# **G2R-**□-**S**(**S**)

J140I-E-02

# Slim and Space-saving Power Plug-in Relay

- Reduces wiring work by 60% when combined with the P2RF-□-PU Push-In Plus Socket (according to actual OMRON measurements).
- Lockable test button models available.
- Built-in mechanical operation indicator.
- Provided with nameplate.
- AC type is equipped with a coil-disconnection self-diagnostic function (LED type).
- High switching power (1-pole: 10 A).



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

# **Model Number Structure**

## **Model Number Legend**

G2R -| - S

#### 1. Number of Poles

1 pole 1: 2. 2 poles

#### 2. Terminals Plua-in

#### 3. Classification

Blank: General-purpose N: LED indicator D: Diode

LED indicator and diode ND: LED indicator with test button

NDI: LED indicator and diode with test button

4. Rated Coil Voltage

5. Mechanical operation indicator and Nameplate

(S): Models with mechanical operation indicator and Nameplate

Note: Contact your OMRON representative for Relays with gold-plated contacts.

# Ordering Information When your order, specify the rated voltage.

#### **List of Models**

Classification	Cail rations	Contact form		
	Coil ratings	SPDT	DPDT	
General-purpose		G2R-1-S (S)	G2R-2-S (S)	
LED indicator	AC 24, 110, 120, 230, 240 DC 6, 12, 24, 48	G2R-1-SN (S)	G2R-2-SN (S)	
LED indicator with test button	00 0, 12, 24, 40	G2R-1-SNI (S)	G2R-2-SNI (S)	
Diode		G2R-1-SD (S)	G2R-2-SD (S)	
LED indicator and diode	DC 6, 12, 24, 48	G2R-1-SND (S)	G2R-2-SND (S)	
LED indicator and diode with test button		G2R-1-SNDI (S)	G2R-2-SNDI (S)	

Note: 1. The standard models are compliant with UL/CSA and VDE standards. Also, an EC compliance declaration has been made for combinations with the P2RF-□-E, P2RF-□-S and P2RF-□-PU. The Relays bear the CE Marking.

- 2. Refer to Connecting Sockets, below, for applicable Socket models.
- 3. When ordering, add the rated coil voltage and "(S)" to the model number. Rated coil voltages are given in the coil ratings table. Example: G2R-1-S 12 VDC (S)

-Rated coil voltage

# **Accessories (Order Separately)**

## **Connecting Sockets**

		Track/surface-r	nounting Socket	Back-mounting Socket		
Applicable Relay model		Push-In Plus Terminal Blocks	Screw terminals *		Solder terminals	
No. of poles		Model	Models	Models	Model	
1 pole	G2R-1-S (S)	P2RF-05-PU	P2RF-05 P2RF-05-E	P2R-05P P2R-057P	P2R-05A	
2 poles	G2R-2-S (S)	P2RF-08-PU	P2RF-08 P2RF-08-E	P2R-08P P2R-087P	P2R-08A	

<sup>\*</sup>The structure of P2RF- -E models provides finger protection. Round terminals cannot be used. Use forked crimp terminals.

#### Accessories for Push-In Plus Terminal Block Sockets (P2RF-□-PU) **Short Bars**

Pitch	No. of poles	Colors	Model *	Minimum order (quantity)
	2	Red (R) Blue (S) Yellow (Y)	PYDN-7.75-020□	
7.75 mm	3		PYDN-7.75-030□	
7.75 111111	4		PYDN-7.75-040□	10
	20		PYDN-7.75-200□	
15.5 mm	8		PYDN-15.5-080□	

**Note:** Use the Short Bars for crossover wiring within one Socket or between Sockets.  $^*$  Replace the box ( $\square$ ) in the model number with the code for the covering color.

#### Labels

Model	Minimum order (sheet) (quantity per sheet)
XW5Z-P4.0LB1	5 1 sheet (60 pieces)

#### **Mounting Tracks**

Applicable Socket	Description		Model	Minimum order (quantity)
		50 cm ( $\ell$ ) × 7.3 mm (t):	PFP-50N	
	Mounting track	1 m ( <i>l</i> ) × 7.3 mm (t):	PFP-100N	
Track-connecting Socket		1 m ( <i>l</i> ) × 16 mm (t):	PFP-100N2	
	End plate *1		PFP-M	10
	Spacer		PFP-S	- 10
Back-connecting Socket	Mounting plate *2		P2R-P	1

<sup>\*1.</sup> When mounting DIN rail, please use End Plate (PFP-M).

<sup>\*2.</sup> Used to mount several P2R-05A and P2R-08A Connecting Sockets side by side.

# **Specifications**

# **Coil Ratings**

Rated voltage		Rated current*		Coil resistance	Coil inductance (H) (ref. value)		Must operate voltage	Must release voltage	Max. voltage	Power consumption
		50 Hz	60 Hz	resistance	Armature OFF	Armature ON	% of rated voltage		(approx.)	
	24 V	43.5 mA	37.4 mA	253 Ω	0.81	1.55				
	110 V	9.5 mA	8.2 mA	5,566 Ω	13.33	26.83				
AC	120 V	8.6 mA	7.5 mA	7,286 Ω	16.13	32.46	80% max.	30% max.	110%	0.9 VA at 60 Hz
	230 V	4.4 mA	3.8 mA	27,172 Ω	72.68	143.90				
	240 V	3.7 mA	3.2 mA	30,360 Ω	90.58	182.34				

Rated voltage		Rated current*	ted current* Coil		Coil inductance (H) (ref. value)		Must release voltage	Max. voltage	Power consumption	
			resistance	Armature OFF	Armature ON	% of rated voltage		age	(approx.)	
	6 V	87.0 mA	69 Ω	0.25	0.48			. 110%		
DC	12 V	43.2 mA	278 Ω	0.98	2.35	70% max.	15% min.		0.50.W/	
DC	24 V	21.6 mA	1,113 Ω	3.60	8.25	70% max.	15% min.		0.53 W	
	48 V	11.4 mA	4,220 Ω	15.2	29.82					

Note: 1. The rated current and coil resistance are measured at a coil temperature of 23°C with tolerances of +15%/-20% for the AC rated current and  $\pm 10\%$  for the DC coil resistance.

- 2. The AC coil resistance and inductance values are reference values only (at 60 Hz).
- 3. Operating characteristics were measured at a coil temperature of 23  $^{\circ}\text{C}.$
- 4. The maximum voltage is the maximum possible value of the voltage that can be applied to the relay coil. It is not the maximum voltage that can be applied continuously.

# **Contact Ratings**

Number of poles	1 pole		2 poles		
Load	Resistive load (cosφ = 1)	Inductive load (cosφ = 0.4; L/R = 7 ms)	Resistive load (cos $\phi$ = 1)	Inductive load (cosφ = 0.4; L/R = 7 ms)	
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	
Rated carry current	10 A		5 A		
Max. switching voltage	440 VAC, 125 VDC		380 VAC, 125 VDC		
Max. switching current	10 A		5 A		
Max. switching power	2,500 VA, 300 W	1,875 VA, 150 W	1,250 VA, 150 W	500 VA, 90 W	
Failure rate (reference value) *	100 mA at 5 VDC		10 mA at 5 VDC		

Note: P level:  $\lambda_{60}$  = 0.1 x 10-6/operation \*This value was measured at a switching frequency of 120 operations per minute.

## **Characteristics**

Item		1 pole	2 poles				
Contact configration	SPDT	SPDT					
Contact structure	Single						
Contact resistance	100 m $\Omega$ max.						
Operate (set) time	15 ms max.						
Release (reset) time	AC: 10 ms max.; (w/built-in diode: 2		AC: 15 ms max.; DC: 10 ms max. (w/built-in diode: 20 ms max.)				
Max. operating frequency							
Insulation resistance	1,000 M $\Omega$ min. (a	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			amplitude (1.5 mm double amplitude) amplitude (1.5 mm double amplitude)				
Shock resistance	, , , , , ,	,000 m/s² 00 m/s² when energized; 100 m/s	<sup>2</sup> when not energized				
Endurance	D	DC coil: 20,000,000 operations min. (at 18,000 operations/hr)					
Ambient temperature	Operating: -4	erating: -40°C to 70°C (with no icing or condensation)					
Ambient humidity	Operating: 59	% to 85%					
Weight	Approx. 20 g						

Note: Values in the above table are the initial values.

# **Approved Standards** UL 508 (File No. E41643)

Model	Contact form	Coil ratings	Contact ratings	Opera- tions
G2R-1-S (S)	SPDT		10 A, 30 VDC (resistive) 10 A, 250 VAC (general use)	100 × 10 <sup>3</sup>
, ,		5 to 110 VDC	TV-3 (NO contact only)	$25 \times 10^{3}$
G2R-2-S (S)		6 to 240 VAC		100 × 10 <sup>3</sup>
			TV-3 (NO contact only)	25 × 10 <sup>3</sup>

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

Model	Contact form	Coil ratings	Contact ratings	Opera- tions
G2R-1-S (S)	SPDT	6 to 240 VAC	10 A, 30 VDC (resistive) 10 A, 250 VAC (general use)	100 × 10 <sup>3</sup>
, ,			TV-3 (NO contact only)	$25 \times 10^{3}$
G2R-2-S (S)	DPDT		5 A, 30 VDC (resistive) 5 A, 250 VAC (general use)	100 × 10 <sup>3</sup>
			TV-3 (NO contact only)	$25 \times 10^{3}$

# IEC/VDE (Certificate No. 40015012 EN 61810-1)

Contact form	Coil ratings	Contact ratings	Operations
1 pole	6, 12, 24, 48 VDC 24, 110, 120, 230, 240 VAC	5 A, 440 VAC (cosφ = 1.0) 10 A, 250 VAC (cosφ = 1.0) 10 A, 30 VDC (0 ms)	100 × 10 <sup>3</sup>
2 poles	6, 12, 24, 48 VDC 24, 110, 120, 230, 240 VAC	5 A, 250 VAC (cosφ =1.0) 5 A, 30 VDC (0 ms)	100 × 10 <sup>3</sup>

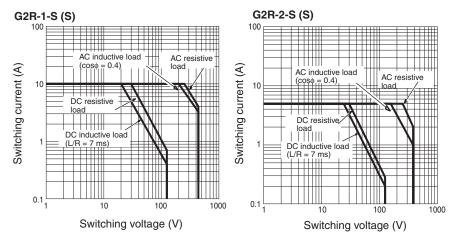
#### LR

Number of poles	Coil ratings	Contact ratings	Operations	
1 pole	5 to 110 VDC 6 to 240 VDC	10 A, 250 VAC (general use) 7.5 A, 250 VAC (PF0.4) 10 A, 30 VDC (resistive) 5A, 30VDC (L/R=7ms)	100 × 10 <sup>3</sup>	
2 poles	5 to 110 VDC 6 to 240 VDC	5 A, 250 VAC (general use) 2 A, 250 VAC (PF0.4) 5 A, 30 VDC (resistive) 3A, 30VDC (L/R=7ms)	100 × 10 <sup>3</sup>	

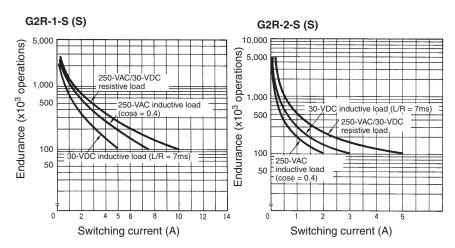
<sup>\*</sup>These values are relay only. Prease refer to the "Products Related to Common Sockets and DIN Tracks Data Sheet" for connecting sockets.

# **Engineering Data**

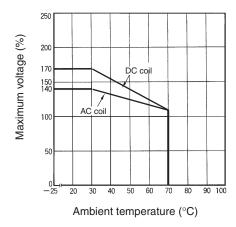
#### **Maximum Switching Power**



#### **Endurance**



#### **Ambient Temperature vs Maximum Coil Voltage**

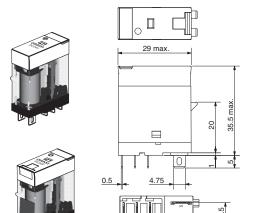


Dimensions (Unit: mm)

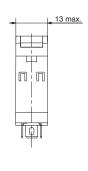
Note: All units are in millimeters unless otherwise indicated.

#### **SPDT Relays**

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

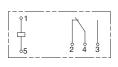


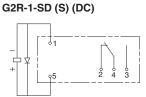
17.5



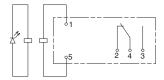
# Terminal Arrangement/Internal Connections (Bottom View)

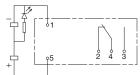
G2R-1-S (S)



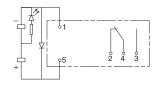


G2R-1-SN (S), G2R-1-SNI (S) (AC) G2R-1-SN (S), G2R-1-SNI (S) (DC)





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

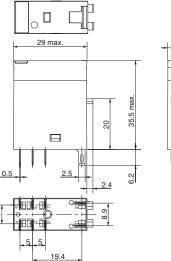


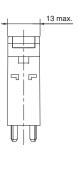
#### **DPDT Relays**

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



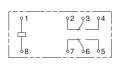


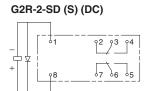




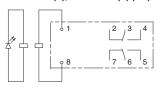
Terminal Arrangement/Internal Connections (Bottom View)

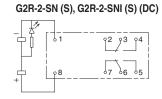
G2R-2-S (S)



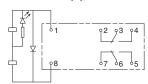


G2R-2-SN (S), G2R-2-SNI (S) (AC)

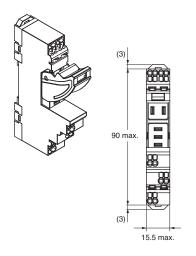


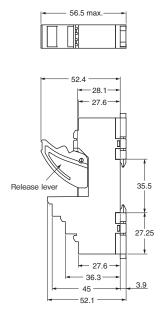


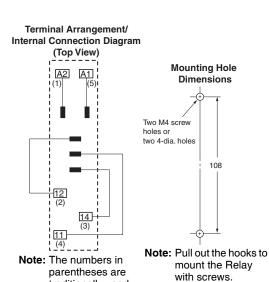
#### G2R-2-SND (S), G2R-2-SNDI (S) (DC)



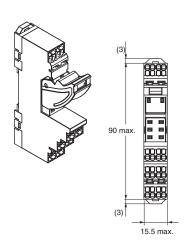
# Track/Surface Mounting Sockets P2RF-05-PU

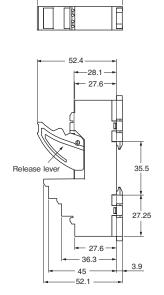






P2RF-08-PU





-56.5 max.

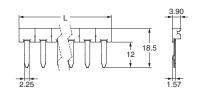
#### **Terminal Arrangement/** Internal Connection Diagram (Top View) **Mounting Hole** A2 A1 **Dimensions** Two M4 screw holes or two 4-dia. holes 108 12 22 (2) 14 24 (4) (5) 11 21 (3)

traditionally used terminal numbers.

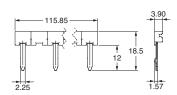
Note: The numbers in parentheses are traditionally used terminal numbers.

Note: Pull out the hooks to mount the Relay with screws.

# Accessories for P2RF-□-PU Short Bars PYDN-7.75-□□ (7.75 mm)



#### PYDN-15.5-080□ (15.5 mm)



Application	Pitch	No. of poles	L (Length)	Colors	Model *	Maximum carry current
For Contact terminals (common)	7.75 mm	2	15.1	Red (R) Blue (S)	PYDN-7.75-020□	20 A
		3	22.85		PYDN-7.75-030□	
		4	30.6		PYDN-7.75-040□	
		20	154.6	Yellow (Y)	PYDN-7.75-200□	2071
For Coil terminals	15.5 mm	8	115.85		PYDN-15.5-080□	

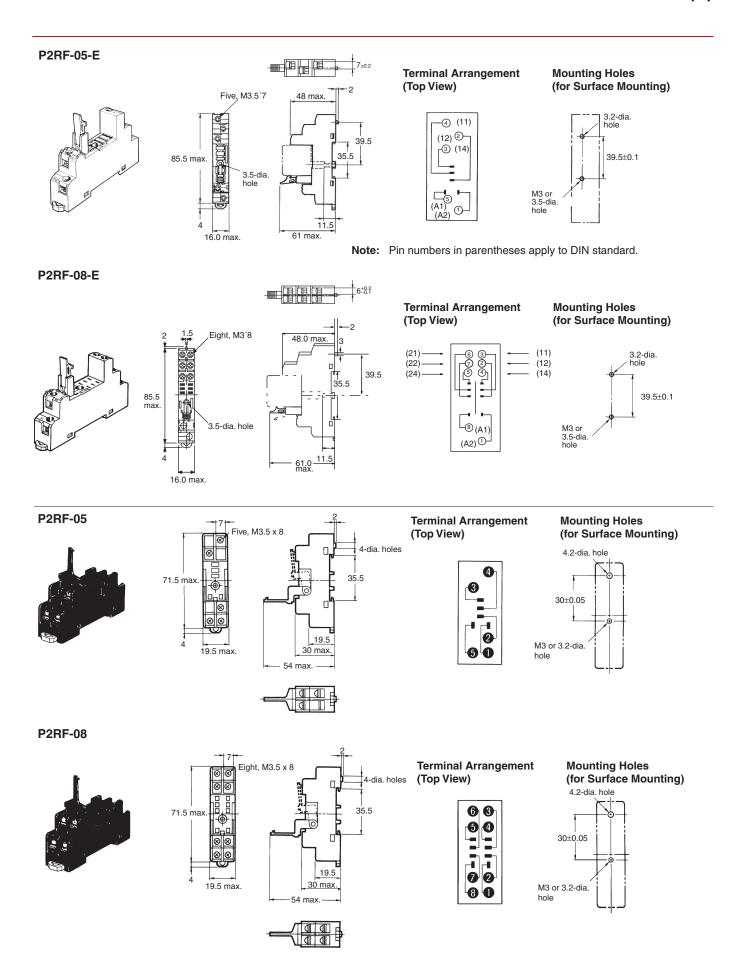
<sup>\*</sup>Replace the box  $(\Box)$  in the model number with the code for the covering color.

Note: 1. Use the Short Bars for crossover wiring within one Socket or between Sockets.

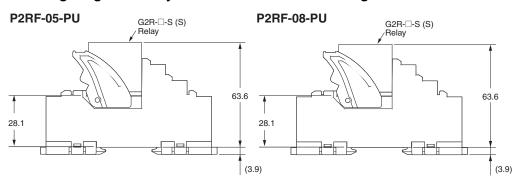
When using short bar to coil terminals of P2RF-□□-PU, A1 terminal cannot be used.
 In case crossover wiring of A1 terminal side is needed, crossover wiring using A1 terminals by wire is possible.

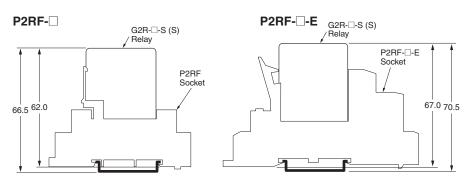
#### Short bar correspondence table

	Contact terminal	Coil terminal		
	(Common)	A1	A2	
P2RF-□□-PU	Available		0	

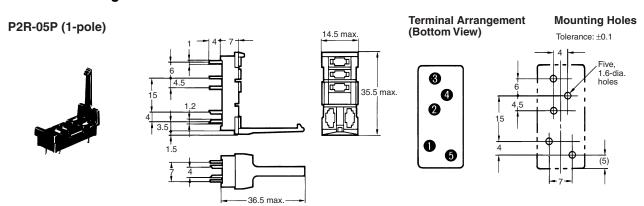


#### Mounting Height of Relay with Track/Surface Mounting Sockets

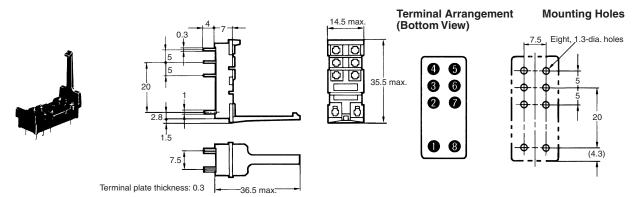


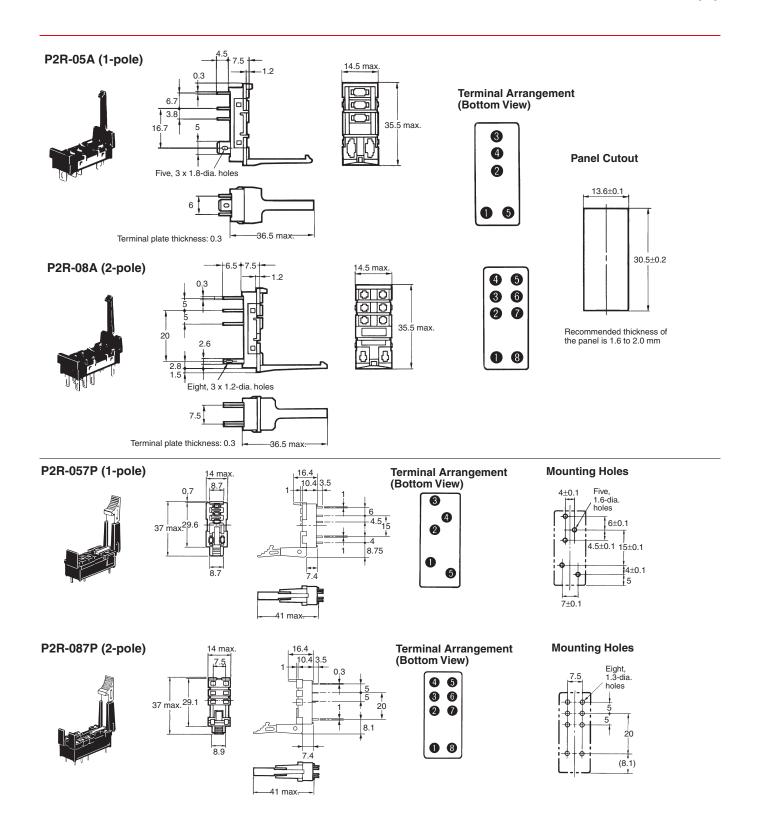


#### **Back-connecting Sockets**

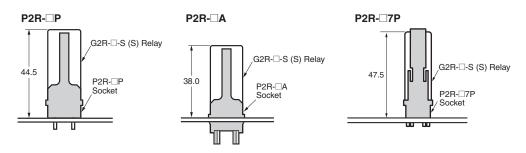


#### P2R-08P (2-pole)

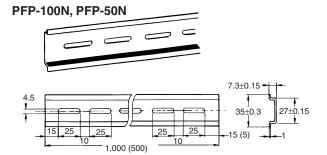




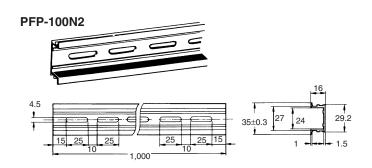
#### Mounting Height of Relay with Back-connecting Sockets



#### **Mounting Tracks**



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



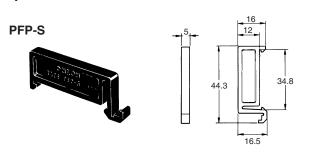
#### **End Plate**

# PFP-M 10 6.2 1,8 35.5 35.3

11.5

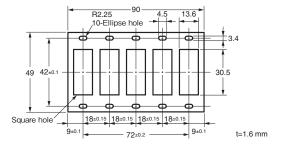
M4 x 8 pan head screw

#### **Spacer**



#### **Mounting Plate**

#### P2R-P



# **Safety Precautions**

Be sure to read the *Common Precautions for All Relay* in the website at the following URL: http://www.ia.omron.com/.

Refer to *Products Related to Common Sockets and DIN Tracks* for precautions on the applicable Sockets. Refer to *PYF-*\_\_-PU/P2RF-\_-PU for precautions on Push-In Plus Terminal Block Sockets.

#### **Warning Indications**



Indicates a potentially hazardous situation which, if not avoided, may result in minor or moderate injury or in property damage.

#### **∴** Cation

- Do not use the test button for any purpose other than testing. Be sure not to touch the test button accidentally as this will turn the contacts ON. Before using the test button, confirm that circuits, the load, and any other connected item will operate safely.
- Check that the test button is released before turning ON relay circuits.
- If the test button is pulled out too forcefully, it may bypass the momentary testing position and go straight into the locked position.
- Use an insulated tool when you operate the test button.

# Terms and Conditions of Sale

- Offer; Acceptance. These terms and conditions (these "Terms") are deemed part of all quotes, agreements, purchase orders, acknowledgments, price lists, catalogs, manuals, brochures and other documents, whether electronic or in catalogs, manuals, brochures and other documents, whether electronic or in writing, relating to the sale of products or services (collectively, the "Products") by Omron Electronics LLC and its subsidiary companies ("Omron"). Omron objects to any terms or conditions proposed in Buyer's purchase order or other documents which are inconsistent with, or in addition to, these Terms. Prices: Payment Terms. All prices stated are current, subject to change without notice by Omron. Omron reserves the right to increase or decrease prices on any unshipped portions of outstanding orders. Payments for Products are due net 30 days unless otherwise stated in the invoice. Discounts. Cash discounts, if any, will apply only on the net amount of invoices sent to Buyer after deducting transportation charges, taxes and duties, and will be allowed only if (i) the invoice is paid according to Omron's payment terms and (ii) Buyer has no past due amounts.

- and (ii) Buyer has no past due amounts.

  Interest. Omron, at its option, may charge Buyer 1-1/2% interest per month or the maximum legal rate, whichever is less, on any balance not paid within the
- Orders. Omron will accept no order less than \$200 net billing.

  Governmental Approvals. Buyer shall be responsible for, and shall bear all costs involved in, obtaining any government approvals required for the importation or sale of the Products.
- Taxes. All taxes, duties and other governmental charges (other than general real property and income taxes), including any interest or penalties thereon, imposed directly or indirectly on Omron or required to be collected directly or indirectly by Omron for the manufacture, production, sale, delivery, importation, consumption or use of the Products sold hereunder (including customs duties and sales, excise, use, turnover and license taxes) shall be charged to and remitted by Buyer to Omron.

  Financial. If the financial position of Buyer at any time becomes unsatisfactory
- <u>Financial</u>. If the financial position of Buyer at any time becomes unsatisfactory to Omron, Omron reserves the right to stop shipments or require satisfactory security or payment in advance. If Buyer fails to make payment or otherwise comply with these Terms or any related agreement, Omron may (without liability and in addition to other remedies) cancel any unshipped portion of Products sold hereunder and stop any Products in transit until Buyer pays all amounts, including amounts payable hereunder, whether or not then due, which are owing to it by Buyer. Buyer shall in any event remain liable for all unpaid accounts. unpaid accounts
- Cancellation: Etc. Orders are not subject to rescheduling or cancellation unless Buyer indemnifies Omron against all related costs or expenses.

  10. Force Majeure. Omron shall not be liable for any delay or failure in delivery
- resulting from causes beyond its control, including earthquakes, fires, floods, strikes or other labor disputes, shortage of labor or materials, accidents to machinery, acts of sabotage, riots, delay in or lack of transportation or the requirements of any government authority.

  11. Shipping: Delivery. Unless otherwise expressly agreed in writing by Omron:
  a. Shipments shall be by a carrier selected by Omron; Omron will not drop ship
- - except in "break down" situations.
    b. Such carrier shall act as the agent of Buyer and delivery to such carrier shall
  - constitute delivery to Buyer; c. All sales and shipments of Products shall be FOB shipping point (unless oth-
- c. All sales and shipments of Products shall be FOB shipping point (unless otherwise stated in writing by Omron), at which point title and risk of loss shall pass from Omron to Buyer; provided that Omron shall retain a security interest in the Products until the full purchase price is paid;
   d. Delivery and shipping dates are estimates only; and
   e. Omron will package Products as it deems proper for protection against normal handling and extra charges apply to special conditions.

  12. Claims. Any claim by Buyer against Omron for shortage or damage to the Products occurring before delivery to the carrier must be presented in writing to Omron within 30 days of receipt of shipment and include the original transportation bill signed by the carrier noting that the carrier received the Products. portation bill signed by the carrier noting that the carrier received the Products from Omron in the condition claimed.
- Warranties. (a) Exclusive Warranty. Omron's exclusive warranty is that the Products will be free from defects in materials and workmanship for a period of twelve months from the date of sale by Omron (or such other period expressed in writing by Omron). Omron disclaims all other warranties, express or implied.

  (b) <u>Limitations</u>. OMRON MAKES NO WARRANTY OR REPRESENTATION, EXPRESS OR IMPLIED, ABOUT NON-INFRINGEMENT, MERCHANTABIL-

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- prevent disclosure to any third party.

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  Miscellaneous. (a) Waiver. No failure or delay by Omron in exercising any right and no course of dealing between Buyer and Omron shall operate as a waiver of rights by Omron. (b) Assignment. Buyer may not assign its rights hereunder without Omron's written consent. (c) Law. These Terms are governed by the law of the jurisdiction of the home office of the Omron company from which Buyer is purchasing the Products (without regard to conflict of law principles). (d) Amendment. These Terms constitute the entire agreement between Buyer and Omron relating to the Products, and no provision may be changed or waived unless in writing signed by the parties. (e) Severability If any provior waived unless in writing signed by the parties. (e) <u>Severability</u> If any provision hereof is rendered ineffective or invalid, such provision shall not invalidate any other provision. (f) Setoff. Buyer shall have no right to set off any amounts against the amount owing in respect of this invoice. (g) <u>Definitions</u>. As used herein, "<u>including</u>" means "including without limitation"; and "<u>Omron Companies</u>" (or similar words) mean Omron Corporation and any direct or indirect subsidiary or affiliate thereof.

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- Suitability of Use. Omron Companies shall not be responsible for conformity with any standards, codes or regulations which apply to the combination of the Product in the Buyer's application or use of the Product. At Buyer's request. Omron will provide application of use of the Product. At Buyer's lequest, omron will provide applicable third party certification documents identifying ratings and limitations of use which apply to the Product. This information by itself is not sufficient for a complete determination of the suitability of the Product in combination with the end product, machine, system, or other application or use. Buyer shall be solely responsible for determining appropriateness of the particular Product with respect to Buyer's application, product or system. the particular Product with respect to Buyer's application, product or system. Buyer shall take application responsibility in all cases but the following is a non-exhaustive list of applications for which particular attention must be given:

  (i) Outdoor use, uses involving potential chemical contamination or electrical interference, or conditions or uses not described in this document.

  (ii) Use in consumer products or any use in significant quantities.

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- to confirm actual specifications of purchased Product.

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ИНН 7805602321 КПП 780501001 P/C 40702810122510004610 ФАКБ "АБСОЛЮТ БАНК" (ЗАО) в г.Санкт-Петербурге К/С 3010181090000000703 БИК 044030703

Компания «Life Electronics» занимается поставками электронных компонентов импортного и отечественного производства от производителей и со складов крупных дистрибьюторов Европы, Америки и Азии.

С конца 2013 года компания активно расширяет линейку поставок компонентов по направлению коаксиальный кабель, кварцевые генераторы и конденсаторы (керамические, пленочные, электролитические), за счёт заключения дистрибьюторских договоров

#### Мы предлагаем:

- Конкурентоспособные цены и скидки постоянным клиентам.
- Специальные условия для постоянных клиентов.
- Подбор аналогов.
- Поставку компонентов в любых объемах, удовлетворяющих вашим потребностям.
- Приемлемые сроки поставки, возможна ускоренная поставка.
- Доставку товара в любую точку России и стран СНГ.
- Комплексную поставку.
- Работу по проектам и поставку образцов.
- Формирование склада под заказчика.
- Сертификаты соответствия на поставляемую продукцию (по желанию клиента).
- Тестирование поставляемой продукции.
- Поставку компонентов, требующих военную и космическую приемку.
- Входной контроль качества.
- Наличие сертификата ISO.

В составе нашей компании организован Конструкторский отдел, призванный помогать разработчикам, и инженерам.

Конструкторский отдел помогает осуществить:

- Регистрацию проекта у производителя компонентов.
- Техническую поддержку проекта.
- Защиту от снятия компонента с производства.
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