



Fuse/Switch

Relay Box

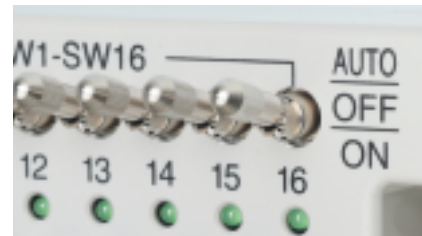
PXGRM

series

Relay interface terminal, switch and fuse are integrated into one unit. It protects external load devices and entire system. It also saves wiring cost and space.

Features

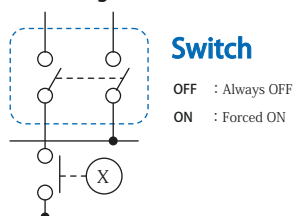
- A switch allows you to control ON/ OFF directly. It is suitable for debugging, trial, testing and maintenance of the equipment.



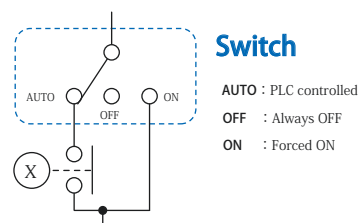
Hold toggle switch installed

PXGRM

- Switching contact side (OP/ON)

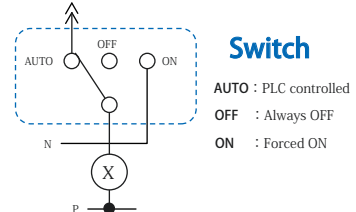


- Switching contact side (OPX/ONX)



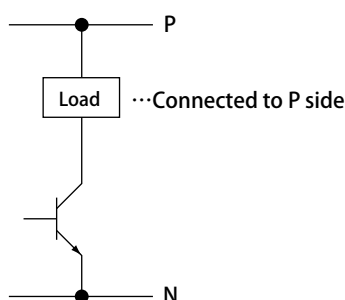
PXGRSF

- Switching coil side (OP/ON)

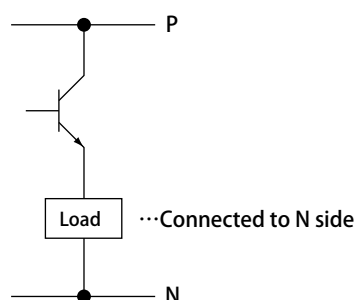


- Available to connect both NPN and PNP devices.
- Wet contact output is installed so that does not require external interface terminal for common.

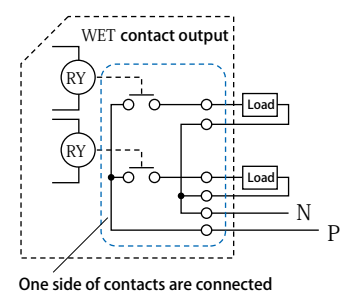
- PNP for input and output



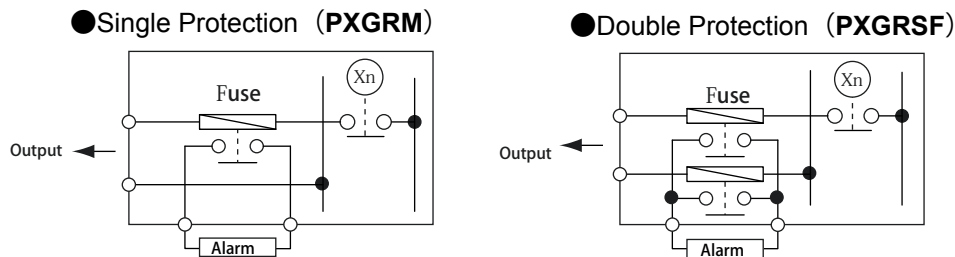
- NPN for output



- WET circuit



- Double fuse protects both positive and negative relay circuit of the contact side.

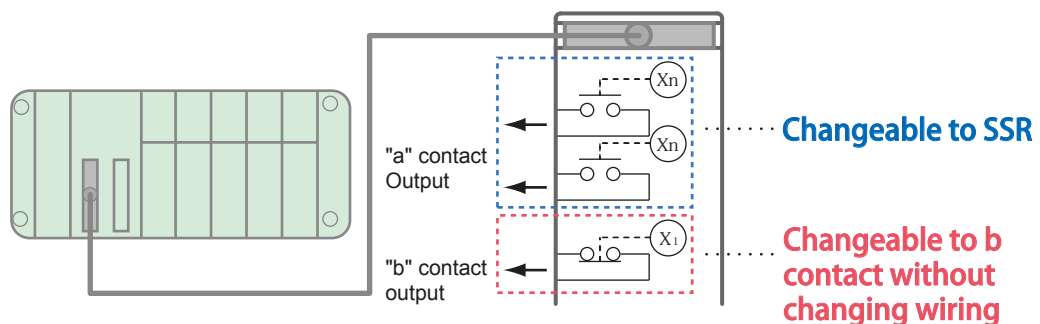


- Alarm signal indicator when the fuse blowout.

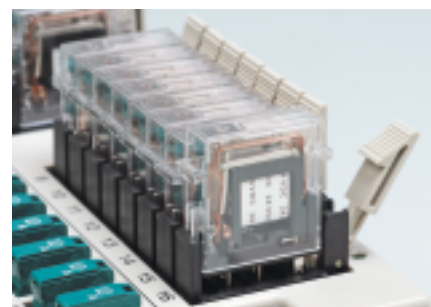


Fuse blowout indication

- Selectable B contact relay or SSR specification by changing relays. *Solid State Relay



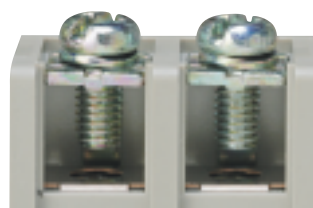
- Relays can be replace with only one hand by pulling lever, without removing cover.



- 3 types of terminal blocks are available.



Standard terminal



Spring lifted terminal



Removable spring lifted terminal

How to order

PX GR M 32 -V 6 -D02 OP -MP -1A

I/O Qty.

16 : 16 points
32 : 32 points

Switch and Fuse

M : Switch(Contact side)
Fuse (Single Protection)
SF : Switch (Contact side)
Fuse (Double Protection)

Base No.

PS : Standard terminals
PX : Spring lifted terminals
HTX : Removable spring lifted terminals

I/O Type

OP : PNP Output
ON : NPN Output
ON : NPN Output
OPX : PNP Output
(PXGRM・MP/SMP
Fuse only)
ONX : NPN Output
(PXGRM・MP/SMP
Fuse only)

Fuse

〈PXGRM〉
P : P4 (Normal Blow)
MP : MP (Fast Blow)
SMP : SMP (Time-Lag)
〈PXGRSF〉
MP : MP (Fast Blow)
SMP : SMP (Time-Lag)

Maximum Current Selection

●MP Fuse : PSE marked

P / N	MP032	MP05	MP063	MP10	MP16	MP20
Maximum Current	0.32A	0.5A	0.63A	1A	1.6A	2A

●SMP Fuse : PSE marked

P / N	SMP10	SMP16	SMP20
Maximum Current	1A	1.6A	2A

Regular stocked product

●P4 Fuse *Please contact for PSE Marked products

P / N	P403	P405	P413	P420
Maximum Current	0.3A	0.5A	1.3A	2A

Connector

Connector P / N	Manufacturer	Connector P / N	
		For 16 points	For 32 points
1	AMP	4-172092-3	4-172092-6
2	Omron	XG4A-2031	XG4A-4031
3	JAE	PS-20PE-D4T1-LP1	PS-40PE-D4T1-LP1
4	Hirose Connectors	HIF3BA-20PA-254DSA	HIF3BA-40PA-254DSA
5	Mitsubishi	FCN-704Q020-AU/M	FCN-704Q040-AU/M
6	Fujitsu	FCN364P024-AU (24P) *1	FCN-364P040-AU
9	Panasonic	AXM220001	AXM240001
10	Yamaichi Electronics	FAP-2001-1204-OBS	FAP-4001-1204-OBS
11	KEL	6201-020-256	6201-040-256
12	Daiichi Denshi Kogyo	FRC5-C20S53T-OL	FRC5-C40S53T-OL
13	JST	RX-H201TD-1190	RX-H401TD-1190
14	3M	3428-6002LCSC	3432-6002LCSC

*1) 24 pin connector

*Please see page 4 "Relay / SSR" list if you prepare SSR yourself.

Specification

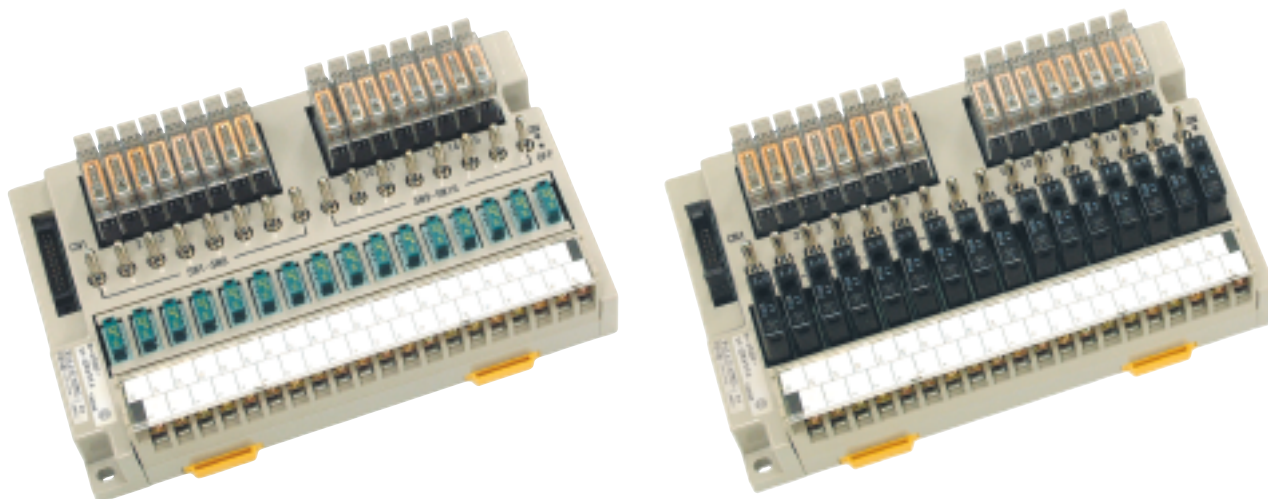
Rating*1)	Relay coil side (connector side)		DC24V
	Contact side (terminal blockside)		MP/ SDP FUSE : Resistance load : AC125V-2A／DC30V-2A Inductive load : AC125V-2A／DC30V-2A
	Common line (WET Circuit)	Current	MAX 10A
		Common points	16points / 1 common
Insulation Resistance			DC500V Mega more than 1000MΩ (*Between terminals and ground)
Withstand Voltage			AC2000V (50/60Hz) 1min (*Between terminals and ground)
Lightening Impulse			1.2/50μs, 4000V (*Between terminals and ground)
Vibration Resistant			Frequency :10～55Hz, Double amplitude :1.5mm
Shock Resistant			491m/s ² More than 50G (*Exept relay)
Recommended Wire			Maximum 2mm ²
Recommended Crimp terminal			R2 - 3.5
Tightening Torque			0.8～1.2N・m (When using crimp terminal)
Relay failure rate "P standard"			DC5V－10mA (frequency of opening/closing 12/min)
Ambient Temperature			－20～＋55℃ -4 ～ 131F *Operating
Ambient Temperature			－25～＋70℃ -13 ～ 158F *Storage
Relative Humidity			45 - 85%
Installed Relay			G7T－1112S(Omron)

P4 FUSE : Resistance load : AC220V-2A/DC30V-2A Inductive load : AC220V-2A/DC30V-2A

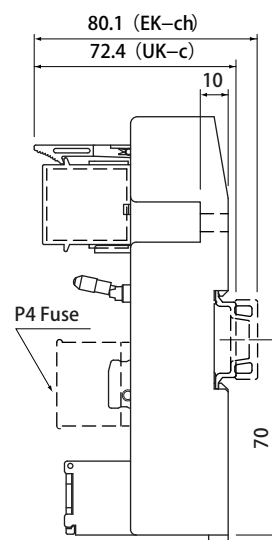
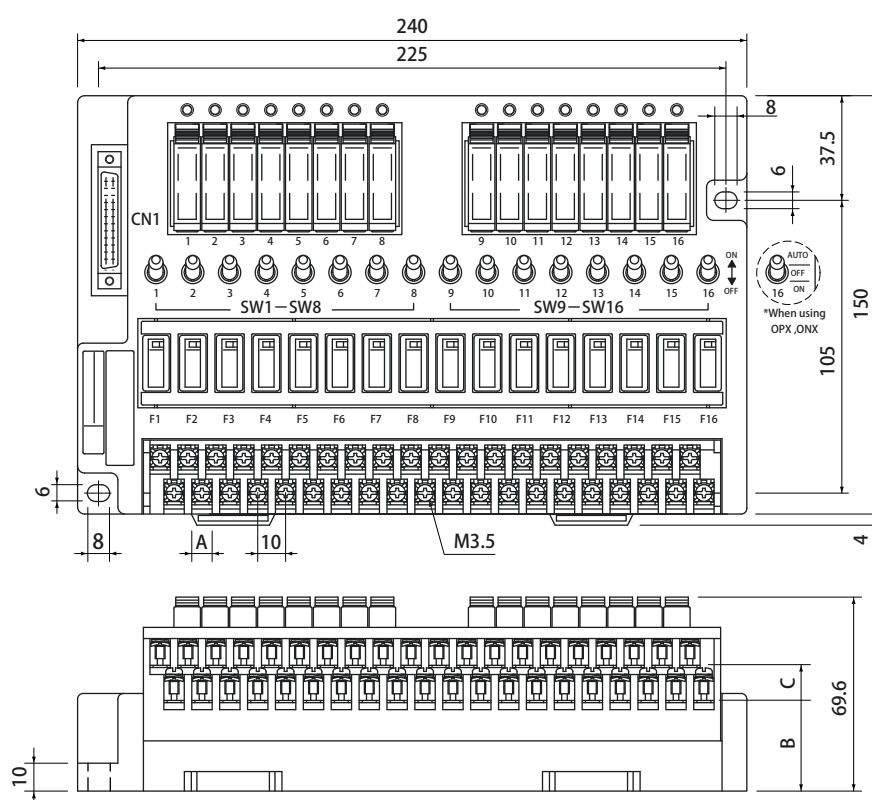
*1) Rating is not same as relay specifications.

Relay / SSR combination list

Use	Voltage Specification		Relay (Omron)	SSR (Omron)
For Output	D02	AC100V~240V Load	"a" contact : G7T-1112S "b"contact : G7T-1012S	G3TA-OA202SZ DC24V
		DC5V~48V Load		G3TA-ODX02S DC24V
		DC48V~200V Load		G3TA-OD201S DC24V

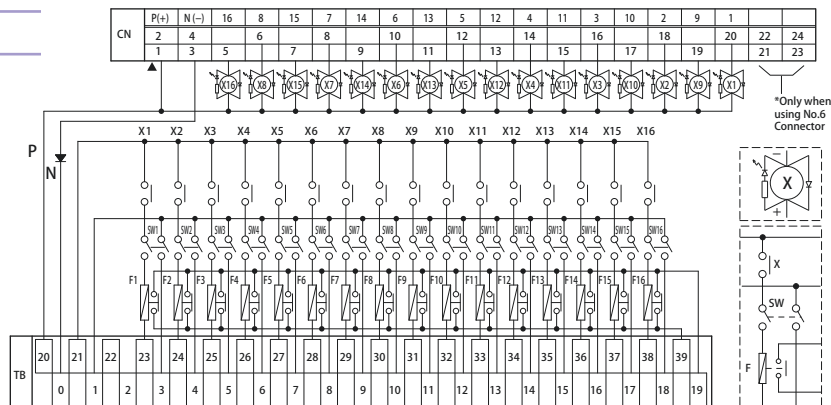


Diagram

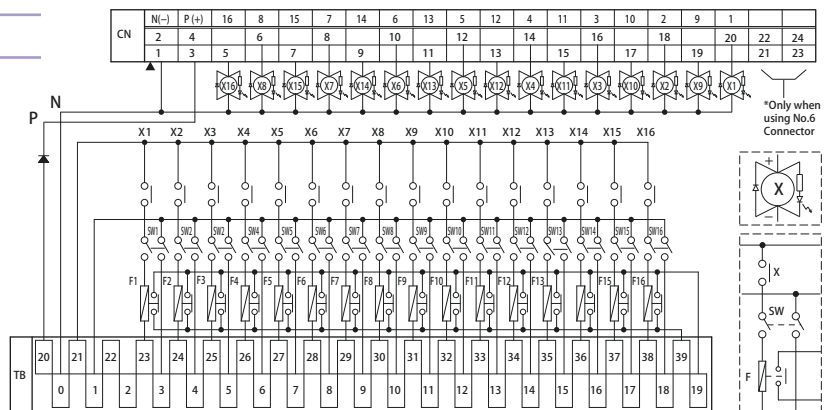


	A	B	C
PSGRM16	8.2	24.8	11.5
PXGRM16	7.3	30.3	12.6
HTXGRM16	7	43.2	12.5

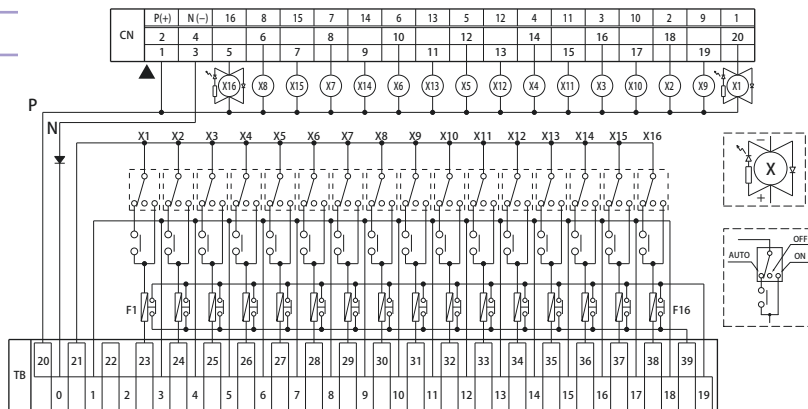
WET Circuit **OP** PNP Output



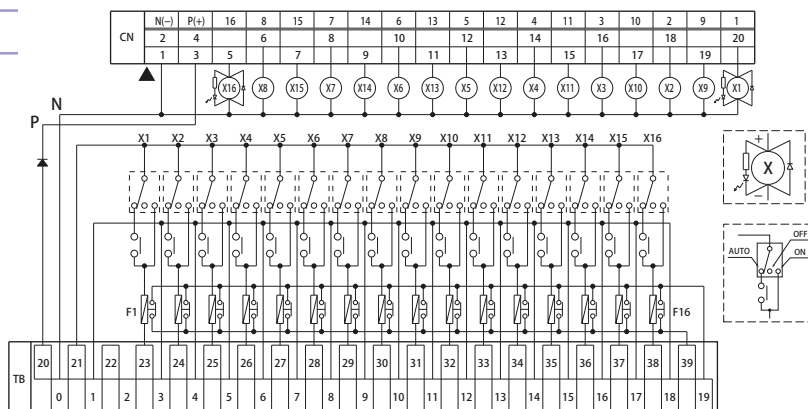
WET Circuit **ON** NPN Output

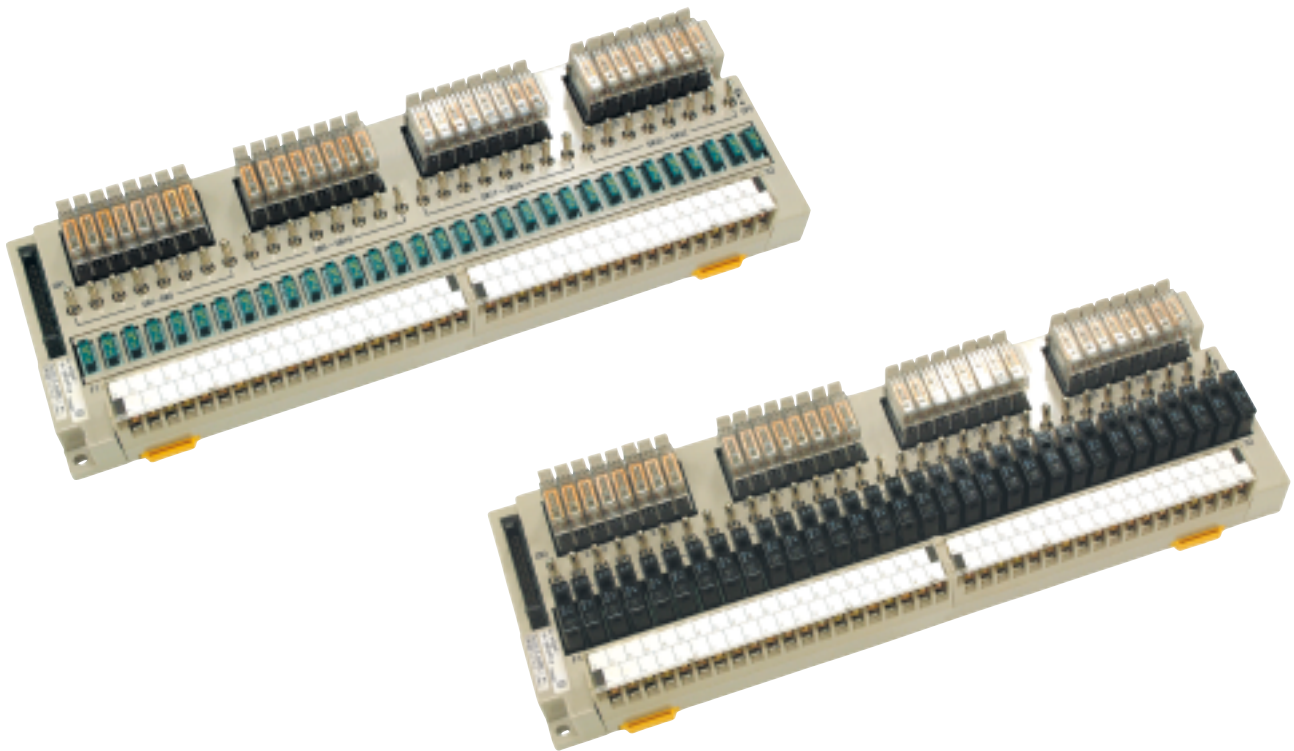


WET circuit **OPX** PNP Output

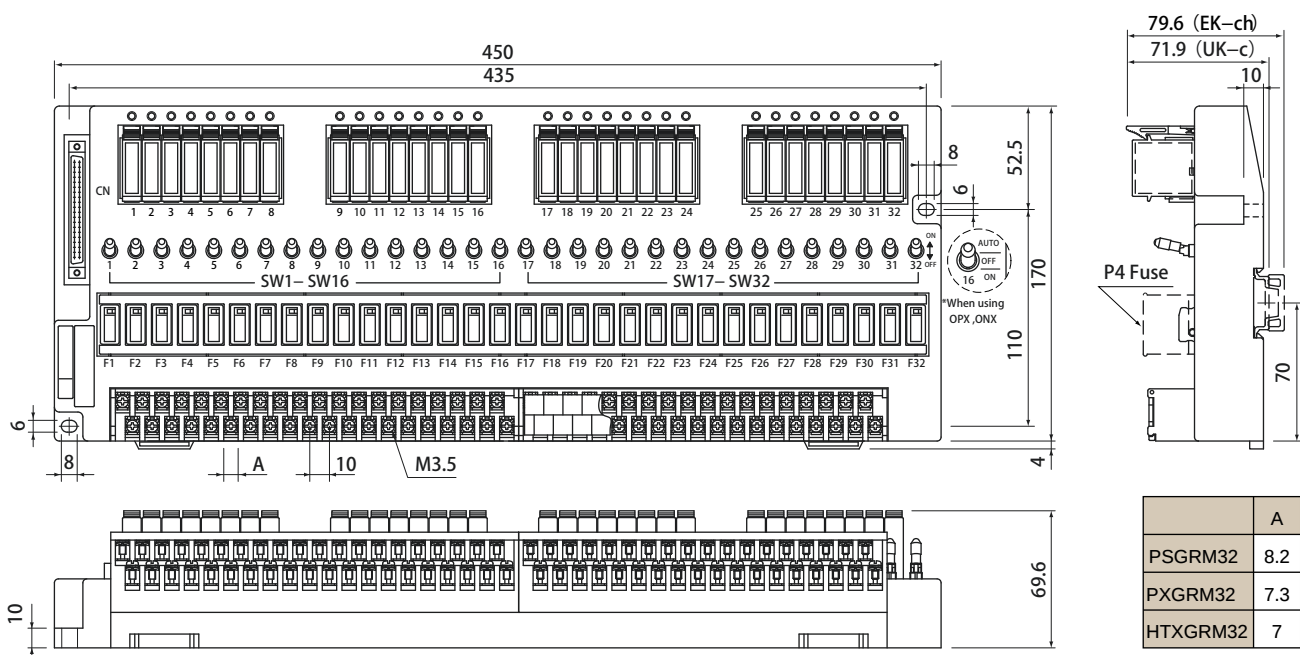


WET circuit **ONX** NPN Output





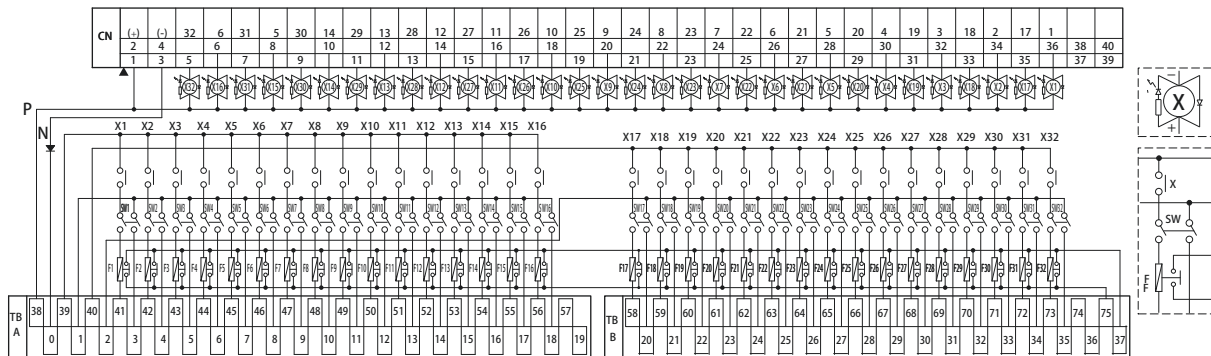
Diagram



	A	B	C
PSGRM32	8.2	24.8	11.5
PXGRM32	7.3	30.3	12.6
HTXGRM32	7	43.2	12.5

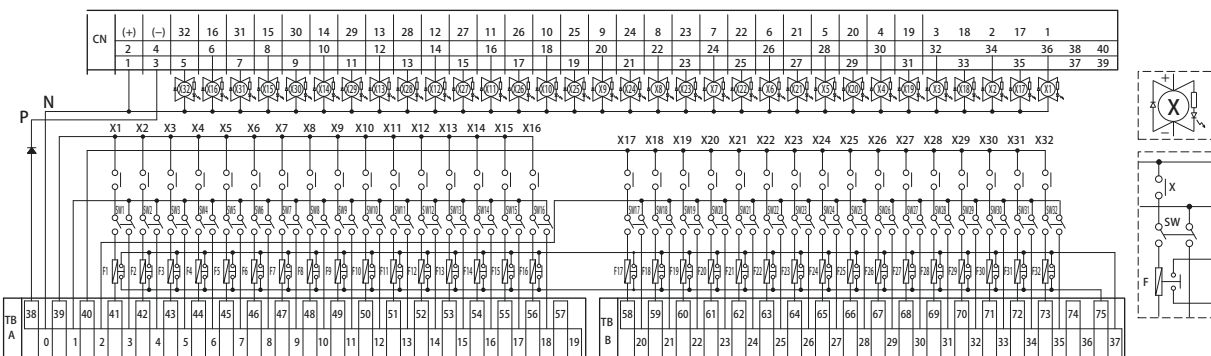
WET Circuit **OP**

PNP Output



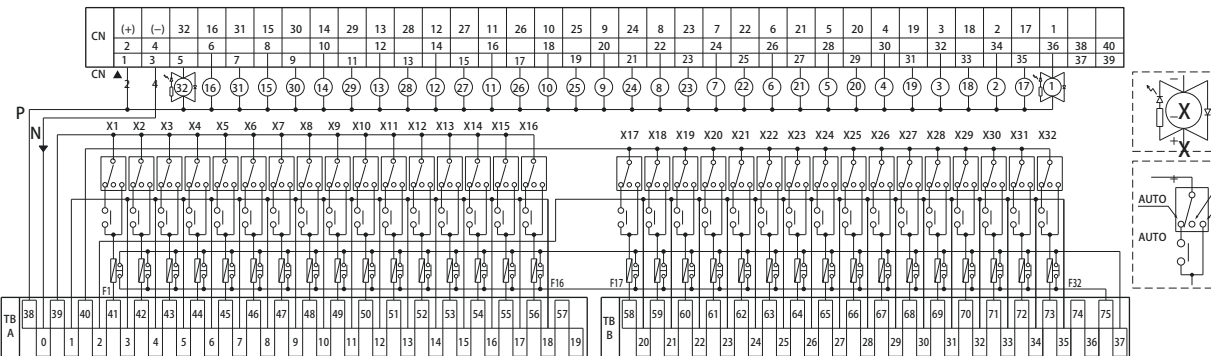
WET Circuit **ON**

NPN Output



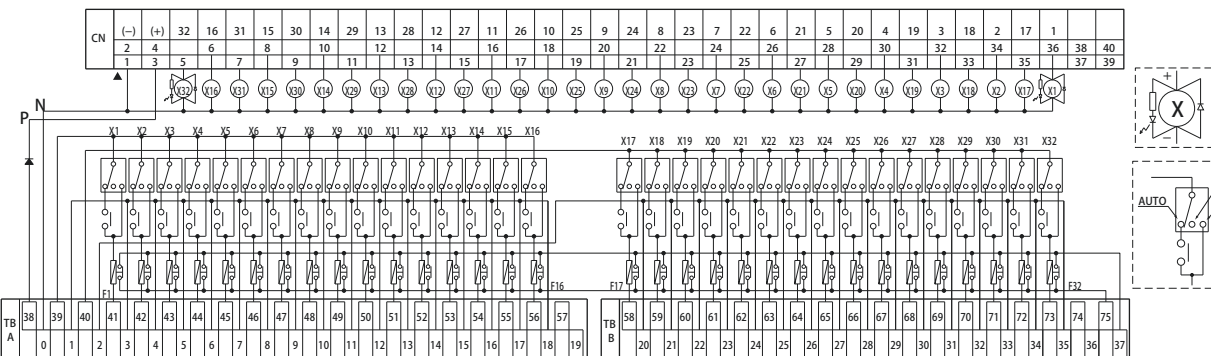
WET circuit **OPX**

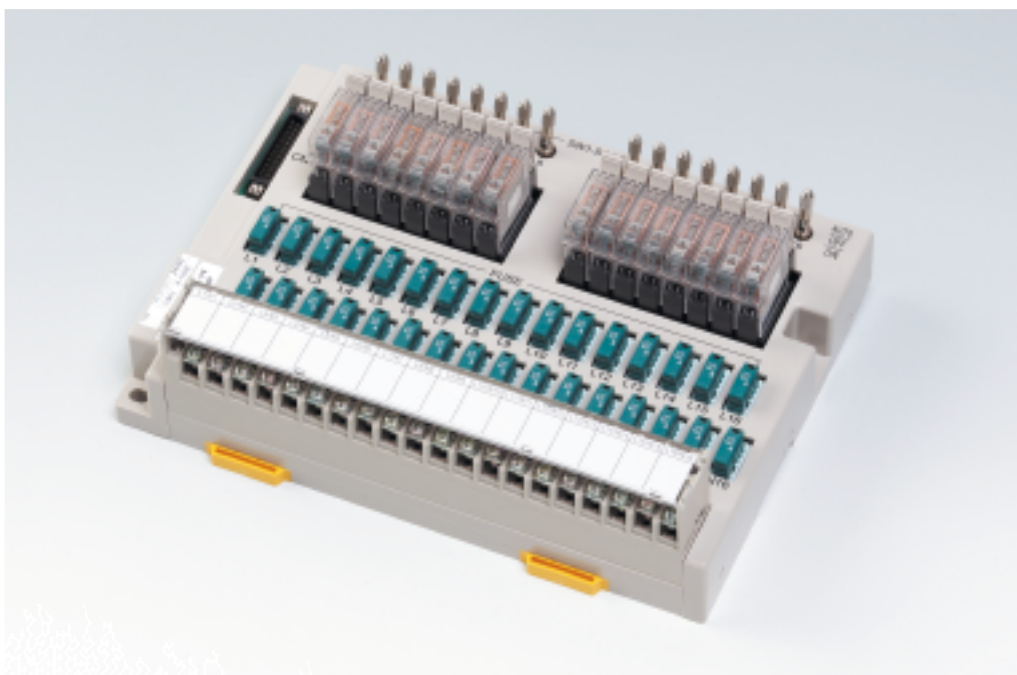
PNP Output



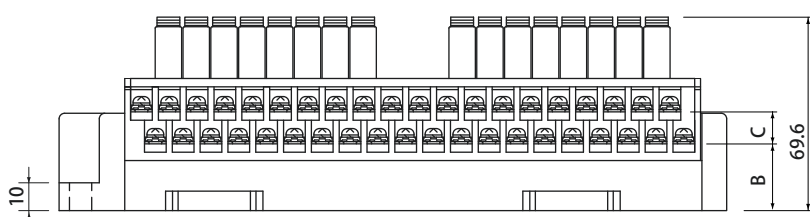
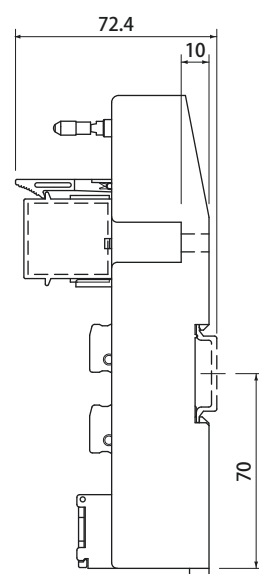
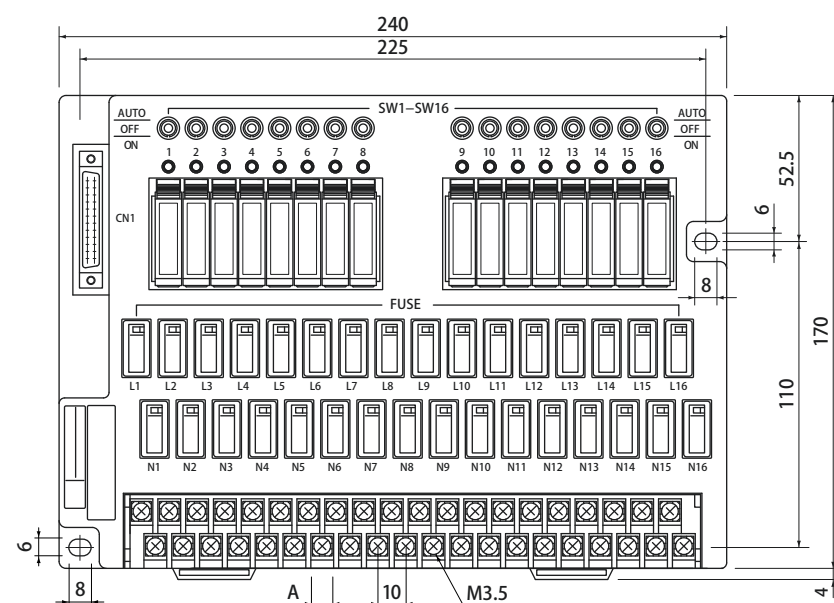
WET circuit **ONX**

NPN Output





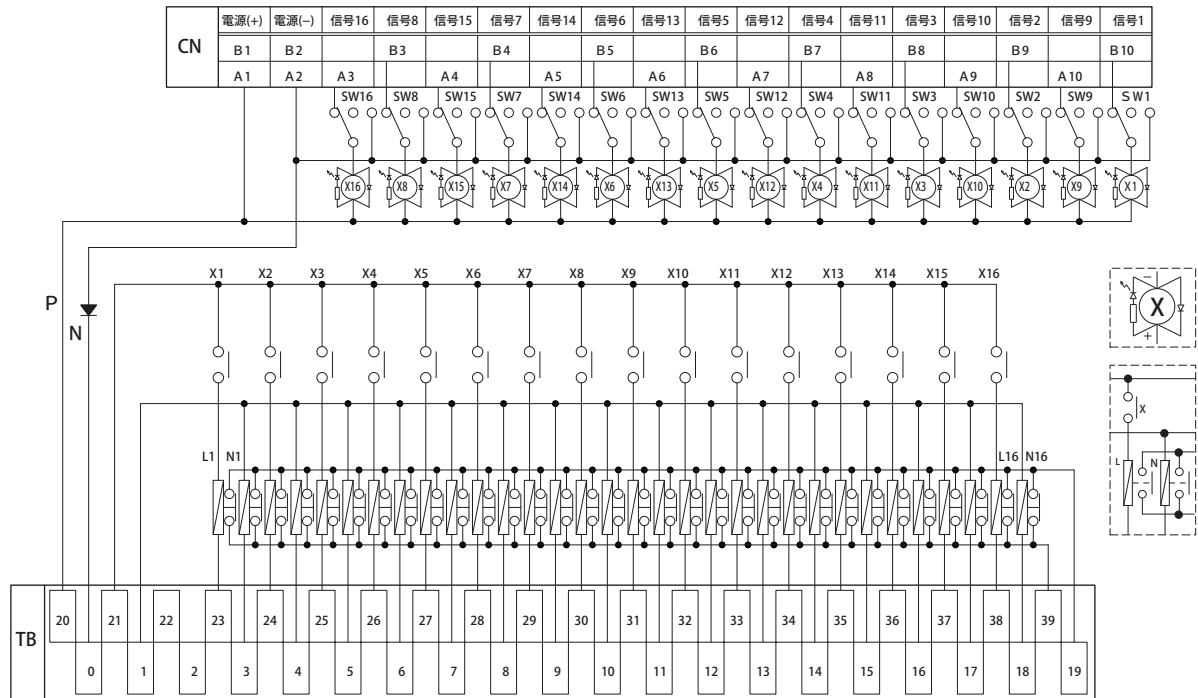
Diagram



	A	B	C
PSGRF32	8.2	24.8	11.5
PXGRF32	7.3	30.3	12.6
HTXGRF32	7	43.2	12.5

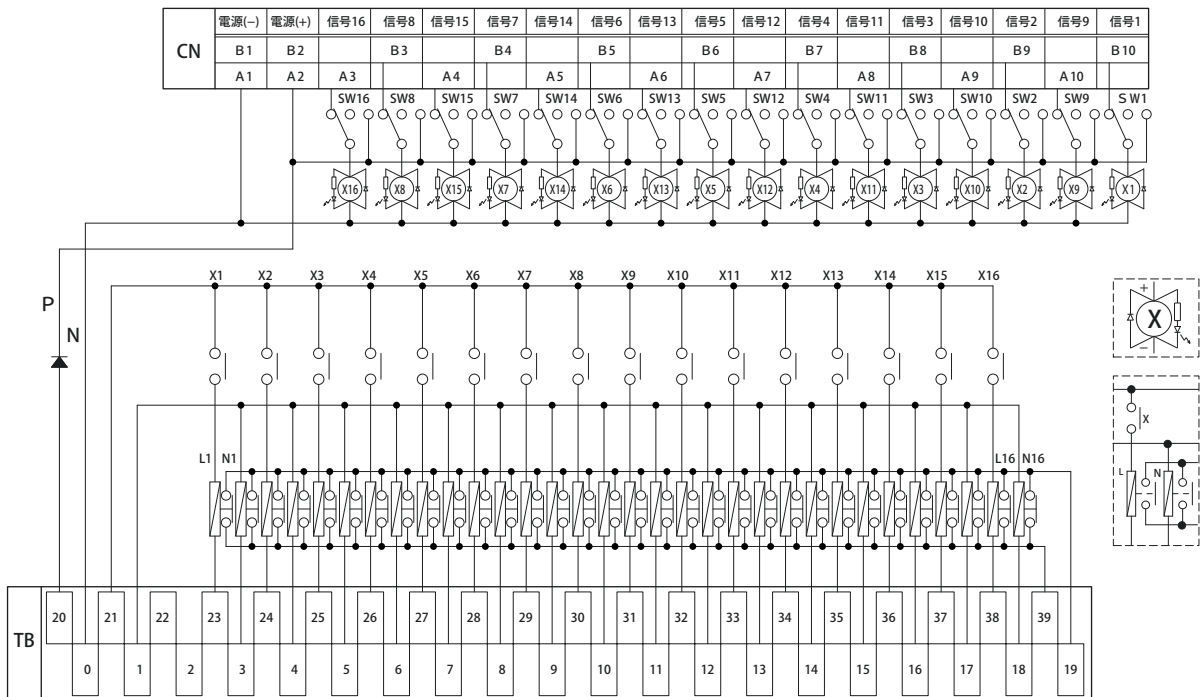
WET Circuit **OP**

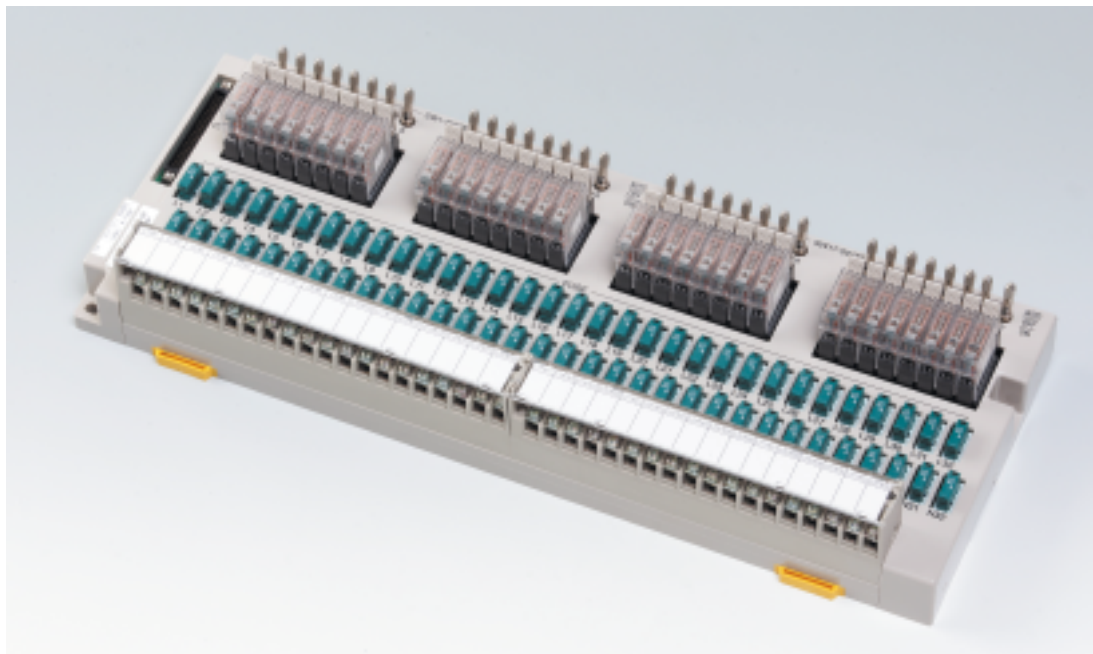
PNP Output



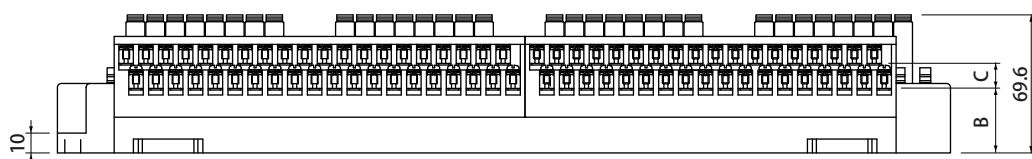
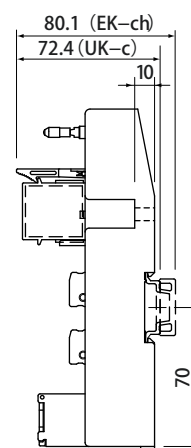
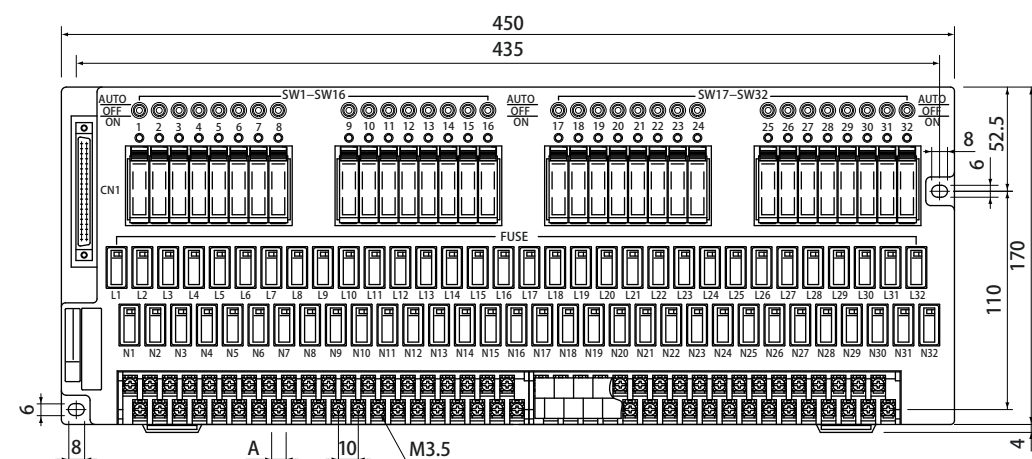
WET Circuit **ON**

NPN Output





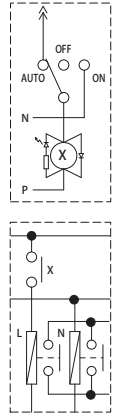
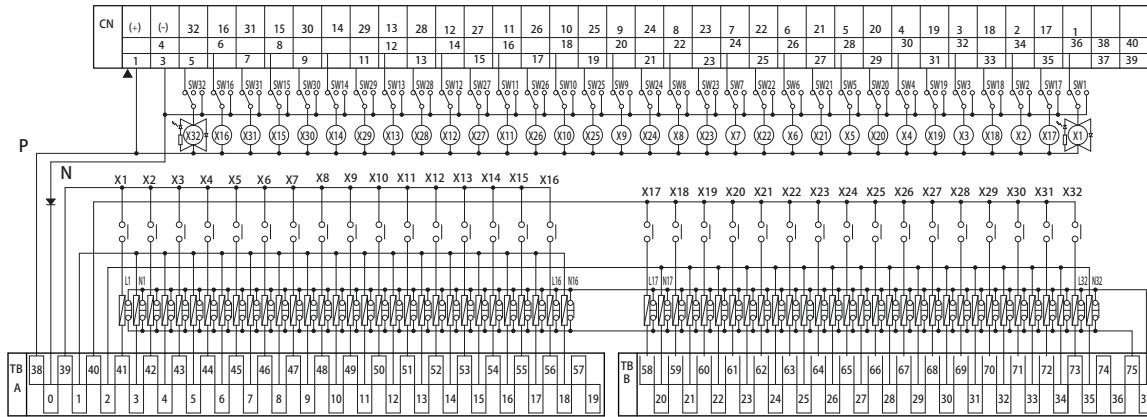
Diagram



	A	B	C
PSGRSF32	8.2	24.8	11.5
PXGRSF32	7.3	30.3	12.6
HTXGRSF32	7	43.2	12.5

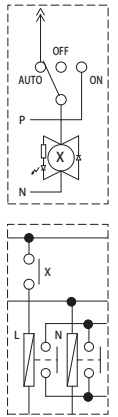
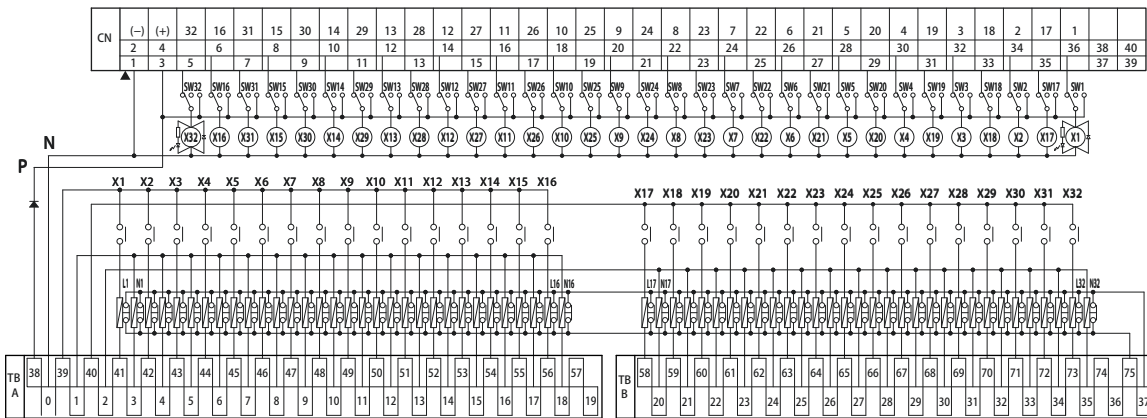
WET Circuit **OP**

PNP Output



WET Circuit **ON**

NPN Output



Caution

DIN rail mounting

- When mounting on DIN rail, please use EK-ch (High-profile DIN rail). Standard DIN rail may not fit to the unit.

Replacing Relay

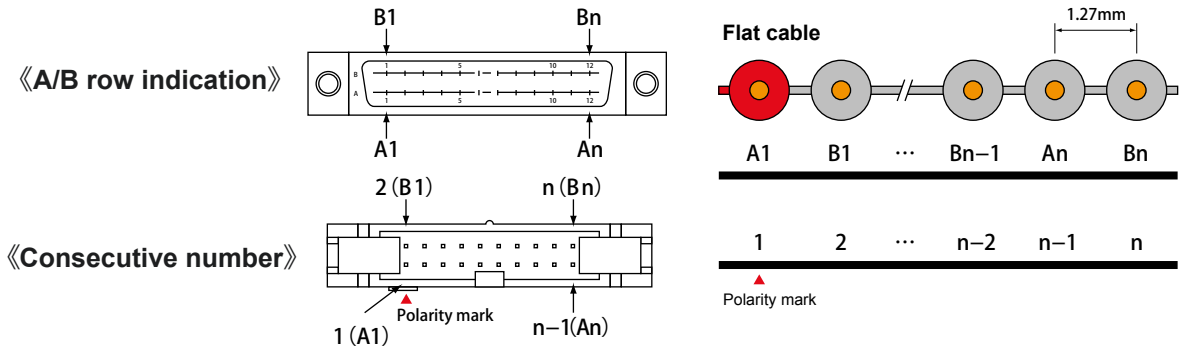
- Do not remove or insert relay while power is on. It may cause a failure and electric shock.

Wiring

- Be careful of wiring voltage and polarity of power or signal wires. A wrong wiring may cause failure.
- Do not remove or insert connector while power is on. It may cause a failure and electric shock.
- Verify the connector is properly installed.

Connector Pin Assignment

- Be careful for connector pin assignment indication.



Recommended Tightening Torque

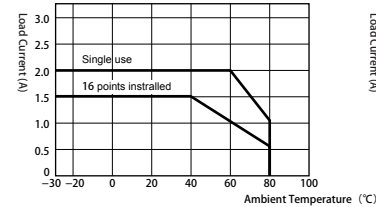
- 0.8~1.2 N/m *When wiring without crimp terminal, Recommended tightening torque is 0.5 N /m)

When using SSR

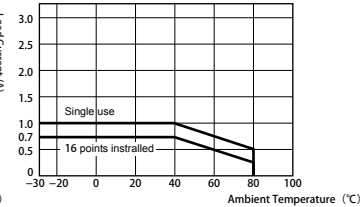
- When using SSR for output, Please install SSR alternately (every other slot) to the unit.
- Load current is depending on the temperature. Please refer to the graph below.

«Load current —Ambient Temperature»

G3TA-OA202SZ / G3TA-ODX02S



G3TA-OD201S



Fuse Rating

- Verify the fuse rating below to perform the appropriate protection coordination.

P4

P/N	Rated Current	Clearing Current ^(*)
P403	0.3A	0.7A
P405	0.5A	1A
P413	1.3A	2A
P420	2A	3A

*1) Clearing current within 1 minute

MP

Current Capacity	Fusing Spec.
110%	135% Within 6min 200% Within 0.5 sec

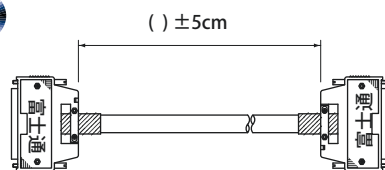
SMP

Current Capacity	Fusing Spec.
110%	135% Within 6min 200% Within 0.5 sec 300% Within 0.5 sec

Cable Assembling

● PLC Pre-wired Cable

Cable for 32 points I/O



() : Each additional cable order will be 10 cm

ex): 10 = 10 cm

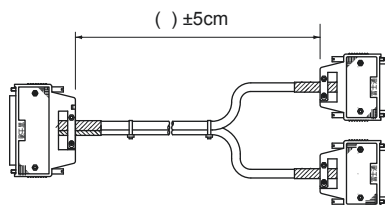
20 = 20 cm

100 = 100 cm

Interface Unit	I/O	Cable P / N	PLC maker	PLC P / N					
PXGRF32-V6 PSGRF32-V6 HTXGRF32-V6	Input	32MI-AI-H0001-()	Mitsubishi	QX41	QX42	QX71	QX72		
				A1SX41	A1SX42	AX42			
	PNP Output	32MI-AOP-H0002-()		QY41P	QY42P				
				A1SY41	A1SY42	A1SY42P	AY42		
	NPN Output	32MI-AON-H0003-()		QY81P	A1SY81				
				DI235	DI335	DI335H			
	Input	32TO-AI-H0036-()	Toshiba	DI634	DI635				
				DO235	DO335	DO634	DO635		
	PNP Output	32TO-AOP-H0037-()	Omron	CJ1W-ID231/ ID261	CS1W-ID231/ID261				
				C200H-ID216/ID218	C200H-ID217/ID219				
	Yokogawa	F3XD32-3F/4F/5F		F3XD32-3N/4N/5N					
		F3X XD64-3F/4F		F3XD64-3N/4N					
	Input	32YO-AI-H0017-()	Omron	CJ1W-OD231/OD261	CS1W-OD231/OD261				
				C200H-OD218/OD219					
			Yokogawa	F3YD32-1A	F3YD64-1A				
				F3YD64-1F					
			PNP Output	32YO-AOP-H0018-()	Omron	CJ1W-OD232 / OD262			
						CS1W-OD232 / OD262	C200H-OD21B		
	Yokogawa	F3YD32-1B							
	NPN Output	32OM-AON-H0006-()	Omron						
		32OM-AON-H0052-()							
			32YO-AON-H0019-()	Yokogawa					
Input	32KQ-C-H0027-()	Keyence	KV-C32XA/C64XA/C64XB						
PNP Output			KV-C32TA/C64TA						
NPN Outout			KV-C32TAP/C64TAP						

We offer customized cable assembling.

● Cable for 16 points I/O



() : Each additional cable order will be 10 cm

ex): 10 = 10 cm

20 = 20 cm

100 = 100 cm

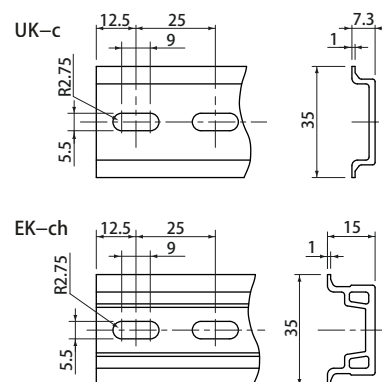
Interface Unit	I/O	Cable P / N	PLC Maker	PLC P/ N			
PXGRF16-V6 PSGRF16-V6 HTXGRF16-V6	Input	16MI-AI-H0007-()	Mitsubishi	QX41	QX42	QX71	QX72
				A1SX41	A1SX42	AX42	
	PNP Output	16MI-AOP-H0008-()		QY41P	QY42P		
				A1SY41	A1SY42	A1SY42P	AY42
	NPN Output	16MI-AON-H0009-()		QY81P	A1SY81		
				DI235	DI335	DI335H	
	Input	16TO-AI-H0015-()	Toshiba	DI634	DI635		
				DO235	DO335	DO634	DO635
	PNP Output	16TO-AOP-H0016-()	Omron	CJ1W-ID231/ ID261	CS1W-ID231/ID261		
				C200H-ID216/ID218	C200H-ID217/ID219		
	Input	16YO-AI-H0020-()	Yokogawa	F3XD32-3F/4F/5F	F3XD32-3N/4N/5N		
				F3X XD64-3F/4F	F3XD64-3N/4N		
	PNP Output	16YO-AOP-H0021-	Omron	CJ1W-OD231/OD261		CS1W-OD231/OD261	
				C200H-OD218/OD219			
			Yokogawa	F3YD32-1A F3YD64-1A			
				F3YD64-1F			
	NPN Output	16OM-AON-H0012-() 16OM-AON-H0053-() 16YO-AON-H0022-()	Omron	CJ1W-OD232 / OD262			
CS1W-OD232 / OD262				C200H-OD21B			
Yokogawa			F3YD32-1B				
Input	16KQ-C-H0038-()	Keyence	KV-C32XA/C64XA/C64XB				
PNP Output			KV-C32TA/C64TA				
NPN Output			KV-C32TAP/C64TAP				

A large variety of conversion cables are available. Example: Breakout cable (The other side are crimp terminals or 4 connectors for 8 point common). We also offer connector branching units. *PSC Series is used for PLC connection.

Accessories

	P / N	Rail	Length (mm)	Packaging
Rail	UK-c	—	1000,1500,2000	10
	EK-ch	—	1000,1500,2000	10
End bracket	EK-b	UK-c,EK-ch	—	100
	UK-b	UK-c,EK-ch	—	100
Rail end cap	UK-ec	UK-c	—	50
	EK-ec	EK-ch	—	50

	P / N	Note
Short bar	PXG-2YC	For terminal block between A • B (For 32 points unit)
	P10-() SLC	() Terminal pole numbers



Safety Precautions

- Please use appropriate current and voltage according to the manual.
- Please do not apply abnormal shock or vibration. It may cause a malfunction or failure.
- Please do not touch terminal block part and close the terminal cover while the power is alive.
- Never use a Relay for a load that exceeds the contact ratings of the Relay, such as the switching capacity. Doing so may result in reducing Relay performance for insulation failure, contact welding, and contact faults, and might even result in burning or other damage to the relay itself.
- Relay durability is greatly affected by the switching conditions. Always test the Relay under actual application conditions to confirm applicability and use the Relay only for the number of switching operations that will not affect performance.
- Our products were not designed or manufactured for use in devices or systems directly related to human life. Users who intend to use the product described in this manual for special purposes must contact Toho Technology Inc beforehand.
- If this product is to be involved a life and death situation or in a facility where failure may cause a serious accident, safety devices MUST be installed to minimize the likelihood of any accident.

★The products and specifications described in this manual or the content and presentation of the manual may be changed without notice to improve the product and/or the manual.



Toho Technology

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