

New G2RS Series

N CEMAX 54

The G2RS Space-saving Power Plug-in Relay has a mechanical indicator and nameplate as standard features. A relay with a lockable test button is also available.

Details on the New G2RS

Overview

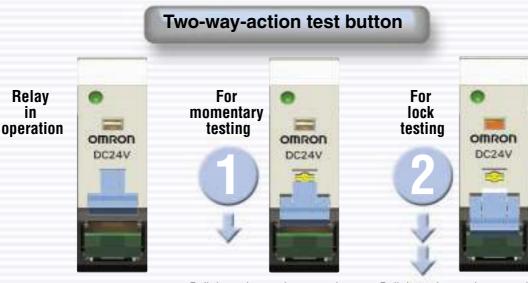
LED indicator ——— Mechanical indicator

Test button -DC: Blue AC: Red

Nameplate -

New Features

- Nameplate and mechanical indicator provided as a standard.
- Models with two-way-action test button available.
- Environment-friendly construction.

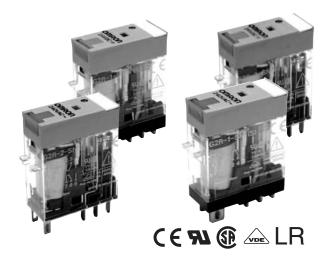


Pull down the test button to the first stop position, then press the yellow button with an insulated tool to operate the contact. Pull down the test button to the second stop position. (The contact is now in the locked position.)

General-purpose Relay

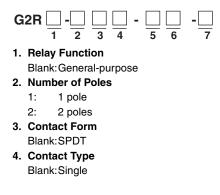
Slim and Space-saving Power Plug-in Relay

- Lockable test button models now available.
- Built-in mechanical operation indicator.
- Provided with nameplate.
- AC type is equipped with a coil-disconnection selfdiagnostic function (LED type).
- High switching power (1-pole: 10 A).
- Environment-friendly (Cd, Pb free).
- Wide range of Sockets also available.



Model Number Structure

Model Number Legend



- 5. Terminals
- S: Plug-in
- 6. Classification
 - Blank:General-purpose
 - N: LED indicator
 - D: Diode
 - ND: LED indicator and diode
 - NI: LED indicator with test button
 - NDI: LED indicator and diode with test button
- 7. Rated Coil Voltage

Ordering Information

■ List of Models

Classification		Enclosure rating	Coil ratings	Contact form/Model	
				SPDT	DPDT
Plug-in terminal	General-purpose	Unsealed	AC/DC	G2R-1-S	G2R-2-S
	LED indicator			G2R-1-SN	G2R-2-SN
	LED indicator with test button	-		G2R-1-SNI	G2R-2-SNI
	Diode	-	DC	G2R-1-SD	G2R-2-SD
	LED indicator and diode	-		G2R-1-SND	G2R-2-SND
	LED indicator and diode with test button	-		G2R-1-SNDI	G2R-2-SNDI

Note: 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 <u>DC12 (S)</u> New model Rated coil voltage

■ Accessories (Order Separately)

Connecting Sockets

Applicable Relay model	Track/surface-mounting Socket		Back-mounting Socket		
	Screwless clamp terminal	Screw terminal	Terminals	Model	
1 pole	• P2RF-05S (See note.)	• P2RF-05-E	PCB terminals	P2R-05P, P2R-057P	
G2R-1-S(N)(D)(ND)(NI)(NDI)	+ (P2CM-S (option))	• P2RF-05	Solder terminals	P2R-05A	
2 poles	• P2RF-08S (See note.)	• P2RF-08-E	PCB terminals	P2R-08P, P2R-087P	
G2R-2-S(N)(D)(ND)(NI)(NDI)	(P2CM-S (option))	• P2RF-08	Solder terminals	P2R-08A	

Note: Use of the P2CM Clip & Release Lever is recommended to ensure stable mounting.

Accessories for Screwless Clamp Terminal Socket (Option)

Name	Model
Clip & Release Lever	P2CM-S
Nameplate	R99-11 Nameplate for MY
Socket Bridge	P2RM-SR (for AC), P2RM-SB (for DC)

Mounting Tracks

Applicable Socket	D	escription	Model
Mounting track and accessories	Mounting track		PFP-50N PFP-100N PFP-100N2
	End plate		PFP-M
	Spacer		PFP-S
Mounting plate	Back-connecting S	ockets	P2R-P*

*Used to mount several P2R-05A and P2R-08A Connecting Sockets side by side.

Specifications

■ Coil Ratings

Ra	Rated voltage Rated current*		voltage Rated current* Coil resistanc			ctance (H) value)	Must operate voltage	Must release voltage	Max. voltage	Power consumption (approx.)
		50 Hz	60 Hz		Armature OFF	Armature ON	% of rated voltage			
AC	24 V	43.5 mA	37.4 mA	253 Ω	0.81	1.55	80% max.	30% min.	110%	0.9 VA at 60 Hz
	110 V	9.5 mA	8.2 mA	5,566 Ω	13.33	26.83				
	120 V	8.6 mA	7.5 mA	7,286 Ω	16.13	32.46				
	230 V	4.4 mA	3.8 mA	27,172 Ω	72.68	143.90	1			
	240 V	3.7 mA	3.2 mA	30,360 Ω	90.58	182.34	1			

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

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

■ Contact Ratings

Number of poles	1 pole		2 poles	
Load	Resistive load $(\cos \phi = 1)$			Inductive load $(\cos\phi = 0.4; L/R = 7 ms)$
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	10 A		
Max. switching voltage	440 VAC, 125 VDC		380 VAC, 125 VDC	
Max. switching current	10 A		5 A	
Max. switching capacity	2,500 VA, 300 W			500 VA, 90 W
Minimum permissible load	100 mA at 5 VDC	100 mA at 5 VDC		

Note: P level: $\lambda_{60} = 0.1 \times 10^{-6}$ /operation

■ Characteristics

Item		1 pole	2 poles			
Contact resistance	100 m Ω max.					
Operate (set) time	15 ms max.	ms max.				
Release (reset) time		x.; DC: 5 ms max. le: 20 ms max.)	AC: 15 ms max.; DC: 10 ms max. (w/built-in diode: 20 ms max.)			
Max. operating frequency	Mechanical: Electrical:					
Insulation resistance	1,000 MΩ min. (at 500 VDC)					
Dielectric strength	contacts*;	/60 Hz for 1 min between coil and /60 Hz for 1 min between contacts of	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: Malfunction:	10 to 55 to 10 Hz, 0.75 mm single 10 to 55 to 10 Hz, 0.75 mm single	amplitude (1.5 mm double amplitude) amplitude (1.5 mm double amplitude)			
Shock resistance	Destruction: Malfunction:	1,000 m/s ² 200 m/s ² when energized; 100 m/s	² when not energized			
Service life	Mechanical: Electrical:	DC coil: 20,000,000 operations min. (at 18,000 operations/hr)				
Ambient temperature	Operating:	-40°C to 70°C (with no icing or cor	ndensation)			
Ambient humidity	Operating:	5% to 85%				
Weight	Approx. 21 g					

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

*4,000 VAC, 50/60 Hz for 1 minute when the P2R-05A or P2R-08A Socket is used.

■ Approved Standards UL 508 (File No. E41643)

Model	Contact form	Coil ratings	Contact ratings	Opera- tions
G2R-1-S	SPDT	5 to 110 VDC 5 to 240 VAC	10 A, 30 VDC (resistive) 10 A, 250 VAC (general use) TV-3 (NO contact only)	6 x 10 ³
G2R-2-S	DPDT		5 A, 30 VDC (resistive) 5 A, 250 VAC (general use) TV-3 (NO contact only)	6 x 10 ³

<u>CSA 22.2 No.0, No.14</u> (File No. LR31928)

Model	Contact form	Coil ratings	Contact ratings	Opera- tions
G2R-1-S	SPDT		10 A, 30 VDC (resistive) 10 A, 250 VAC (general use) TV-3 (NO contact only)	6 x 10 ³
G2R-2-S	DPDT		5 A, 30 VDC (resistive) 5 A, 250 VAC (general use) TV-3 (NO contact only)	6 x 10 ³

IEC/VDE (EN61810)

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 x 10 ³
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 x 10 ³

<u>LR</u>

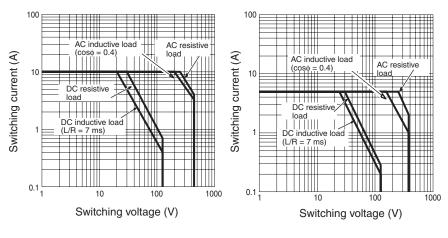
Number of poles	Coil ratings	Contact ratings	Operations
1 pole	5 to 110 VDC 5 to 240 VDC	10 A, 250 VAC (general use) 7.5 A, 250 VAC (PF0.4) 10 A, 30 VDC (resistive) 5A, 30VDC (L/R=7ms)	100 x 10 ³
2 poles	5 to 110 VDC 5 to 240 VDC	5 A, 250 VAC (general use) 2 A, 250 VAC (PF0.4) 5 A, 30 VDC (resistive)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

Maximum Switching Capacity

Plug-in Relays

G2R-1-S

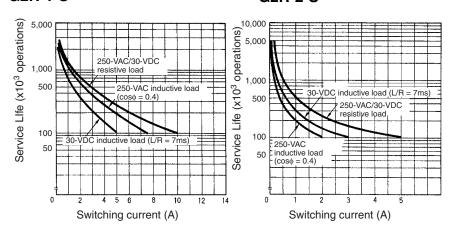




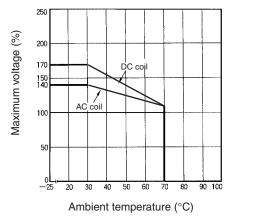
■ Electrical Service Life

Plug-in Relays G2R-1-S

G2R-2-S



Ambient Temperature vs. Maximum Coil Voltage



4

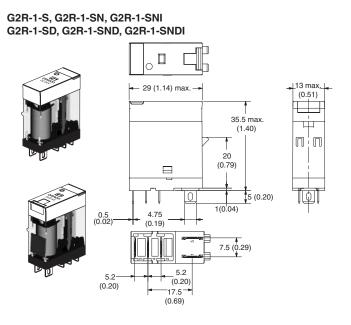
Note: The maximum voltage refers to the maximum value in a varying range of operating power voltage, not a continuous voltage.

Dimensions

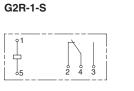
Unit: mm (inch)

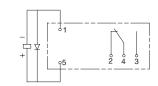
Relays with Plug-in Terminals

SPDT Relays



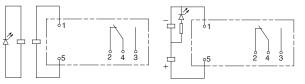
Terminal Arrangement/Internal Connections (Bottom View)



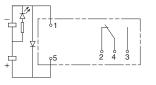


G2R-1-SD (DC)

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



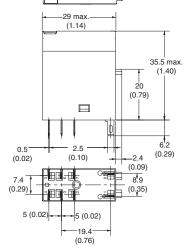
G2R-1-SND, G2R-1-SNDI (DC)



DPDT Relays

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





 \Box

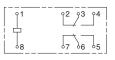
Terminal Arrangement/Internal Connections (Bottom View)

G2R-2-S

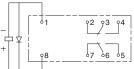
13 max

(0.51)

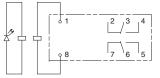
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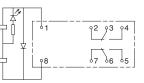
G2R-2-SD (DC)

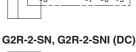


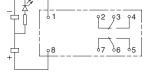
G2R-2-SN, G2R-2-SNI (AC)



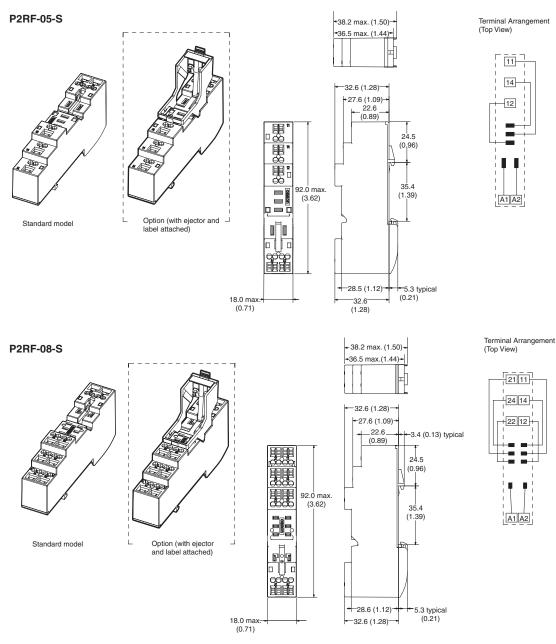
G2R-2-SND, G2R-2-SNDI (DC)







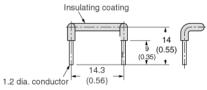
Track/Surface Mounting Sockets



Accessories for P2RF-□-S

Socket Bridge

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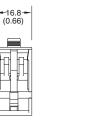


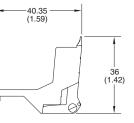
Note: The color of insulating coating indicates power type.

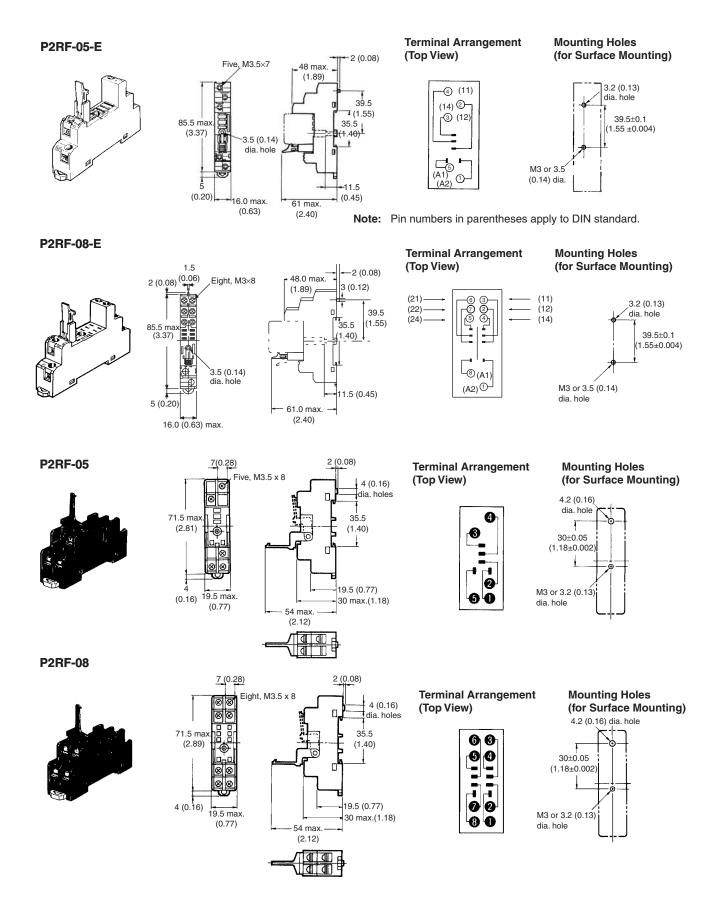
Model	Power	Color
P2RM-SR	AC	Red
P2RM-SB	DC	Blue

Clip and Release Lever

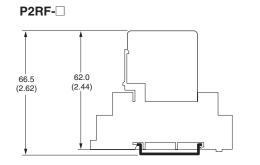


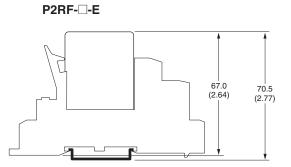




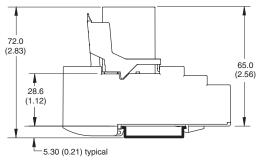


Mounting Height of Relay with Track/Surface Mounting Sockets

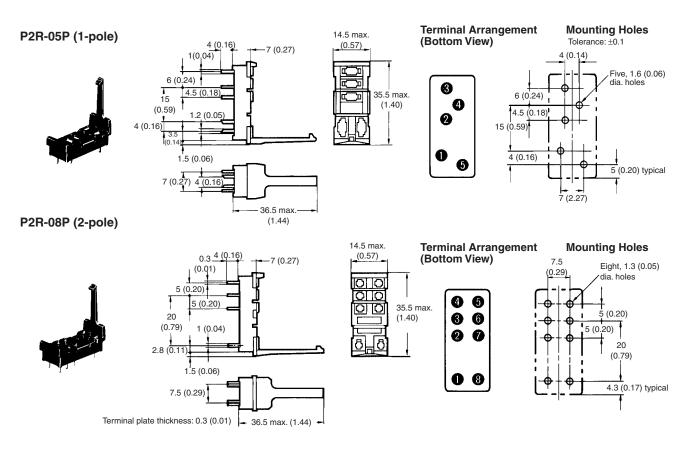




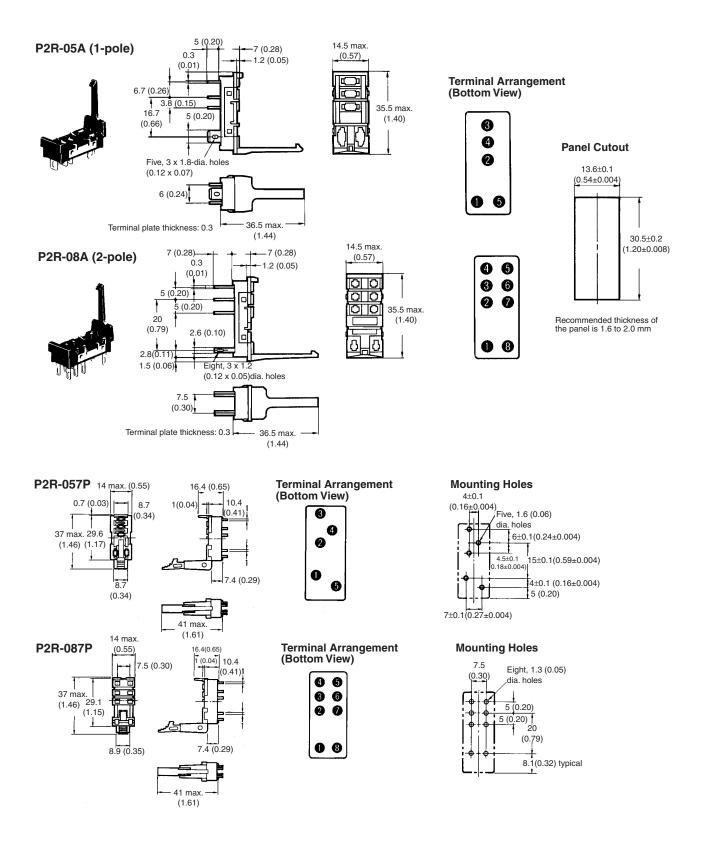
P2RF-□-S



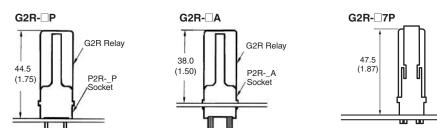
Back-connecting Sockets



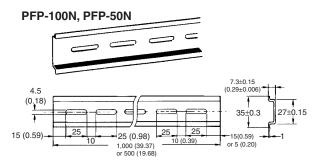
8



Mounting Height of Relay with Back-connecting Sockets

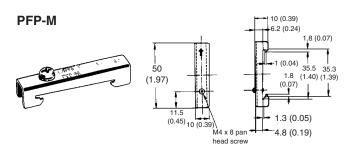


Mounting Tracks



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

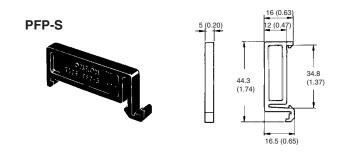
End Plate



16 (0.63) 4.5 (0.18) 24 27 35±0.3 29.2 (1.38±0.01) (1.06) (0.94) \in (1.15) 25 15 (0.59 25 (0.98) 1 (0.04)--1.5 (0.06) 0 (0.39 1,000 (39.37)

Spacer

PFP-100N2



Precautions

- <u>A</u>Caution

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.

- 🕂 Caution

Check that the test button is released before turning ON relay circuits.

- 🕂 Caution

If the test button is pulled out too forcefully, it may bypass the momentary testing position and go straight into the locked position.

- 🕂 Caution

Use an insulated tool when you operate the test button.

Precautions for P2RF-D-S Connection

- Do not move the screwdriver up, down, or from side to side while it is inserted in the hole. Doing so may cause damage to internal components (e.g., deformation of the clamp spring or cracks in the housing) or cause deterioration of insulation.
- Do not insert the screwdriver at an angle. Doing so may break the side of the socket and result in a short-circuit.

Certain Terms and Conditions of Sale

- Offer: Acceptance. These terms and conditions (these "Terms") are deemed part of all catalogs, manuals or other documents, whether electronic or in writ-1. ing, relating to the sale of goods or services (collectively, the "<u>Goods</u>") by Omron Electronics LLC and its subsidiary companies ("<u>Seller</u>"). Seller hereby 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. Please contact your Omron representative to confirm any additional terms for sales from your Omron company.
- All prices stated are current, subject to change without notice by 2. Prices.
- <u>Prices</u>. All prices stated are current, subject to change without notice uy Seller. Buyer agrees to pay the price in effect at time of shipment. <u>Discounts</u>. 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 Seller's payment terms and (ii) Buyer has no past due amounts owing to Seller. <u>Orders</u>. Seller will accept no order less than \$200 net billing. <u>Governmental Approvals</u>. Buyer shall be responsible for, and shall bear all costs involved in, obtaining any government approvals required for the importation or sale of the Goods. 3.
- tation or sale of the Goods
- Taxes. All taxes, duties and other governmental charges (other than general 6 real property and income taxes), including any interest or penalties thereon, imposed directly or indirectly on Seller or required to be collected directly or indirectly by Seller for the manufacture, production, sale, delivery, importation, consumption or use of the Goods sold hereunder (including customs duties and sales, excise, use, turnover and license taxes) shall be charged to and remitted by Buyer to Seller.
- <u>Financial</u>. If the financial position of Buyer at any time becomes unsatisfactory to Seller, Seller reserves the right to stop shipments or require satisfactory security or payment in advance. If Buyer fails to make payment or otherwise 7. security or payment in advance. If Buyer fails to make payment or otherwise comply with these Terms or any related agreement, Seller may (without liability and in addition to other remedies) cancel any unshipped portion of Goods sold hereunder and stop any Goods in transit until Buyer pays all amounts, includ-ing 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. <u>Cancellation; Etc.</u> Orders are not subject to rescheduling or cancellation unless Buyer indemnifies Seller fully against all costs or expenses arising in connection therewith.
- 8.
- Force Majeure. Seller 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 9. machinery, acts of subspaces, shortage of habit of materials, actualities in materials, actualities in materials, actualities of any government authority. <u>Shipping: Delivery</u>. Unless otherwise expressly agreed in writing by Seller: a. Shipments shall be by a carrier selected by Seller; b. Such carrier shall act as the agent of Buyer and delivery to such carrier actual the self-time shall act as the agent of Buyer and delivery to such carrier
- 10.
- 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 Goods shall be FOB shipping point (unless otherwise stated in writing by Seller), at which point title to and all risk of loss of the Goods shall pass from Seller to Buyer, provided that Seller shall retain a security interest in the Goods until the full purchase price is paid by Buyer;
 d. Delivery and shipping dates are estimates only.
 e. Seller will package Goods as it deems proper for protection against normal handling and extra charges apply to special conditions.
 11. <u>Claims</u>. Any claim by Buyer against Seller for shortage or damage to the Goods occurring before delivery to the carrier must be presented in writing to Seller within 30 days of receipt of shipment and include the original transportation bill signed by the carrier noting that the carrier received the Goods from Seller in the condition claimed.

- <u>Warranties.</u> (a) <u>Exclusive Warranty</u>. Seller's exclusive warranty is that the Goods will be free from defects in materials and workmanship for a period of twelve months from the date of sale by Seller (or such other period expresse twelve months from the date of sale by Seller (or such other period expressed in writing by Seller). Seller disclaims all other warranties, express or implied. (b) Limitations. SELLER MAKES NO WARRANTY OR REPRESENTATION, EXPRESS OR IMPLIED, ABOUT NON-INFRINGEMENT, MERCHANTABIL-ITY OR FITNESS FOR A PARTICULAR PURPOSE OF THE GOODS. BUYER ACKNOWLEDGES THAT IT ALONE HAS DETERMINED THAT THE GOODS WILL SUITABLY MEET THE REQUIREMENTS OF THEIR INTENDED USE. Seller further disclaims all warranties and responsibility of any type for claims or expenses based on infringement by the Goods or other-wise of any intellectual property right. (c) Buyer Remedy. Seller's sole obligawise of any intellectual property right. (c) <u>Buyer Remedy.</u> Seller's sole obliga-tion hereunder shall be to replace (in the form originally shipped with Buyer responsible for labor charges for removal or replacement thereof) the noncomplying Good or, at Seller's election, to repay or credit Buyer an amount equal to the purchase price of the Good; provided that in no event shall Seller be responsible for warrarty, repair, indemnity or any other claims or expenses regarding the Goods unless Seller's analysis confirms that the Goods were properly handled, stored, installed and maintained and not subject to contamination, abuse, misuse or inappropriate modification. Return of any goods by Buyer must be approved in writing by Seller before shipment. Seller shall not be liable for the suitability or unsuitability or the results from the use of Goods in combination with any electrical or electronic components, circuits, system assemblies or any other materials or substances or environments. Any advice, recommendations or information given orally or in writing, are not to be
- advice, recommendations or information given orally or in writing, are not to be construed as an amendment or addition to the above warranty.
 <u>Damage Limits: Etc.</u> SELLER SHALL NOT BE LIABLE FOR SPECIAL, INDI-RECT OR CONSEQUENTIAL DAMAGES, LOSS OF PROFITS OR PRODUCTION OR COMMERCIAL LOSS IN ANY WAY CONNECTED WITH THE GOODS, WHETHER SUCH CLAIM IS BASED IN CONTRACT, WARRANTY, NEGLIGENCE OR STRICT LIABILITY. Further, in no event shall liability of Seller exceed the individual price of the Good on which liability is asserted.
 <u>Indemnities.</u> Buyer shall indemnify and hold harmless Seller, its affiliates and its employees from and against all liability is costs and
- its employees from and against all liabilities, losses, claims, costs and expenses (including attorney's fees and expenses) related to any claim, inves-tigation, litigation or proceeding (whether or not Seller is a party) which arises or is alleged to arise from Buyer's acts or omissions under these Terms or in any way with respect to the Goods. Without limiting the foregoing, Buyer (at its own expense) shall indemnify and hold harmless Seller and defend or settle any action brought against Seller to the extent that it is based on a claim that any Good made to Buyer specifications infringed intellectual property rights of another party.
- Property: Confidentiality. The intellectual property embodied in the Goods is the exclusive property of Seller and its affiliates and Buyer shall not attempt to duplicate it in any way without the written permission of Seller. Notwithstand-15
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Certain Precautions on Specifications and Use

- <u>Suitability of Use.</u> Seller shall not be responsible for conformity with any stan-dards, codes or regulations which apply to the combination of the Good in the Buyer's application or use of the Good. At Buyer's request, Seller will provide applicable third party certification documents identifying ratings and limitations of use which apply to the Good. This information by itself is not sufficient for a complete determination of the suitability of the Good in combination with the end product, machine, system, or other application or use. The following are some examples of applications for which particular attention must be given. This is not intended to be an exhaustive list of all possible uses of this Good, nor is it intended to imply that the uses listed may be suitable for this Good:
 (i) Outdoor use, uses involving potential chemical contamination or electrical interference, or conditions or uses not described in this document.
 - (ii)
 - Energy control systems, combustion systems, railroad systems, aviation systems, medical equipment, amusement machines, vehicles, safety equipment, and installations subject to separate industry or government regulations.
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- Seller's Warranty and Limitations of Liability. <u>Change in Specifications</u>. Product specifications and accessories may be changed at any time based on improvements and other reasons. It is our prac-4 changed at any time based on improvements and other reasons. It is our prac-tice to change part numbers when published ratings or features are changed, or when significant construction changes are made. However, some specifica-tions of the Good may be changed without any notice. When in doubt, special part numbers may be assigned to fix or establish key specifications for your application. Please consult with your Seller's representative at any time to con-firm actual specifications of purchased Good. <u>Errors and Omissions</u>. The information in this catalog has been carefully checked and is believed to be accurate; however, no responsibility is assumed for clerical twoographical or proofreading errors or omissions.
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