal Sockets

Mounted Relays (G7T I/O Relays and G3TA I/O SSRs) I/O Terminal Sockets (P7TF-IS16/OS16/OS08) Refer to Safety Precautions on page 13 for details.

### **Indicator Module (With Surge Suppressing Function)**

	Model	Applicable relay coil voltage	Remarks	
Fan A.C. ralass		100 (110) V AC	Variates access accession	
For AC relay	200 (220) V AC	Varistor surge suppression		
For DC relay	P70D	12/24 V DC	Diode surge suppression	

Note: 1. Order the indicator module suitable for the relay coil voltage.

2. The indicator module for DC relays can be used with a 12-V or 24 V DC power supply.

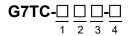
### **Accessories for DIN Track Mounting**

Appearance	Name		Model	Minimum order (quantity)
	DIN Tracks	1 m	PFP-100N	1
	DIN HACKS	0.5 m	PFP-50N	1
6	End Plate		PFP-M *	10
	Spacer		PFP-S *	10

\* Please order in sets of 10 units.

### **Model Number Legend**

A G7TC I/O Relay Terminal is a combination of (8 or 16) G7T I/O Relays with SPST-NO specifications and a P7TF I/O Terminal Socket.



#### 1. Input/Output Classification

I: For input

O: For output

### 2. Type of I/O Signal

- A: AC coil type for input relays mounted (Input/Output Classification: I)
- D: DC coil type for input relays mounted (Input/Output Classification: I)
- C: Contact output for output relays mounted (Input/Output Classification: O)

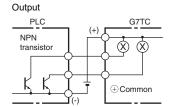
### 3. Number of I/O Points

16: 16 points

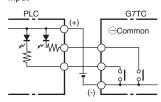
08: 8 points (for output only)

### 4. Internal I/O Common

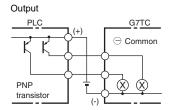
Blank: NPN



Input



#### 1: PNP



### **Specifications**

### Coil Ratings (Common to Input/Output per Relay)

Item Rated current (mA)		rrent (mA)	Coil resistance	Must operate	Must release	Maximum voltage	Power co	nsumption			
Rated voltage	⊋ (V)	(V) 50 Hz 60 Hz $(\Omega)$ of rated voltage		е	per Relay	per 16 Relays					
AC	100/(110)	8.2/-	7/7.7	8,700	80% max.	30% min.	105%	0.7 VA	11 VA		
AC	200/(220)	4.1/-	3.5/3.85	33,300	00% IIIax.	30 /6 111111.	103 /6	0.7 VA	IIVA		
	12	4	2	290							
DC	24	2	:1	1,150	80% max.	80% max.	80% max. 10% min.	10% min.	min. 105%	0.5 W	8 W
	100/110		5	20,000							

- Note: 1. The rated current and coil resistance are measured at a coil temperature of 23°C with a tolerance of 15%/-20% for AC rated current and ±15% for coil resistance.
  - 2. The operating characteristics are measured at a coil temperature of 23°C.
  - 3. The value for maximum voltage is the maximum value within the allowable voltage fluctuation range for the relay coil's operating power supply. Continuous operation at this voltage is not within product specifications.

    4. Approx. 4 mA flows into each LED indicator. To calculate the power supply capacity, add the current value of each LED indicator.

  - 5. When the G7TC is used with an AC rated voltage, three rated currents can be used. If a coil voltage of 110 or 220 VAC is used, 50 Hz cannot be used.

### **Contact Ratings (G7T I/O Relay)**

Classification	For	input	For output		
Item	Resistive load (cosφ=1)	Inductive load (cosφ=0.4 L/R=7 ms)	Resistive load (cosφ=1)	Inductive load (cosφ=0.4 L/R=7 ms)	
Rated load	1 A at 24 VDC	0.5 A at 24 VDC	2 A at 220 VAC 5 A at 24 VDC	1 A at 220 VAC 2 A at 24 VDC	
Rated carry current	1 A 5 A				
Max. switching voltage	250 VAC, 125 VDC				
Max. switching current	1 A	0.5 A	5 A	2 A	
Error rate (reference value) *	100 μA at 1 V		10 mA at 5 V		
Electrical endurance	10,000,000 operations (at 10 mA) 50,000 operations (at 1 A)	2,500,000 operations (at 10 mA) 20,000 operations (at 1 A)	1,000,000 operations (under rated load)		
Mechanical endurance	50,000,000 operations				

<sup>\*</sup> The above values are for a switching frequency of 120 operations/min.

### **Characteristics**

Item	Model	G7TC-IA16 (Input, AC coil)	G7TC-ID16 (Input, DC coil)	G7TC-OC16 (-1) (output, DC coil)	G7TC-OC08 (output, DC coil)		
Contact form		SPST-NO × 16			SPST-NO × 8		
Contact mechai	nism	Bifurcated crossbar contact		Single contact			
Contact materia	ıl	u cladding + Ag AgInSn					
Contact resistar	nce <b>*</b> 1	50 mΩ max.					
Must Operate ti	me <b>*</b> 2	15 ms max.					
Release time *2	2	15 ms max.					
Max.switching	Mechanical limit	18,000 operations/h					
frequency	At rated load	1,800 operations/h					
Insulation resis	tance	100 M $\Omega$ (at 500 VDC)					
	Between coil and contact	2,000 VAC, 50/60 Hz for 1 min	nute				
Dielectric strength	Between same polarity contacts	1,000 VAC, 50/60 Hz for 1 min	nute				
	Between paired connectors *3	250 VAC, 50/60 Hz for 1 minute					
Vibration resist	ance	10 to 55 to 10 Hz with 0.5-mm single amplitude (1.0-mm double amplitude)					
Shock resistand	ce	200 m/s <sup>2</sup>					
Noise immunity	,	Noise level: 1.5 kV; pulse width: 100 ns to 1 μs					
Rated voltage b negative termin	etween positive and al blocks	Rated voltage of controller's (PLC or other) input circuit 12 VDC ±5% 24 VDC ±5%					
Rated current be negative termin	etween positive and al blocks	Input circuit current of controll ON points	er (PLC or other) $\times$ number of	12 VDC: 46 mA $\times$ number 24 VDC: 25 mA $\times$ number			
Cable length	To controller	5 m max. (reference value)					
<b>*</b> 4	To I/O devices	50 m max. (reference value, for 2-mm² CVV cable)  Dependent on load					
Ambient operat	ing temperature	0 to 55°C					
Ambient operat	ing humidity	35% to 85% (with no icing or condensation)					
Tightening torq connections	ue for external	0.78 to 1.18 N·m					
Tensile strength	1	No damage when a tensile force of 49 N is applied in each direction. In the direction of the track, the tensile strength is 9.8 N min.					
I/O terminal tigh	tening torque	Tightening strength: 0.98 N·m; Tensile strength 49 N per minute					
LED color		Red	Green				
Case color		Transparent red	Transparent green	Transparent green			
Coil surge abso	rber	Varistor	Diode (1 A, 1,000 V)	•			
Weight		Approx. 640 g	Approx. 630 g	Approx. 670 g	Approx. 350 g		
lote: The abov	e values are initial v	/alues.		•			

- \*1. Measurement: 1 A at 5 VDC.
- **\*2.** Ambient temperature: 23°C.
- **\*3.** This is between connector pin No. 10 and 20, and between connector pin No. 9 and 19.
- \*4. Connecting cables up to 5 m are available as standard products. For longer cables, enquire separately.

### **Approved Standards**

- The rated values for safety standard certification are not the same as individually defined performance values. Always check the specifications before use.
- Standard G7TC I/O Relay Terminal, except for the G7TC-OC16-1, have met UL and CSA standards (UL file no. E95399; CSA file no. LR35535).

### **UL standard certification (File No. E95399)**

Model	Standard number	Category	Listed/Recognized	Contact ratings
G7TC-ID16 G7TC-IA16	UL508	NRAQ2	Recognized	Terminal block side: 250 VAC max./point Connector side: 10 mA/point, 24 VDC
G7TC-OC16 G7TC-OC08	UL508	NRAQ2	Recognized	Terminal block side: Inductive load: 10 A, 250 VAC Resistive load: 10 A, 30 VDC Rated horsepower: 1/2 HP, 240 VAC

### CSA Standard (File No. LR35535)

Model	Standard number	Class number	Contact ratings
G7TC-ID16			
G7TC-IA16	CSA C22.2	3211 04	6 to 240 VAC
G7TC-OC16	No.14	3211 04	6 to 125 VDC
G7TC-OC08			

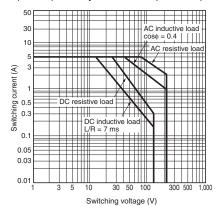
### **Engineering Data (Reference Value)**

### Life Expectancy of Output

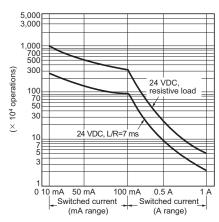
#### 5,000 3,000 1,000 700 500 300 24 VDC, resistive load = 24 VDC, L/R=7 ms 100 0 50 300 24 VDC, L/R=7 ms

### Max. Switching capacity of Output

(Life expectancy: 1,000,000 operations)



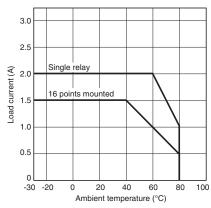
### Life Expectancy of Input



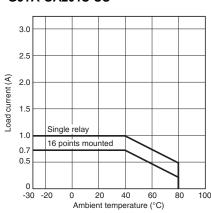
- **Note: 1.** These data are actual measured values that were sampled from the production line and prepared in graph format, and are for reference purposes only. A relay is manufactured by mass production, and as a basic rule must be used with allowance made for a certain amount of deviation
  - 2. The data shown above are values for a single relay.

### Load Current vs. Ambient Temperature

G3TA-OA202SZ-US G3TA-OA202SL-US G3TA-ODX02S-US



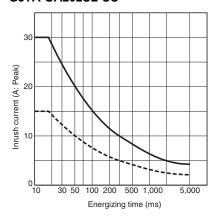
#### G3TA-OA201S-US



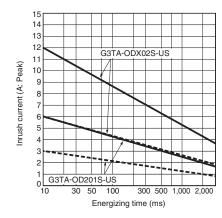
#### **Inrush Current**

The following graphs show the maximum inrush currents that can be withstood for non-repetitive operation. For repetitive operation, the figures should be reduced by half.

#### G3TA-OA202SZ-US G3TA-OA202SL-US

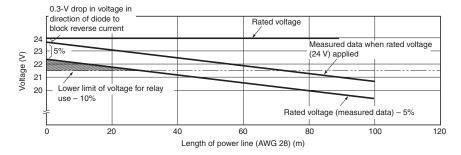


#### G3TA-ODX02S-US G3TA-OD201S-US



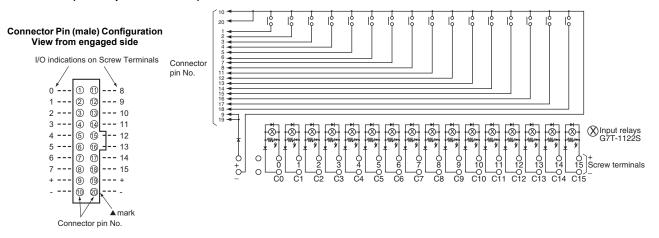
### **Cable Length**

The following graph gives reference values for the relationship between cable length and voltage in the case where the voltage fluctuation of the power supply is 5%.

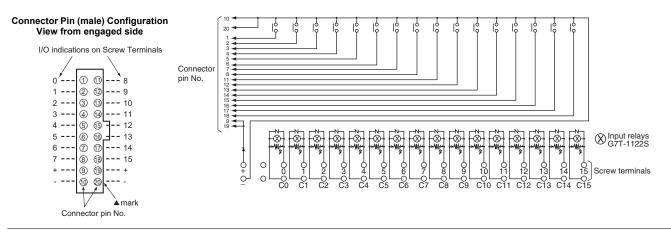


### **Internal Circuits**

### G7TC-ID16 (NPN input/- common)



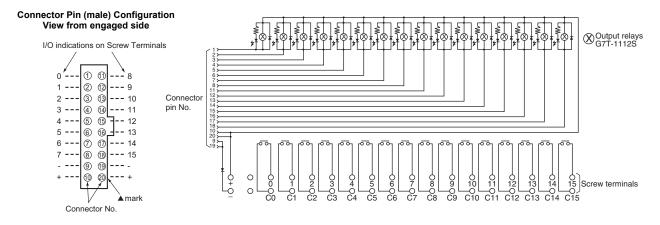
### G7TC-IA16 (NPN input/- common)



Note: Pin numbers are indicated for convenience. The ▲ mark can be used to determine orientation.

#### G7TC-OC16 (NPN output/+ common)

Note: A controller with an NPN transistor, common output can be connected to the G7TC-OC16.



### G7TC-OC16-1 (PNP output/- common)

Note: A controller with a PNP transistor, + common output can be connected to the G7TC-OC16-1.

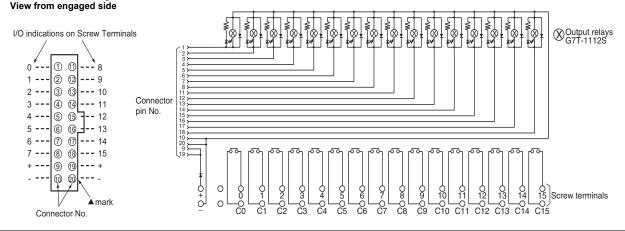
Do not connect the G71 Remote Interface to the G7TC-OC16-1.

Due to the difference in polarity, the G71 will be damaged if the G7TC-OC16-1 and the G71 are connected to each other.

Use the G7TC-OC16 (NPN output/+ common) instead, to connect to the G71.

The reception of orders for G71 Remote Interface was discontinued at the end of March 2012.

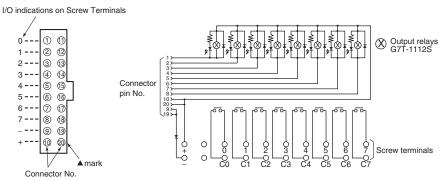
### Connector Pin (male) Configuration



#### G7TC-OC08 (NPN output/+ common)

Note: A controller with an NPN transistor, -common output can be connected to the G7TC-OC08.

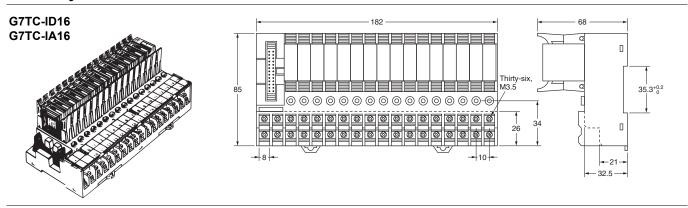
#### Connector Pin (male) Configuration View from engaged side

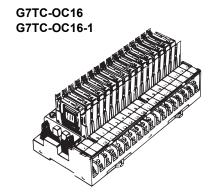


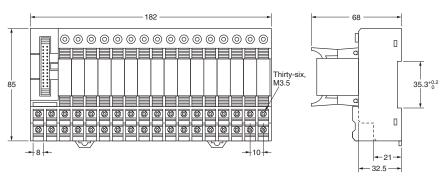
Note: Pin numbers are indicated for convenience. The ▲ mark can be used to determine orientation.

Dimensions (Unit: mm)

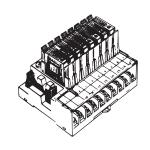
### I/O Relay Terminal

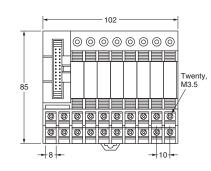


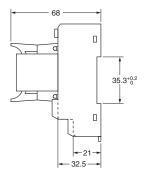




G7TC-OC08





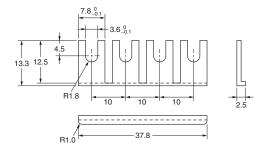


### **Accessories (Order Separately)**

#### **Short Bar** G78-04

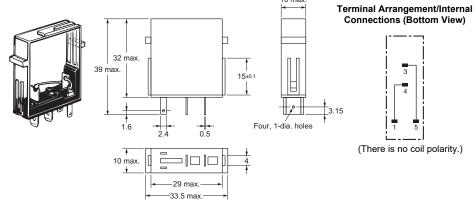
Use this piece for short-circuiting across terminals. Max. current flow: 20 A





### **Output Short-Circuit Module** G77-S

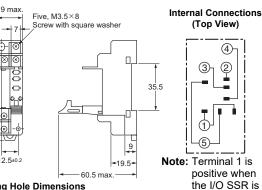
The output of the I/O Relay Terminal can be obtained without relays through the G77-S Output Short-Circuit Module. Note that the G77-S Output Short-Circuit Module is not available for inputs.



### **Socket** P7TF-05

The G7T (SPST-NO, SPST-NC, and SPDT types) and the G3TA I/O Relays can be mounted on the P7TF-05 Socket. The P7TF-05 can be used for applications involving sequences that require slim relays, or to enable use of SPDT relays with the I/O Relay Terminal. To use part of the I/O Relay Terminal with SPDT specifications, insert an Output Short-Circuit Module into the I/O Relay Terminal. and use the P7TF-05 Socket in combination with an SPDT Relay for the Module's output.





#### **Specifications**

Contact resistance	10 m $\Omega$ max. (measured at 5 V DC, 1 A)		
Dielectric strength	2,000 VAC for 1 minute		
Insulation resistance	1,000 MΩ min. (at 500 V)		
Vibration resistance	10 to 55 to 10 Hz, 0.5 mm single amplitude (1.0 mm double amplitude)		
Shock resistance	1,000 m/s <sup>2</sup>		
Ambient temperature	Operating: -40 to 70°C (with no icing or condensation)		
Ambient humidity	5% to 85%		
Weight	Approx. 28 g		

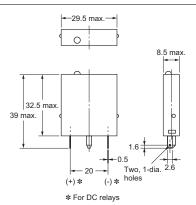
**Mounting Hole Dimensions** 

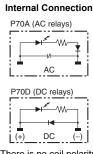
employed. 12.5±0.2 62±0.1 Note: Terminal 1 is positive when the G3TA or Indicator Module is employed. 4 dia. or M3

### **Indicator Module** (With Surge Suppressing Function) P70□

Remove the transparent style strip of the P7TF-05 socket and mount this module and it will function as an operation indicator with the surge suppression.





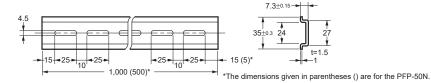


(There is no coil polarity for AC relays.)

### **Parts for Rail Mounting**

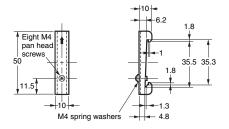
### DIN Track PFP-100N PFP-50N





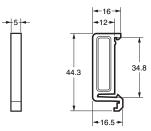
## End Plate PFP-M





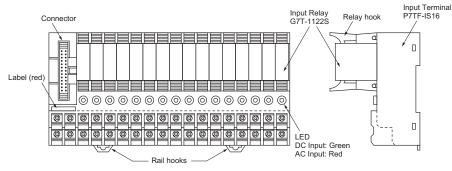
#### Spacer PFP-S





### **Terminal Arrangement / Terminal Connection Example**

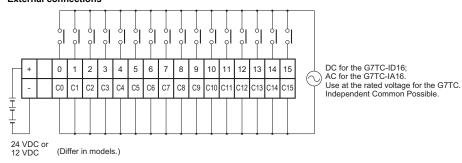
### Input G7TC-ID16 G7TC-IA16



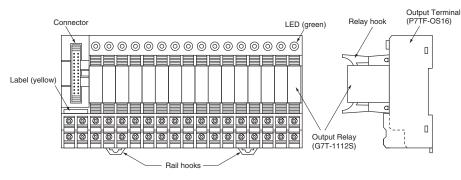
- Supply power to terminals 0 through 15 and C0 through C15 according to the voltage specifications of the I/O Relays and I/O Relay Terminal. Do not reverse positive and negative terminals on the DC Input Block (0 through 15 are positive; C0 through C15, negative). Short Bar is available.
- Supply to the power terminal (positive and negative) the rated voltage of the controller's input circuits (24 VDC or 12 VDC). Use a low-noise power source.
- power source.

  When using a Connecting Cable with two connectors, be sure to use the Cable for Input Blocks. Using the Cable for Output Blocks may result in malfunction or damage to the product. Connecting Cable: XW2Z-R Tape Color: Red

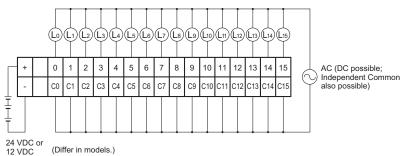
#### **External connections**



#### Output G7TC-OC16(-1) G7TC-OC08



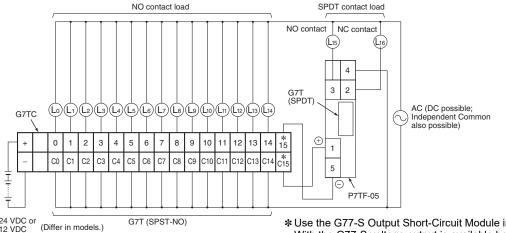
#### **External connections**



- There are voltage specifications for the Relays and Terminals. Depending on the controller connected, select either 12 or 24 VDC.
- Supply power to contact output terminals 0 through 15 and C0 through C15 according to the requirements of the loads. A 4 terminal Short Bar is available.
- Supply to the power terminals (positive and negative) power both for driving the relays and for controller output transistors. Match the controller and I/O Relay Terminal voltage specifications. Use a low-noise power source.
   When using a Connecting Cable with two
- When using a Connecting Cable with two connectors, be sure to use the Cable for Output Blocks. Using the Cable for Input Blocks may result in malfunction or damage to the product. Connecting Cable: XW2Z-R Tape Color: Yellow
  Output Block Unit G7TC-OC08 does not have
- Output Block Unit G7TC-OC08 does not have terminals 8 through 15 and C8 through C15.
   Although a 20-pin connector is used, pins 11 through 18 are not connected.
- When an I/O SSR (G3TA-OD□□-US) is mounted, terminals 0 to 15 will be positive.

### **Connection Example for SPDT Relays**

The following is an application example for the P7TF-05 using an SPDT Relay on a terminal of the G7TC-□□16(-1).



\* Use the G77-S Output Short-Circuit Module in place of the G7T I/O Relay. With the G77-S voltage output is available between terminals 15 and C15. The maximum current is determined according to the controller.

Note: If more than one G77-S Output Short-Circuit Module is employed, the voltage output of the terminals on the G7TC is as follows: G7TC-OC16: The positive side (the lower row) connects to the common line internally.

G7TC-OC16-1: The negative side (the upper row) connects to the common line internally.

### **Safety Precautions**

Be sure to read *The Safety Precautions for All I/O Relay Terminals* in the website at the following URL: http://www.ia.omron.com/product/cautions/46/243/index.html.

For PLC I/O unit connection procedures, refer to G70V/G7TC/G70A/G70D Table of I/O Relay Terminal and connectable device combinations (Cat. No. J217).

#### General

I/O Relays and I/O Relay Terminal can be combined as follows to form I/O Relay Terminal:

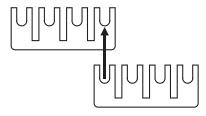
	I/O Relay Terminal	I/O Relay	I/O SSR *2		I/O Terminal (Socket) *3
DC input	G7TC-ID16	G7T-1122S <b>*</b> 1	DC	G3TA-IDZ002 (M)-US	P7TF-IS16 (DC type)
AC input	G7TC-IA16	G/1-11225 #1	AC	G3TA-IAZR02S-US	P7TF-IS16 (AC type)
DC output G7TC-OC16 G7TC-OC16-1 G7TC-OC08		G7T-1112S (SPST-NO type) *1	AC	G3TA-OA202SZ-US G3TA-OA202SL-US	P7TF-OS16 P7TF-OS16-1
		G7T-1012S (SPST-NC type)	DC	G3TA-ODX02S-US G3TA-OD201S-US	P7TF-OS16-1 P7TF-OS08

- \*1. These are the I/O Relays mounted on the G7TC I/O Relay Terminal.
- \*2. To use I/O SSRs, remove the I/O Relays and mount the I/O SSRs to the slots where the I/O Relays were mounted. Or, order and combine a P7FT I/O Terminal and I/O SSRs.
- \*3. The P7TF I/O Terminal provides only sockets. It does not have Relays mounter to it. Mount I/O Relays or I/O SSRs to the sockets. Specify the rated voltage in the same way as when ordering the G7TC I/O Relay Terminal.
- Combinations of AC Input Relays/SSRs and DC Input Relays/ SSRs cannot be used with the same Terminal. This is because specifications for coil surge suppression elements are different. Relays/SSRs with different voltage specifications cannot be used with the same Terminal. (For example, a 100-VAC Input Relay and a 200-VAC Input Relay, or a 12-VDC Output Relay and a 24-VDC Output Relay cannot be used with the same Terminal.) This is because specifications of operation indicator circuits are different.
- Only use I/O Terminals, I/O Relays, and I/O SSRs with the same specifications for rated voltage.
- I/O Relay Terminal are color coded, as shown below, according to input/output and AC/DC specifications.

		I/O Terminal label	I/O Terminal indicators	I/O Relay case
£	DC	Red	Green	Green
for Input	AC	Red	Red	Red
for Output	DC	Yellow	Green	Transparent

- Both Input and Output Blocks do not have internal power supplies.
   For an Output Block, supply the relay drive power to the positive and negative terminals (either 12 or 24 VDC). Loads (terminal contacts 0 through 15) must also be supplied with appropriate power. For an Input Block, supply, to the positive and negative terminals, power for input signals to the controller.
- The same Connecting Cable, XW2Z-RY, is used for the G7TC-OC08 eight-point Output Block as for other I/O Relay Terminal; leave 8 points unconnected.
- Indicators indicate the presence or absence of signals.
   Use the display lever inside each relay for fault diagnosis. (Some relays do not have this lever depending on the specifications.)
- Each relay must be pressed down until its hold-down hooks engage completely. Heating or malfunction can result if relays are not mounted properly.
- Unlabeled terminals are not electrically connected. Use these for repeater terminals.
- Indicator positions and relay orientation differ between Input and Output Blocks. This is to aid in differentiating Input Blocks from Output Blocks and in following signal flow.

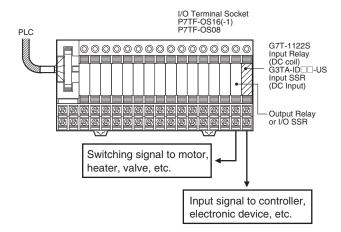
- DIN tracks are generally used to mount I/O Relay Terminal. For screw mounting, a 210-mm DIN track is available that can be used as an adapter in combination with End Plates (PFP-M, two required).
- A Short Bar is provided to connect four terminals. The current capacity of the Short Bar is 20 A. As long as this current capacity is not exceeded, the Short Bar can be used in combination as shown at the right to connect more than four terminals.



 Special Connecting Cables are provided for connections to OMRON PLC I/O Units with Connectors. Connecting Cables with two connectors, however, come in two types: Cables for Input Blocks (XW2Z-R) and Cables for Output Blocks (XW2Z-R).
 Be sure to purchase the correct Cable for the application.

#### **Microload Switching**

Input Relays (DC coil type) and I/O SSRs (DC input type) can be mounted onto an Output Block. Doing so enables using controller programming to simultaneously switch on or off two outputs (DPST-NO operation) to switch a SPST-NO load that in turn switches another SPST-NO load. One configuration for this is shown below.



## **Connecting Cables**

Refer to XW2Z-R Cables for I/O Relay Terminals (Cat. No. G126) for details on the Connecting Cables.

Type (A side)	Name	I/O Classification	Appearance	Cable leng	th L (mm)	Models
			A side B side	1,00	00	XW2Z-RY100C
	Cables with Loose Wires and Crimp Ter-		Device end I/O Relay Terminal	1,50	00	XW2Z-RY150C
	minals	16 I/O points		2,00	00	XW2Z-RY200C
	XW2Z-RY□C			3,00	00	XW2Z-RY300C
Various devices			300	5,00	00	XW2Z-RY500C
,	Cables with Loose Wires	16 I/O points	A side B side Device end I/O Relay Terminal	2,00	00	XW2Z-RA200C
	XW2Z-RA□C	To yo points	300	5,00	00	XW2Z-RA500C
			A side B side	1,00	00	XW2Z-R100C
	Cables with Connec-		Device end I/O Relay Terminal	1,50	00	XW2Z-R150C
Fujitsu/Otax connectors (24 pins)	tors (1:1)	16 I/O points		2,00	00	XW2Z-R200C
(2 : p)	XW2Z-R□C			3,00	00	XW2Z-R300C
			L	5,00	00	XW2Z-R500C
	Cables with Connectors (1:2)  XW2Z-RI□C-□  XW2Z-RO□C-□	32 input points		(A) 1,000	(B) 750	XW2Z-RI100C-75
			A side B side	(A) 1,500	(B) 1,250	XW2Z-RI150C-125
			Device end I/O Relay Terminal    (A) →	(A) 2,000	(B) 1,750	XW2Z-RI200C-175
				(A) 3,000	(B) 2,750	XW2Z-RI300C-275
Fujitsu/Otax connectors				(A) 5,000 (B) 4,750		XW2Z-RI500C-475
(40 pins)		32 output points	(120)	(A) 1,000 (B) 750		XW2Z-RO100C-75
			(120)	(A) 1,500	(B) 1,250	XW2Z-RO150C-125
			(B)	(A) 2,000 (B) 1,75		XW2Z-RO200C-175
			Straight length (without bends)	(A) 3,000	(B) 2,750	XW2Z-RO300C-275
				(A) 5,000	(B) 4,750	XW2Z-RO500C-475
			A side B side Device end I/O Relay Terminal  (A) (B)	(A) (B) 1,500 1,25	(C) 0 1,000	XW2Z-R150C-125-100
Fujitsu/Otax connectors (56 pins)	Cables with Connectors (1:3)  XW2Z-R□C-□-□	48 I/O points	(270)	(A) (B) 2,000 1,75	(C) 0 1,500	XW2Z-R200C-175-150
			Straight length (without bends)	(A) (B) 3,000 2,75	(C) 2,500	XW2Z-R300C-275-250
	Cables with Connec-		A side B side	25	0	XW2Z-RI25C
MIL (OO : )	tors (1:1)	40.1/0 :	Device end I/O Relay Terminal	50	0	XW2Z-RI50C
MIL connectors (20 pins)	XW2Z-RI□C,	16 I/O points		25	0	XW2Z-RO25C
	XW2Z-RI□C, XW2Z-RO□C			50	0	XW2Z-RO50C

Type (A side)	Name	I/O Classification	Appearance	Cable leng	gth L (mm)	Models
				(A) 500	(B) 250	XW2Z-RO50-25-D1
				(A) 750	(B) 500	XW2Z-RO75-50-D1
				(A) 1,000	(B) 750	XW2Z-RO100-75-D1
				(A) 1,500	(B) 1,250	XW2Z-RO150-125-D1
				(A) 2,000	(B) 1,750	XW2Z-RO200-175-D1
				(A) 3,000	(B) 2,750	XW2Z-RO300-275-D1
			A side B side	(A) 5,000	(B) 4,750	XW2Z-RO500-475-D1
	Cables with Connec-	32 I/O points	Device end I/O Relay Terminal (A) →	(A) 500	(B) 250	XW2Z-RI50-25-D1
	tors (1:2)	32 1/O points		(A) 750	(B) 500	XW2Z-RI75-50-D1
MIL connectors (40 pins)	XW2Z-RO□-□-D1,			(A) 1,000	(B) 750	XW2Z-RI100-75-D1
WILL CONTRECTORS (40 pins)	XW2Z-RI□-□-D1, XW2Z-RI□-□-D2, XW2Z-RM□-□-D1 *1			(A) 1,500	(B) 1,250	XW2Z-RI150-125-D1
			(120)	(A) 2,000	(B) 1,750	XW2Z-RI200-175-D1
	XW2Z-RM□-□-D2 <b>*</b> 1		(B)	(A) 3,000	(B) 2,750	XW2Z-RI300-275-D1
			Straight length (without bends)	(A) 5,000	(B) 4,750	XW2Z-RI500-475-D1
				(A) 500	(B) 250	XW2Z-RI50-25-D2
				(A) 750	(B) 500	XW2Z-RI75-50-D2
		16 inputs and 16 outputs (32 I/O points)		(A) 500	(B) 250	XW2Z-RM50-25-D1
				(A) 750	(B) 500	XW2Z-RM75-50-D1
				(A) 500	(B) 250	XW2Z-RM50-25-D2
				(A) 750	(B) 500	XW2Z-RM75-50-D2
			A side B side	(A) 1,000	(B) 750	XW2Z-RI100C-75-MN
		32 input points	Device end I/O Relay Terminal	(A) 1,500	(B) 1,250	XW2Z-RI150C-125-MN
	Mitsubishi Electric PLC	32 input points	(A)	(A) 2,000	(B) 1,750	XW2Z-RI200C-175-MN
Mitsubishi Electric PLCs with	Connecting Cables			(A) 3,000	(B) 2,750	XW2Z-RI300C-275-MN
32-point connectors (1:2) *2	XW2Z-RI□C-□-MN			(A) 1,000	(B) 750	XW2Z-RO100C-75-MN
	XW2Z-RO□C-□-MN	32 output points	(120)	(A) 1,500	(B) 1,250	XW2Z-RO150C-125-MN
		32 output points	(B) —	(A) 2,000	(B) 1,750	XW2Z-RO200C-175-MN
			Straight length (without bends)	(A) 3,000	(B) 2,750	XW2Z-RO300C-275-MN

Note: 1. Contact for a cable length other than the above.
2. For a connector pin assignment diagram and cable color information, refer to the wiring drawings.

\*1. These cables are used to connect to slave products for DeviceNet and other networks.

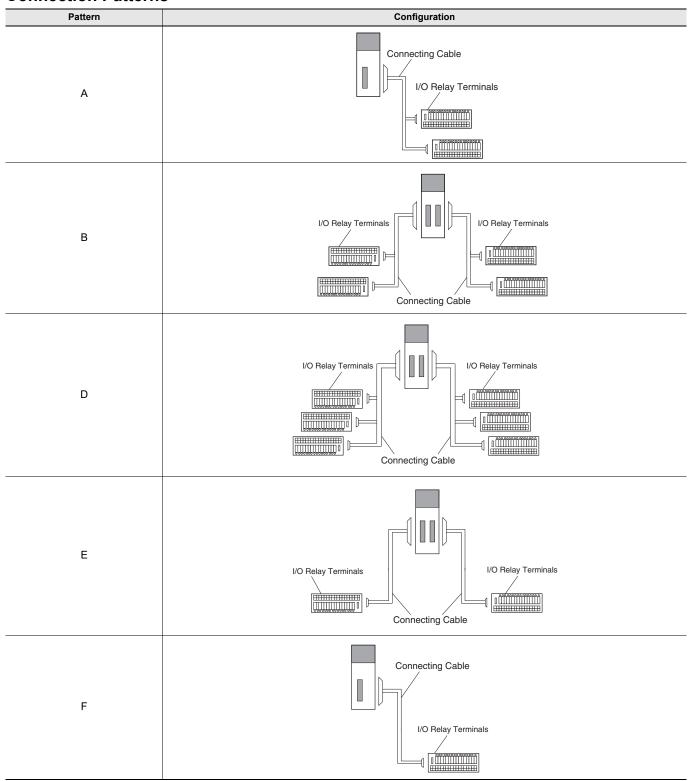
<sup>\*2.</sup> For details on models that can be used, refer to List of Combinations with the Mitsubishi PLC MELSEC-L Series, MELSEC-Q Series, and MELSEC iQ-R Series on page 20.

### **Combinations of Connections**

Refer to the next page for details on the combinations of cables and connection devices [OMRON PLC I/O Units NX Series, CJ Series], [Mitsubishi PLC I/O Units MELSEC-L Series, MELSEC-Q Series, MELSEC iQ-R Series].

For combinations with other products, refer to I/O Relay Terminals and Connected Devices (Cat. No. J217) or to the datasheets for related products.

### **Connection Patterns**



### List of Combinations with the OMRON PLC NX Series

NX I/O Units				Connec	XW2Z-R Cables			G7TC I/O Relay Terminals		
I/O capacity	Model	External connectors	Polarity	tion pattern	Connection	Model *	Quantity required	Specifications	Model	Quantity required
Input Units	s									
16 inputs	NX-ID5142-5	1 MIL connector (20 p)	NPN or PNP	F	1:1	XW2Z-RO□C	1	NPN Inputs	G7TC-IA16/ID16	1
20 immusta	NX-ID6142-5	1 MIL connector (40 p)	NPN or PNP	А	1:2	XW2Z-RO□-□-D1	1	NPN Inputs	G7TC-IA16/ID16	2
32 inputs	NX-ID6142-6	1 Fujitsu/Otax connector (40 p)	NPN or PNP	A	1:2	XW2Z-RI□C-□	1	NPN Inputs	G7TC-IA16/ID16	2
Output Un	its									
16 inputs	NX-OD5121-5 1 MIL connector (20 p) NPN	NPN	F	1:1	XW2Z-RO□C	1	NPN outputs	G7TC-OC16	1	
16 inputs	NX-OD5256-5	1 MIL connector (20 p)	PNP		1:1	XW2Z-RI□C	1	PNP outputs	G7TC-OC16-1	1
32	NX-OD6121-5	1 MIL connector (40 p)	NPN		1:2	XW2Z-RO□-□-D1	1	NPN outputs	G7TC-OC16	2
outputs	NX-OD6256-5	1 MIL connector (40 p)	PNP	Α	1:2	XW2Z-RI□-□-D1	1	PNP outputs	G7TC-OC16-1	2
32 outputs	NX-OD6121-6	1 Fujitsu/Otax connector (40 p)	NPN		1:2	XW2Z-RO□C-□	1	NPN outputs	G7TC-OC16	2
Mixed I/O	Units									
	NX-MD6121-6	2 Fujitsu/Otax connectors (24 p)	Inputs: NPN or PNP		1:1	XW2Z-R□C	1	NPN Inputs	G7TC-IA16/ID16	1
	NX-WD0121-0	(1 for 16 inputs and 1 for 16 outputs)	Outputs: NPN		1:1	XW2Z-R□C	1	NPN outputs	G7TC-OC16	1
16 inputs	NIV MDC404 F	2 MIL connectors (20 p)	Inputs: NPN or PNP	_	1:1	XW2Z-RO□C	1	NPN Inputs	G7TC-IA16/ID16	1
outputs	NX-MD6121-5	(1 for 16 inputs and 1 for 16 outputs)	Outputs: NPN	E	1:1	XW2Z-RO□C	1	NPN outputs	G7TC-OC16	1
	NY MD6256 5	2 MIL connectors (20 p)	Inputs: NPN or PNP		1:1	XW2Z-RO□C	1	NPN Inputs	G7TC-IA16/ID16	1
	NX-MD6256-5	(1 for 16 inputs and 1 for 16 outputs)	Outputs: PNP		1:1	XW2Z-RO□C	1	PNP outputs	G7TC-OC16-1	1

<sup>\*</sup>The box  $\square$  is replaced by the cable length. For details on the types, refer to pages 14 and 15. **Note:** The G7TC-OC08 8-output type is also available.

### List of Combinations with the OMRON PLC CJ Series

	CJ1V	V I/O Units		Conne	)	(W2Z-R Cables		G71	C I/O Relay Termina	
I/O capacity	Model	External connectors	Polarity	ction pattern	Connection	Model *	Quantity required	Specifications	Model	Quantity required
Input Unit	S						-			
	CJ1W-ID231	1 Fujitsu/Otax connector (40 p)	NPN or PNP		1:2	XW2Z-RI□C-□	1	NPN Inputs	G7TC-IA16/ID16	2
32 inputs	CJ1W-ID232	1 MIL connector (40 p)	NPN or PNP	Α	1:2	XW2Z-RO□-□-D1	1	NPN Inputs	G7TC-IA16/ID16	2
	CJ1W-ID233	1 MIL connector (40 p)	NPN or PNP		1:2	XW2Z-RO□-□-D1	1	NPN Inputs	G7TC-IA16/ID16	2
64 inputs	CJ1W-ID261	2 Fujitsu/Otax connectors (40 p) (2, 32-point connectors)	NPN or PNP	В	1:2	XW2Z-RI□C-□	2	NPN Inputs	G7TC-IA16/ID16	4
	CJ1W-ID262	2 MIL connectors (40p) (2, 32-point connectors)	NPN or PNP		1:2	XW2Z-RO□-□-D1	2	NPN Inputs	G7TC-IA16/ID16	4
Output Un	its					T.	1			
· ·	CJ1W-OD231	1 Fujitsu/Otax connector (40 p)	Sinking (NPN)		1:2	XW2Z-RO□C-□	1	NPN outputs	G7TC-OC16	2
32	CJ1W-OD233	1 MIL connector (40 p)	Sinking (NPN)	A	1:2	XW2Z-RO□-□-D1	1	NPN outputs	G7TC-OC16	2
outputs	CJ1W-OD232	1 MIL connector (40 p)	Sourcing (PNP)		1:2	XW2Z-RI□-□-D1	1	PNP outputs	G7TC-OC16-1	2
	CJ1W-OD234	1 MIL connector (40 p)	Sinking (NPN)		1:2	XW2Z-RO□-□-D1	1	NPN outputs	G7TC-OC16	2
64 outputs	CJ1W-OD261	2 Fujitsu/Otax connectors (40 p) (2, 32-point connectors)	Sinking (NPN)		1:2	XW2Z-RO□C-□	2	NPN outputs	G7TC-OC16	4
	CJ1W-OD262	2 MIL connectors (40 p) (2, 32-point connectors)	Sourcing (PNP)	В	1:2	XW2Z-RI□-□-D1	2	PNP outputs	G7TC-OC16-1	4
	CJ1W-OD263	2 MIL connectors (40 p) (2, 32-point connectors)	Sinking (NPN)		1:2	XW2Z-RO□-□-D1	2	NPN outputs	G7TC-OC16	4
Mixed I/O	Units									
	CJ1W-MD231	2 Fujitsu/Otax connectors (24 p) (1 for 16 inputs and 1 for 16 outputs)	Inputs: Sinking/Sourcing (NPN or PNP)		1:1	XW2Z-R□C	1	NPN Inputs	G7TC-IA16/ID16	1
			Outputs: Sinking (NPN)		1:1	XW2Z-R□C	1	NPN outputs	G7TC-OC16	1
16 inputs and 16	CJ1W-MD233	2 MIL connectors (20 p)	Inputs: Sinking/Sourcing (NPN or PNP)	E	1:1	XW2Z-RO□C	1	NPN Inputs	G7TC-IA16/ID16	1
outputs	00111 1112200	(1 for 16 inputs and 1 for 16 outputs)	Outputs: Sinking (NPN)	_	1:1	XW2Z-RO□C	1	NPN outputs	G7TC-OC16	1
	CJ1W-MD232	2 MIL connectors (20 p)	Inputs: Sinking/Sourcing (NPN or PNP)		1:1	XW2Z-RO□C	1	NPN Inputs	G7TC-IA16/ID16	1
	001VV-WIB202	(1 for 16 inputs and 1 for 16 outputs)	Inputs: Sourcing (PNP)		1:1	XW2Z-RO□C	1	PNP outputs	G7TC-OC16-1	1
	C IAW MD364	2 Fujitsu/Otax connectors (40p)	Inputs: Sinking/Sourcing (NPN or PNP)		1:2	XW2Z-RI□C-□	1	NPN Inputs	G7TC-IA16/ID16	2
32 inputs/	CJ1W-MD261	(1 for 32 inputs and 1 for 32 outputs)	Outputs: Sinking (NPN)	_	1:2	XW2Z-RO□C-□	1	NPN outputs	G7TC-OC16	2
32 outputs	CJ1W-MD263	2 MIL connectors (40 p)	Inputs: Sinking/Sourcing (NPN or PNP)	В	1:2	XW2Z-RO□-□-D1	1	NPN Inputs	G7TC-IA16/ID16	2
	30 11.0200	(1 for 32 inputs and 1 for 32 outputs)	Outputs: Sinking (NPN)		1:2	XW2Z-RO□-□-D1	1	NPN outputs	G7TC-OC16	2

<sup>\*</sup>The box  $\square$  is replaced by the cable length. For details on the types, refer to pages 14 and 15. **Note:** The G7TC-OC08 8-output type is also available.

### List of Combinations with the OMRON PLC CS Series

	CJ1W I/O Units			Connec	XW2Z-R Cables			G7TC I/O Relay Terminals		
I/O capacity	Model	External connectors	Polarity	tion pattern	Connection	Model *	Quantity required	Specifications	Model	Quantity required
Input Unit	s									
32 inputs	CS1W-ID231	1 Fujitsu/Otax connector (40 p)	NPN or PNP	Α	1:2	XW2Z-RI□C-□	1	NPN Inputs	G7TC-IA16/ID16	2
64 inputs	CS1W-ID261	2 Fujitsu/Otax connectors (40 p) (2, 32-point connectors)	NPN or PNP	В	1:2	XW2Z-RI□C-□	2	NPN Inputs	G7TC-IA16/ID16	4
96 inputs	CS1W-ID291	2 Fujitsu/Otax connectors (56 p) (2, 48-point connectors)	NPN or PNP	D	1:3	XW2Z-R□C-□-□	2	NPN Inputs	G7TC-IA16/ID16	6
Output Un	nits Transistor C	Output Units								
32	CS1W-OD231	1 Fujitsu/Otax connector (40 p)	Sinking (NPN)	Α	1:2	XW2Z-RO□C-□	1	NPN outputs	G7TC-OC16	2
outputs	CS1W-OD232	1 Fujitsu/Otax connector (40 p)	Sourcing (PNP)	A	1:2		1	PNP outputs	G7TC-OC16-1	2
64	CS1W-OD261	2 Fujitsu/Otax connectors (40 p) (2, 32-point connectors)	Sinking (NPN)	В	1:2	XW2Z-RO□C-□	2	NPN outputs	G7TC-OC16	4
outputs	CS1W-OD262	2 Fujitsu/Otax connectors (40 p) (2, 32-point connectors)	Sourcing (PNP)	Б	1:2		2	PNP outputs	G7TC-OC16-1	4
96	CS1W-OD291	2 Fujitsu/Otax connectors (56 p) (2, 48-point connectors)	Sinking (NPN)	D	1:3	XW2Z-R□C-□-□	2	NPN outputs	G7TC-OC16	6
outputs	CS1W-OD292	2 Fujitsu/Otax connectors (56 p) (2, 48-point connectors)	Sourcing (PNP)		1:3	XW2Z-R□C-□-□	2	PNP outputs	G7TC-OC16-1	6
Mixed I/O	Units DC Trans	istor Output Units								
	l .	2 Fujitsu/Otax connectors (40 p) (1 for 32 inputs and 1 for 32 outputs)	Inputs: Sinking/Sourcing (NPN or PNP)		1:2	XW2Z-RI□C-□	1	NPN Inputs	G7TC-IA16/ID16	2
32 inputs/	CS1W-MD261		Outputs: Sinking (NPN)	В	1:2	XW2Z-RO□C-□	1	NPN outputs	G7TC-OC16	2
32 outputs	CS1W-MD262	2 Fujitsu/Otax connectors (40 p)	Inputs: Sinking/Sourcing (NPN or PNP)	В	1:2	XW2Z-RI□C-□	1	NPN Inputs	G7TC-IA16/ID16	2
	CSTW-MD202	(1 for 32 inputs and 1 for 32 outputs)	Outputs: Sourcing (PNP)		1:2		1	PNP outputs	G7TC-OC16-1	2
	CS1W-MD291	2 Fujitsu/Otax connectors (56 p)	Inputs: Sinking/Sourcing (NPN or PNP)		1:3	XW2Z-R□C-□-□	1	NPN Inputs	G7TC-IA16/ID16	3
48 inputs/	CS1W-MD291	(1 for 48 inputs and 1 for 48 outputs)	Outputs: Sinking (NPN)	_	1:3	XW2Z-R□C-□-□	1	NPN outputs	G7TC-OC16	3
48 outputs	CS1W-MD292	2 Fujitsu/Otax connectors (56 p)	Inputs: Sinking/Sourcing (NPN or PNP)	D	1:3	XW2Z-R□C-□-□	1	NPN Inputs	G7TC-IA16/ID16	3
	CS I VV-IVIDZ9Z	(1 for 48 inputs and 1 for 48 outputs)	Outputs: Sourcing (PNP)		1:3	XW2Z-R□C-□-□	1	PNP outputs	G7TC-OC16-1	3
N The hev	is replaced	by the eable len	th Cordetail	a an the	tunes refer	to nades 14 and	1 =			

<sup>\*</sup>The box ☐ is replaced by the cable length. For details on the types, refer to pages 14 and 15.

Note: The G7TC-OC08 8-output type is also available.

Refer to the manuals for the connected PLC for the connections to I/O Units for OMRON PLCs.

Series	Model	Man. No.	Manual Name
CS1	CS1G-CPU□□H, CS1H-CPU□□H	W339	Programmable Controllers Operation Manual
CJ1	CJ1H-CPU□□H-R, CJ1G/H-CPU□□H, CJ1G-CPU□□P, CJ1M-CPU□□, CJ1G-CPU□□	W393	CJ Series Programmable Controllers Operation Manual
CJ2	CJ2H-CPU6□-EIP, CJ2H-CPU6□, CJ2M-CPU□□	W472	CJ-series CJ2 CPU Unit Hardware User's Manual
NJ	NJ501-□□□□	W500	NJ-series CPU Unit Hardware User's Manual
NX	NX-ID□□□□, NX-IA□□□□, NX-OD□□□□, NX-OC□□□□, NX-MD□□□□	W521	NX-series Digital I/O Units User's Manual

### List of Combinations with the Mitsubishi PLC MELSEC-L Series, MELSEC-Q Series, and MELSEC iQ-R Series

PLC I/O Unit				Connec		XW2Z-R Cables		G7TC I/O Relay Terminals		
I/O capacity	Model	External connectors	Polarity	tion pattern	Connection	Model *1	Quantity required	Specification s	Model	Quantity required
Input Units	s									
	LX41C4								G7TC-ID16/IA16	
32 inputs	QX41/QX41-S1/ QX41-S2	1 Fujitsu/Otax		Α		XW2Z-RI	1	Inputs *2		2
	QX71	Connector								
	RX41C4		NPN or PNP		1:2					
	LX42C4									
64 inputs	QX42/QX42-S1	2 Fujitsu/Otax		В		XW2Z-RI	2	Inputs *2	G7TC-ID16/IA16	4
04 iliputs	QX82/QX82-S1	connectors		Ь		XVVZZ-IXIDDD-DDIVIIN		inputs *2	G/ TC-ID TO/IATO	4
	RX42C4									
Output Un	its									
	LY41NT1P									
	QY41P	1 Fujitsu/Otax	NPN		1:2	XW2Z-RODDD-DDMN	1	NPN outputs	C7TC OC16	2
	QY71	connector	INPIN			XWZZ-ROLLI-LIWIN	1		G7TC-OC16	
32 outputs	RY41NT2P	<del>-</del>		Α						
outputo	LY41PT1P		PNP			XW2Z-RODD-DMN	1		!	
	RY41PT1P	1 Fujitsu/Otax connector								
	RY41PT2H									
	LY42NT1P			В						
	RY42NT2P	2 Fujitsu/Otax connectors	NPN			XW2Z-RO	2	NPN outputs	G7TC-OC16	4
64	QY42P							outputs		
outputs	LY42PT1P		PNP			XW2Z-RODD-DDMN	2			
	RY42PT1P	2 Fujitsu/Otax connectors								
	QY82P	Connectors								
Mixed I/O	Units	1	l		l	<u> </u>	'	l		
	RH42C4NT2P (Input side)	2 Fujitsu/Otax	NPN or PNP			XW2Z-RI	1	Inputs *2	G7TC-ID16/IA16	2
	RH42C4NT2P (Output side)	connectors	NPN			XW2Z-RO	1	NPN outputs	G7TC-OC16	2
	QH42P (Input side)	2 Fujitsu/Otax	NPN or PNP			XW2Z-RI	1	Inputs *2	G7TC-ID16/IA16	2
	QH42P (Output side)	connectors	NPN			XW2Z-RO	1	NPN outputs	G7TC-OC16	2
32 inputs/	QX41Y41P (Input side)	2 Fujitsu/Otax	NPN or PNP	В	1:2	XW2Z-RI	1	Inputs *2	G7TC-ID16/IA16	2
outputs	QX41Y41P (Output side)	connectors	NPN	В	1.2	XW2Z-RO	1	NPN outputs	G7TC-OC16	2
	LH42C4NT1P (Input side)	2 Fujitsu/Otax	NPN or PNP			XW2Z-RI	1	Inputs *2	G7TC-ID16/IA16	2
	LH42C4NT1P (Output side)	connectors				XW2Z-RO	1	NPN outputs	G7TC-OC16	2
	LH42C4PT1P (Input side)	2 Fujitsu/Otax	NPN or PNP			XW2Z-RI	1	Inputs *2	G7TC-ID16/IA16	2
	LH42C4PT1P (Output side)	connectors	PNP			XW2Z-RO	1			

Note: Contact for a cable length other than the above.

Cables that can be connected to the QX81, QX81-S2, and QY81P have not been prepared.

★1. The box ☐ is replaced by the cable length. For details on the types, refer to pages 14 and 15.

★2. Either NPN inputs or PNP inputs can be used.

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