Omron, Минск т.80447584780
www.fotorele.net www.tiristor.by радиодетали, электронные компоненты
email minsk17@tut.by tel.+375 29 758 47 80 мтс

омрон, каталог, описание, технические, характеристики, datasheet, параметры, маркировка,габариты, фото, даташит, аналог, замена, omron

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OMRON
ELECTRONIC COMPONENTS

QR код

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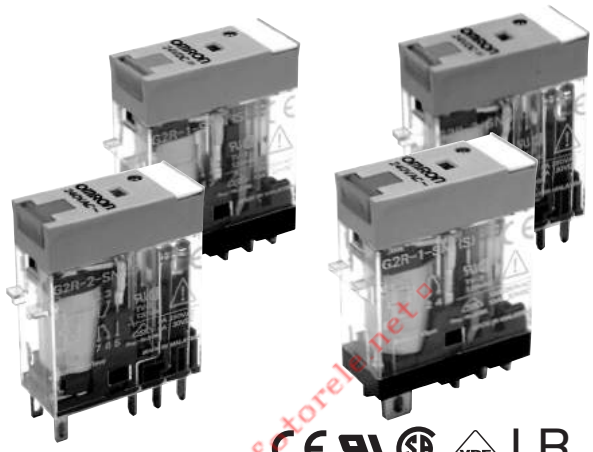
OMRON

Универсальные реле

Новая модель G2RS

Компактное, съемное реле с плоским корпусом

- Возможны исполнения с блокируемой тестовой кнопкой.
- Интегрированный механический коммутационный индикатор.
- Поставка с фирменной табличкой.
- У модели для переменного тока в случае отсоединения катушки имеется функция самодиагностики (светодиод).
- Высокая коммутационная способность (1 полюс: 10 А).
- Экологичны (не содержит кадмия и свинца).
- Широкий ассортимент цоколей.



Структура номера модели

■ Код заказа

G2R □-□ □□ - □□ -□

1 2 3 4 5 6 7

1. **Функция реле**
   пробел: стандарт
2. **Количество полюсов**
   1: 1 полюс
   2: 2 полюса
3. **Вид контактов**
   пробел: SPDT
4. **Тип контакта**
   пробел: одиночный контакт
5. **Клеммы**
   S: штырьковые
6. **Классификация**
   пробел: стандарт
   N: светодиодный индикатор
   D: диод
   ND: светодиодный индикатор и диод
   NI: светодиодный индикатор и тестовая кнопка
   NDI: светодиодный индикатор, диод и тестовая кнопка
7. **Номинальное напряжение катушки**

Информация по заказам

■ Перечень моделей

Классификация		Класс защиты	Характеристики катушки	Вид контактов	
				SPDT	DPDT
Штырьковое подсоединение	Реле общего назначения	Негерметично	перем. ток/пост. ток	G2R-1-S	G2R-2-S
	Светодиодный индикатор			G2R-1-SN	G2R-2-SN
	Светодиодный индикатор и тестовая кнопка			G2R-1-SNI	G2R-2-SNI
	Диод		пост. ток	G2R-1-SD	G2R-2-SD
	Светодиодный индикатор и диод			G2R-1-SND	G2R-2-SND
	Светодиодный индикатор, диод и тестовая кнопка			G2R-1-SNDI	G2R-2-SNDI

Указание: При заказе к номеру модели добавляйте значение номинального напряжения и "(S)".
Номинальные напряжения катушек приведены в таблице параметров катушек.
Например: G2R-1-S 12 VDC (S) ——— Новая модель
└——— Номинальное напряжение катушки

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■ Дополнительные принадлежности (по особому заказу)

Соединительные цоколи

Подходят для моделей реле	Цоколь для монтажа на шинах и монтажной плате		Цоколь с разъемами сзади	
	Невинтовое соединение (SLC)	Винтовое соединение	Клеммы	Модель
1 полюс G2R-1-S(N)(D)(ND)(NI)(NDI)	• P2RF-05S (см. указание) + (P2CM-S (опция))	• P2RF-05-E • P2RF-05	Разъемы печатной платы	P2R-05P, P2R-057P
			Паяные соединения	P2R-05A
2 полюса G2R-2-S(N)(D)(ND)(NI)(NDI)	• P2RF-08S (см. указание) + (P2CM-S (опция))	• P2RF-08-E • P2RF-08	Разъемы печатной платы	P2R-08P, P2R-087P
			Паяные соединения	P2R-08A

Указание: Для стабильного монтажа рекомендуется применение зажимного хомута и размыкающего рычажка P2CM.

Дополнительные принадлежности для цоколя SLC (опция)

Название	Модель
Зажимной хомут & размыкающий рычажок	P2CM-S
Фирменная табличка	R99-11 фирменная табличка для MY
Перемычка цоколя	P2RM-SR (для перем. тока), P2RM-SB (для пост. тока)

Шины для монтажа

Применяемый цоколь реле	Описание	Модель
Цоколь для шинного монтажа	Шина для монтажа	50 см (ℓ) x 7,3 мм (T): PFP-50N 1 м (ℓ) x 7,3 мм (T): PFP-100N 1 м (ℓ) x 16 мм (T): PFP-100N2
	Соединительная плата	PFP-M
	Прокладка	PFP-S
Цоколь с разъемами сзади	Монтажная плата	P2R-P

*Применяется для монтажа нескольких цоколей P2R-05A и P2R-08A рядом друг с другом.

Технические данные

■ Характеристики катушки

Номинальное напряжение		Номинальный ток*		Сопротивление катушки*	Индуктивность катушки (H) (базовое значение)		Напряжение трогания	Напряжение отпускания	Максимальное напряжение	Потребление мощности (прибл.)
		50 Гц	60 Гц		Якорь ВЫКЛ.	Якорь ВКЛ.	% номинального напряжения			
перем. ток	24 В	43,5 мА	37,4 мА	253 Ом	0,81	1,55	80% макс.	30% макс.	110%	0,9 ВА при 60 Гц
	110 В	9,5 мА	8,2 мА	5566 Ом	13,33	26,83				
	120 В	8,6 мА	7,5 мА	7286 Ом	16,13	32,46				
	230 В	4,4 мА	3,8 мА	27172 Ом	72,68	143,90				
	240 В	3,7 мА	3,2 мА	30360 Ом	90,58	182,34				

Номинальное напряжение		Номинальный ток*	Сопротивление катушки*	Индуктивность катушки (H) (базовое значение)		Напряжение трогания	Напряжение отпускания	Максимальное напряжение	Потребление мощности (прибл.)
				Якорь ВЫКЛ.	Якорь ВКЛ.	% номинального напряжения			
пост. ток	6 В	87,0 мА	69 Ом	0,25	0,48	70% макс.	мин. 15 %	110%	0,53 Вт
	12 В	43,2 мА	278 Ом	0,98	2,35				
	24 В	21,6 мА	1113 Ом	3,60	8,25				
	48 В	11,4 мА	4220 Ом	15,2	29,82				

* Номинальный ток и сопротивление катушки были определены при температуре катушки 23°C с отклонением ±10 %.

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■ Нагрузочная способность контакта

Пара контактов	1 полюс		2 полюса	
Нагрузочная способность	Омическая нагрузка (cosϕ = 1)	Индуктивная нагрузка (cosϕ = 0,4; L/R = 7 мс)	Омическая нагрузка (cosϕ = 1)	Индуктивная нагрузка (cosϕ = 0,4; L/R = 7 мс)
Номинальная нагрузка	10 А при 250 В перем. тока; 10 А при 30 В пост. тока	7,5 А при 250 В перем. тока; 5 А при 30 В пост. тока	7,5 А при 250 В перем. тока; 5 А при 30 В пост. тока	2 А при 250 В перем. тока, 3 А при 30 В пост. тока
Номинальный ток при длительной нагрузке	10 А		5 А	
Макс. напряжение переключения	440 В перем. тока, 125 В пост. тока		380 В перем. тока, 125 В пост. тока	
Макс. ток переключения	10 А		5 А	
Макс. коммутационная способность	2500 ВА, 300 Вт	1875 ВА, 150 Вт	1250 ВА, 150 Вт	500 ВА, 90 Вт
Минимальная нагрузка (базовое значение)	100 мА при 5 В пост. тока		10 мА при 5 В пост. тока	

Указание: P-уровень: λ_{60} = 0,1 x 10^{-6}/переключений

■ Характеристики

Описание	1 полюс	2 полюса
Сопротивление контакта	макс. 100 мОм	
Время срабатывания	макс. 15 мс	
Время возврата	перем. ток: макс. 10 мс; пост. ток: макс. 5 мс (с интегр. макс. 20 мс)	перем. ток: макс. 15 мс; пост. ток: макс. 10 мс (с интегр. макс. 20 мс)
Макс. частота переключений	механически: 18000 переключений/час электрически: 1800 переключений/час (под номинальной нагрузкой)	
Сопротивление изоляции	миним. 1000 МОм (при 500 В пост. тока)	
Испытательное напряжение изоляции	5000 В перем. тока, 50/60 Гц за одну минуту между катушкой и контактами*; 1000 В перем. тока, 50/60 Гц за одну минуту между контактами одинаковой полярности	5000 В перем. тока, 50/60 Гц за одну минуту между катушкой и контактами*; 3000 В перем. тока, 50/60 Гц за одну минуту между контактами разной полярности 1000 В перем. тока, 50/60 Гц за одну минуту между контактами одинаковой полярности
Вибропрочность	разрушение: с 10 до 55 Гц, 0,75 мм одинарная амплитуда (1,5 мм двойная амплитуда) сбой: с 10 до 55 Гц, 0,75 мм одинарная амплитуда (1,5 мм двойная амплитуда)	
Ударопрочность	разрушение: 1000 м/с^2 сбой: 200 м/с^2 при возбуждении; 100 м/с^2 при отсутствии возбуждения	
Срок службы	механически: катушка перем. тока: мин. 10 000 000 переключений; катушка пост. тока: мин. 20 000 000 переключений (при 18 000 переключений/час) электрически: мин. 100 000 переключений (при 1800 переключений/час под номинальной нагрузкой (тип катушки с пост. током)	
Температура окружающей среды	эксплуатация: от –40°C до 70°C (без образования льда или конденсата)	
Влажность воздуха	при эксплуатации:от 5 % до 85 %	
Вес	прибл. 21 г	

Указание: Значения в вышерасположенной таблице – это начальные значения.
*4000 В перем. тока, 50/60 Гц для одной минуты при применении цоколя P2R-05A или P2R-08A.

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■ Принятые стандарты

UL 508 (№ документа E41643)

Модель	Вид контактов	Характеристики катушки	Нагрузочная способность контакта	Переключения
G2R-1-S	SPDT	5 - 110 В пост. тока 5 - 240 В перем. тока	10 А, 30 В пост. тока (омическая нагрузка) 10 А, 250 В перем. тока (общее назначение) TV-3 (только замыкающий контакт)	6 x 10^3
G2R-2-S	DPDT		5 А, 30 В пост. тока (омическая нагрузка) 5 А, 250 В перем. тока (общее назначение) TV-3 (только замыкающий контакт)	6 x 10^3

CSA 22.2 № 0, № 14 (№ документа)

Модель	Вид контактов	Характеристики катушки	Нагрузочная способность контакта	Переключения
G2R-1-S	SPDT	5 - 110 В пост. тока 5 - 240 В перем. тока	10 А, 30 В пост. тока (омическая нагрузка) 10 А, 250 В перем. тока (общее назначение) TV-3 (только замыкающий контакт)	6 x 10^3
G2R-2-S	DPDT		5 А, 30 В пост. тока (омическая нагрузка) 5 А, 250 В перем. тока (общее назначение) TV-3 (только замыкающий контакт)	6 x 10^3

IEC/VDE (EN61810)

Вид контактов	Характеристики катушки	Нагрузочная способность контакта	Переключения
1 полюс	6, 12, 24, 48 В пост. тока 24, 110, 120, 230, 240 В перем. тока	5 А, 440 В перем. тока (cosϕ = 1,0) 10 А, 250 В перем. тока (cosϕ = 1,0) 10 А, 30 В пост. тока (0 мс)	100 x 10^3
2 полюса	6, 12, 24, 48 В пост. тока 24, 110, 120, 230, 240 В перем. тока	5 А, 250 В перем. тока (cosϕ = 1,0) 5 А, 30 В пост. тока (0 мс)	100 x 10^3

LR

Пара контактов	Характеристики катушки	Нагрузочная способность контакта	Переключения
1 полюс	5 - 110 В пост. тока 5 - 240 В пост. тока	10 А, 250 В перем. тока (общее назначение) 7,5 А, 250 В перем. тока (коэффициент мощности 0,4) 10 А, 30 В пост. тока (омическая нагрузка) 5 А, 30 В пост. тока (L/R = 7 мс)	100 x 10^3
2 полюса	5 - 110 В пост. тока 5 - 240 В пост. тока	5 А, 250 В перем. тока (общее назначение) 2 А, 250 В перем. тока (коэффициент мощности 0,4) 5 А, 30 В пост. тока (омическая нагрузка) 3 А, 30 В пост. тока (L/R = 7 мс)	100 x 10^3

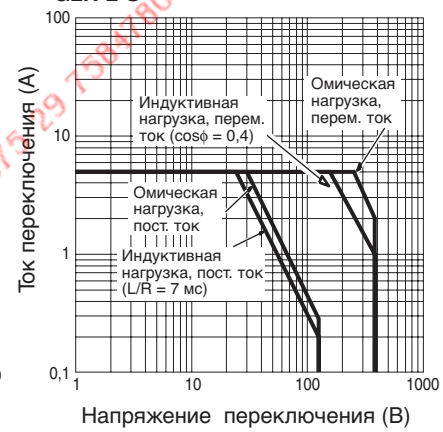
Характеристики

Максимальная коммутационная способность

Съемное реле

G2R-1-S

G2R-2-S



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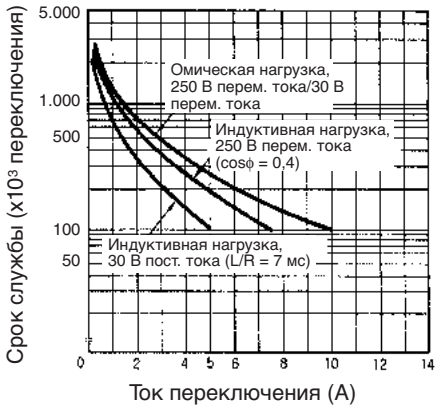
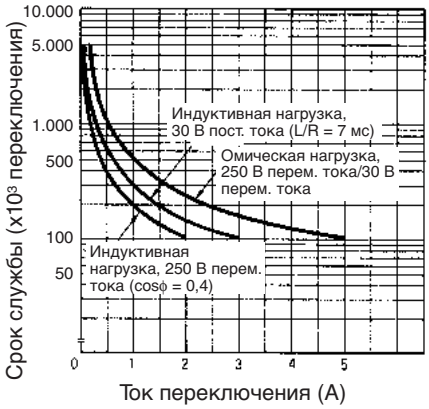
Срок службы

Съемное реле

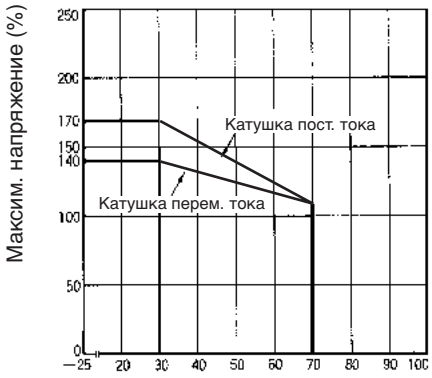
G2R-1-S



G2R-2-S



Температура окружающей среды / максим. напряжение катушки



Указание: Максимальное напряжение - это максимальное значение в диапазоне меняющегося рабочего напряжения, оно не распространяется на напряжение при длительной нагрузке.

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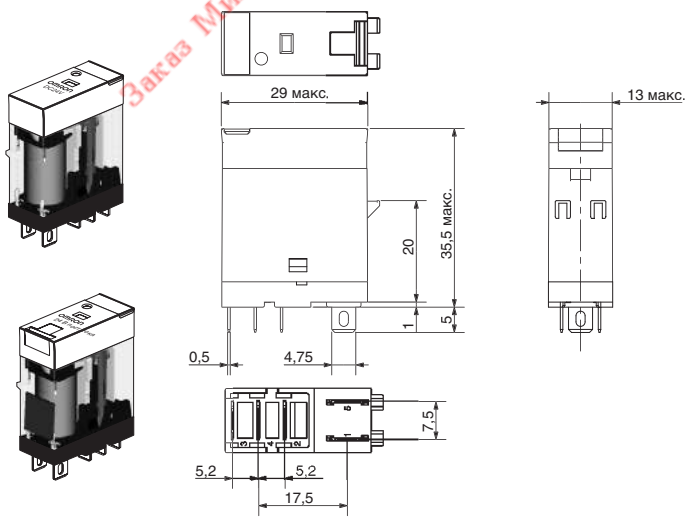
Габаритные размеры

Указание: Все значения представлены в миллиметрах, если не указано иначе.

Съемное реле

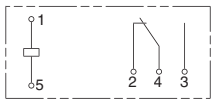
Реле с SPDT

G2R-1-S, G2R-1-SN, G2R-1-SNI
G2R-1-SD, G2R-1-SND, G2R-1-SNDI

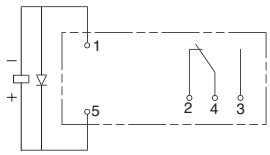


Расположение клемм/внутренняя проводка (вид снизу)

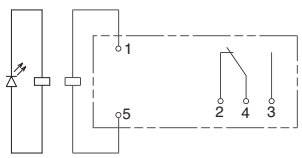
G2R-1-S



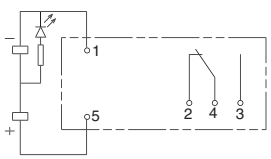
G2R-1-SD (DC)



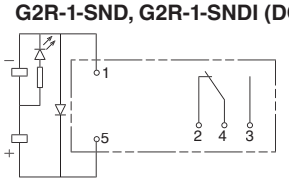
G2R-1-SN, G2R-1-SNI (AC)



G2R-1-SN, G2R-1-SNI (DC)

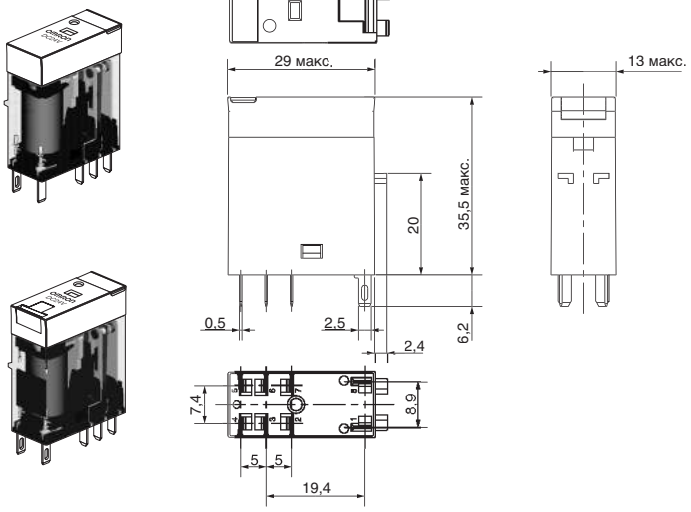


G2R-1-SND, G2R-1-SNDI (DC)



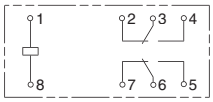
Реле с DPDT

G2R-2-S, G2R-2-SN, G2R-2-SNI
G2R-2-SD, G2R-2-SND, G2R-2-SNDI

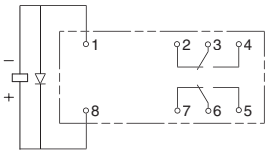


Расположение клемм/внутренняя проводка (вид снизу)

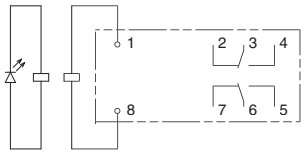
G2R-2-S



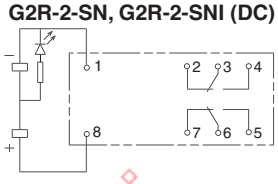
G2R-2-SD (DC)



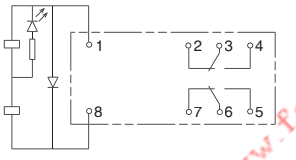
G2R-2-SN, G2R-2-SNI (AC)



G2R-2-SN, G2R-2-SNI (DC)

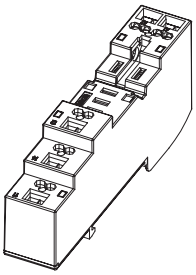


G2R-2-SND, G2R-2-SNDI (DC)

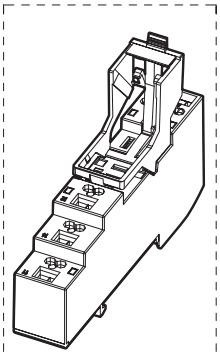


Цоколь для монтажа на шинах и монтажной плате

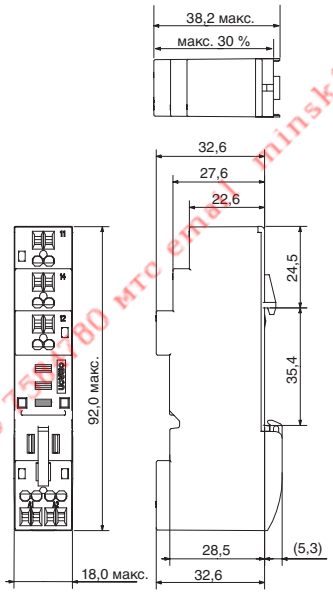
P2RF-05-S



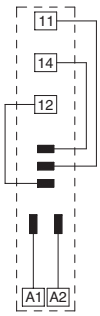
Стандартная модель



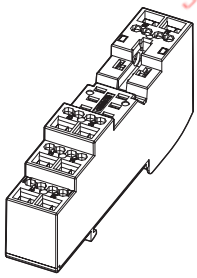
Опция (с выталкивателем и маркировкой)



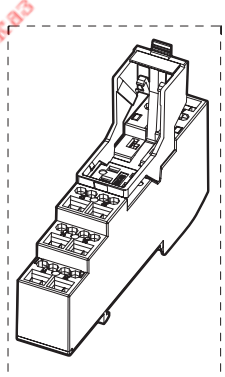
Расположение клемм (вид сверху)



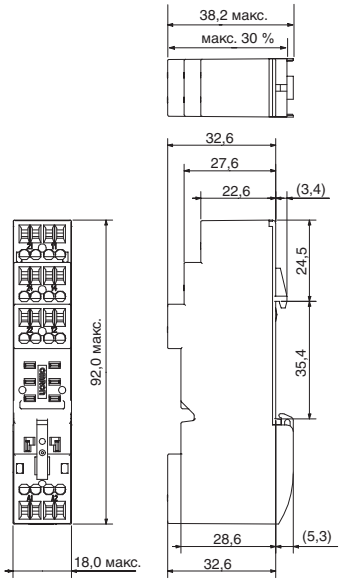
P2RF-08-S



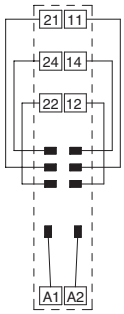
Стандартная модель



Опция (с выталкивателем и маркировкой)



Расположение клемм (вид сверху)



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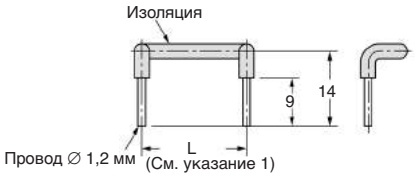
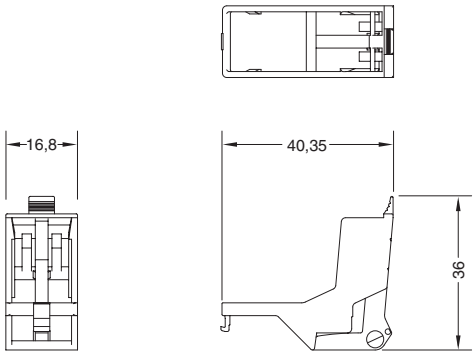
Дополнительные принадлежности для P2RF-□-S

Перемычка цоколя



Зажимной хомут и размыкающий рычажок



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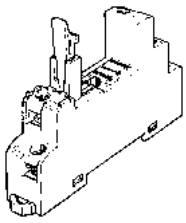
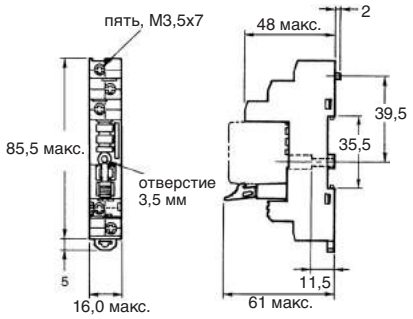
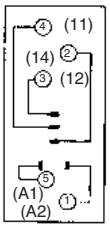
P2RF-05-E

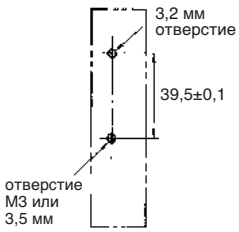




Расположение клемм (вид сверху)

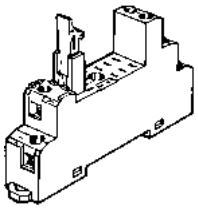


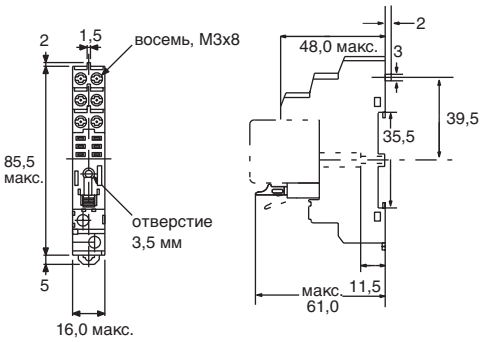
Крепежные отверстия (для поверхностного монтажа)



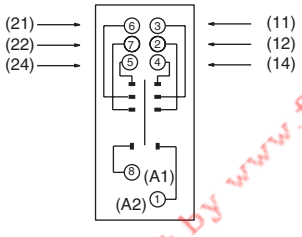
Указание: Номера штырьковых контактов в скобках относятся к нормам DIN.

P2RF-08-E



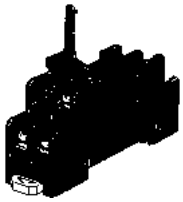


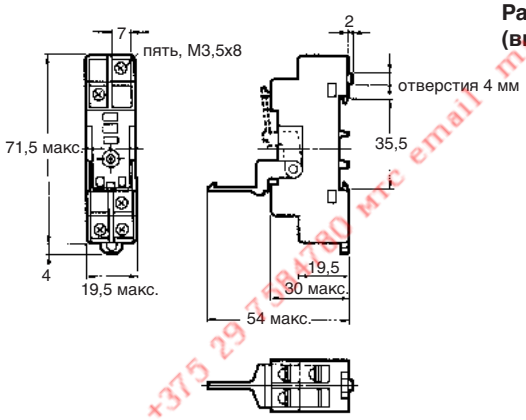
Расположение клемм (вид сверху)



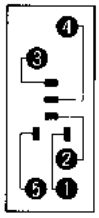
Крепежные отверстия (для поверхностного монтажа)

P2RF-05

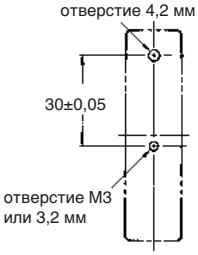




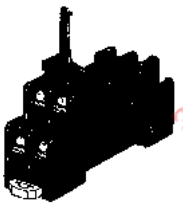
Расположение клемм (вид сверху)

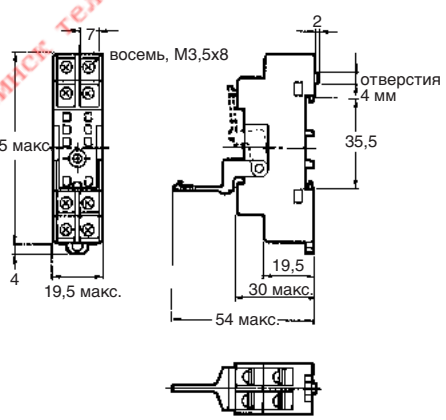


Крепежные отверстия (для поверхностного монтажа)

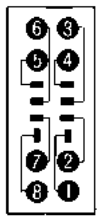


P2RF-08

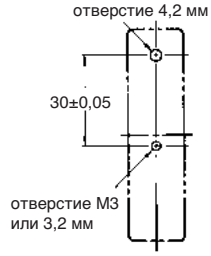




Расположение клемм (вид сверху)



Крепежные отверстия (для поверхностного монтажа)



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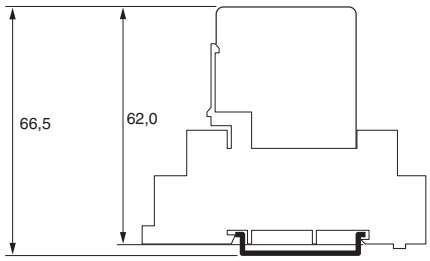
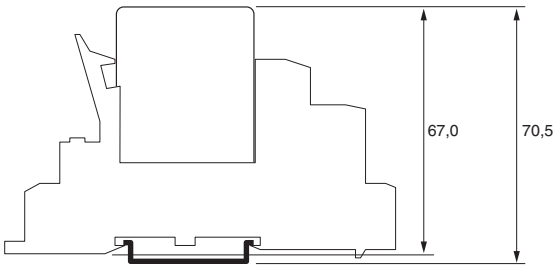
Монтажная высота реле с цоколем для монтажа на шинах и монтажной плате

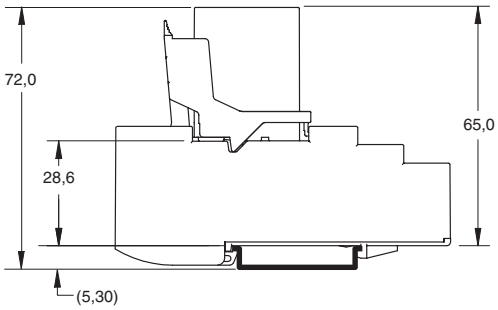
P2RF-□



P2RF-□-E

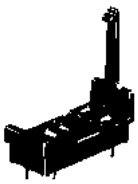


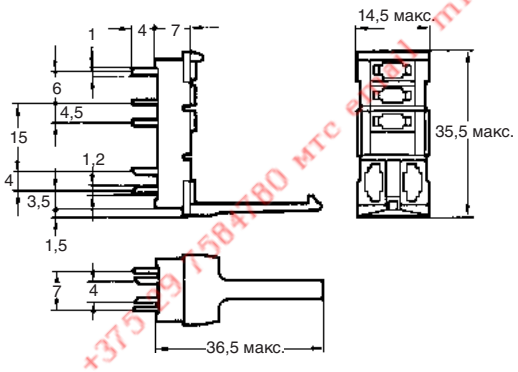
P2RF-□-S



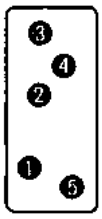
Цоколь с разъемами сзади

P2R-05P (1 полюс)



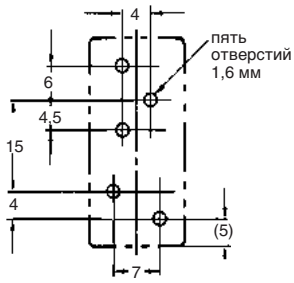


Расположение клемм (вид снизу)

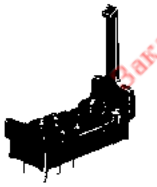


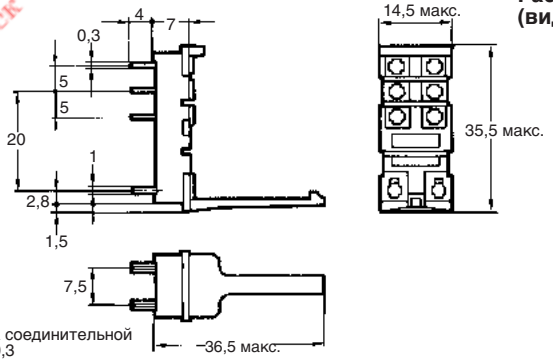
Крепежные отверстия

Допуск: ±0,1

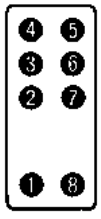


P2R-08P (2 полюса)

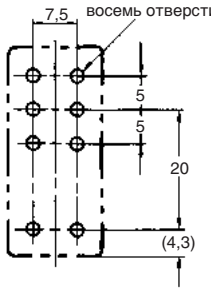




Расположение клемм (вид снизу)



Крепежные отверстия



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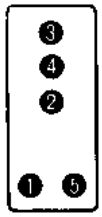
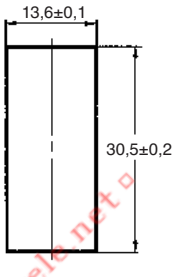
P2R-05A (1 полюс)

Расположение клемм (вид снизу)

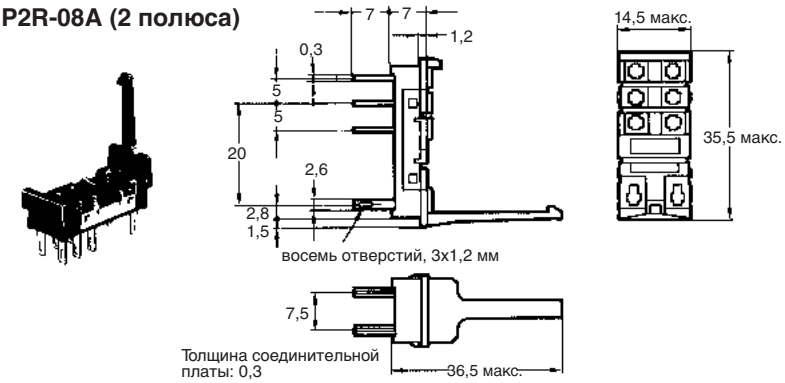


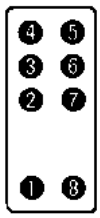
Монтажный вырез



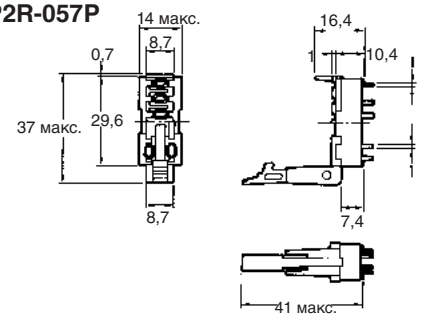
Рекомендуемая толщина панели составляет 1,6 - 2,0 мм

P2R-08A (2 полюса)

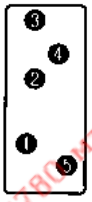




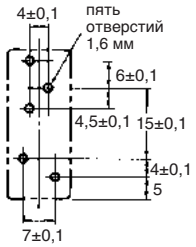
P2R-057P



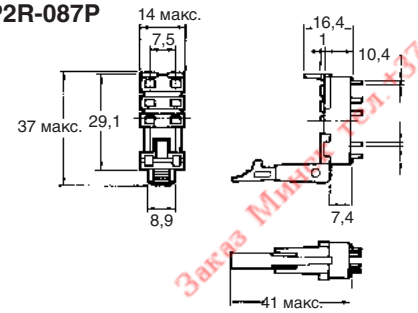
Расположение клемм (вид снизу)



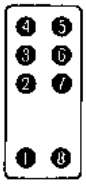
Крепежные отверстия



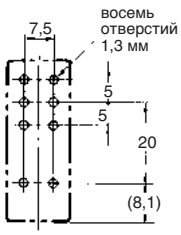
P2R-087P



Расположение клемм (вид снизу)

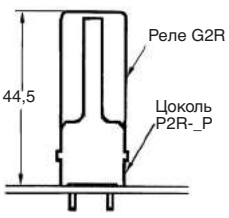


Крепежные отверстия

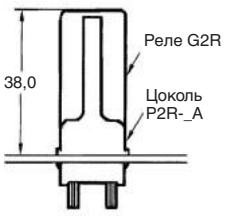


Монтажная высота реле и цоколя с разъемами сзади

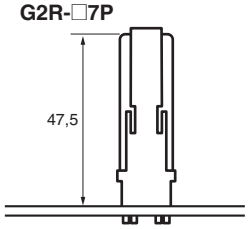
G2R-□P



G2R-□A



G2R-□7P



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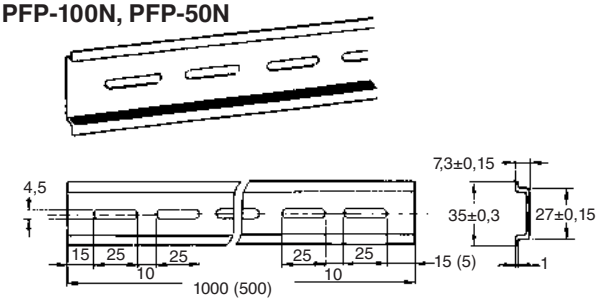
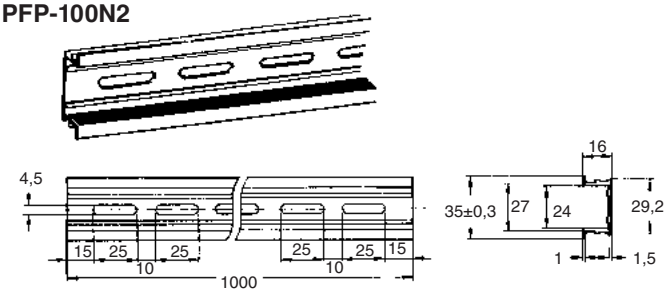
Шины для монтажа

PFP-100N, PFP-50N



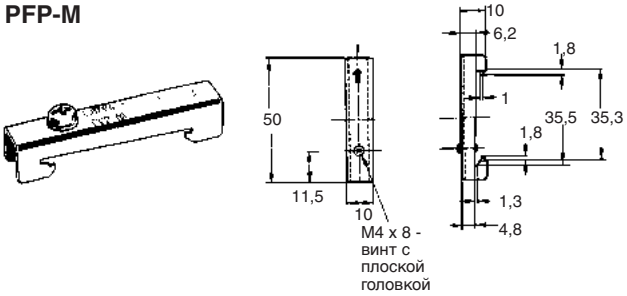
PFP-100N2



Рекомендуется применять панель толщиной 1,6 - 2,0 мм.

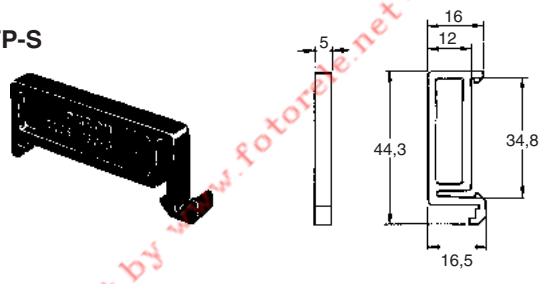
Соединительная плата

PFP-M



Прокладка

PFP-S



Указания по технике безопасности

⚠ Внимание

Тестовую кнопку разрешается использовать только в целях проверки. Необходимо избегать непреднамеренного касания тестовой кнопки, так как срабатывают контакты. Перед использованием тестовой кнопки обязательно убедиться, что обеспечено безопасное функционирование нагрузки и все других подключенных устройств.

⚠ Внимание

При этом следить за тем, чтобы перед включением электрической цепи реле тестовая кнопка была отпущена.

⚠ Внимание

Если тестовую кнопку слишком вытянуть, то может произойти пропуск текущего положения тестирования и реле будет заблокировано.

⚠ Внимание

При пользовании тестовой кнопкой применяйте изолированный инструмент.

Указания по технике безопасности для подсоединения P2RF-□-S

- Не перемещайте вставленную в отверстие отвертку наверх, вниз или в сторону. В противном случае можно повредить внутренние детали (например, вследствие изгиба клемм или появления трещин в корпусе) или нарушить изоляцию.
- Не вводите отвертку наклонно. Иначе можно пробить поверхность цоколя, что приведет к короткому замыканию.

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OMRON

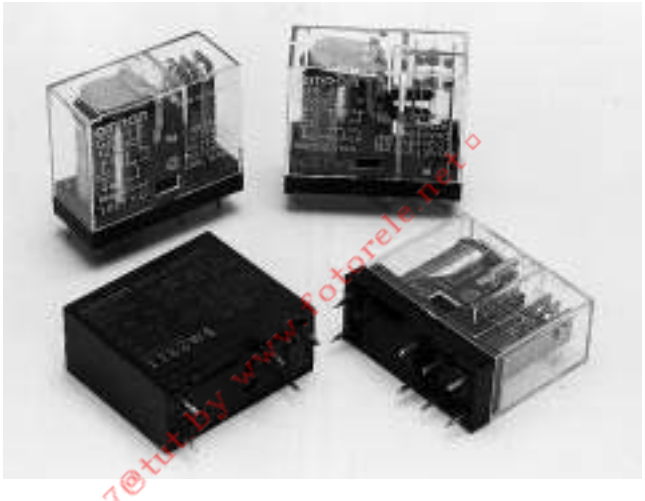
Back

PCB Relay

G2R

The Redesigned G2R Power Relay

- Flux protection, pre-tinned terminals now standard.
- High-sensitivity (360 mW) and high-capacity (16 A) types available.
- Double-winding latching type also available.
- Plug-in and quick-connect terminals available.
- Models meeting SEV and SEMKO, or VDE standards available.



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Ordering Information

Classification		Enclosure ratings	Coil ratings	Contact form			
				SPST-NO	SPDT	DPST-NO	DPDT
PCB terminal	General-purpose	Flux protection	AC/DC	G2R-1A	G2R-1	G2R-2A	G2R-2
		Plastic-sealed		G2R-1A4	G2R-14	G2R-2A4	G2R-24
	Twin contact	Flux protection	DC	G2R-1AZ	G2R-1Z	---	---
		Plastic-sealed		G2R-1AZ4	G2R-1Z4	---	---
	High-capacity	Flux protection	AC/DC	G2R-1A-E	G2R-1-E	---	---
	High-sensitivity	Flux protection	DC	G2R-1A-H	G2R-1-H	G2R-2A-H	G2R-2-H
	Double-winding latching	Flux protection		G2RK-1A	G2RK-1	G2RK-2A	G2RK-2
Plug-in terminal	General-purpose	Unsealed	AC/DC	---	G2R-1-S	---	G2R-2-S
	LED indicator			---	G2R-1-SN	---	G2R-2-SN
	Diode		DC	---	G2R-1-SD	---	G2R-2-SD
	LED indicator and diode			---	G2R-1-SND	---	G2R-2-SND
Plug-in terminal (Twin crossbar contact)	General-purpose		AC/DC	G2R-1A3-S	G2R-13-S	---	---
	LED indicator			G2R-1A3-SN	G2R-13-SN	---	---
	LED indicator and diode		DC	G2R-1A3-SND	G2R-13-SND	---	---
Quick-connect terminal	General-purpose		AC/DC	G2R-1A-T	G2R-1-T	---	---

Note: 1. When ordering, add the rated coil voltage to the model number.
Example: G2R-1A 12 VDC
Rated coil voltage

2. OMRON has also prepared the above relays with AgSnIn contacts, which are more tolerant of large inrush currents and physical movement compared with relays with standard contacts. When ordering, add “-ASI” to the model number.
Example: G2R-1A-ASI

3. Standard, NO contact type relays are TV-3 class products in accordance with the TV standards of the UL/CSA. Models with AgSnIn contacts are TV-5 class products.
Example: G2R-1A-ASI
When ordering a TV-8 class model, insert “-TV8” into the model number as follows:
Example: G2R-1A-TV8-ASI

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Model Number Legend:

G2R □-□ □ □ □-□ □-□ □ □

1 2 3 4 5 6 7 8 9

1. **Relay Function**
   None: General-purpose
   K: Double-winding latching.
2. **Number of Poles**
   1: 1 pole
   2: 2 poles
3. **Contact Form**
   None: SPDT
   A: SPST-NO
4. **Contact Type**
   None: Single
   Z: Bifurcated
   3: Bifurcated crossbar
5. **Enclosure Ratings**
   None: Flux protection
   4: Plastic-sealed
6. **Terminals**
   None: Straight PCB
   S: Plug-in
   T: Quick-connect (upper bracket mounting)
7. **Classification**
   None: General-purpose
   E: High-capacity
   H: High-sensitivity
   N: LED indicator
   D: Diode
   ND: LED indicator and diode
8. **Contact Material**
   None: AgCdO
   ASI: AgSnIn
9. **Rated Coil Voltage**

■ Accessories (Order Separately)

Connecting Sockets

Number of poles	Applicable relay model	Track/surface mounting socket	Back mounting socket	
			Terminals	Model
1 pole	G2R-1-S(N)(D)(ND)	P2RF-05-E	PCB terminals	P2R-05P, P2R-057P
	G2R-13-S (G2R-1A3-S)	P2RF-05	Solder terminals	P2R-05A
2 poles	G2R-2-S(N)(D)(ND)	P2RF-08-E	PCB terminals	P2R-08P, P2R-087P
		P2RF-08	Solder terminals	P2R-08A

Note: See "*Dimensions*" for details on socket size.

Mounting Track

Applicable socket	Description	Model
Track connecting socket	Mounting track	50 cm (ℓ) x 7.3 mm (t): PFP-50N 1 m (ℓ) x 7.3 mm (t): PFP-100N 1 m (ℓ) x 16 mm (t): PFP-100N2
	End plate	PFP-M
	Spacer	PFP-S
Back connecting socket	Mounting plate	P2R-P*

*Used to mount several P2R-05A and P2R-08A connecting sockets side by side.

Specifications

■ Coil Ratings

Rated voltage		12 VAC	24 VAC	100/ (110) VAC	120 VAC	200/ (220) VAC	220 VAC	230 VAC	240 VAC
Rated current*	50 Hz	93 mA	46.5 mA	11 mA	9.3 mA	5.5 (4.0) mA	5.1 mA	4.7 (3.7) mA	4.7 mA
	60 Hz	75 mA	37.5 mA	9/ (10.6) mA	7.5 mA	4.5 (5.3) mA	4.1 mA	3.8 (3.1) mA	3.8 mA
Coil resistance*		65 Ω	260 Ω	4,600 Ω	6,500 Ω	20,200 (25,000) Ω	25,000 Ω	26,850 (30,000) Ω	30,000 Ω
Coil inductance (H) (ref. value)	Armature OFF	0.19	0.81	13.34	21	51.3	57.5	62	65.5
	Armature ON	0.39	1.55	26.84	42	102	117	124	131
Must operate voltage		80% max. of rated voltage							
Must release voltage		30% max. of rated voltage							
Max. voltage		110% of rated voltage							
Power consumption		Approx. 0.9 VA at 60 Hz (approx. 0.7 VA at 60 Hz)							

Note: 1. Rated voltage of bifurcated crossbar contact type: 100/(110) VAC, 200/(220) VAC, 230 VAC (Approx. 0.7 VA at 60 Hz)

2. Depending on the type of Relay, Some Relays do not have coil specifications. Contact your OMRON representative for more details.

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Rated voltage		5 VDC	6 VDC	12 VDC	24 VDC	48 VDC	100 VDC
Rated current* (50/60 Hz)		106 mA	88.2 mA	43.6 mA	21.8 mA	11.5 mA	5.3 mA
Coil resistance*		47 Ω	68 Ω	275 Ω	1,100 Ω	4,170 Ω	18,860 Ω
Coil inductance (H) (ref. value)	Armature OFF	0.20	0.28	1.15	4.27	13.86	67.2
	Armature ON	0.39	0.55	2.29	8.55	27.71	93.2
Must operate voltage		70% min. of rated voltage					
Must release voltage		15% min. of rated voltage					
Max. voltage		110% of rated voltage					
Power consumption		Approx. 0.53 W					

Note: Rated voltage of bifurcated crossbar contact type: 12 VDC, 24 VDC

High-sensitivity Relays

Rated voltage		5 VDC	6 VDC	12 VDC	24 VDC	48 VDC
Rated current (50/60 Hz)		71.4 mA	60 mA	30 mA	15 mA	7.5 mA
Coil resistance		70 Ω	100 Ω	400 Ω	1,600 Ω	6,400 Ω
Coil inductance (H) (ref. value)	Armature OFF	0.37	0.53	2.14	7.80	31.20
	Armature ON	0.75	1.07	4.27	15.60	62.40
Must operate voltage		70% max. of rated voltage				
Must release voltage		15% max. of rated voltage				
Max. voltage		110% of rated voltage				
Power consumption		Approx. 0.36 W				

***Note:** 1. The rated current and coil resistance are measured at a coil temperature of 23°C with a tolerance of $^{+15\%}/_{-20\%}$ (AC rated current) or ±10% (DC coil resistance).

2. LEDs are used for the built-in operation indicator. For models equipped with these indications, the VAC rated current must be increased by approximately 1 mA; the VDC rated current, by approximately 4 mA.

3. Operating characteristics are measured at a coil temperature of 23°C.

Double-winding Latching Relays

Rated voltage			5 VDC	6 VDC	12 VDC	24 VDC
Set coil	Rated current*		167 mA	138 mA	70.6 mA	34.6 mA
	Coil resistance*		30 Ω	43.5 Ω	170 Ω	694 Ω
	Coil inductance (H) (ref. value)	Armature OFF	0.073	0.104	0.42	1.74
		Armature ON	0.146	0.208	0.83	3.43
Reset coil	Rated current		119 mA	100 mA	50 mA	25 mA
	Coil resistance		42 Ω	60 Ω	240 Ω	960 Ω
	Coil inductance (H) (ref. value)	Armature OFF	0.003	0.005	0.018	0.079
		Armature ON	0.006	0.009	0.036	0.148
Must set voltage			70% of rated voltage			
Must reset voltage			70% of rated voltage			
Max. voltage			110% of rated voltage			
Power consumption			Set coil: Approx. 850 mW; Reset coil: Approx. 600 mW			

***Note:** 1. The rated current and coil resistance are measured at a coil temperature of 23°C with a tolerance of ±10%.

2. Operating characteristics are measured at a coil temperature of 23°C.

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■ Contact Ratings

PCB/Flux Protection, Plug-in, Quick-connect Terminal Relays

Item	General-purpose, quick-connect terminal, plug-in 1/2/3*		Quick-connect terminal, plug-in 4*		High-capacity	
Number of poles	1 pole		2 pole		1 pole	
Load	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)	Resistive load (cosϕ = 1)	Inductive load (cosϕ = 0.4; L/R = 7 ms)
Rated load	10 (1) A at 250 VAC; 10 (1) A at 30 VDC	7.5 A at 250 VAC; 5 A at 30 VDC	5 A at 250 VAC; 5 A at 30 VDC	2 A at 250 VAC; 3 A at 30 VDC	16 A at 250 VAC; 16 A at 30 VDC	8 A at 250 VAC; 8 A at 30 VDC
Rated carry current	10 (1) A		5 A		16 A	
Max. operating voltage	380 VAC, 125 VDC		380 VAC, 125 VDC		380 VAC, 125 VDC	
Max. operating current	10 (1) A		5 A		16 A	
Max. switching capacity	2,500 (250) VA, 300 (30) W	1,875 VA, 150 W	1,250 VA, 150 W	500 VA, 90 W	4,000 VA, 480 W	2,000 VA, 240 W
Min. permissible load	100 mA at 5 VDC (1 mA at 5 VDC)		10 mA at 5 VDC		100 mA at 5 VDC	

Note: 1. P level: λ_{60} = 0.1 x 10^{-6}/operation

*2. Plug-in type 1: standard; 2: w/operation indicator; 3: w/diode; 4: w/operation indicator and diode

3. ( ): Twin crossbar contact type.

PCB/Flux Protection Relays

Item	Bifurcated contacts		High-sensitivity			
Number of poles	1 pole		1 pole		2 pole	
Load	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)	Resistive load (cosϕ = 1)	Inductive load (cosϕ = 0.4; L/R = 7 ms)
Rated load	5 A at 250 VAC; 5 A at 30 VDC	2 A at 250 VAC; 3 A at 30 VDC	5 A at 250 VAC; 5 A at 30 VDC	2 A at 250 VAC; 3 A at 30 VDC	3 A at 250 VAC; 3 A at 30 VDC	1 A at 250 VAC; 1.5 A at 30 VDC
Rated carry current	5 A		5 A		3 A	
Max. operating voltage	380 VAC, 125 VDC		380 VAC, 125 VDC		380 VAC, 125 VDC	
Max. operating current	5 A		5 A		3 A	
Max. switching power	1,250 VA, 150 W	500 VA, 90 W	1,250 VA, 150 W	500 VA, 90 W	750 VA, 90 W	250 VA, 45 W
Min. permissible load	1 mA at 5 VDC		100 mA at 5 VDC		10 mA at 5 VDC	

Note: P level: λ_{60} = 0.1 x 10^{-6}/operation

PCB/Plastic-sealed Relays

Item	General-purpose (single contact)				Bifurcated contact	
Number of poles	1 pole		2 pole		1 pole	
Load	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)	Resistive load (cosϕ = 1)	Inductive load (cosϕ = 0.4; L/R = 7 ms)
Rated load	8 A at 250 VAC; 8 A at 30 VDC	6 A at 250 VAC; 4 A at 30 VDC	4 A at 250 VAC; 4 A at 30 VDC	1.5 A at 250 VAC; 2.5 A at 30 VDC	5 A at 250 VAC; 5 A at 30 VDC	2 A at 250 VAC; 3 A at 30 VDC
Rated carry current	8 A		4 A		5 A	
Max. operating voltage	380 VAC, 125 VDC		380 VAC, 125 VDC		380 VAC, 125 VDC	
Max. operating current	8 A		4 A		5 A	
Max. switching capacity	2,000 VA, 240 W	1,500 VA, 120 W	1,000 VA, 120 W	375 VA, 75 W	1,250 VA, 150 W	500 VA, 90 W
Min. permissible load	100 mA at 5 VDC		10 mA at 5 VDC		1 mA at 5 VDC	

Note: P level: λ_{60} = 0.1 x 10^{-6}/operation

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Latching Relays

Number of poles	1 pole		2 pole	
Load	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	5 A at 250 VAC; 5 A at 30 VDC	3.5 A at 250 VAC; 2.5 A at 30 VDC	3 A at 250 VAC; 3 A at 30 VDC	1.5 A at 250 VAC; 2 A at 30 VDC
Rated carry current	5 A		3 A	
Max. operating voltage	380 VAC, 125 VDC		380 VAC, 125 VDC	
Max. operating current	5 A		3 A	
Max. switching power	1,250 VA, 150 W	875 VA, 75 W	750 VA, 90 W	375 VA, 60 W
Min. permissible load	100 mA at 5 VDC		10 mA at 5 VDC	

Note: P level: λ_{60} = 0.1 x 10^{-6}/operation

■ Characteristics

Standard Relays

Item	1 pole	2 pole
Contact resistance	30 mΩ max.	50 mΩ max.
Operate (set) time	15 ms max.	
Release (reset) time	AC: 10 ms max.; DC: 5 ms max. (w/built-in diode: 20 ms max.)	
Max. operating frequency	Mechanical: 18,000 operations/hr Electrical: 1,800 operations/hr (under rated load)	
Insulation resistance	1,000 MΩ min. (at 500 VDC)	
Dielectric strength	5,000 VAC, 50/60 Hz for 1 min between coil and contacts*; 1,000 VAC, 50/60 Hz for 1 min between contacts of same polarity	5,000 VAC, 50/60 Hz for 1 min between coil and contacts*; 3,000 VAC, 50/60 Hz for 1 min between contacts of different polarity 1,000 VAC, 50/60 Hz for 1 min between contacts of same polarity
Vibration resistance	Destruction: 10 to 55 Hz, 1.5-mm double amplitude Malfunction: 10 to 55 Hz, 1.5-mm double amplitude	
Shock resistance	Destruction: 1,000 m/s^2 (approx. 100G) Malfunction: 200 m/s^2 when energized (approx. 20G); 100m/s^2 when no energized (approx. 10G)	
Life expectancy	Mechanical: AC coil: 10,000,000 operations min.; DC coil: 20,000,000 operations min. (at 18,000 operations/hr) Electrical: 100,000 operations min. (at 1,800 operations/hr under rated load)	
Ambient temperature	Operating: –40°C to 70°C (with no icing) Storage: –40°C to 70°C (with no icing)	
Ambient humidity	Operating: 35% to 85% Storage: 35% to 85%	
Weight	Approx. 17 g (plug-in terminal: approx. 20 g)	

Note: Values in the above table are the initial values.
*2,000 VAC, 50/60 Hz for 1 minute when the P2R-05A or P2R-08A socket is mounted.

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Double-winding Latching Relays

Item	1 pole	2 poles
Contact resistance	30 mΩ max.	50 mΩ max.
Set time	20 ms max.	
Reset time	20 ms max.	
Min. set/reset signal width	30 ms max.	
Max. operating frequency	Mechanical: 18,000 operations/hr Electrical: 1,800 operations/hr (under rated load)	
Insulation resistance	1,000 MΩ min. (at 500 VDC)	
Dielectric strength	5,000 VAC, 50/60 Hz for 1 min between coil and contacts*; 1,000 VAC, 50/60 Hz for 1 min between contacts of same pole; 1,000 VAC, 50/60 Hz for 1 min between set and reset coil	5,000 VAC, 50/60 Hz for 1 min between coil and contacts*; 3,000 VAC, 50/60 Hz for 1 min between contacts of different poles 1,000 VAC, 50/60 Hz for 1 min between contacts of same pole 1,000 VAC, 50/60 Hz for 1 min between set and reset coil
Vibration resistance	Destruction: 10 to 55 Hz, 1.5 mm double amplitude Malfunction: 10 to 55 Hz, 1.5 mm double amplitude	
Shock resistance	Destruction: 1,000 m/s^2 (approx. 100G) Malfunction: Set: 500 m/s^2 (approx. 50G); 200m/s^2 (approx. 20G) Reset: 100 m/s^2 (approx. 10G)	
Life expectancy	Mechanical: 10,000,000 operations min (at 18,000 operations/hr) Electrical: 100,000 operations min. (at 1,800 operations/hr under rated load)	
Weight	Approx. 17 g	

Note: Values in the above table are the initial values.
*2,000 VAC, 50/60 Hz for 1 minute when the P2R-05A or P2R-08A socket is mounted.

■ Approved Standards

UL 508 (File No. E41643)

Model	Contact form	Coil ratings	Contact ratings
G2R-1 G2R-14 G2R-1-H G2R-1-S G2R-1-T	SPDT	3 to 110 VDC 3 to 240 VAC	10 A, 30 VDC (resistive) 10 A, 250 VAC (general use) TV-3 (NO contact only)
G2R-1A G2R-1A4 G2R-1A-H G2R-1A-S G2R-1A-T	SPST-NO		
G2R-1-E	SPDT		16 A, 30 VDC (resistive, NO contact only) 16 A, 250 VAC (general use, NO contact only) TV-3 (NO contact only); 1/3 hp, 120 VAC
G2R-1A-E	SPST-NO		
G2R-2 G2R-24 G2R-2-H G2R-2-S	DPDT		5 A, 30 VDC (resistive) 5 A, 250 VAC (general use) TV-3 (NO contact only)
G2R-2A G2R-2A4 G2R-2A-H G2R-2A-S	DPST-NO		
G2R-1A-ASI	SPST-NO		10 A, 30 VDC (resistive) 10 A, 250 VAC (general use) TV-5/TV-8 (NO contact only)

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CSA 22.2 No.0, No.14 (File No. LR31928)

Model	Contact form	Coil ratings	Contact ratings
G2R-1 G2R-14 G2R-1-H G2R-1-S G2R-1-T	SPDT	3 to 110 VDC 3 to 240 VAC	10 A, 30 VDC (resistive) 10 A, 250 VAC (general use) TV-3 (NO contact only)
G2R-1A G2R-1A4 G2R-1A-H G2R-1A-S G2R-1A-T	SPST-NO		
G2R-1-E	SPDT		16 A, 30 VDC (resistive, N.O only) 16 A, 250 VAC (general use, NO contact only) TV-3 (NO contact only)
G2R-1A-E	SPST-NO		
G2R-2 G2R-24 G2R-2-H G2R-2-S	DPDT		5 A, 30 VDC (resistive) 5 A, 250 VAC (general use) TV-3 (NO contact only)
G2R-2A G2R-2A4 G2R-2A-H G2R-2A-S	DPST-NO		
G2R-1A-ASI	SPST-NO		10 A, 30 VDC (resistive) 10 A, 250 VAC (general use) TV-8 (NO contact only); 1/4 hp, 125 VAC

SEV

Contact form	Coil ratings	Contact ratings
1 poles	3 to 110 VDC	16 A, 250 VAC1 (AgSnIn contact) 16 A, 30 VDC1 (AgSnIn contact) 10 A, 250 VAC1 5 A, 250 VAC3 10 A, 30 VDC1
2 poles	3 to 240 VAC	5 A, 250 VAC1 2 A, 380 VAC1 5 A, 30 VDC1

SEMKO

Contact form	Coil ratings	Contact ratings
1 poles	3 to 110 VDC	10/80 A, 250 VAC 3/100 A, 250 VAC 16/128 A, 250 VAC (AgSnIn contact)
2 poles		5/40 A, 250 VAC

TÜV (IEC 255)

Contact form	Coil ratings	Contact ratings
1 poles	3 to 110 VDC, 6 VAC to 240 VAC (for Standards coil) 3 to 48 VDC (for K, U coil) 3 to 70 VDC (for H coil)	10 A, 250 VAC (cosϕ = 1.0) 10 A, 30 VDC (0 ms) 16 A, 250 VAC (cosϕ = 1.0) (AgSnIn contact)
2 poles		8 A, 250 VAC (cosϕ = 0.4) 5 A, 250 VAC (cosϕ =1.0) 5 A, 30 VDC (0 ms) 2.5 A, 250 VAC (cosϕ = 0.4)

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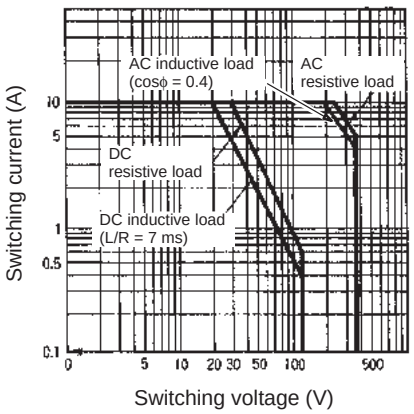
Engineering Data

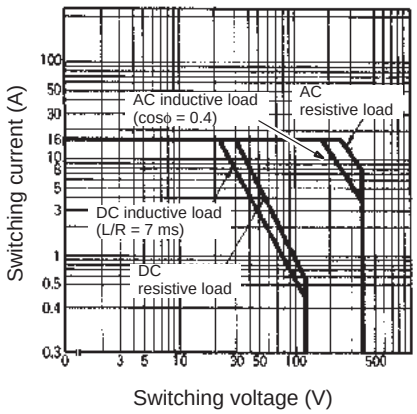
Max. Switching Capacity

Flux Protection/Plug-in Relays

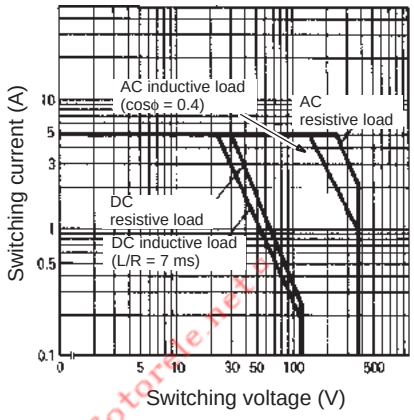
G2R-1, G2R-1A, G2R-1-S, G2R-1-T, G2R-1A-T



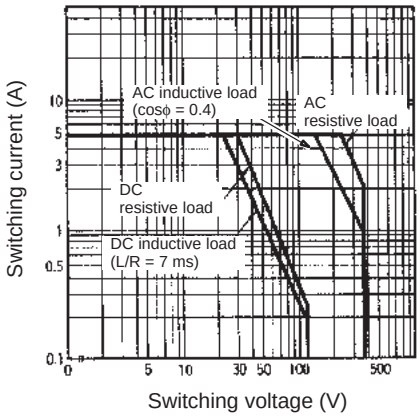
G2R-1-E, G2R-1A-E



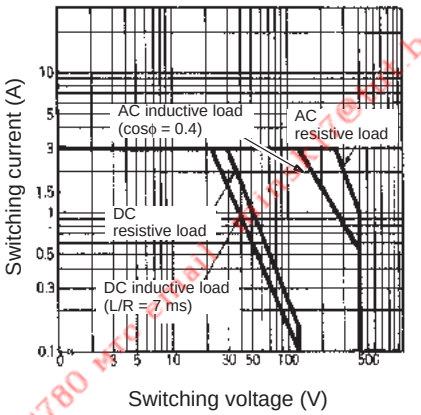
G2R-1Z, G2R-1AZ



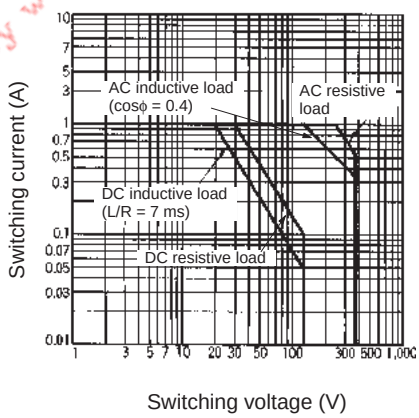
G2R-1-H, G2R-1A-H, G2R-2 G2R-2A, G2R-2-S



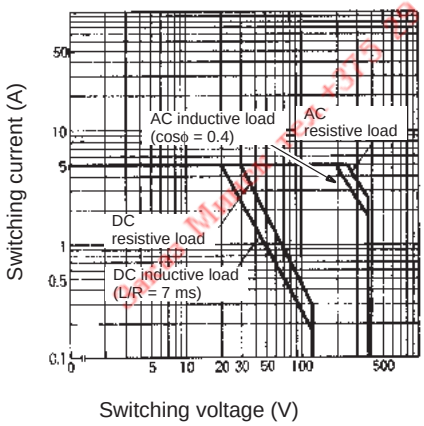
G2R-2-H, G2R-2A-H



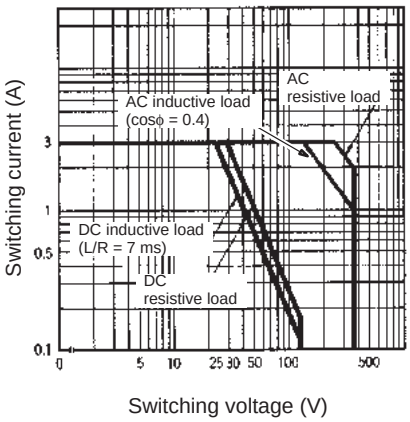
G2R-13-S, G2R-1A3-S



G2RK-1A, G2RK-1



G2RK-2A, G2RK-2



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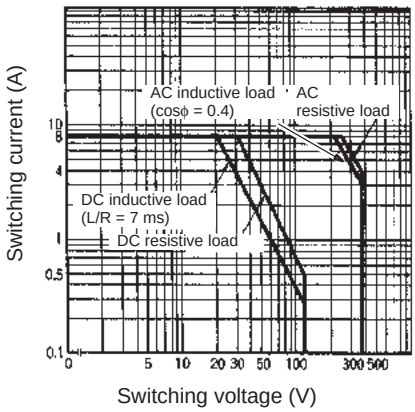
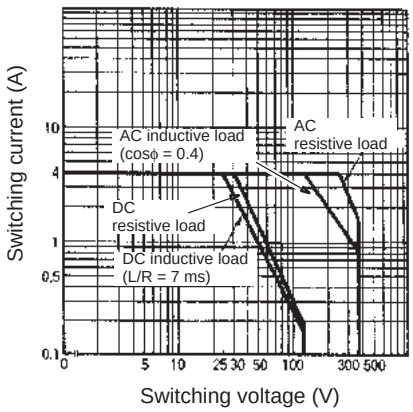
Plastic-sealed Relays

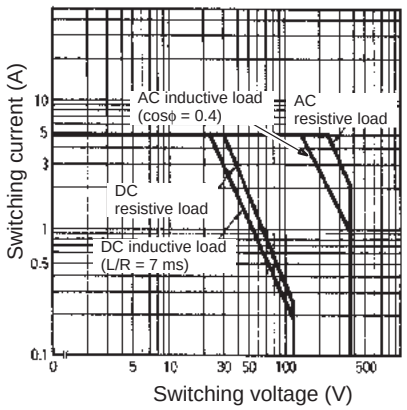
G2R-14, G2R-1A4



G2R-24, G2R-2A4



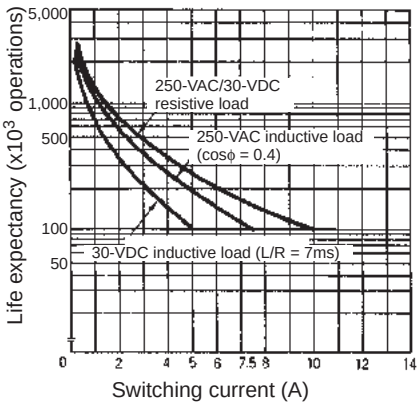
G2R-1Z4, G2R-1AZ4



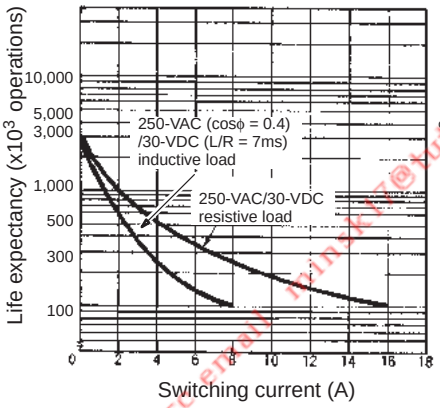
Life Expectancy

Flux Protection/Plug-in Relays

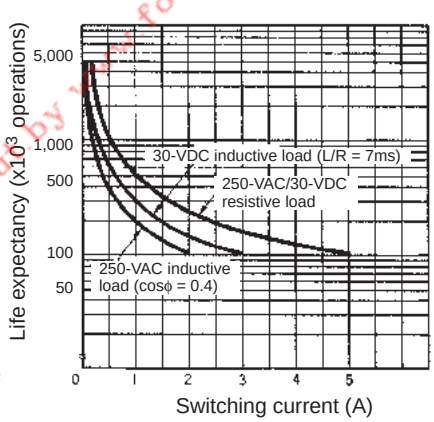
G2R-1, G2R-1A, G2R-1-S, G2R-1-T, G2R-1A-T



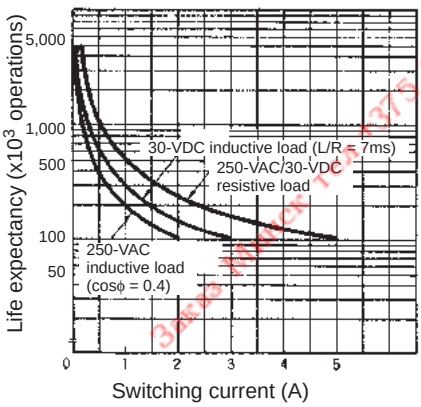
G2R-1-E, G2R-1A-E



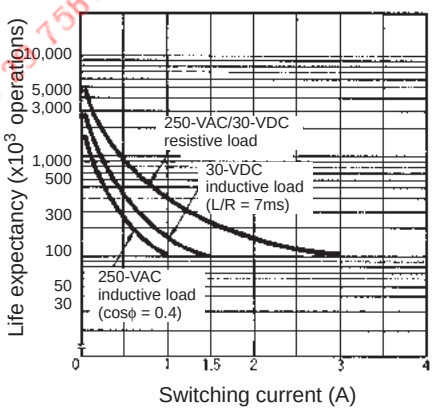
G2R-1Z, G2R-1AZ



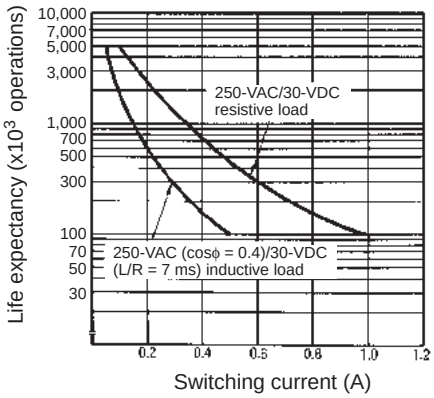
G2R-1-H, G2R-1A-H, G2R-2 G2R-2A, G2R-2-S



G2R-2-H, G2R-2A-H



G2R-13-S, G2R-1A3-S



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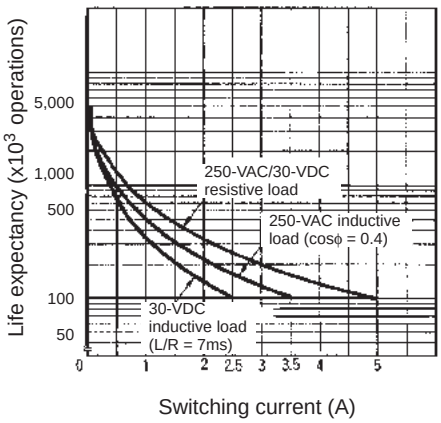
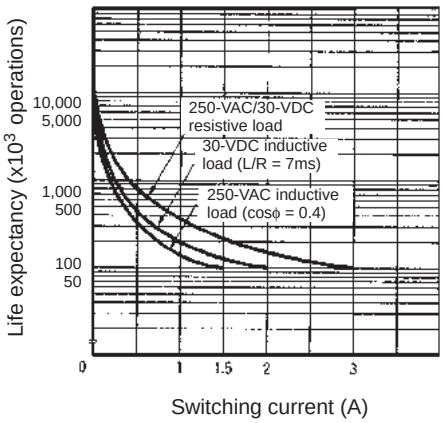
G2RK-1A, G2RK-1

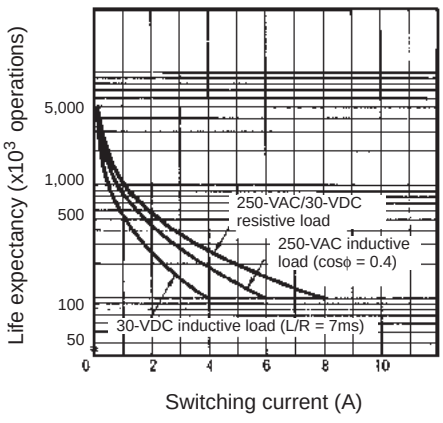


G2RK-2A, G2RK-2

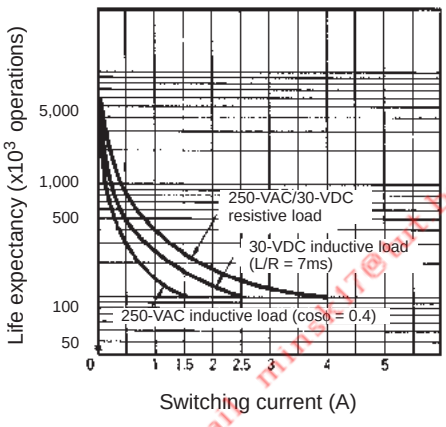


Plastic-sealed Relays

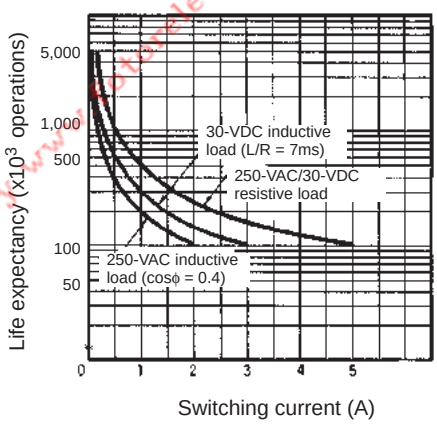
G2R-14, G2R-1A4



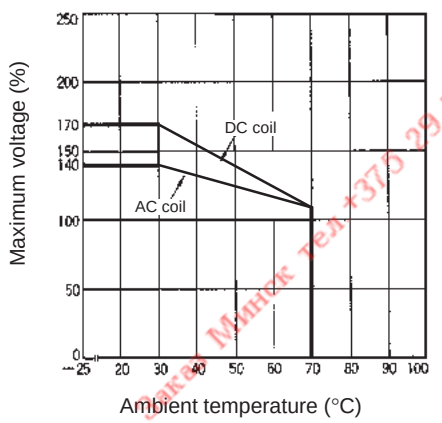
G2R-24, G2R-2A4



G2R-1Z4, G2R-1AZ4



Ambient Temperature vs Maximum Voltage



Note: The maximum voltage refers to the maximum value in a varying range of operating power voltage, not a continuous voltage.

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Dimensions

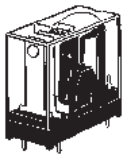
Note: 1. All units are in millimeters unless otherwise indicated.

2. Orientation marks are indicated as follows:

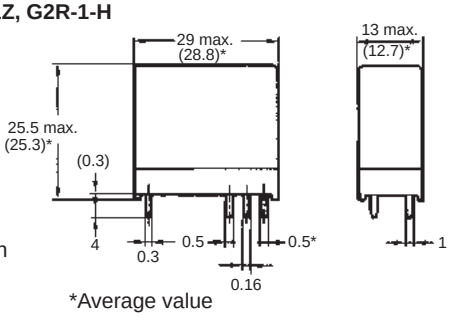
Relays with PCB Terminals

SPDT Relays

G2R-1, G2R-1Z, G2R-1-H

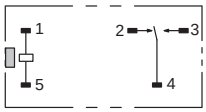


The illustration shows the G2R-1.



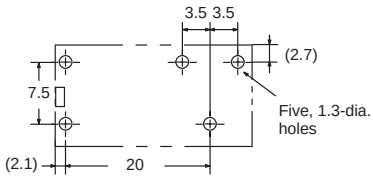
*Average value

Terminal Arrangement/ Internal Connections (Bottom View)



Mounting Holes (Bottom View)

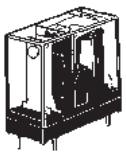
Tolerance: ±0.1



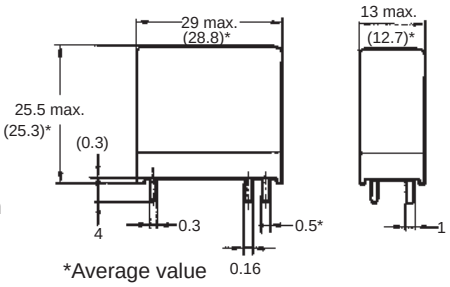
(No coil polarity)

SPST-NO Relays

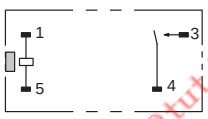
G2R-1A, G2R-1AZ, G2R-1A-H

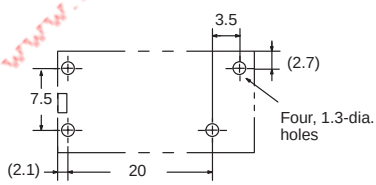


The illustration shows the G2R-1A.



*Average value

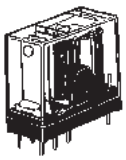


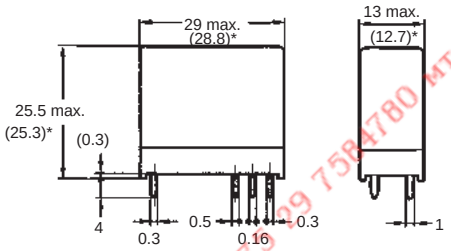


(No coil polarity)

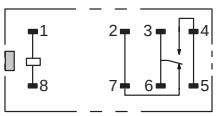
SPDT/High-capacity Relays

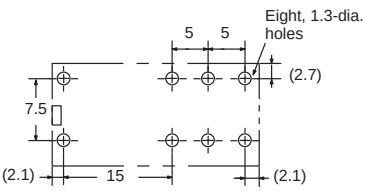
G2R-1-E





*Average value

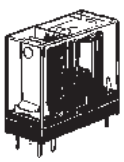


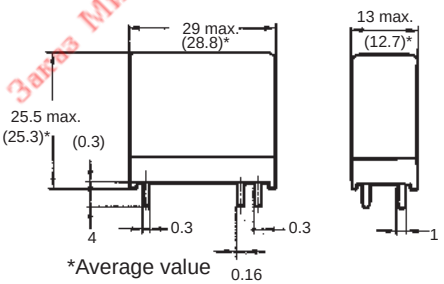


(No coil polarity)

SPST-NO/High-capacity Relays

G2R-1A-E





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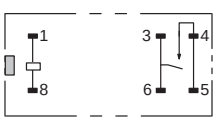

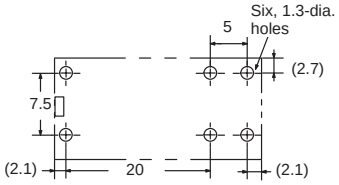

(No coil polarity)

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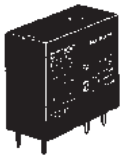
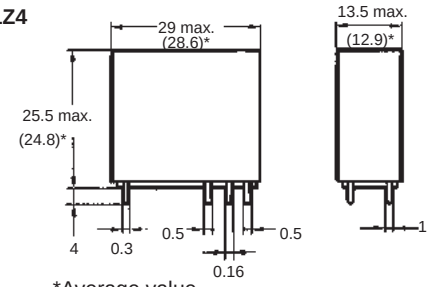
Relays with PCB Terminals

SPDT Relays

G2R-14, G2R-1Z4

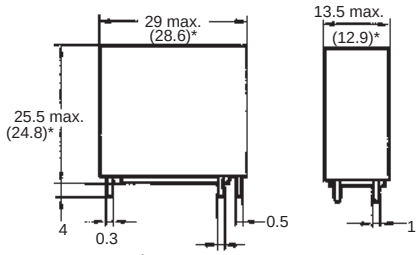




*Average value

SPST-NO Relays

G2R-1A4, G2R-1AZ4

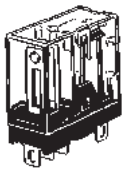


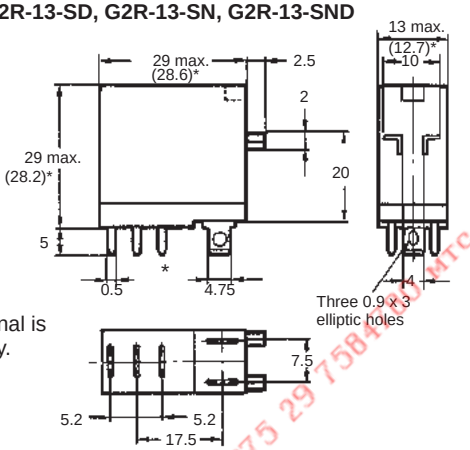
*Average value 0.16

Relays with Plug-in Terminals

SPDT Relays

G2R-1-S, G2R-1-SD, G2R-1-SN, G2R-1-SND
G2R-13-S, G2R-13-SD, G2R-13-SN, G2R-13-SND



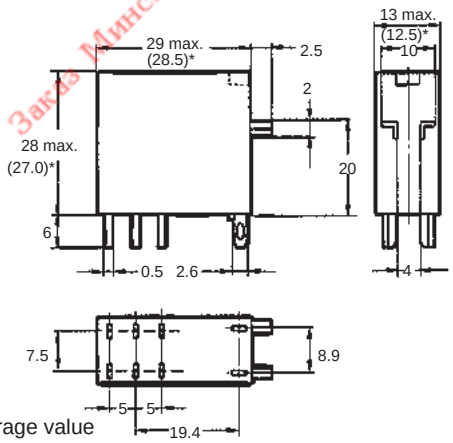


*This terminal is SPDT only.

*Average value

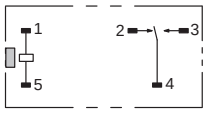
SPST-NO Relays

G2R-2-S, G2R-2-SD, G2R-2-SN,
G2R-2-SND



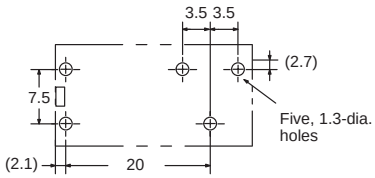
*Average value

Terminal Arrangement/ Internal Connections (Bottom View)

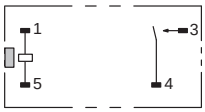


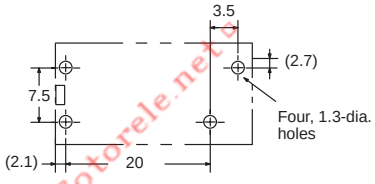
Mounting Holes (Bottom View)

Tolerance: ±0.1



(No coil polarity)

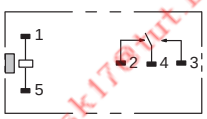




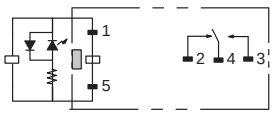
(No coil polarity)

Terminal Arrangement/Internal Connections (Bottom View)

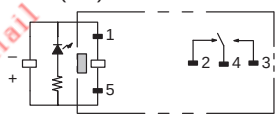
G2R-1-S, G2R-13-S



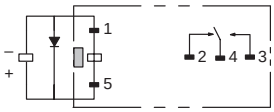
G2R-1-SN, G2R-13-SN (AC)



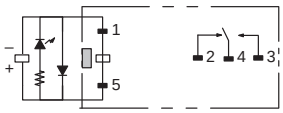
G2R-1-SN, G2R-13-SN (DC)



G2R-1-SD, G2R-13-SD (DC)



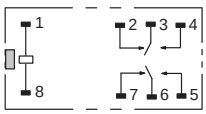
G2R-1-SND, G2R-13-SND (DC)



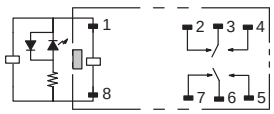
(After confirming coil polarity, wire correctly.) (Except G2R-1-S, G2R-13-S)

Terminal Arrangement/Internal Connections (Bottom View)

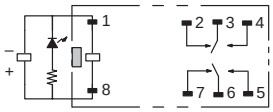
G2R-2-S



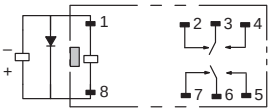
G2R-2-SN (AC)



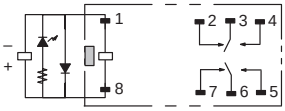
G2R-2-SN (DC)



G2R-2-SD (DC)



G2R-2-SND (DC)



(After confirming coil polarity, wire correctly.)

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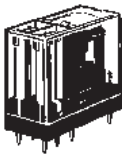
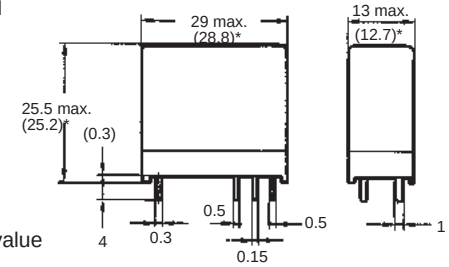
Relays with PCB Terminals

DPDT Relays

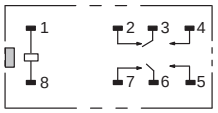
G2R-2, G2R-2-H





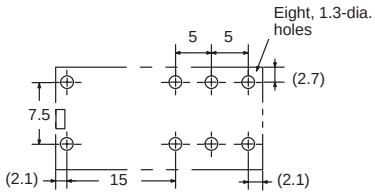
*Average value

Terminal Arrangement/ Internal Connections (Bottom View)



Mounting Holes (Bottom View)

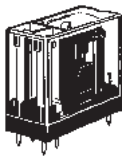
Tolerance: ±0.1

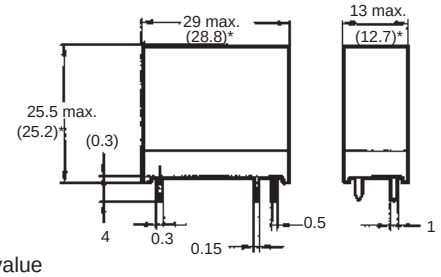


(No coil polarity)

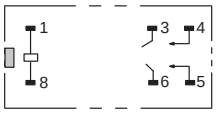
DPST-NO Relays

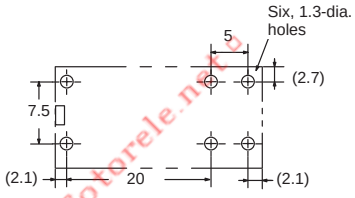
G2R-2A, G2R-2A-H





*Average value

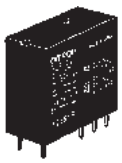


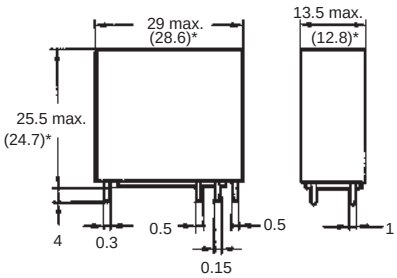


(No coil polarity)

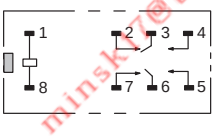
DPDT Relays

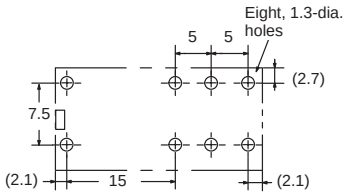
G2R-24





*Average value

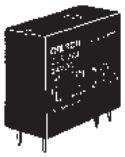


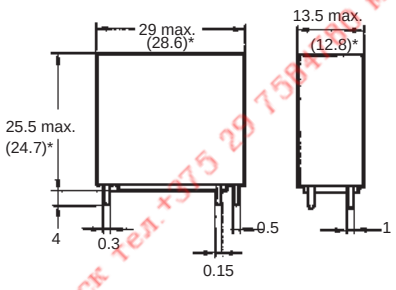


(No coil polarity)

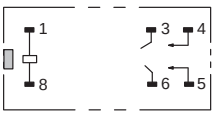
DPST-NO Relays

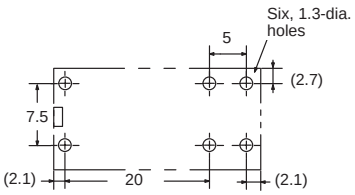
G2R-2A4





*Average value



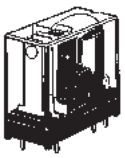


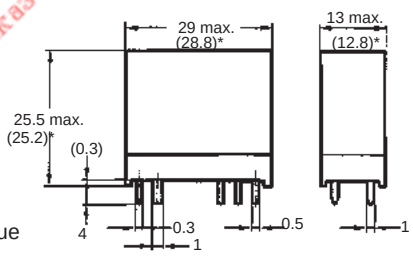
(No coil polarity)

Double-winding Latching Relays with PCB Terminals

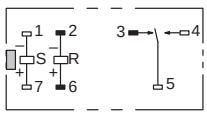
SPDT Relays

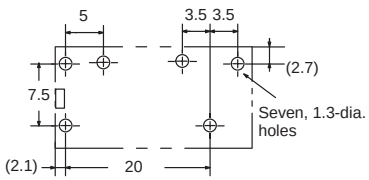
G2RK-1





*Average value





(After confirming coil polarity, wire correctly.)

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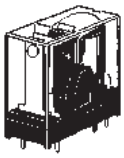
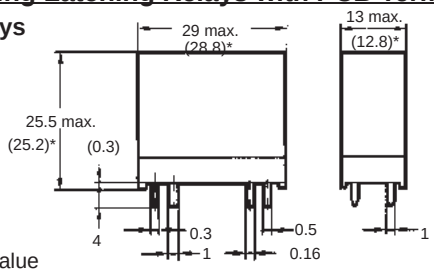
Double-winding Latching Relays with PCB Terminals

SPST-NO Relays

G2RK-1A

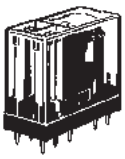


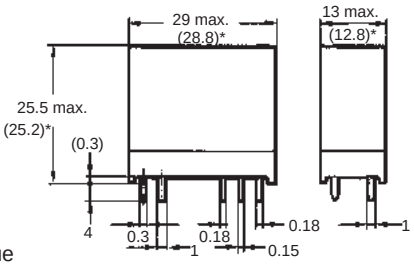


*Average value

DPDT Relays

G2RK-2

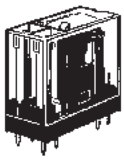


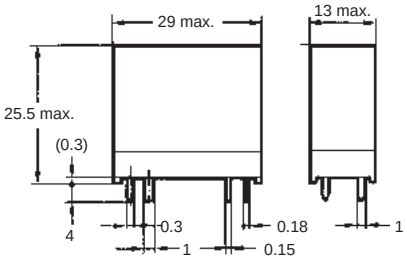


*Average value

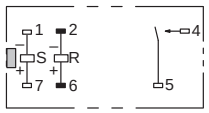
DPST-NO Relays

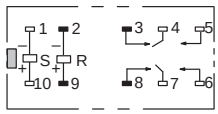
G2RK-2A

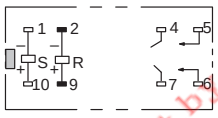




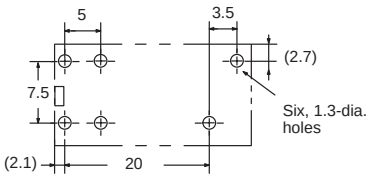
Terminal Arrangement/ Internal Connections (Bottom View)



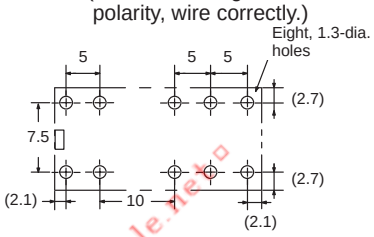




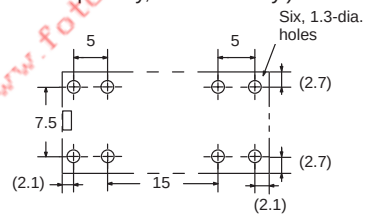
Mounting Holes (Bottom View)
Tolerance: ±0.1



(After confirming coil polarity, wire correctly.)



(After confirming coil polarity, wire correctly.)

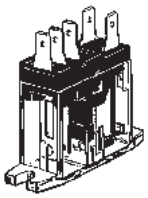


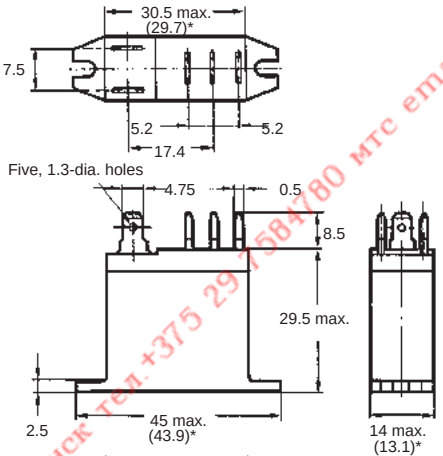
(After confirming coil polarity, wire correctly.)

Relays with Quick-connect terminals

SPDT Relays

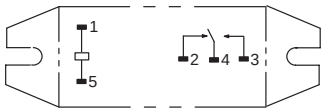
G2R-1-T





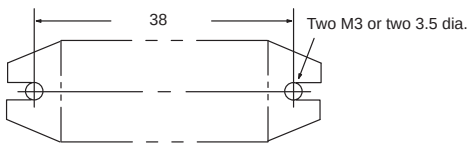
*Average value

Terminal Arrangement/Internal Connections (Bottom View)



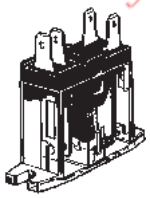
(No coil polarity)

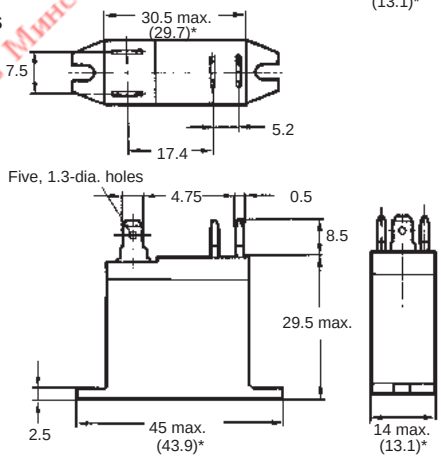
Mounting Holes (Bottom View)
Tolerance: ±0.1



SPST-NO Relays

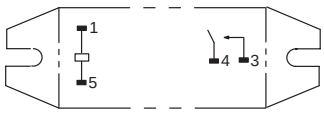
G2R-1A-T





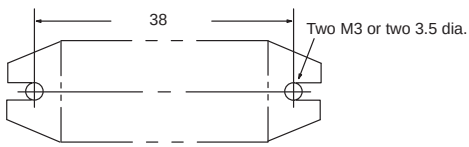
*Average value

Terminal Arrangement/Internal Connections (Bottom View)



(No coil polarity)

Mounting Holes (Bottom View)



Note: Model number of quick-connect terminal is 187.

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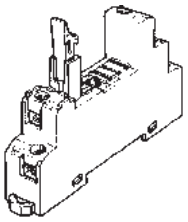
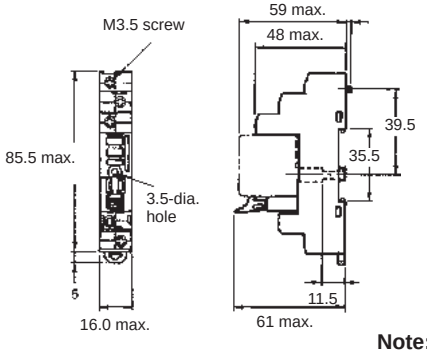
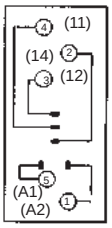
Track/Surface Mounting Sockets

P2RF-05-E

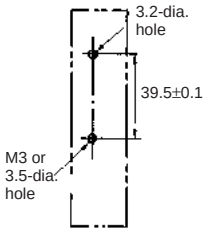




Terminal Arrangement (Top View)

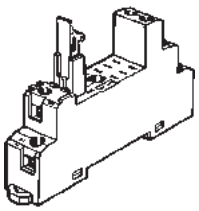


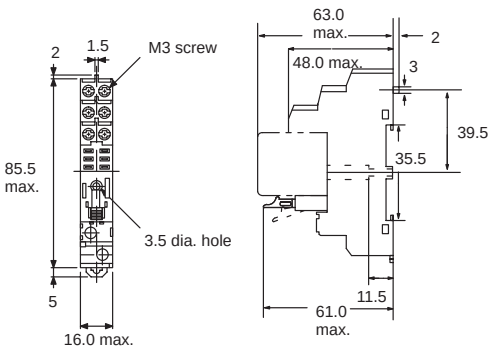
Mounting Holes (for Surface Mounting)



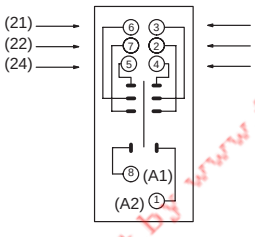
Note: Pin numbers in parentheses apply to DIN standard.

P2RF-08-E

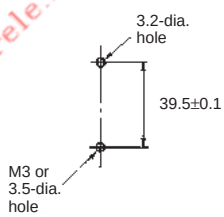




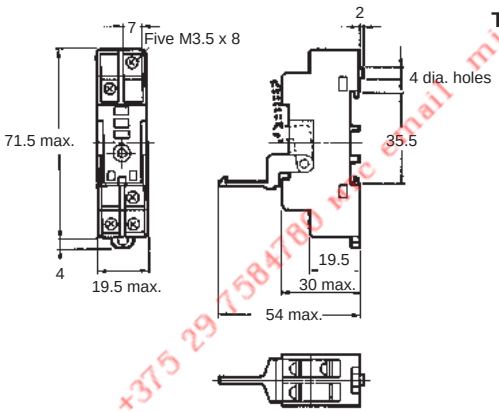
Terminal Arrangement (Top View)



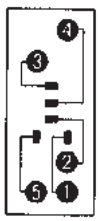
Mounting Holes (for Surface Mounting)



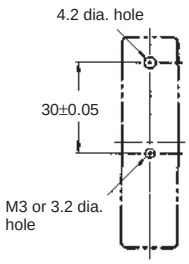
P2RF-05



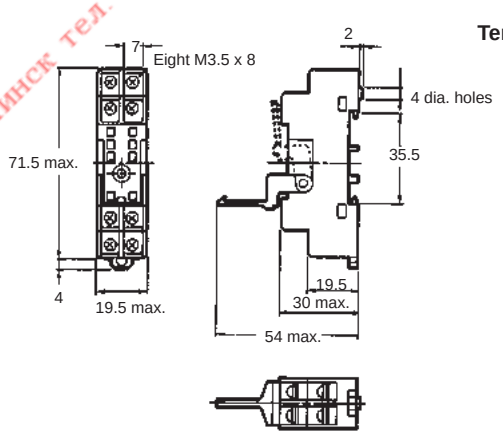
Terminal Arrangement



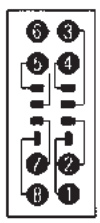
Mounting Holes (for Surface Mounting)



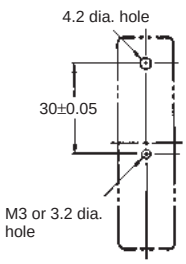
P2RF-08



Terminal Arrangement



Mounting Holes (for Surface Mounting)



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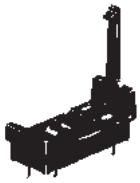
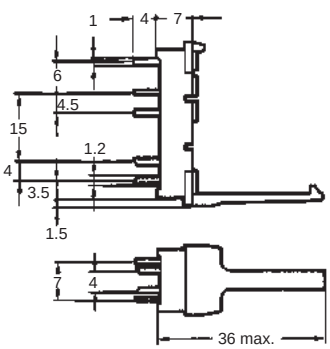
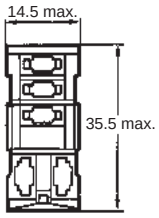
Back Connecting Sockets

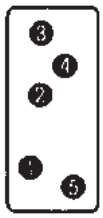
P2R-05P (1-pole)





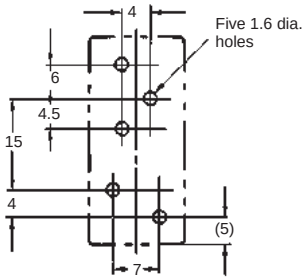


Terminal Arrangement

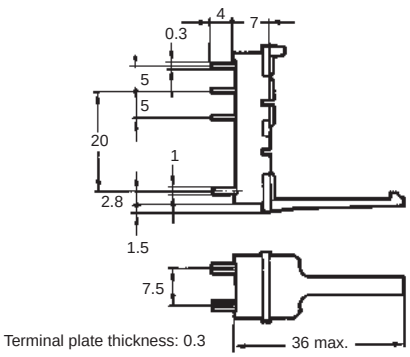


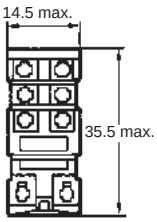
Mounting Holes

Tolerance: ±0.1

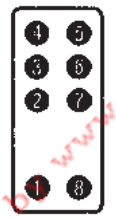


P2R-08P (2-pole)

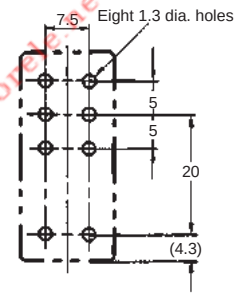




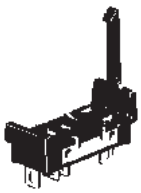
Terminal Arrangement

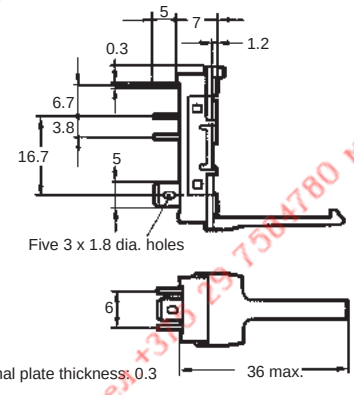


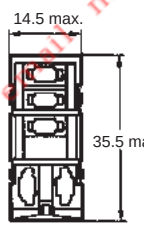
Mounting Holes



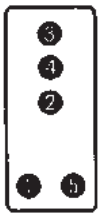
P2R-05A (1-pole)



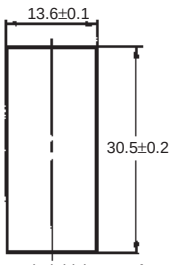




Terminal Arrangement

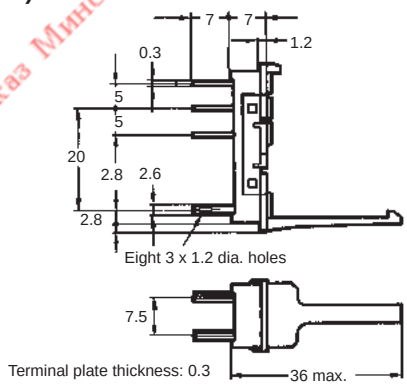


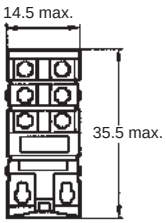
Panel Cutout

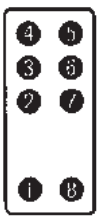


Recommended thickness of the panel is 1.6 to 2.0 mm

P2R-08A (2-pole)







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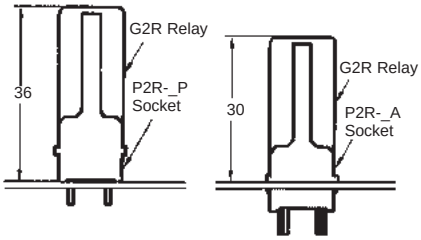
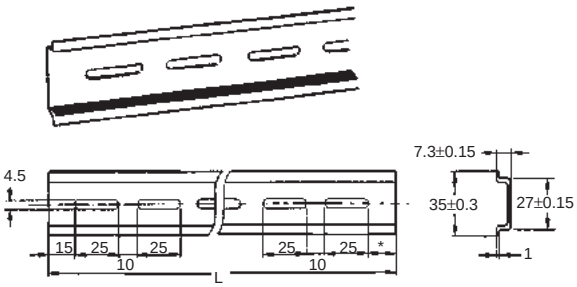
Mounting Height of Relay with Socket

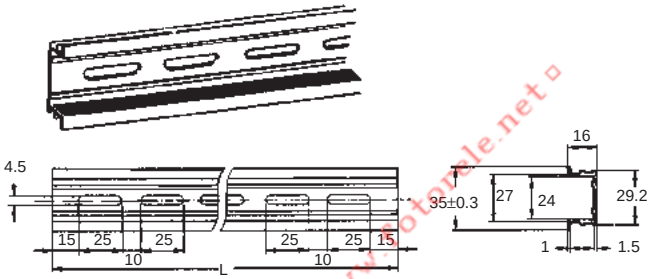


Mounting Track

PFP-100N, PFP-50N



PFP-100N2



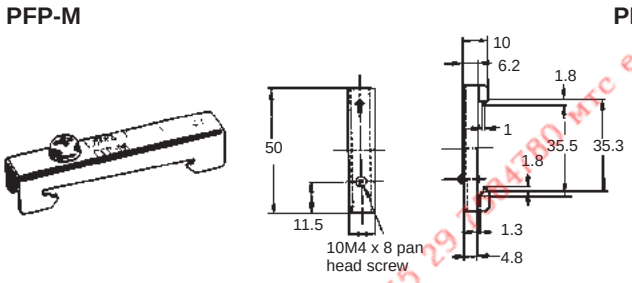
It is recommended to use a panel 1.6 to 2.0 mm thick.

L: Length

1 m	PFP-100N
50 cm	PFP-50N
1 m	PFP-100N2

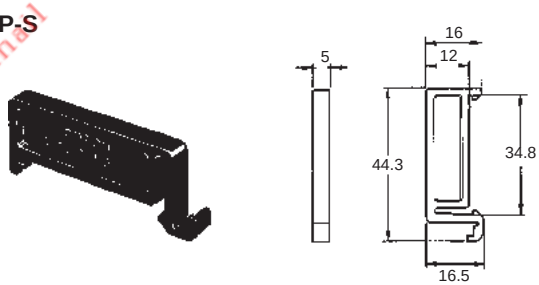
End Plates

PFP-M



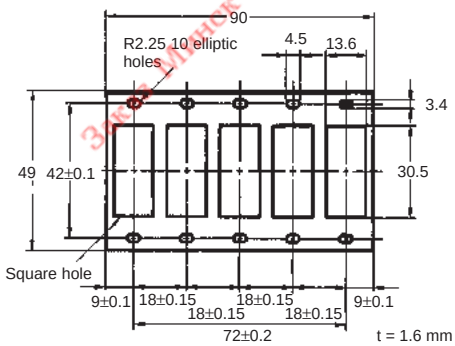
Spacers

PFP-S



Mounting Plates

P2R-P



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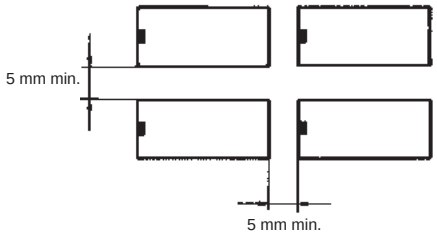
Precautions

■ Mounting

When mounting a number of relays on a PCB, be sure to provide a minimum mounting space of 5 mm between the two juxtaposed relays as shown below.



The above minimum mounting space is necessary due to mutual thermal interference generated by the relays. This restriction may be ignored, however, depending on the operating conditions of the relays. Consult OMRON for details.

There is no restriction on the mounting direction of each relay on the PCB.

When using this circuit, confirm the set and reset states and then take into account the circuit constant.

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

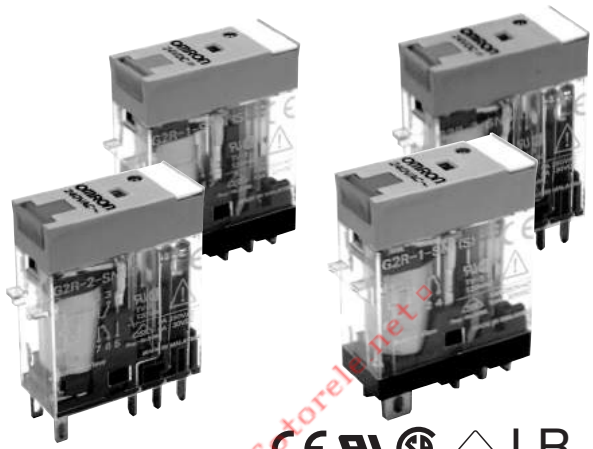
Cat. No. K13-E1-11A

OMRON

Универсальные реле
G2RS

Компактное, съемное реле с плоским корпусом

- Возможны исполнения с блокируемой тестовой кнопкой.
- Интегрированный механический коммутационный индикатор.
- Поставка с фирменной табличкой.
- У модели для переменного тока в случае отсоединения катушки имеется функция самодиагностики (светодиод).
- Высокая коммутационная способность (1 полюс: 10 А).
- Экологичны (не содержит кадмия и свинца).
- Широкий ассортимент цоколей.



Структура номера модели

■ Код заказа

G2R □-□ □□ - □□ -□
1 2 3 4 5 6 7

1. **Функция реле**
   пробел: стандарт
2. **Количество полюсов**
   1: 1 полюс
   2: 2 полюса
3. **Вид контактов**
   пробел: SPDT
4. **Тип контакта**
   пробел: одиночный контакт
5. **Клеммы**
   S: штырьковые
6. **Классификация**
   пробел: стандарт
   N: светодиодный индикатор
   D: диод
   ND: светодиодный индикатор и диод
   NI: светодиодный индикатор и тестовая кнопка
   NDI: светодиодный индикатор, диод и тестовая кнопка
7. **Номинальное напряжение катушки**

Информация по заказам

■ Перечень моделей

Классификация		Класс защиты	Характеристики катушки	Вид контактов	
				SPDT	DPDT
Штырьковое подсоединение	Реле общего назначения	Негерметично	перем. ток/пост. ток	G2R-1-S	G2R-2-S
	Светодиодный индикатор			G2R-1-SN	G2R-2-SN
	Светодиодный индикатор и тестовая кнопка			G2R-1-SNI	G2R-2-SNI
	Диод		пост. ток	G2R-1-SD	G2R-2-SD
	Светодиодный индикатор и диод			G2R-1-SND	G2R-2-SND
	Светодиодный индикатор, диод и тестовая кнопка			G2R-1-SNDI	G2R-2-SNDI

Указание: При заказе к номеру модели добавляйте значение номинального напряжения и "(S)".
Номинальные напряжения катушек приведены в таблице параметров катушек.
Например: G2R-1-S 12 VDC (S) ——— Новая модель
└——— Номинальное напряжение катушки

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■ Дополнительные принадлежности (по особому заказу)

Соединительные цоколи

Подходят для моделей реле	Цоколь для монтажа на шинах и монтажной плате		Цоколь с разъемами сзади	
	Невинтовое соединение (SLC)	Винтовое соединение	Клеммы	Модель
1 полюс G2R-1-S(N)(D)(ND)(NI)(NDI)	• P2RF-05S (см. указание) + (P2CM-S (опция))	• P2RF-05-E • P2RF-05	Разъемы печатной платы	P2R-05P, P2R-057P
			Паяные соединения	P2R-05A
2 полюса G2R-2-S(N)(D)(ND)(NI)(NDI)	• P2RF-08S (см. указание) + (P2CM-S (опция))	• P2RF-08-E • P2RF-08	Разъемы печатной платы	P2R-08P, P2R-087P
			Паяные соединения	P2R-08A

Указание: Для стабильного монтажа рекомендуется применение зажимного хомута и размыкающего рычажка P2CM.

Дополнительные принадлежности для цоколя SLC (опция)

Название	Модель
Зажимной хомут & размыкающий рычажок	P2CM-S
Фирменная табличка	R99-11 фирменная табличка для MY
Перемычка цоколя	P2RM-SR (для перем. тока), P2RM-SB (для пост. тока)

Шины для монтажа

Применяемый цоколь реле	Описание	Модель
Цоколь для шинного монтажа	Шина для монтажа	50 см (⎓) x 7,3 мм (T): PFP-50N 1 м (⎓) x 7,3 мм (T): PFP-100N 1 м (⎓) x 16 мм (T): PFP-100N2
	Соединительная плата	PFP-M
	Прокладка	PFP-S
Цоколь с разъемами сзади	Монтажная плата	P2R-P

*Применяется для монтажа нескольких цоколей P2R-05A и P2R-08A рядом друг с другом.

Технические данные

■ Характеристики катушки

Номинальное напряжение		Номинальный ток*		Сопротивление катушки*	Индуктивность катушки (H) (базовое значение)		Напряжение трогания	Напряжение отпускания	Максимальное напряжение	Потребление мощности (прибл.)
		50 Гц	60 Гц		Якорь ВЫКЛ.	Якорь ВКЛ.	% номинального напряжения			
перем. ток	24 В	43,5 мА	37,4 мА	253 Ом	0,81	1,55	80% макс.	30% макс.	110%	0,9 ВА при 60 Гц
	110 В	9,5 мА	8,2 мА	5566 Ом	13,33	26,83				
	120 В	8,6 мА	7,5 мА	7286 Ом	16,13	32,46				
	230 В	4,4 мА	3,8 мА	27172 Ом	72,68	143,90				
	240 В	3,7 мА	3,2 мА	30360 Ом	90,58	182,34				

Номинальное напряжение		Номинальный ток*	Сопротивление катушки*	Индуктивность катушки (H) (базовое значение)		Напряжение трогания	Напряжение отпускания	Максимальное напряжение	Потребление мощности (прибл.)
				Якорь ВЫКЛ.	Якорь ВКЛ.	% номинального напряжения			
пост. ток	6 В	87,0 мА	69 Ом	0,25	0,48	70% макс.	мин. 15 %	110%	0,53 Вт
	12 В	43,2 мА	278 Ом	0,98	2,35				
	24 В	21,6 мА	1113 Ом	3,60	8,25				
	48 В	11,4 мА	4220 Ом	15,2	29,82				

* Номинальный ток и сопротивление катушки были определены при температуре катушки 23°C с отклонением ±10 %.

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■ Нагрузочная способность контакта

Пара контактов	1 полюс		2 полюса	
Нагрузочная способность	Омическая нагрузка (cosϕ = 1)	Индуктивная нагрузка (cosϕ = 0,4; L/R = 7 мс)	Омическая нагрузка (cosϕ = 1)	Индуктивная нагрузка (cosϕ = 0,4; L/R = 7 мс)
Номинальная нагрузка	10 А при 250 В перем. тока; 10 А при 30 В пост. тока	7,5 А при 250 В перем. тока; 5 А при 30 В пост. тока	7,5 А при 250 В перем. тока; 5 А при 30 В пост. тока	2 А при 250 В перем. тока, 3 А при 30 В пост. тока
Номинальный ток при длительной нагрузке	10 А		5 А	
Макс. напряжение переключения	440 В перем. тока, 125 В пост. тока		380 В перем. тока, 125 В пост. тока	
Макс. ток переключения	10 А		5 А	
Макс. коммутационная способность	2500 ВА, 300 Вт	1875 ВА, 150 Вт	1250 ВА, 150 Вт	500 ВА, 90 Вт
Минимальная нагрузка (базовое значение)	100 мА при 5 В пост. тока		10 мА при 5 В пост. тока	

Указание: P-уровень: λ_{60} = 0,1 x 10^{-6}/переключений

■ Характеристики

Описание	1 полюс	2 полюса
Сопротивление контакта	макс. 100 мОм	
Время срабатывания	макс. 15 мс	
Время возврата	перем. ток: макс. 10 мс; пост. ток: макс. 5 мс (с интегр. макс. 20 мс)	перем. ток: макс. 15 мс; пост. ток: макс. 10 мс (с интегр. макс. 20 мс)
Макс. частота переключений	механически: 18000 переключений/час электрически: 1800 переключений/час (под номинальной нагрузкой)	
Сопротивление изоляции	миним. 1000 МОм (при 500 В пост. тока)	
Испытательное напряжение изоляции	5000 В перем. тока, 50/60 Гц за одну минуту между катушкой и контактами*; 1000 В перем. тока, 50/60 Гц за одну минуту между контактами одинаковой полярности	5000 В перем. тока, 50/60 Гц за одну минуту между катушкой и контактами*; 3000 В перем. тока, 50/60 Гц за одну минуту между контактами разной полярности 1000 В перем. тока, 50/60 Гц за одну минуту между контактами одинаковой полярности
Вибропрочность	разрушение: с 10 до 55 Гц, 0,75 мм одинарная амплитуда (1,5 мм двойная амплитуда) сбой: с 10 до 55 Гц, 0,75 мм одинарная амплитуда (1,5 мм двойная амплитуда)	
Ударопрочность	разрушение: 1000 м/с^2 сбой: 200 м/с^2 при возбуждении; 100 м/с^2 при отсутствии возбуждения	
Срок службы	механически: катушка перем. тока: мин. 10 000 000 переключений; катушка пост. тока: мин. 20 000 000 переключений (при 18 000 переключений/час) электрически: мин. 100 000 переключений (при 1800 переключений/час под номинальной нагрузкой (тип катушки с пост. током)	
Температура окружающей среды	эксплуатация: от –40°C до 70°C (без образования льда или конденсата)	
Влажность воздуха	при эксплуатации: от 5 % до 85 %	
Вес	прибл. 21 г	

Указание: Значения в вышерасположенной таблице – это начальные значения.
*4000 В перем. тока, 50/60 Гц для одной минуты при применении цоколя P2R-05A или P2R-08A.

■ Принятые стандарты

UL 508 (№ документа E41643)

Модель	Вид контактов	Характеристики катушки	Нагрузочная способность контакта	Переключения
G2R-1-S	SPDT	5 - 110 В пост. тока 5 - 240 В перем. тока	10 А, 30 В пост. тока (омическая нагрузка) 10 А, 250 В перем. тока (общее назначение) TV-3 (только замыкающий контакт)	6 x 10^3
G2R-2-S	DPDT		5 А, 30 В пост. тока (омическая нагрузка) 5 А, 250 В перем. тока (общее назначение) TV-3 (только замыкающий контакт)	6 x 10^3

CSA 22.2 № 0, № 14 (№ документа)

Модель	Вид контактов	Характеристики катушки	Нагрузочная способность контакта	Переключения
G2R-1-S	SPDT	5 - 110 В пост. тока 5 - 240 В перем. тока	10 А, 30 В пост. тока (омическая нагрузка) 10 А, 250 В перем. тока (общее назначение) TV-3 (только замыкающий контакт)	6 x 10^3
G2R-2-S	DPDT		5 А, 30 В пост. тока (омическая нагрузка) 5 А, 250 В перем. тока (общее назначение) TV-3 (только замыкающий контакт)	6 x 10^3

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IEC/VDE (EN61810)

Вид контактов	Характеристики катушки	Нагрузочная способность контакта	Переключения
1 полюс	6, 12, 24, 48 В пост. тока 24, 110, 120, 230, 240 В перем. тока	5 А, 440 В перем. тока (cosϕ = 1,0) 10 А, 250 В перем. тока (cosϕ = 1,0) 10 А, 30 В пост. тока (0 мс)	100 x 10^3
2 полюса	6, 12, 24, 48 В пост. тока 24, 110, 120, 230, 240 В перем. тока	5 А, 250 В перем. тока (cosϕ = 1,0) 5 А, 30 В пост. тока (0 мс)	100 x 10^3

LR

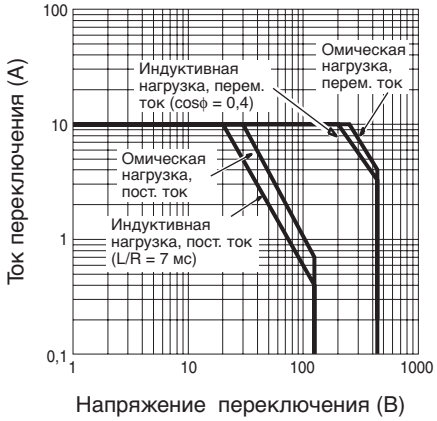
Пара контактов	Характеристики катушки	Нагрузочная способность контакта	Переключения
1 полюс	5 - 110 В пост. тока 5 - 240 В пост. тока	10 А, 250 В перем. тока (общее назначение) 7,5 А, 250 В перем. тока (коэффициент мощности 0,4) 10 А, 30 В пост. тока (омическая нагрузка) 5 А, 30 В пост. тока (L/R = 7 мс)	100 x 10^3
2 полюса	5 - 110 В пост. тока 5 - 240 В пост. тока	5 А, 250 В перем. тока (общее назначение) 2 А, 250 В перем. тока (коэффициент мощности 0,4) 5 А, 30 В пост. тока (омическая нагрузка) 3 А, 30 В пост. тока (L/R = 7 мс)	100 x 10^3

Характеристики

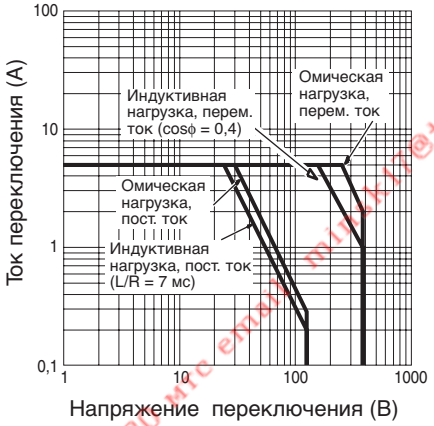
Максимальная коммутационная способность

Съемное реле

G2R-1-S



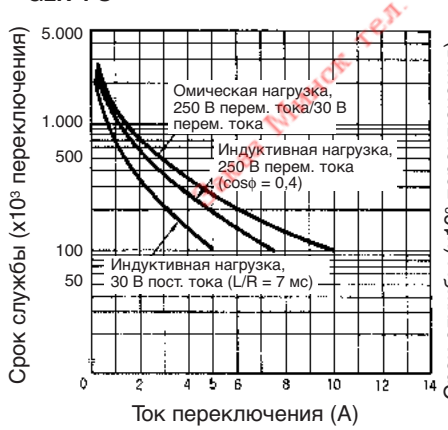
G2R-2-S



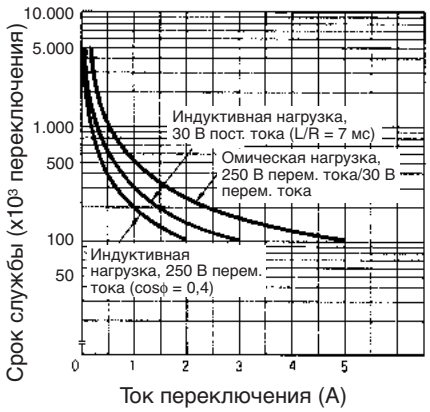
Срок службы

Съемное реле

G2R-1-S



G2R-2-S



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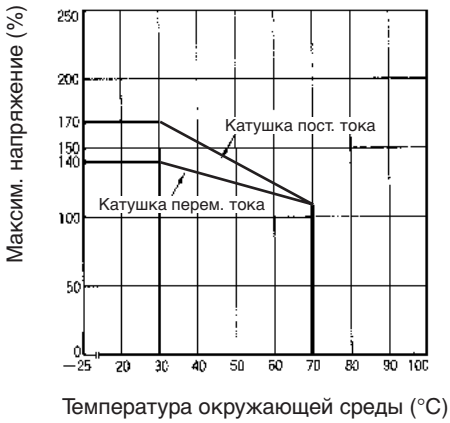
Температура окружающей среды / максим. напряжение катушки



Указание: Максимальное напряжение - это максимальное значение в диапазоне меняющегося рабочего напряжения, оно не распространяется на напряжение при длительной нагрузке.

Технические характеристики и условия эксплуатации

Технические характеристики	1- и 2-полюсные модели	
Устойчивость к искрообразованию	Основание 250	
Экологичность	RT 1	
Класс воспламеняемости	Основание, изолятор, катушка Корпус, индикатор Кнопка	UL 94V-0 UL 94V-2
Класс загрязнения	2	
Ползучесть	8 мм	
Зазоры	8 мм	
Материал контактов	AgSnIn	

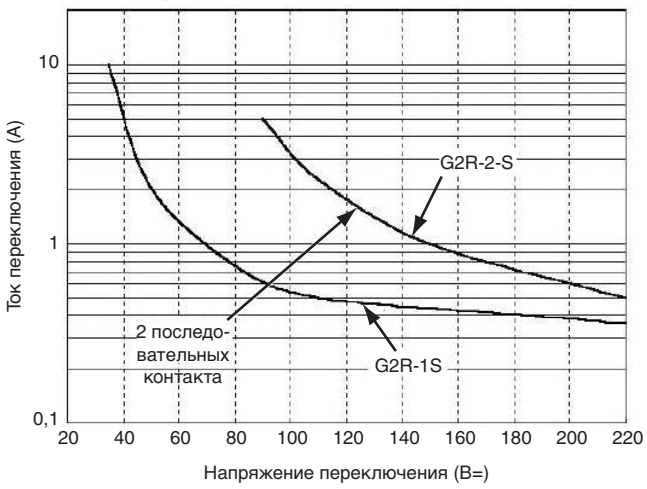
Типовые данные (только для справки)

Приведенные ниже экспериментальные и/или расчетные данные представлены только для справки. Эти данные относятся к категории номинальных характеристик - рабочие характеристики конкретных реле могут отличаться в зависимости от условий эксплуатации.

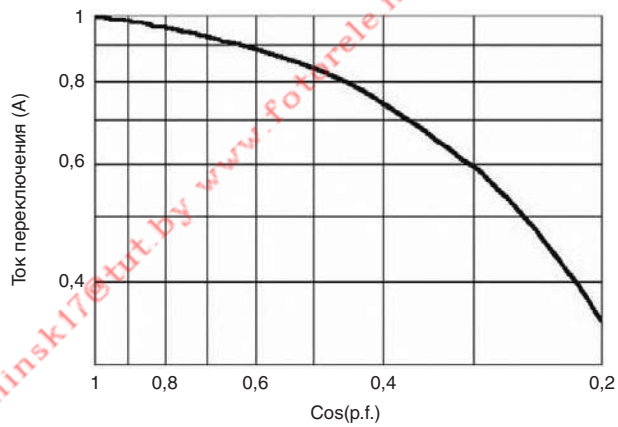
Номинальное время срабатывания / размыкания	1-полюсная модель	2-полюсная модель
Модель для перем. тока (время срабатывания/размыкания)	6 / 8 ms	6 / 10 ms
Модель для пост. тока (время срабатывания/размыкания)	12 / 4 ms	11 / 15 ms

Мощность коммутации пост. тока для реле с несколькими контактами

Мощность коммутации для омической нагрузки пост. тока



Коэффициент снижения нагрузки



Для индуктивных нагрузок (таких как соленоиды, контакторные катушки и др.) коэффициент снижения, соответствующий cos(p.f.) (косинус коэффициента мощности), умножается на величину номинального тока для получения максимально допустимого тока. Эта формула неверна для нагрузок с высоким пусковым током, таких как электродвигатели или флюоресцентные лампы.

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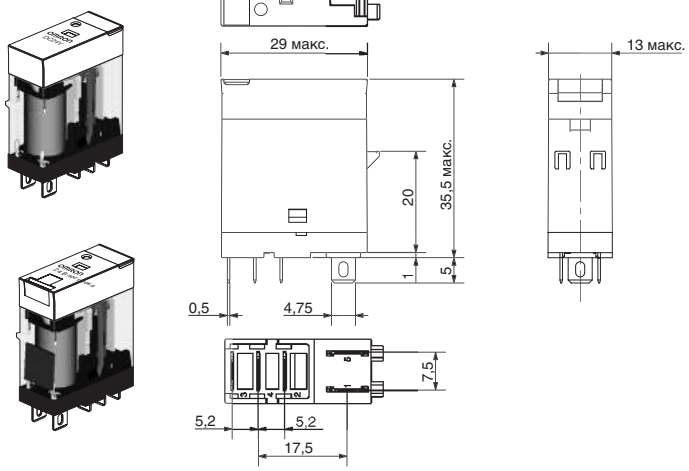
Габаритные размеры

Указание: Все значения представлены в миллиметрах, если не указано иначе.

Съемное реле

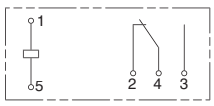
Реле с SPDT

G2R-1-S, G2R-1-SN, G2R-1-SNI
G2R-1-SD, G2R-1-SND, G2R-1-SNDI

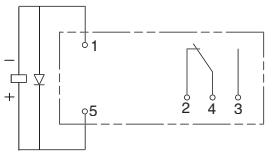


Расположение клемм/внутренняя проводка (вид снизу)

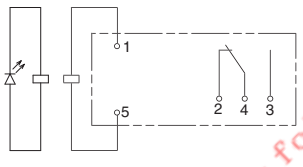
G2R-1-S



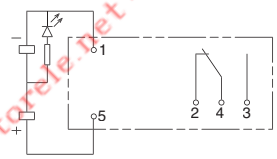
G2R-1-SD (DC)



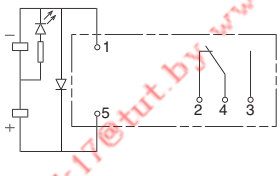
G2R-1-SN, G2R-1-SNI (AC)



G2R-1-SN, G2R-1-SNI (DC)

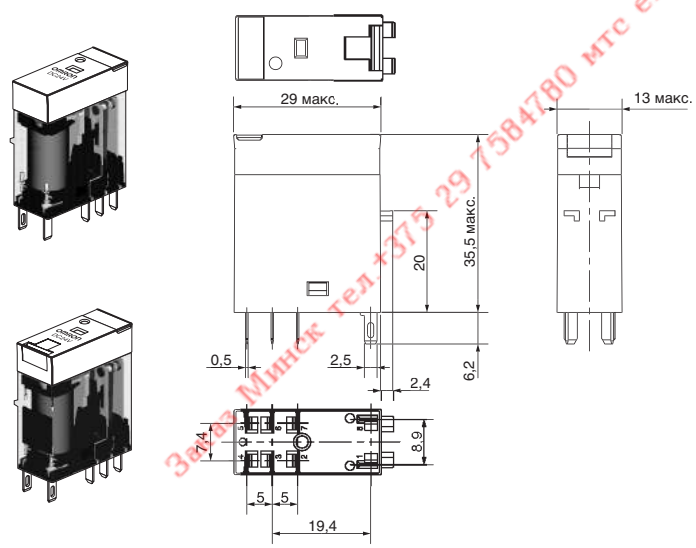


G2R-1-SND, G2R-1-SNDI (DC)



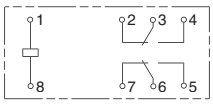
Реле с DPDT

G2R-2-S, G2R-2-SN, G2R-2-SNI
G2R-2-SD, G2R-2-SND, G2R-2-SNDI

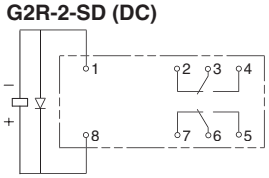


Расположение клемм/внутренняя проводка (вид снизу)

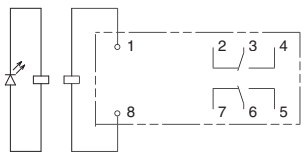
G2R-2-S



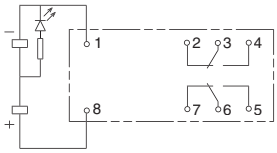
G2R-2-SD (DC)



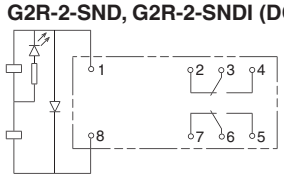
G2R-2-SN, G2R-2-SNI (AC)



G2R-2-SN, G2R-2-SNI (DC)



G2R-2-SND, G2R-2-SNDI (DC)



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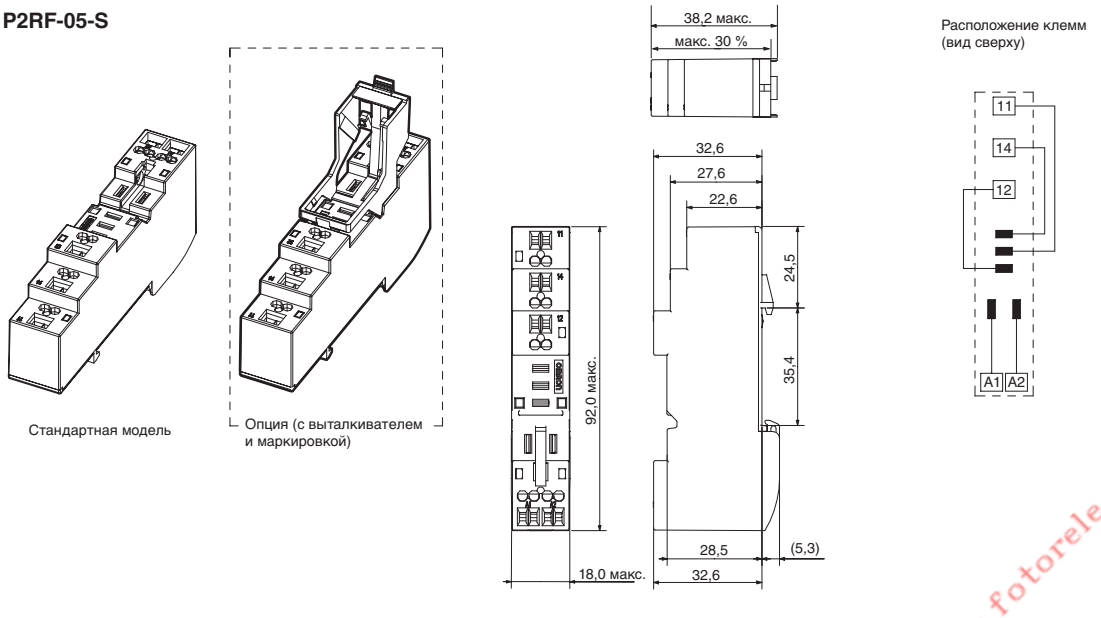
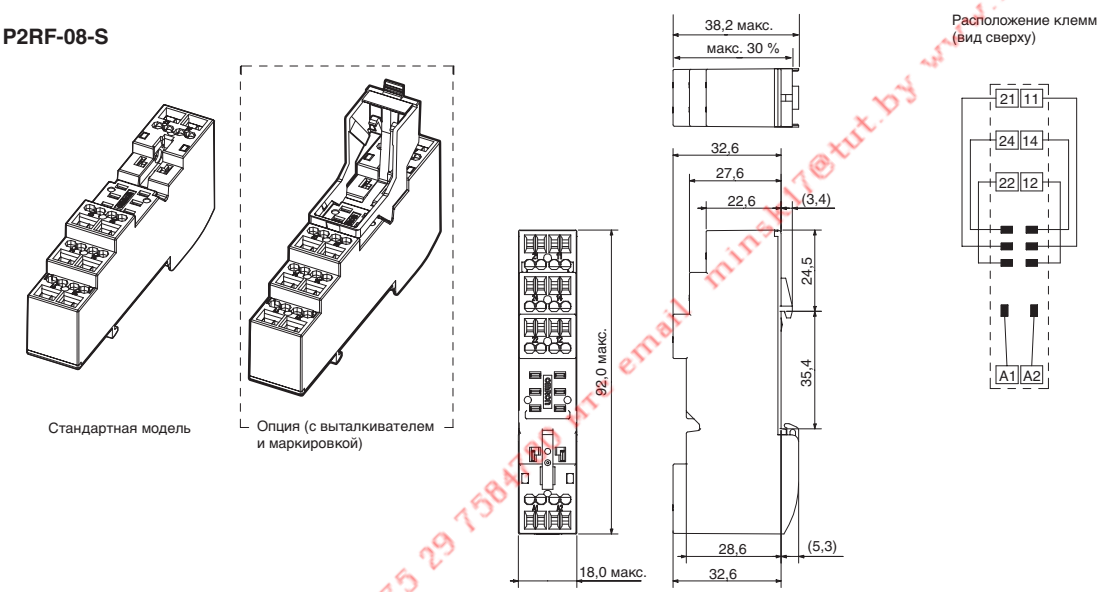
Цоколь для монтажа на шинах и монтажной плате

P2RF-05-S



P2RF-08-S



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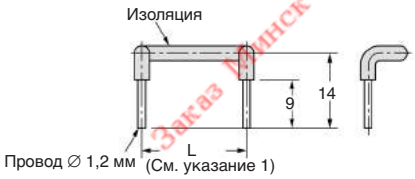
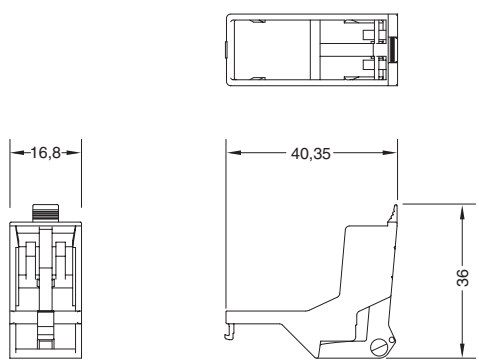
Дополнительные принадлежности для P2RF-□-S

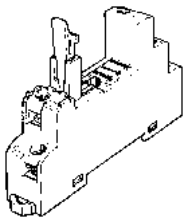
Перемычка цоколя

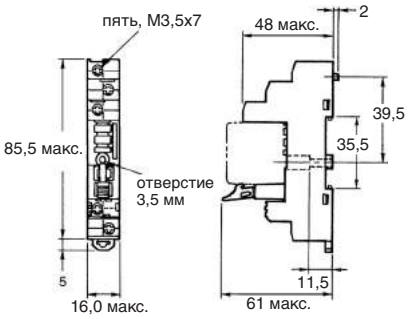


Зажимной хомут и размыкающий рычажок

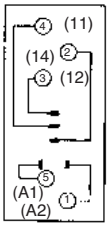


P2RF-05-E

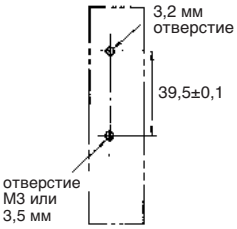




Расположение клемм (вид сверху)

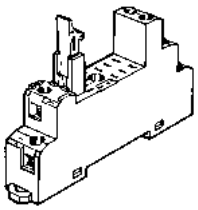


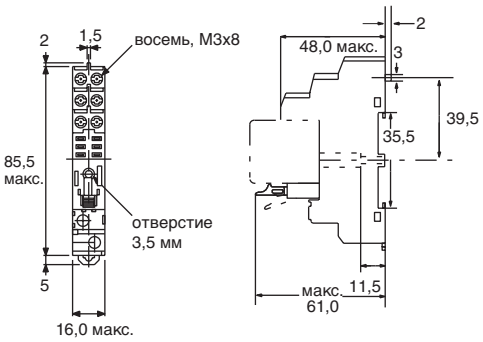
Крепежные отверстия (для поверхностного монтажа)



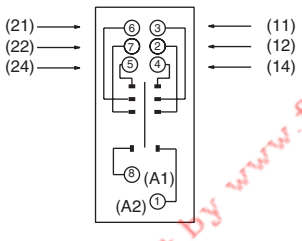
Указание: Номера штырьковых контактов в скобках относятся к нормам DIN.

P2RF-08-E



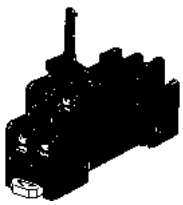


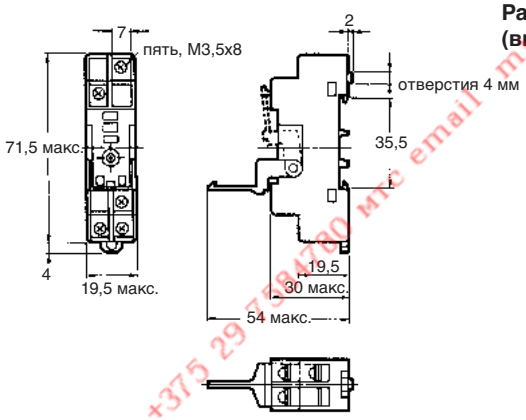
Расположение клемм (вид сверху)



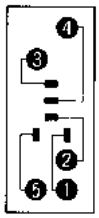
Крепежные отверстия (для поверхностного монтажа)

P2RF-05

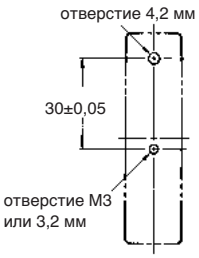




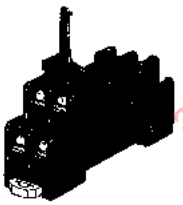
Расположение клемм (вид сверху)

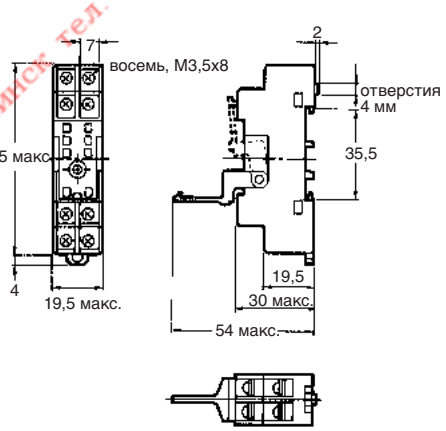


Крепежные отверстия (для поверхностного монтажа)

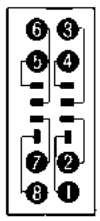


P2RF-08

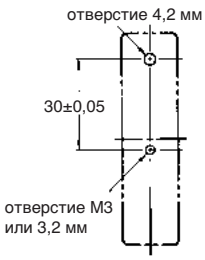




Расположение клемм (вид сверху)



Крепежные отверстия (для поверхностного монтажа)



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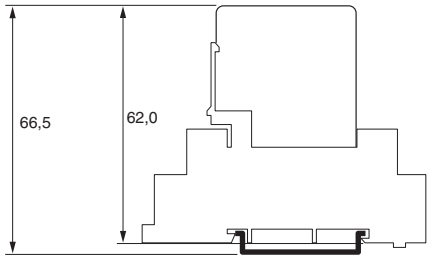
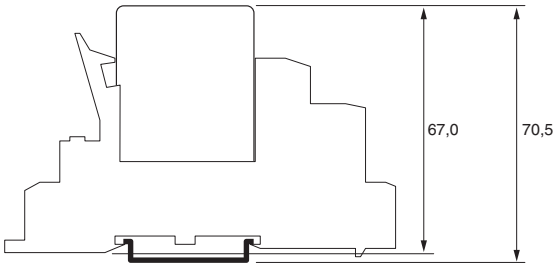
Монтажная высота реле с цоколем для монтажа на шинах и монтажной плате

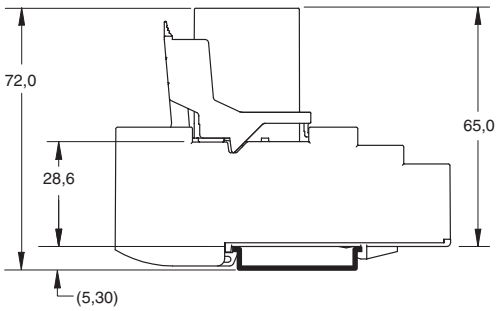
P2RF-□



P2RF-□-E

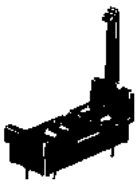


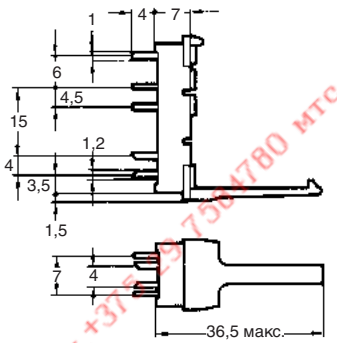
P2RF-□-S



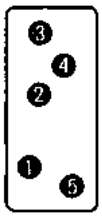
Цоколь с разъемами сзади

P2R-05P (1 полюс)



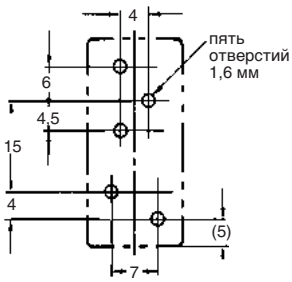


Расположение клемм (вид снизу)

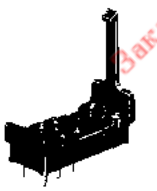


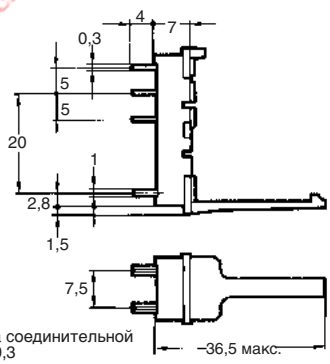
Крепежные отверстия

Допуск: ±0,1

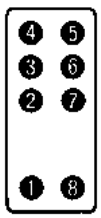


P2R-08P (2 полюса)

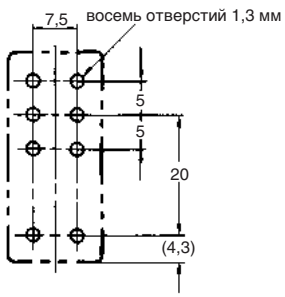




Расположение клемм (вид снизу)



Крепежные отверстия



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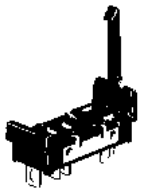
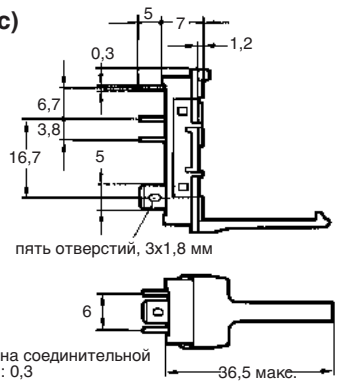
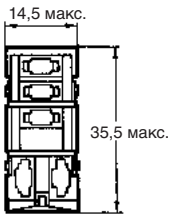
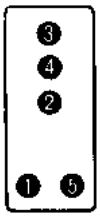
P2R-05A (1 полюс)



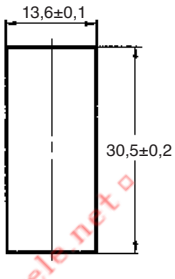




Расположение клемм (вид снизу)

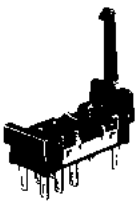


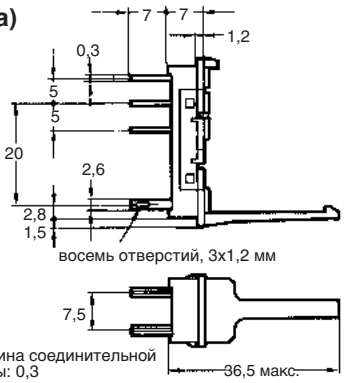
Монтажный вырез

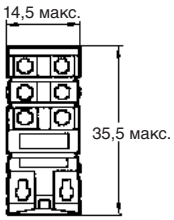


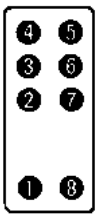
Рекомендуемая толщина панели составляет 1,6 - 2,0 мм

P2R-08A (2 полюса)

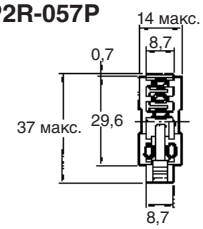


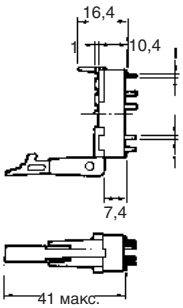




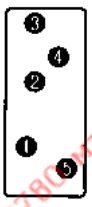


P2R-057P

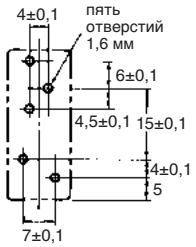




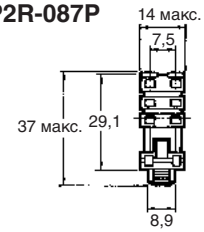
Расположение клемм (вид снизу)

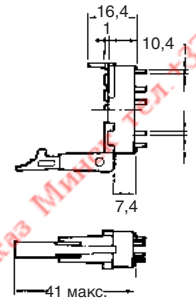


Крепежные отверстия

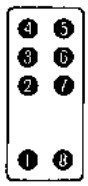


P2R-087P

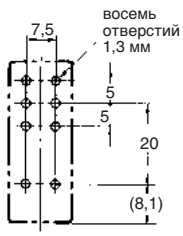




Расположение клемм (вид снизу)

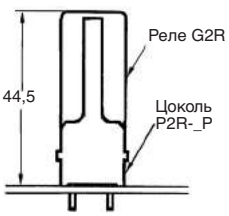


Крепежные отверстия

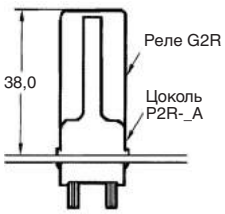


Монтажная высота реле и цоколя с разъемами сзади

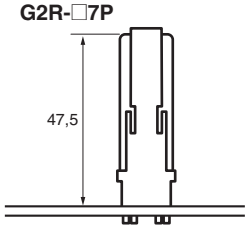
G2R-□P



G2R-□A



G2R-□7P



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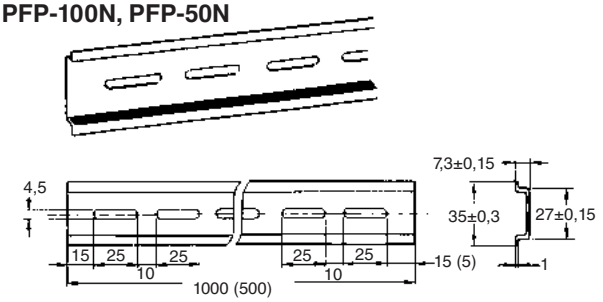
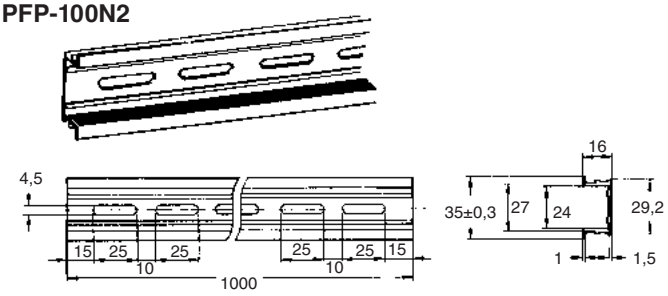
Шины для монтажа

PFP-100N, PFP-50N



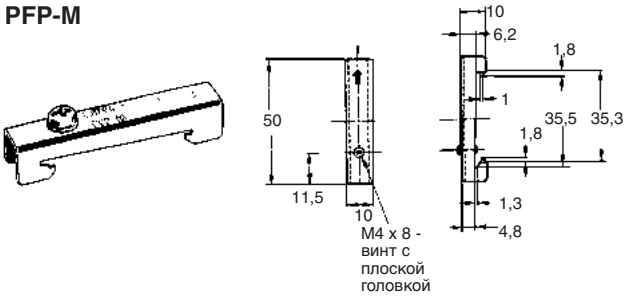
PFP-100N2



Рекомендуется применять панель толщиной 1,6 - 2,0 мм.

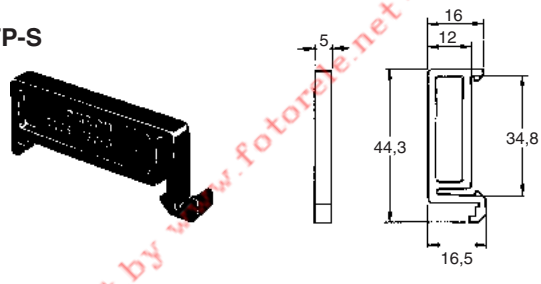
Соединительная плата

PFP-M



Прокладка

PFP-S



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г.Минск тел.+375 29 7584780 e-mail

Указания по технике безопасности

⚠ Внимание

Тестовую кнопку разрешается использовать только в целях проверки. Необходимо избегать непреднамеренного касания тестовой кнопки, так как срабатывают контакты. Перед использованием тестовой кнопки обязательно убедиться, что обеспечено безопасное функционирование нагрузки и все других подключенных устройств.

⚠ Внимание

При этом следить за тем, чтобы перед включением электрической цепи реле тестовая кнопка была отпущена.

⚠ Внимание

Если тестовую кнопку слишком вытянуть, то может произойти пропуск текущего положения тестирования и реле будет заблокировано.

⚠ Внимание

При пользовании тестовой кнопкой применяйте изолированный инструмент.

Указания по технике безопасности для подсоединения P2RF-□-S

- Не перемещайте вставленную в отверстие отвертку наверх, вниз или в сторону. В противном случае можно повредить внутренние детали (например, вследствие изгиба клемм или появления трещин в корпусе) или нарушить изоляцию.
- Не вводите отвертку наклонно. Иначе можно пробить поверхность цоколя, что приведет к короткому замыканию.

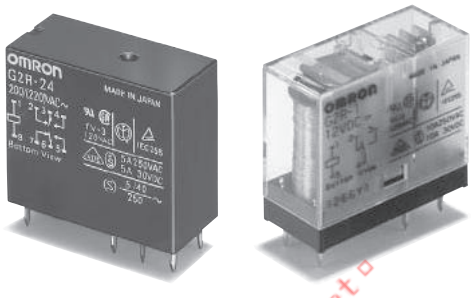
G2R

PCB Power Relay

The Best Seller G2R

- 1General purpose power Relays of single-pole10 A and double-pole 5 A.
- Safety-oriented design with dielectric strength of 5,000 V between coil and contacts, and surge resistance of 10,000 V.
- AC and DC types are both available for operational coils.

RoHS Compliant



■Model Number Legend

G2R-□-□□□□-□□
1 2 3 4 5 6 7

1. Relay Function
None: Single-side stable
K : Double-winding latching

2. Number of poles
1: 1-pole
2: 2-pole

3. Contact Form
None: NO/NC
A : NO

4. Contact Type
None: Single
Z : Bifurcated contact

5. Enclosure rating
None: Flux protection (T-type is an enclosed relay)
4 : Fully sealed

6. Terminal Shape
None: PCB terminals
T : Quick-connect (upper bracket mounting #187)

7. Classification
None: Standard
E : High-capacity
H : High-sensitivity
U : For ultrasonically cleanable
Z : Full-wave rectifier

■Model Configuration

Terminal Shape	Classification	Number of poles: Enclosure rating	Number of poles: Contact form	1-pole: SPST-NO (1a)	1-pole: SPDT (1c)	2-pole: DPST-NO (2a)	2-pole: DPDT (2c)	Minimum packing unit
PCB terminals	Standard	Flux protection	AC	G2R-1A	G2R-1	G2R-2A	G2R-2	50 pcs/tray
			DC					
		Fully sealed	AC	G2R-1A4	G2R-14	G2R-2A4	G2R-24	
			DC					
	Bifurcated contact	Flux protection	DC	G2R-1AZ	G2R-1Z	–	–	
		Fully sealed		G2R-1AZ4	G2R-1Z4	–	–	
	High-capacity	Flux protection	AC	G2R-1A-E	G2R-1-E	–	–	
			DC					
	High-sensitivity	Flux protection	DC	G2R-1A-H	G2R-1-H	G2R-2A-H	G2R-2-H	
	Double-winding latching	Flux protection	DC	G2RK-1A	G2RK-1	G2RK-2A	G2RK-2	
Quick-connect	Standard	Unsealed	AC	G2R-1A-T	G2R-1-T	–	–	100 pcs/tray
			DC					

Note 1. Full-wave rectifier and supersonic cleaner compatible models are also available. Refer to page 3.
2. Sockets for PCB terminal models are not provided.
Use the plug-in terminal Relay instead of socket if necessary.

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■Ordering Information

● PCB Terminal Models

Classification	Enclosure rating	Number of poles / Contact form	1-pole Model	1-pole Rated coil voltage	2-pole Model	2-pole Rated coil voltage
General-purpose	Flux protection	NO	**G2R-1A**	12, 24, 100/(110) VAC	**G2R-2A**	12, 24, 100/(110) VAC
				200/(220) VAC		200/(220) VAC
				5, 6, 12, 24, 48 VDC		5, 6, 12, 24, 48 VDC
				100 VDC		100 VDC
		NO/NC	**G2R-1**	12, 24, 100/(110) VAC	**G2R-2**	12, 24, 100/(110) VAC
				200/(220) VAC		200/(220) VAC
				5, 6, 12, 24, 48 VDC		5, 6, 12, 24, 48 VDC
				100 VDC		100 VDC
	Fully sealed	NO	**G2R-1A4**	12, 24, 100/(110) VAC	**G2R-2A4**	12, 24, 100/(110) VAC
				200/(220) VAC		200/(220) VAC
				5, 6, 12, 24, 48 VDC		5, 6, 12, 24, 48 VDC
				100 VDC		100 VDC
		NO/NC	**G2R-14**	12, 24, 100/(110) VAC	**G2R-24**	12, 24, 100/(110) VAC
				200/(220) VAC		200/(220) VAC
				5, 6, 12, 24, 48 VDC		5, 6, 12, 24, 48 VDC
				100 VDC		100 VDC
High-sensitivity	Flux protection	NO	**G2R-1A-H**	5, 6, 12, 24, 48 VDC	**G2R-2A-H**	5, 6, 12, 24, 48 VDC
		NO/NC	**G2R-1-H**	5, 6, 12, 24, 48 VDC	**G2R-2-H**	5, 6, 12, 24, 48 VDC
Double-winding latching		NO	**G2RK-1A**	5, 6, 12, 24 VDC	**G2RK-2A**	5, 12, 24 VDC
		NO/NC	**G2RK-1**	5, 6, 12, 24 VDC	**G2RK-2**	5, 6, 12, 24 VDC
Bifurcated contact	Flux protection	NO	**G2R-1AZ**	12, 24, 48 VDC	–	
				100 VDC		
		NO/NC	**G2R-1Z**	5, 6, 12, 24, 48 VDC		
				100 VDC		
	Fully sealed	NO	**G2R-1AZ4**	5, 12, 24, 48 VDC	–	
				100 VDC		
		NO/NC	**G2R-1Z4**	5, 12, 24, 48 VDC		
				100 VDC		
High-capacity	Flux protection	NO	**G2R-1A-E**	12, 24, 100/(110) VAC	–	
				200/(220) VAC		
				5, 6, 12, 24, 48 VDC		
				100 VDC		
		NO/NC	**G2R-1-E**	12, 24, 100/(110) VAC	–	
				200/(220) VAC		
				5, 6, 12, 24, 48 VDC		
				100 VDC		

Note: When ordering, add the rated coil voltage to the model number.
Example: G2R-1A 12 VAC
└ Rated coil voltage

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● Quick-connect Terminal (#187)

Classification	Enclosure rating	Number of poles / Contact form	1-pole Model	1-pole Rated coil voltage
General-purpose	Unsealed	NO	**G2R-1A-T**	12, 24, 100/(110) VAC
				200/(220) VAC
				5, 6, 12, 24, 48 VDC
				100 VDC
		NO/NC	**G2R-1-T**	12, 24, 100/(110) VAC
				200/(220) VAC
				5, 6, 12, 24, 48 VDC
				100 VDC

● Full-wave Rectifier

Classification	Enclosure rating	Number of poles / Contact form	1-pole Model	1-pole Rated coil voltage	2-pole Model	2-pole Rated coil voltage
General-purpose	Flux protection	NO	**G2R-1A-Z**	5, 12, 24 VDC	**G2R-2A-Z**	5, 6, 12, 24, 48 VDC
				100 VDC		100 VDC
		NO/NC	**G2R-1-Z**	5, 12, 24, 48 VDC	**G2R-2-Z**	12, 24, 48 VDC
				100 VDC		100 VDC
	Fully sealed	NO	**G2R-1A4-Z**	5, 12, 48 VDC	**G2R-2A4-Z**	24, 48 VDC
				100 VDC		100 VDC
		NO/NC	**G2R-14-Z**	5, 12, 24, 48 VDC	**G2R-24-Z**	5, 12, 24 VDC
				100 VDC		100 VDC
High-capacity	Flux protection	NO	**G2R-1A-EZ**	5, 12, 24 VDC	–	
				100 VDC		
		NO/NC	**G2R-1-EZ**	12, 24, 48 VDC		
				100 VDC		

● For Ultrasonically Cleanable

Classification	Enclosure rating	Number of poles / Contact form	1-pole Model	1-pole Rated coil voltage	2-pole Model	2-pole Rated coil voltage
General-purpose	Fully sealed	NO	**G2R-1A4-U**	12, 24, 100/(110) VAC	**G2R-2A4-U**	100/(110) VAC
				200/(220) VAC		–
				5, 6, 12, 24, 48 VDC		5, 12, 24 VDC
		NO/NC	**G2R-14-U**	12, 100/(110) VAC 200/(220) VAC	**G2R-24-U**	12, 24, 100/(110) VAC 200/(220) VAC
				5, 12, 24, 48 VDC		5, 12, 24, 48 VDC
				100 VDC		100 VDC

Note: When ordering, add the rated coil voltage to the model number.
Example: G2R-1A-T 12 VAC
└── Rated coil voltage

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■Ratings

● Coil

Classification	Item / Rated voltage	Rated current (mA) 50 Hz	Rated current (mA) 60 Hz	Coil resistance (Ω)	Must operate voltage (V)	Must release voltage (V)	Max. voltage (V)	Power consumption (VA, W)
					% of rated voltage			
• General-purpose • Quick-connect • Fully sealed • High-capacity	12 VAC	93	75	65	80% max.	30% min.	140% (at 23°C)	Approx. 0.9 (60 Hz)
	24 VAC	46.5	37.5	260				
	100/(110) VAC	11	9/(10.6)	4,600				
	200/(220) VAC	5.5	4.5/(5.3)	20,200				
• General-purpose • High-capacity • Bifurcated contact • Quick-connect • Fully sealed	5 VDC	106		47	70% max.	15% min.	170% (at 23°C)	Approx. 0.53
	6 VDC	88.2		68				
	12 VDC	43.6		275				
	24 VDC	21.8		1,100				
	48 VDC	11.5		4,170				
	100 VDC	5.3		18,860				
• High-sensitivity	5 VDC	71.4		70	70% max.	15% min.	170% (at 23°C)	Approx. 0.36
	6 VDC	60		100				
	12 VDC	30		400				
	24 VDC	15		1,600				
	48 VDC	7.5		6,400				

Note 1. The rated current and coil resistance are measured at a coil temperature of 23°C with a tolerance of+15%/-20% (AC rated current) or ±10% (DC coil resistance).
2. AC coil resistances shown above are only reference values.
3. The operating characteristics are measured at a coil temperature of 23°C.
4. The “Max. voltage” is the maximum voltage that can be applied to the relay coil.

● Coil: Double-winding Latching Relays

Item / Rated voltage	Set Coil Rated current (mA)	Set Coil Coil resistance (Ω)	Reset coil Rated current (mA)	Reset coil Coil resistance (Ω)	Must set voltage (V)	Must reset voltage (V)	Max. voltage (V)	Power consumption Set Coil (mW)	Power consumption Reset coil (mW)
					% of rated voltage				
5 VDC	167	30	119	42	70% max.	70% max.	140% (at 23°C)	Approx. 850	Approx. 600
6 VDC	138	43.5	100	60					
12 VDC	70.6	170	50	240					
24 VDC	34.6	694	25	960					

Note 1. The rated current and coil resistance are measured at a coil temperature of 23°C with a tolerance of ±10%.
2. The operating characteristics are measured at a coil temperature of 23°C.
3. The “Max. voltage” is the maximum voltage that can be applied to the relay coil.

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● Contacts

Classification	General-purpose Quick-connect Terminal (1single-pole type)				High-capacity		Bifurcated contact		High-sensitivity			
Number of poles	1-pole		2-pole		1-pole		2-pole		1-pole		2-pole	
Load / Item	Resistive load	Inductive load (cosϕ = 0.4; L/R = 7 ms)	Resistive load	Inductive load (cosϕ = 0.4; L/R = 7 ms)	Resistive load	Inductive load (cosϕ = 0.4; L/R = 7 ms)	Resistive load	Inductive load (cosϕ = 0.4; L/R = 7 ms)	Resistive load	Inductive load (cosϕ = 0.4; L/R = 7 ms)	Resistive load	Inductive load (cosϕ = 0.4; L/R = 7 ms)
Contact type	Single				Single		Bifurcated		Single			
Contact material	Ag-alloy (Cd free)											
Rated load	10 A at 250 VAC 10 A at 30 VDC	7.5 A at 250 VAC 5 A at 30 VDC	5 A at 250 VAC 5 A at 30 VDC	2 A at 250 VAC 3 A at 30 VDC	16 A at 250 VAC 16 A at 30 VDC	8 A at 250 VAC 8 A at 30 VDC	5 A at 250 VAC 5 A at 30 VDC	2 A at 250 VAC 3 A at 30 VDC	5 A at 250 VAC 5 A at 30 VDC	2 A at 250 VAC 3 A at 30 VDC	3 A at 250 VAC 3 A at 30 VDC	1 A at 250 VAC 1.5 A at 30 VDC
Rated carry current	10 A		5 A		16 A		5 A		5 A		3 A	
Max. switching voltage	380 VAC, 125 VDC				380 VAC, 125 VDC				380 VAC, 125 VDC			
Max. switching current	10 A		5 A		16 A		5 A		5 A		3 A	
Failure rate (P level) (reference value) *	100 mA at 5 VDC		10 mA at 5 VDC		100 mA at 5 VDC		1 mA at 5 VDC		100 mA at 5 VDC		10 mA at 5 VDC	

* This value was measured at a switching frequency of 120 operations/min.

● Contacts: Fully Sealed Models

Classification	General-purpose (Single contact)				Bifurcated contact	
Number of poles	1-pole		2-pole		1-pole	
Load / 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)	Resistive load (cosϕ = 1)	Inductive load (cosϕ = 0.4; L/R = 7 ms)
Contact type	Single		Single		Bifurcated	
Contact material	Ag-alloy (Cd free)					
Rated load	8 A at 250 VAC 8 A at 30 VDC	6 A at 250 VAC 4 A at 30 VDC	4 A at 250 VAC 4 A at 30 VDC	1.5 A at 250 VAC 2.5 A at 30 VDC	5 A at 250 VAC 5 A at 30 VDC	2 A at 250 VAC 3 A at 30 VDC
Rated carry current	8 A		4 A		5 A	
Max. switching voltage	380 VAC, 125 VDC		380 VAC, 125 VDC		380 VAC, 125 VDC	
Max. switching current	8 A		4 A		5 A	
Failure rate (P level) (reference value) *	100 mA at 5 VDC		10 mA at 5 VDC		1 mA at 5 VDC	

* This value was measured at a switching frequency of 120 operations/min.

● Contacts: Latching Models

Number of poles	1-pole		2-pole	
Load / 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)
Contact type	Single		Single	
Contact material	Ag-alloy (Cd free)			
Rated load	5 A at 250 VAC 5 A at 30 VDC	3.5 A at 250 VAC 2.5 A at 30 VDC	3 A at 250 VAC 3 A at 30 VDC	1.5 A at 250 VAC 2 A at 30 VDC
Rated carry current	5 A		3 A	
Max. switching voltage	380 VAC, 125 VDC		380 VAC, 125 VDC	
Max. switching current	5 A		3 A	
Failure rate (P level) (reference value) *	100 mA at 5 VDC		10 mA at 5 VDC	

* This value was measured at a switching frequency of 120 operations/min.

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■Characteristics

● Standard Relays

Item	Number of poles	1-pole	2-pole
Contact resistance *1		30 mΩ max. *2	50 mΩ max.
Operate time *3		15 ms max.	
Release time *3		AC: 10 ms max.; DC: 5 ms max.	
Max. operating frequency	Mechanical	18,000 operations/hr	
	Electrical	1,800 operations/hr	
Insulation resistance *4		1,000 MΩ min.	
Dielectric strength	Between coil and contacts	5,000 VAC, 50/60 Hz for 1 min	
	Between contacts of different polarity	-	3,000 VAC, 50/60 Hz for 1 min
	Between contacts of the same polarity	1,000 VAC, 50/60 Hz for 1 min	
Vibration resistance	Destruction	10 to 55 to 10 Hz, 0.75 mm single amplitude (1.5 mm double amplitude)	
	Malfunction	10 to 55 to 10 Hz, 0.75 mm single amplitude (1.5 mm double amplitude)	
Shock resistance	Destruction	1,000 m/s²	
	Malfunction	200 m/s² when energized; 100m/s² when no energized	
Durability	Mechanical	AC coil: 10,000,000 operations min.; DC coil: 20,000,000 operations min. (at 18,000 operations/hr)	
	Electrical	100,000 operations min. (at 1,800 operations/hr under rated load)	
Ambient operating temperature		-40°C to 70°C (with no icing)	
Ambient operating humidity		5% to 85%	
Weight		Approx. 17 g (Approx. 20 g *5)	

Note: The values here are initial values.
*1. Measurement conditions: 5 VDC, 1 A, voltage-drop method.
*2. High-capacity type: 100 mΩ max.
*3. Measurement conditions: Rated operating voltage applied, not including contact bounce.
*4. Measurement conditions: The insulation resistance was measured with a 500 VDC megohmmeter at the same locations as the dielectric strength was measured.
*5. Value for quick-connect terminals.

Double-winding Latching Relays

Item	Number of poles	1-pole	2-pole
Contact resistance *1		30 mΩ max.	50 mΩ max.
Set	Time *2	20 ms max.	
	Min. set pulse width	30 ms	
Reset	Time *2	20 ms max.	
	Min. reset pulse width	30 ms	
Max. operating frequency	Mechanical	18,000 operations/hr	
	Electrical	1,800 operations/hr	
Insulation resistance *3		1,000 MΩ min. (at 500 VDC)	
Dielectric strength	Between coil and contacts	5,000 VAC, 50/60 Hz for 1 min	
	Between contacts of different polarity	–	3,000 VAC, 50/60 Hz for 1 min
	Between contacts of the same polarity	1,000 VAC, 50/60 Hz for 1 min	
	Between set and reset coils	1,000 VAC, 50/60 Hz for 1 min	
Vibration resistance	Destruction	10 to 55 to 10 Hz, 0.75 mm single amplitude (1.5 mm double amplitude)	
	Malfunction	10 to 55 to 10 Hz, 0.75 mm single amplitude (1.5 mm double amplitude)	
Shock resistance	Destruction	1,000 m/s²	
	Malfunction	Set: 500m/s² Armature OFF Reset: 200m/s² Contact OFF	
Durability	Mechanical	10,000,000 operations min (at 18,000 operations/hr)	
	Electrical	100,000 operations min. (at 1,800 operations/hr under rated load)	
Ambient operating temperature		-40°C to 70°C (with no icing or condensation)	
Ambient operating humidity		5% to 85%	
Weight		Approx. 17 g	

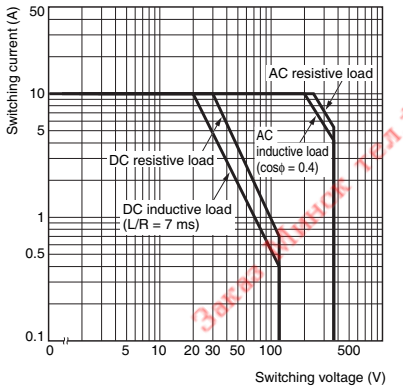
Note: The values here are initial values.
*1. Measurement conditions: 5 VDC, 1 A, voltage-drop method.
*2. Measurement conditions: Rated operating voltage applied, not including contact bounce.
*3. Measurement conditions: The insulation resistance was measured with a 500 VDC megohmmeter at the same locations as the dielectric strength was measured.

■Engineering Data

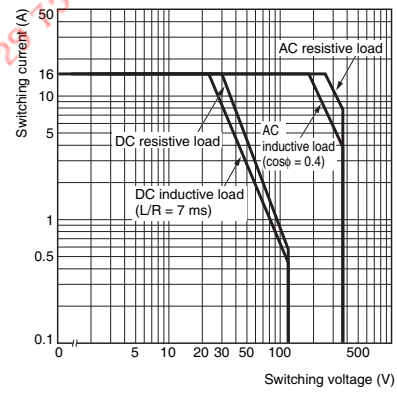
● Maximum Switching Capacity

Flux Protection/Plug-in Relays

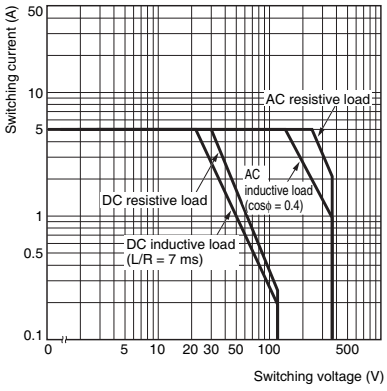
G2R-1, G2R-1A, G2R-1-T, G2R-1A-T



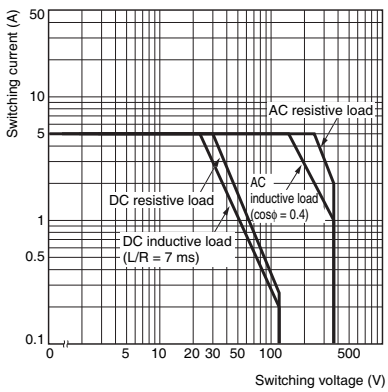
G2R-1-E, G2R-1A-E



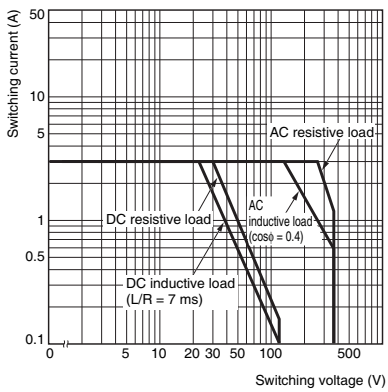
G2R-1Z, G2R-1AZ



G2R-1-H, G2R-1A-H, G2R-2, G2R-2A



G2R-2-H, G2R-2A-H



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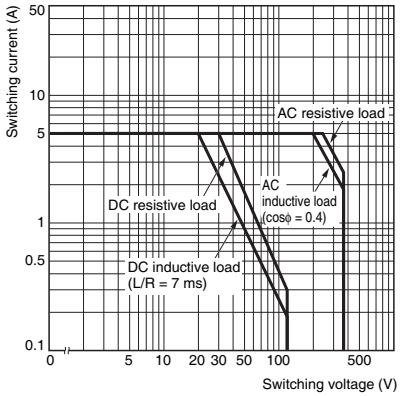
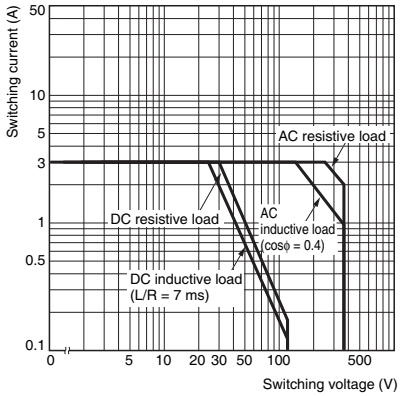
G2RK-1A, G2RK-1

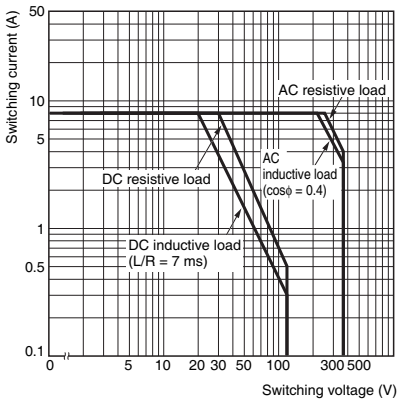


G2RK-2A, G2RK-2

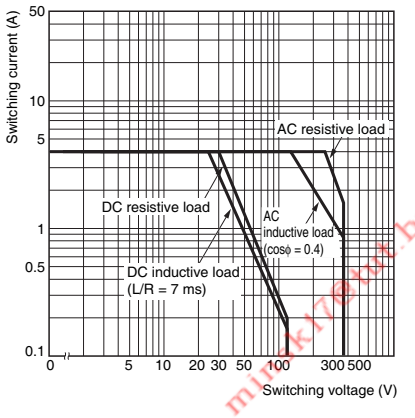


Fully Sealed Relays

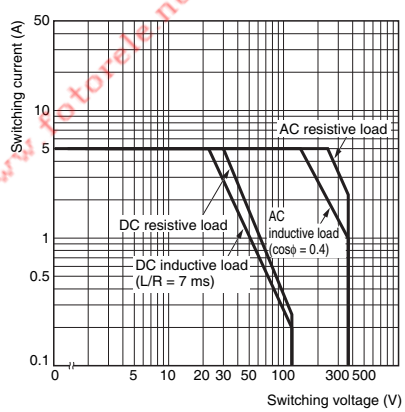
G2R-14, G2R-1A4



G2R-24, G2R-2A4



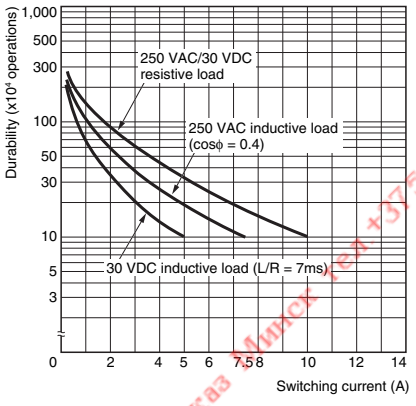
G2R-1Z4, G2R-1AZ4



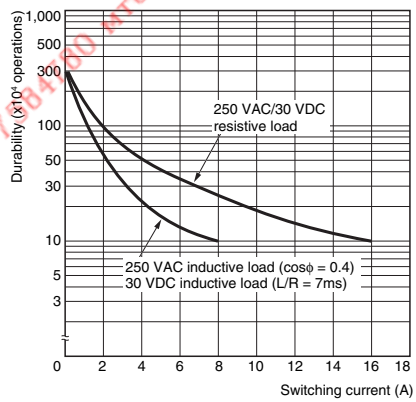
● Durability

Flux Protection/Plug-in Relays

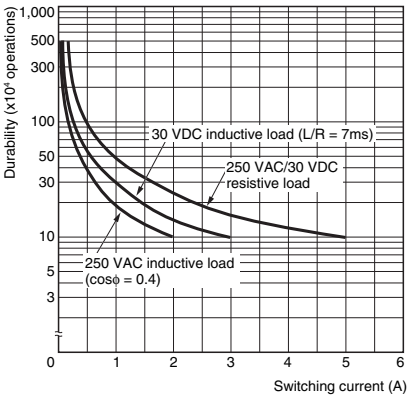
G2R-1, G2R-1A, G2R-1-T, G2R-1A-T



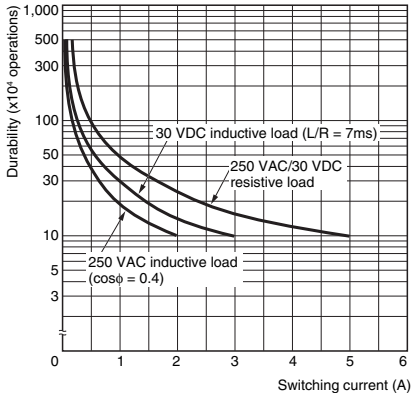
G2R-1-E, G2R-1A-E



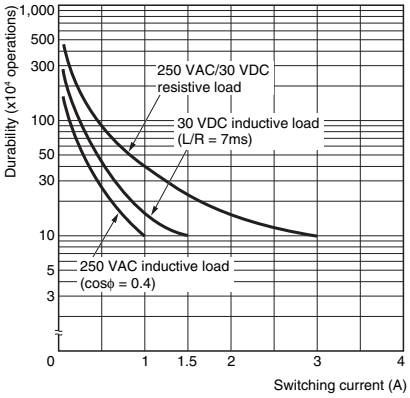
G2R-1Z, G2R-1AZ



G2R-1-H, G2R-1A-H, G2R-2, G2R-2A



G2R-2-H, G2R-2A-H



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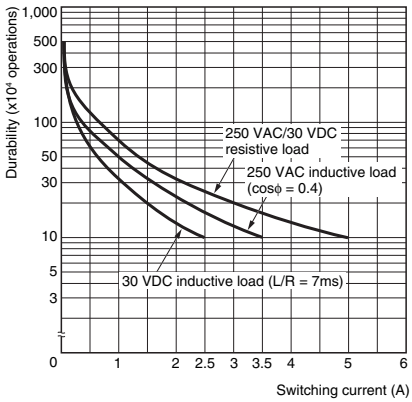
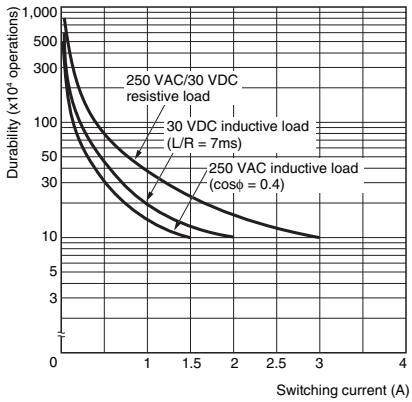
G2RK-1A, G2RK-1

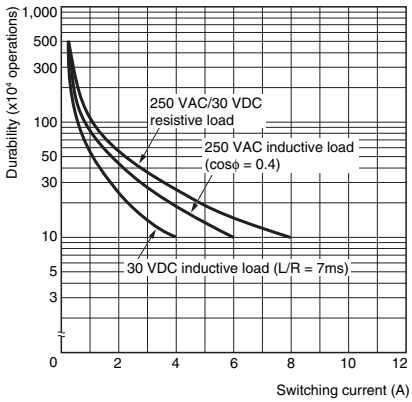


G2RK-2A, G2RK-2

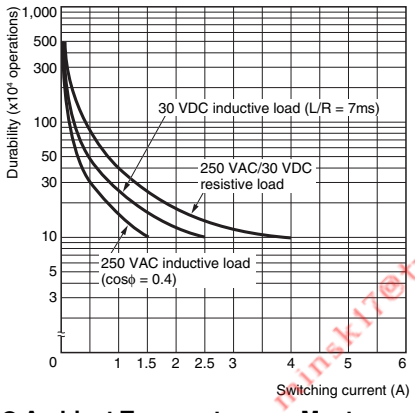


Fully Sealed Relays

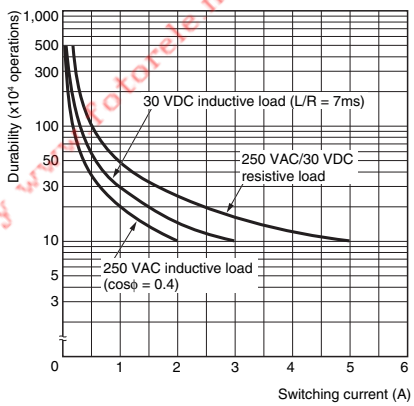
G2R-14, G2R-1A4



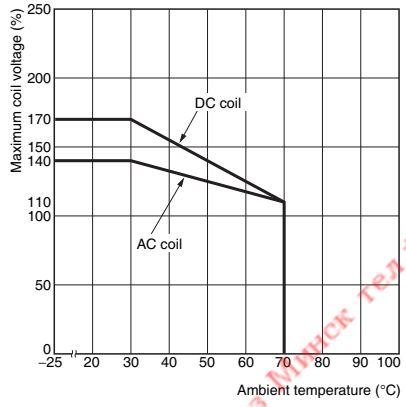
G2R-24, G2R-2A4



G2R-1Z4, G2R-1AZ4



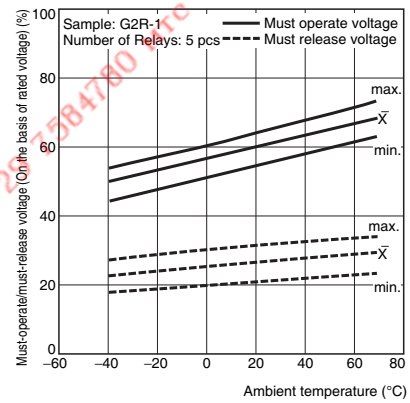
● Ambient Temperature vs. Maximum Coil Voltage



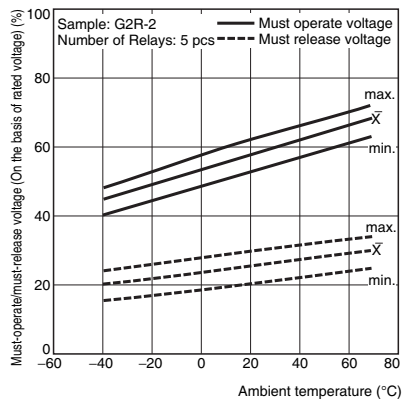
Note: The maximum coil voltage refers to the maximum value in a varying range of operating power voltage, not a continuous voltage.

● Ambient Temperature vs. Must Operate and Must Release Voltage

G2R-1

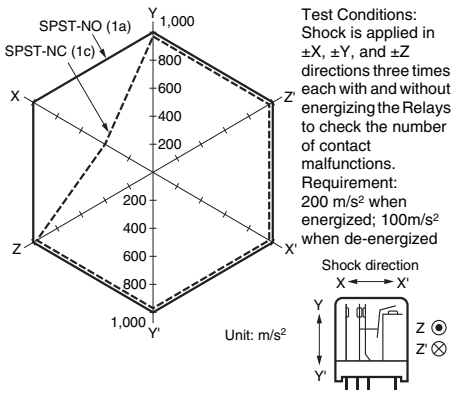


G2R-2



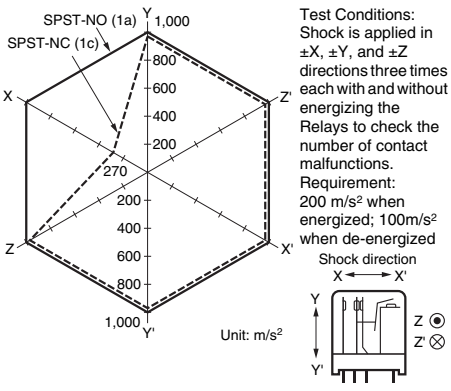
● Shock Malfunction

G2R-1 Number of Relays: 5 pcs



Test Conditions: Shock is applied in ±X, ±Y, and ±Z directions three times each with and without energizing the Relays to check the number of contact malfunctions. Requirement: 200 m/s² when energized; 100m/s² when de-energized

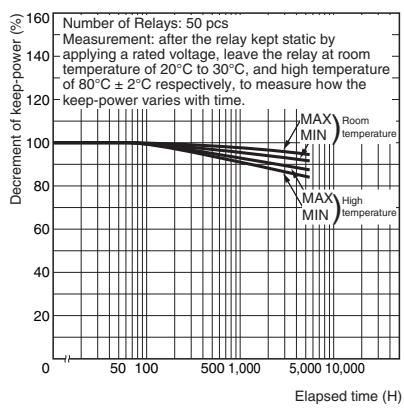
G2R-2 Number of Relays: 5 pcs



Test Conditions: Shock is applied in ±X, ±Y, and ±Z directions three times each with and without energizing the Relays to check the number of contact malfunctions. Requirement: 200 m/s² when energized; 100m/s² when de-energized

● Keep-power decrement with time

G2RK-1



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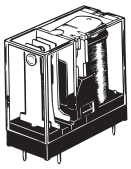
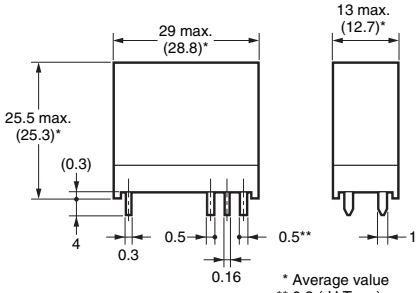
■Dimensions

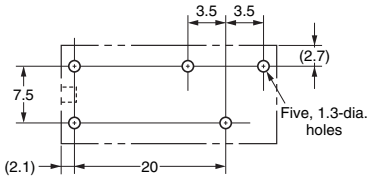
Relays with PCB Terminals (SPDT (1c) Relays) G2R-1(-Z) G2R-1Z G2R-1-H



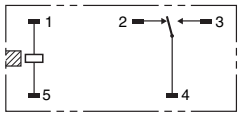
This illustration is the G2R-1 model.



PCB Mounting Holes
(BOTTOM VIEW)
Tolerance: ±0.1 mm

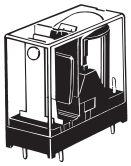


Terminal Arrangement/ Internal Connections
(BOTTOM VIEW)

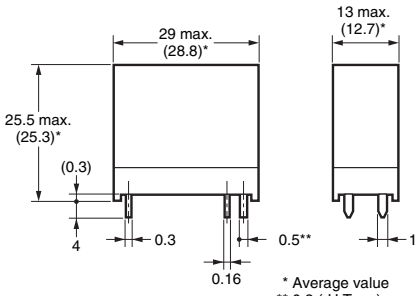


(No coil polarity)

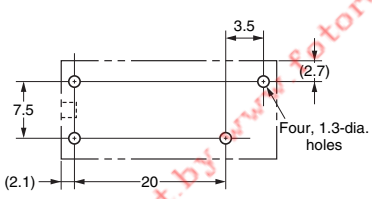
Relays with PCB Terminals (SPST-NO (1a) Relays) G2R-1A(-Z) G2R-1AZ G2R-1A-H



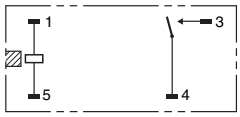
This illustration is the G2R-1A model.



PCB Mounting Holes
(BOTTOM VIEW)
Tolerance: ±0.1 mm

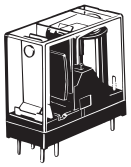


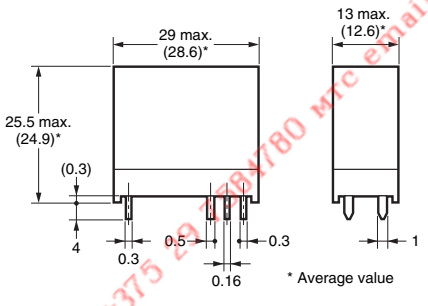
Terminal Arrangement/ Internal Connections
(BOTTOM VIEW)



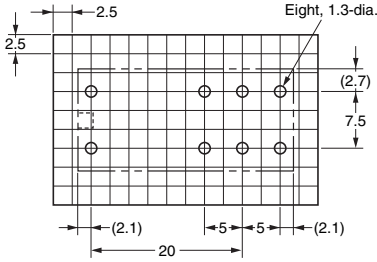
(No coil polarity)

Relays with PCB Terminals (SPDT (1c) /High-capacity Relays) G2R-1-E(Z)

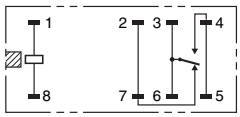




PCB Mounting Holes
(BOTTOM VIEW)
Tolerance: ±0.1 mm

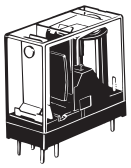


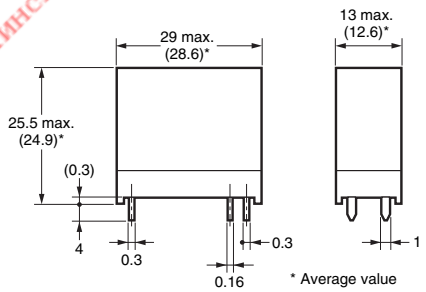
Terminal Arrangement/ Internal Connections
(BOTTOM VIEW)



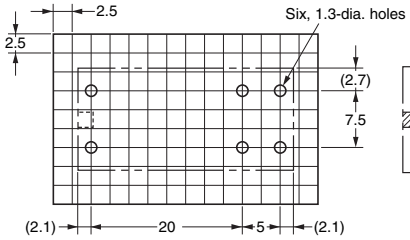
(No coil polarity)

Relays with PCB Terminals (SPST-NO (1a)/High-capacity Relays) G2R-1A-E(Z)

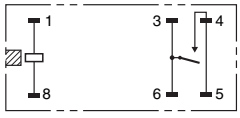




PCB Mounting Holes
(BOTTOM VIEW)
Tolerance: ±0.1 mm



Terminal Arrangement/ Internal Connections
(BOTTOM VIEW)



(No coil polarity)

Note: Orientation marks are indicated as follows:

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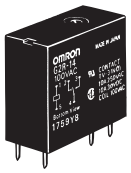
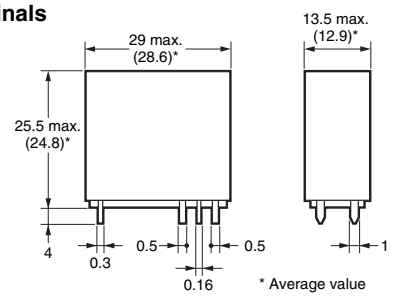
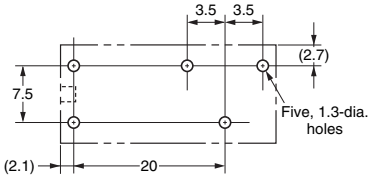
Relays with PCB Terminals (SPDT (1c) Relays) G2R-14(-Z)(-U) G2R-1Z4

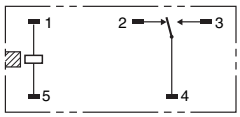




PCB Mounting Holes
(BOTTOM VIEW)
Tolerance: ±0.1 mm

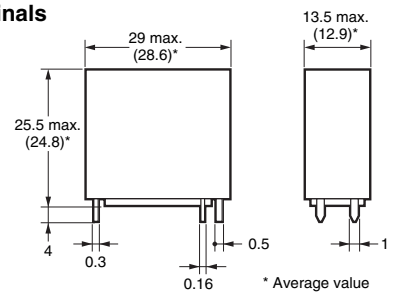


Terminal Arrangement/ Internal Connections
(BOTTOM VIEW)

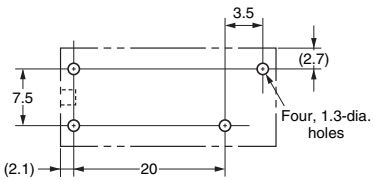


(No coil polarity)

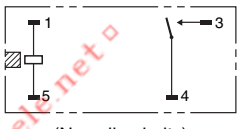
Relays with PCB Terminals (SPST-NO (1a) Relays) G2R-1A4(-Z)(-U) G2R-1AZ4



PCB Mounting Holes
(BOTTOM VIEW)
Tolerance: ±0.1 mm

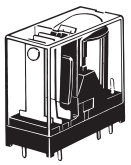


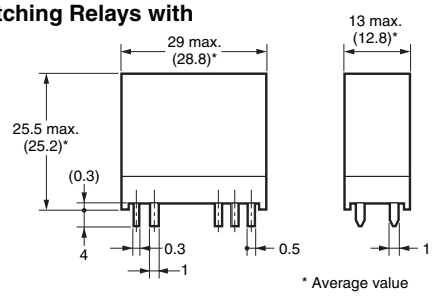
Terminal Arrangement/ Internal Connections
(BOTTOM VIEW)



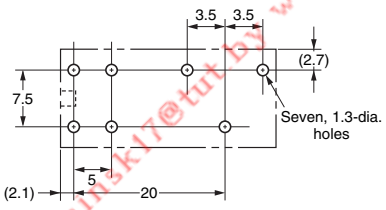
(No coil polarity)

Double-winding Latching Relays with PCB Terminals (SPDT (1c) Relays) G2RK-1

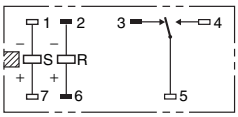




PCB Mounting Holes
(BOTTOM VIEW)
Tolerance: ±0.1 mm

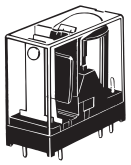


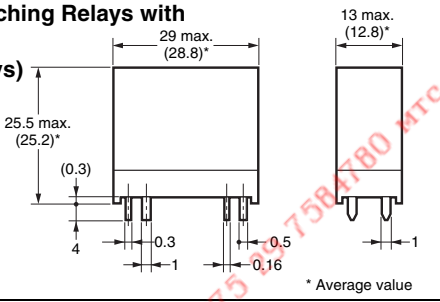
Terminal Arrangement/ Internal Connections
(BOTTOM VIEW)



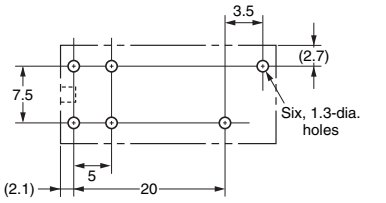
(After confirming coil polarity, wire correctly.)

Double-winding Latching Relays with PCB Terminals (SPST-NO (1a) Relays) G2RK-1A

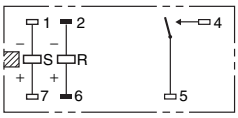




PCB Mounting Holes
(BOTTOM VIEW)
Tolerance: ±0.1 mm

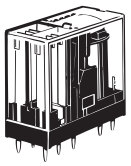


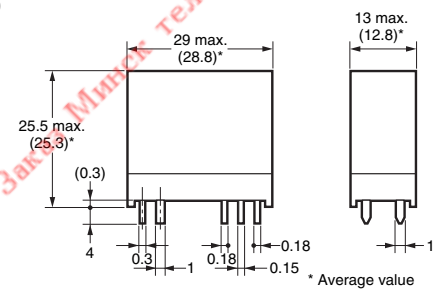
Terminal Arrangement/ Internal Connections
(BOTTOM VIEW)



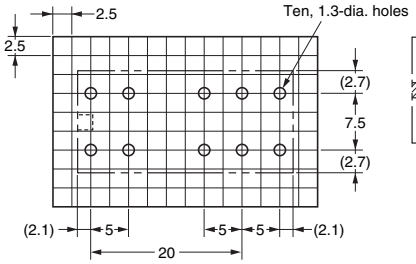
(After confirming coil polarity, wire correctly.)

Double-winding Latching Relays with PCB Terminals (DPDT (2c) Relays) G2RK-2

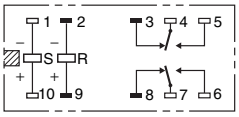




PCB Mounting Holes
(BOTTOM VIEW)
Tolerance: ±0.1 mm

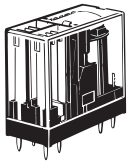


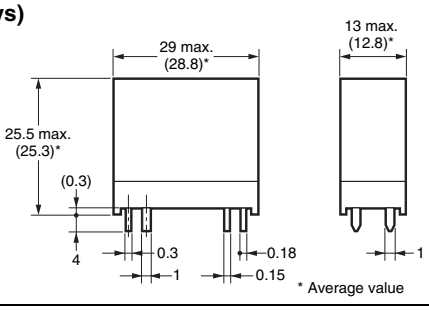
Terminal Arrangement/ Internal Connections
(BOTTOM VIEW)



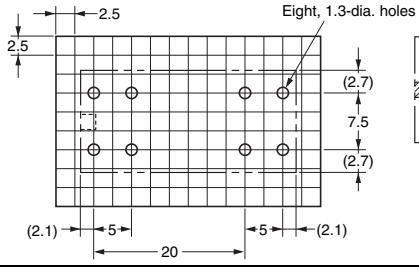
(After confirming coil polarity, wire correctly.)

Double-winding Latching Relays with PCB Terminals (DPST-NO (2a) Relays) G2RK-2A

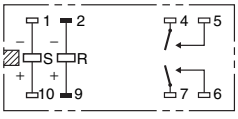




PCB Mounting Holes
(BOTTOM VIEW)
Tolerance: ±0.1 mm



Terminal Arrangement/ Internal Connections
(BOTTOM VIEW)



(After confirming coil polarity, wire correctly.)

Note: Orientation marks are indicated as follows:

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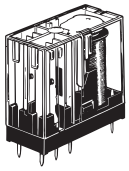
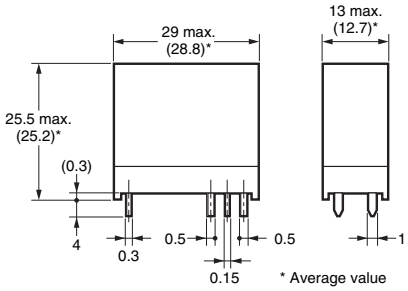
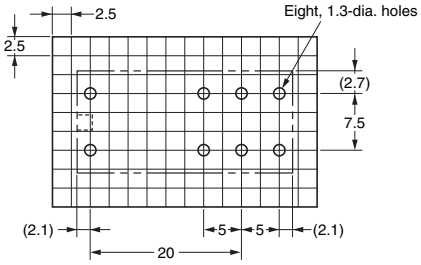
Relays with PCB Terminals (DPDT (2c) Relays) G2R-2(-Z) G2R-2-H

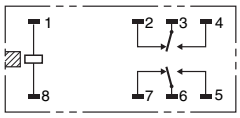




PCB Mounting Holes
(BOTTOM VIEW)
Tolerance: ±0.1 mm

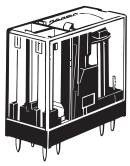


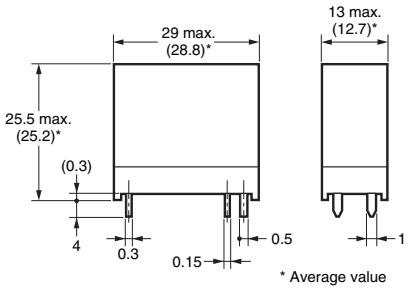
Terminal Arrangement/ Internal Connections
(BOTTOM VIEW)



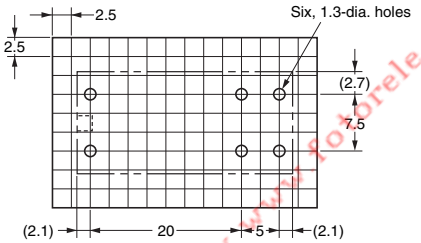
(No coil polarity)

Relays with PCB Terminals (DPST-NO (2a) Relays) G2R-2A G2R-2A-H G2R-2A-Z

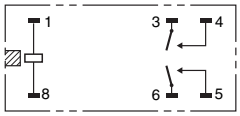




PCB Mounting Holes
(BOTTOM VIEW)
Tolerance: ±0.1 mm

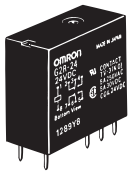


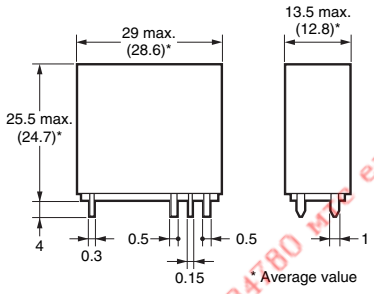
Terminal Arrangement/ Internal Connections
(BOTTOM VIEW)



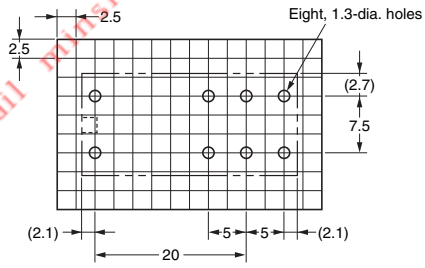
(No coil polarity)

Relays with PCB Terminals (DPDT (2c) Relays) G2R-24(-Z)(-U)

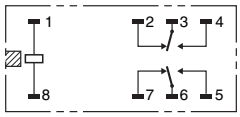




PCB Mounting Holes
(BOTTOM VIEW)
Tolerance: ±0.1 mm

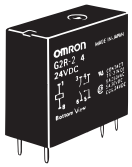


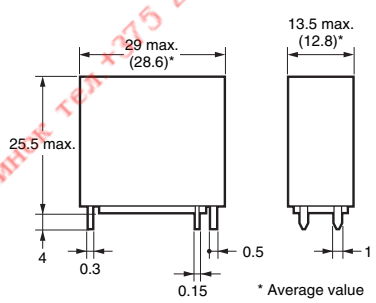
Terminal Arrangement/ Internal Connections
(BOTTOM VIEW)



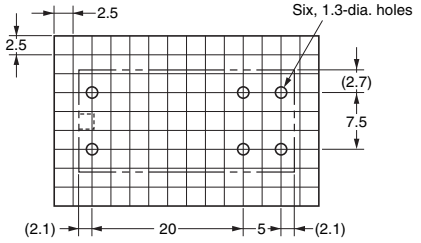
(No coil polarity)

Relays with PCB Terminals (DPST-NO (2a) Relays) G2R-2A4(-Z)(-U)

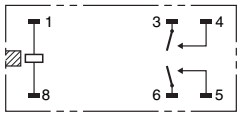




PCB Mounting Holes
(BOTTOM VIEW)
Tolerance: ±0.1 mm



Terminal Arrangement/ Internal Connections
(BOTTOM VIEW)



(No coil polarity)

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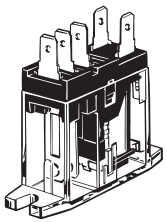
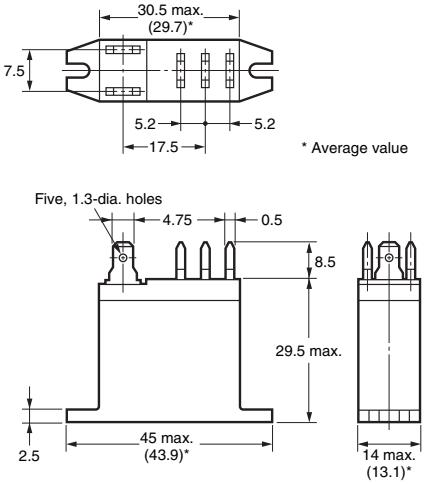
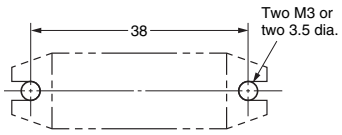
Note: Orientation marks are indicated as follows:

Relays with Quick-connect Terminals (SPDT (1c) Relays) G2R-1-T



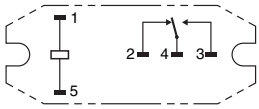


Mounting Holes
(BOTTOM VIEW)
Tolerance: ±0.1 mm



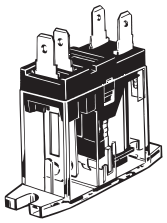
Note: Model number of quick-connect terminal is 187.

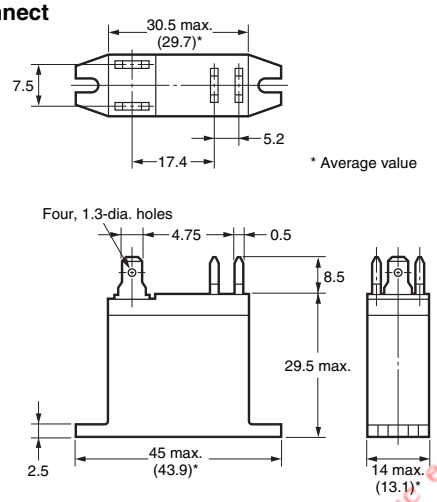
Terminal Arrangement/ Internal Connections
(BOTTOM VIEW)



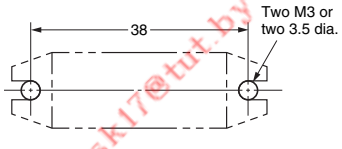
(No coil polarity)

Relays with Quick-connect Terminals (SPST-NO (1a) Relays) G2R-1A-T



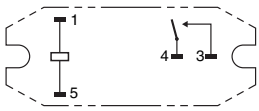


Mounting Holes
(BOTTOM VIEW)
Tolerance: ±0.1 mm



Note: Model number of quick-connect terminal is 187.

Terminal Arrangement/ Internal Connections
(BOTTOM VIEW)



(No coil polarity)

Note: Orientation marks are indicated as follows:

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■Approved Standards

• The approval rating values for overseas standards are different from the performance values determined individually. Confirm the values before use.

UL Recognized: File No. E41643

1-pole

Model	Contact form	Coil ratings	Contact ratings	Number of test operations
G2R-1A	SPST-NO (1a)	3 to 120 VDC 6 to 240 VAC	10 A, 250 VAC (General Use) at 40°C	100,000
G2R-1A4			5 A, 277 VAC (General Use) at 40°C	6,000
G2R-1A-H			5 A, 30 VDC (Resistive) at 40°C	100,000
G2R-1A-T				
G2R-1	SPDT (1c)			
G2R-14			TV-3 (N. O. only) at 40°C	25,000
G2R-1-H				
G2R-1-T				
G2R-1AZ	SPST-NO (1a)	3 to 120 VDC 6 to 240 VAC	10 A, 250 VAC (General Use) at 40°C	6,000
G2R-1AZ4			5 A, 30 VDC (Resistive) at 40°C	
G2R-1Z	SPDT (1c)			
G2R-1Z4				
G2R-1A-E	SPST-NO (1a)	3 to 120 VDC 6 to 240 VAC	16 A, 250 VAC (General Use) at 40°C	30,000
G2R-1-E	SPDT (1c)		16 A, 30 VDC (Resistive) at 40°C	6,000
			TV-3 (N. O. only) at 40°C	25,000

2-pole

Model	Contact form	Coil ratings	Contact ratings	Number of test operations
G2R-2A	DPST-NO (2a)	3 to 120 VDC 6 to 240 VAC	5 A, 250 VAC (General Use) at 40°C	6,000
G2R-2A4				
G2R-2A-H			5 A, 30 VDC (Resistive) at 40°C	100,000
G2R-2	DPDT (2c)			
G2R-24			TV-3 (N. O. only) at 40°C	25,000
G2R-24-H				

Note: Consult separately for UL/CSA contact standard ratings.

CSA Certified: File No. LR31928

1-pole

Model	Contact form	Coil ratings	Contact ratings	Number of test operations
G2R-1A	SPST-NO (1a)	3 to 110 VDC 3 to 240 VAC	10 A, 250 VAC (General Use) at 40°C	100,000
G2R-1A4				
G2R-1A-H				
G2R-1A-T			10 A, 30 VDC (Resistive) at 40°C	100,000
G2R-1	SPDT (1c)			
G2R-14				
G2R-1-H			TV-3 (N. O. only) at 40°C	25,000
G2R-1-T				
G2R-1AZ	SPST-NO (1a)	3 to 110 VDC 3 to 240 VAC	5 A, 250 VAC (General Use) at 40°C	6,000
G2R-1AZ4				
G2R-1Z	SPDT (1c)		5 A, 30 VDC (Resistive) at 40°C	
G2R-1Z4				
G2R-1A-E	SPST-NO (1a)	3 to 110 VDC 3 to 240 VAC	16 A, 250 VAC (General Use) at 40°C	6,000
			16 A, 30 VDC (Resistive) at 40°C	
G2R-1-E	SPDT (1c)		TV-3 (N. O. only) at 40°C	25,000

2-pole

Model	Contact form	Coil ratings	Contact ratings	Number of test operations
G2R-2A	DPST-NO (2a)	3 to 110 VDC 3 to 240 VAC	5 A, 250 VAC (General Use) at 40°C	6,000
G2R-2A4				
G2R-2A-H			5 A, 30 VDC (Resistive) at 40°C	100,000
G2R-2	DPDT (2c)			
G2R-24			TV-3 (N. O. only) at 40°C	25,000
G2R-24-H				

EN/IEC, VDE Certified: Registration No. 40015012

Model	Contact form	Coil ratings	Contact ratings	Number of test operations
G2R-1(A)-E	1	3 to 110 VDC 12 to 240 VAC	16 A, 250 VAC (cosϕ = 1.0) at 70°C	100,000
G2R-( )	1	5 to 110 VDC 12 to 240 VAC	10 A, 250 VAC (cosϕ = 1.0) at 40°C	
			10 A, 30 VDC (0 ms) at 40°C	
	2	5 to 110 VDC 12 to 240 VAC	5 A, 250 VAC (cosϕ = 1.0) at 40°C	
			5 A, 30 VDC (0 ms) at 40°C	

EN, TÜV Certified: Registration No. R50030327

Model	Contact form	Coil ratings	Contact ratings	Number of test operations
G2R-1(A)-E	1	3 to 120 VDC 6 to 240 VAC	16 A, 250 VAC (cosϕ = 1.0) at 70°C	100,000
G2R-( )	1	3 to 120 VDC 6 to 240 VAC	10 A, 250 VAC (cosϕ = 1.0) at 70°C	
			10 A, 30 VDC (0 ms) at 70°C	
	2	3 to 120 VDC 6 to 240 VAC	5 A, 250 VAC (cosϕ = 1.0) at 40°C	
			5 A, 30 VDC (0 ms) at 40°C	

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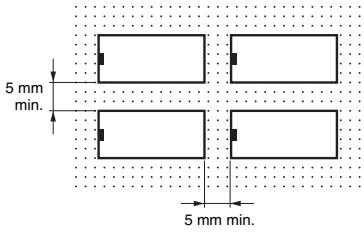
■Precautions

●Please refer to "PCB Relays Common Precautions" for correct use.

Correct Use

●Mounting

- When mounting a number of relays on a PCB, be sure to provide a minimum mounting space of 5 mm between the two juxtaposed relays as shown below.



●Handling

- The terminals are compatible with Faston receptacle #187 and are suitable for positive-lock mounting. Use only Faston terminals with the specified numbers.
  Select leads for connecting Faston receptacles with wire diameters that are within the allowable range for the load current.
  Do not apply excessive force to the terminals when mounting or dismounting the Faston receptacle. Also, do not insert terminals at an angle, or insert/remove multiple terminals at the same time. Be sure to insert and remove terminals carefully one at a time.
  Refer to the following table for examples of positive-lock connectors made by AMP. Contact the manufacturer directly for details on connectors including availability.

Type	Receptacle terminals	Positive housing
#187 (Width 4.75)	AMP170330-1 (170324-1) AMP170331-1 (170325-1) AMP170332-1 (170326-1)	AMP172074-1 (natural color) AMP172074-4 (yellow) AMP172074-5 (green) AMP172074-6 (blue)

Note: The numbers shown in parentheses are for air-feeding.

●Minimum Pulse Width of Double-winding Latching Relays

- The minimum pulse width shown in the table of characteristics are values measured under conditions of ambient temperature at 23°C with rated operating voltage imposed on coil. The Relay may not provide a satisfactory performance as its holding ability decreases depending on the operating circuit conditions and ambient temperature, or decreases due to degradation over time.
  In actual operation, impose to the coil a rated operating voltage with a pulse width that is suitable to the actual load, and reset the setting at least once a year, to correspond to the degradation over time.
- When using the Relay in a strong magnetic field environment, the magnetic body may be demagnetized due to the influence of environment, causing the Relay to malfunction. Therefore, do not use the Relay in a strong magnetic field environment.

●Degradation over Time of Double-winding Latching Relays Holding Ability

- If a double-winding latching Relay is used left set for an extended period, changes over time will degrade the magnetic force, and the reduction in holding ability may cause the set status to be released. This is also because of the properties of semi-hard magnetic material, and the rate of degradation over time depends on the ambient environment (e.g., temperature, humidity, vibration, and presence or absence of external magnetic fields).Perform maintenance at least once a year by resetting, applying the rated voltage again, and then setting.

●Wiring High Capacity (-E) Models

- High-capacity models (-E) have a structure that connects two terminals from one contact.
  When designing the circuit, use both terminals.
  If you use only one terminal, the relay may be unable to satisfy specified performance.

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• Application examples provided in this document are for reference only. In actual applications, confirm equipment functions and safety before using the product.
• Consult your OMRON representative before using the product under conditions which are not described in the manual or applying the product to nuclear control systems, railroad systems, aviation systems, vehicles, combustion systems, medical equipment, amusement machines, safety equipment, and other systems or equipment that may have a serious influence on lives and property if used improperly. Make sure that the ratings and performance characteristics of the product provide a margin of safety for the system or equipment, and be sure to provide the system or equipment with double safety mechanisms.

Note: Do not use this document to operate the Unit.

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Cat. No. K013-E1-13
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