PCB Relay
G5LE

A Cubic, Single-pole 10-A Power Relay

- High Capacity (-E) and 0.8mm Contact Gap (-G) versions
- Subminiature “sugar cube” relay with universal footprint.
- Conforms to EN 61810-1. UL recognized/ CSA certified.
- UL class-F coil insulation model available (UL class-B coil insulation for standard model).
- Withstands impulse of up to 4,500 V.
- 400-mW and 360-mW coil power types available.
- RoHS Compliant



Ordering Information

Enclosure ratings	Contact form/Style	Contact material			
		$AgSnO_2$	AgSnIn		
		Standard	Standard	High Capacity	0.8mm Contact Gap
Flux protection	SPDT	**G5LE-1** **G5LE-1-CF**	**G5LE-1-ASI** **G5LE-1-ASI-CF**	**G5LE-1-E**	**G5LE-1-G**
	SPST-NO	**G5LE-1A** **G5LE-1A-CF**	**G5LE-1A-ASI** **G5LE-1A-ASI-CF**	**G5LE-1A-E**	**G5LE-1A-G**
Fully sealed	SPDT	**G5LE-14** **G5LE-14-CF**	**G5LE-14-ASI** **G5LE-14-ASI-CF**	- - -	- - -
	SPST-NO	**G5LE-1A4** **G5LE-1A4-CF**	**G5LE-1A4-ASI** **G5LE-1A4-ASI-CF**	- - -	- - -

Note: When ordering, add the rated coil voltage to the model number.
Example: G5LE-1 DC12
Rated coil voltage

Model Number Legend

G5LE - □ □ □ - □ - □ - □ - □ - □ - □ - DC□
1 2 3 4 5 6 7 8 9 10

1. **Number of Poles**
   1: 1 pole
2. **Contact Form**
   None: SPDT
   A: SPST-NO
3. **Enclosure Ratings**
   None: Flux protection
   4: Fully sealed
   (Not applicable with -E and -G versions)
4. **Contact Material**
   None: $AgSnO_2$ (AgSnIn for -E and -G versions)
   ASI: AgSnIn
5. **Insulation System**
   None: Class B (Class F for -E and -G versions)
   CF: Class F (UL and CSA only)
6. **Coil Power Consumption/Coil Characteristic**
   None: Approx. 400 mW (Approx. 700mW for -G versions)
   36: Approx. 360 mW (Not applicable for -G versions)
7. **Approved Standards**
   G: 0.8mm contact gap type
   E: High capacity type
8. **Approved Standards**
   None: UL, CSA, and VDE
9. **Packaging**
   None: Standard polystyrene tray
   SP: Anti-static tube packaging
10. **Rated Coil Voltage**
    5, 9, 12, 24, 48 VDC

Specifications

■ Coil Ratings

700-mW Type (G5LE-G)

Rated voltage	9 VDC	12 VDC	20 VDC	48 VDC
Rated current	77.8mA	58.3mA	35.0mA	29.2mA
Coil resistance	115.7 Ω	205.7 Ω	571.4 Ω	822.9 Ω
Must operate voltage	75% max. of rated voltage (max.)			
Must release voltage	10% min. of rated voltage (min.)			
Max. voltage	120% of rated voltage at 85°C, 150% of rated voltage at 23°C			
Power consumption	Approx. 700 mW			

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

400-mW Type

Rated voltage	5 VDC	9 VDC	12 VDC	24 VDC	48 VDC
Rated current	79.4 mA	45 mA	33.3 mA	16.7 mA	8.33 mA
Coil resistance	63 Ω	200 Ω	360 Ω	1,440 Ω	5,760 Ω
Must operate voltage	75% max. of rated voltage (max.)				
Must release voltage	10% min. of rated voltage (min.)				
Max. voltage	130% of rated voltage at 85°C, 170% of rated voltage at 23°C				
Power consumption	Approx. 400 mW				

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

360-mW Type

Rated voltage	5 VDC	9 VDC	12 VDC	24 VDC	48 VDC
Rated current	72 mA	40 mA	30 mA	15 mA	7.5 mA
Coil resistance	70 Ω	225 Ω	400 Ω	1,600 Ω	6,400 Ω
Must operate voltage	75% max. of rated voltage (max.)				
Must release voltage	10% min. of rated voltage (min.)				
Max. voltage	130% of rated voltage at 85°C, 170% of rated voltage at 23°C				
Power consumption	Approx. 360 mW				

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

■ Contact Ratings

	Standard	G5LE-G	G5LE-E
Load	Resistive load ($\cos\phi = 1$)		
Rated load	10 A at 120 VAC; 8 A at 30 VDC 10A at 240VAC (12 and 24 VDC coil)	10A at 35VDC	16A at 250VAC
Contact Material	$AgSnO_2$ (AgSnIn optional)	AgSnIn	AgSnIn
Rated carry current	10 A	10A	16A
Max. switching voltage	250 VAC, 125 VDC (30 VDC when UL/CSA standard is applied)	35VDC	250VAC
Max. switching current	AC: 10 A; DC: 8 A	DC: 10A	AC: 16A
Max. switching power	1,200 VA, 240 W	350W	4,000VA
Minimum Permissible Load (See note)	100 mA at 5 VDC		

Note: Reference value - P level: $\lambda_{60} = 0.1 \times 10^{-6}$ operations

■ Characteristics

Contact resistance		100 mΩ max.
Operate time		10 ms max.
Release time		5 ms max.
Bounce Time		Operate: Approx. 0.6ms Release: Approx. 7.2ms
Max. switching frequency		Mechanical: 18,000 operations/hr Electrical: 1,800 operations/hr at rated load
Insulation resistance		100 MΩ min. (at 500 VDC)
Dielectric strength		2,000 VAC, 50/60 Hz for 1 min between coil and contacts 750 VAC, 50/60 Hz for 1 min between contacts of same polarity 1,500 VAC (for suffix -G) 50/60Hz for 1 min between contacts of same polarity
Impulse withstand voltage		4,500 V (1.2 x 50 μs) between coil and contacts
Insulation Distance	**Creepage (Typ)**	3.3 mm
	Clearance (Typ)	2.7 mm
Tracking Resistance (CTI)		250 V
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/s^2 Malfunction: 100 m/s^2
Endurance		Mechanical: 10,000,000 operations min. (at 18,000 operations/hr) Electrical: 100,000 operations min. (at 1,800 operations/hr) for standard type 36,000 operations min. (10A at 250VAC) 100,000 operations min. (at 1,800 operations/hr), 12A 250 VAC) - applicable for G5LE-1-E,NO contact only
Ambient temperature		Operating: −25°C to 85°C (with no icing)
Ambient humidity		Operating: 5% to 85%
Weight		Approx. 12 g

■ Approved Standards

UL Recognized (File No. E41643)
CSA Certified (File No. LR34815)

Model	Coil rating	Contact rating
G5LE	3 to 48 VDC (Standard) 5 to 24 VDC (-E versions) 9 to 24 VDC (-G versions)	10 A, 250 VAC (general use), 6,000 cycles, 40°C (excluding -G type) 10 A, 125 VAC (general use), 100,000 cycles, 40°C (excluding -E, -G types) 8 A, 30 VDC (resistive load), 6,000 cycles, 40°C (excluding -E, -G types) 125 VA, 125 VAC, pilot duty, 100,000 cycles, 105°C (excluding -G type) NO: 13 A, 120 VAC, resistive, 100,000 cycles, 85°C ($AgSnO_2$ & -E types, only) 1/2 hp, 125 VAC, 100,000 cycles, 40°C (excluding -G type) 1/3 hp, 125 VAC, 30,000 cycles, 70°C ($AgSnO_2$ type only, excluding -E, -G types) 400W-T (3.3A), 120 VAC, tungsten, 100,000 cycles ($AgSnO_2$ type only, excluding -E, -G types) TV-5, 120 VAC, 40°C (-ASI type only, excluding -E, -G types) 12 A, 250 VAC, general use, 100,000 cycles, 1s=on, 1s=off, 105°C (-E type only) TV-8,120 VAC, 25,000 cycles, 40°C (-E type only) 10 A, 35 VDC, resistive, 100,000 cycles, 1s=on, 1s=off, 40°C (-G type only) NC: 12 A, 250 VAC, general use, 30,000 cycles, 1s=on, 9s=off, 40°C (-E type only) 10 A, 35 VDC, resistive, 50,000 cycles, 5s=on, 5s=off, 40°C (-G type only) 1/8 hp, 120 VAC, 50,00 cycles, 40°C ($AgSnO_2$ type only, excluding -E, -G types)

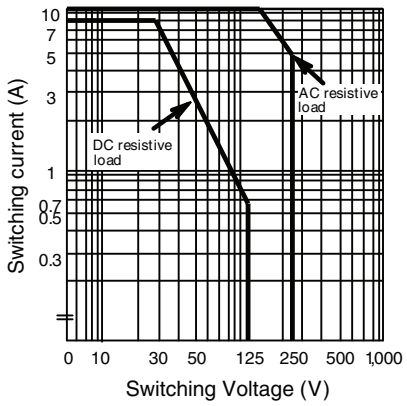
EN 61810-1, EN 60255, IEC (VDE TUV Reg No. R9151267, VDE Reg No. 6850UG)

Model	Coil rating	Contact rating
G5LE	Approx. 400 mW 3, 5, 6, 9, 12, 24, 48 VDC Approx. 360 mW 5, 6, 12, 24, 48 VDC	10A, 250VAC (resistive load, 50,000 cycles at 85°C) 5A, 30VDC 2.5 A, 250 VAC ($\cos\phi = 0.4$)

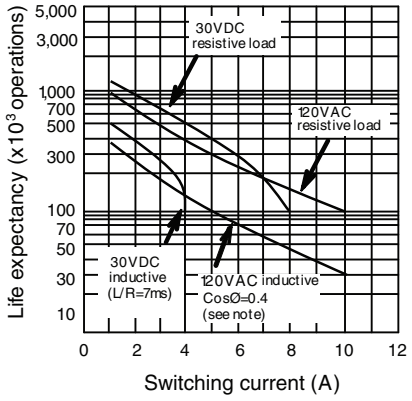
Engineering Data

For standard type

Max. Switching Capacity

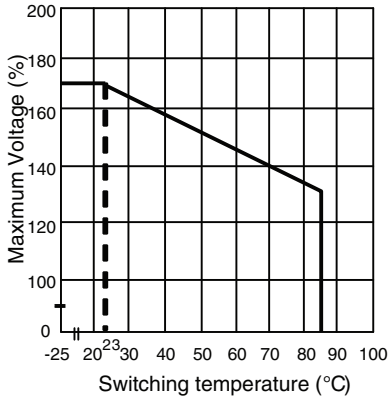


Life Expectancy



Note: Same curve as for 250-VAC resistive load

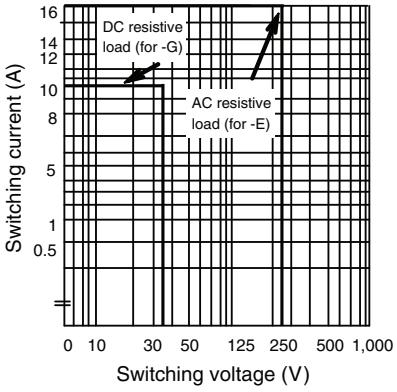
Ambient Temp. Vs. Max. Voltage



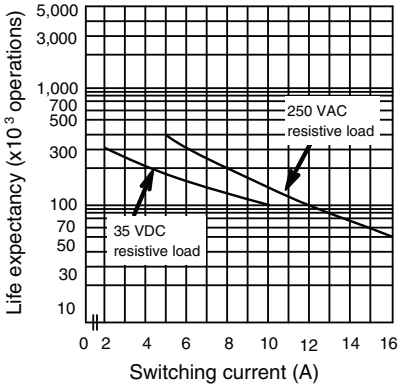
Note: The maximum coil voltage refers to the maximum value in a varying range of operating power voltage, not a continuous voltage.

For suffix -E and -G

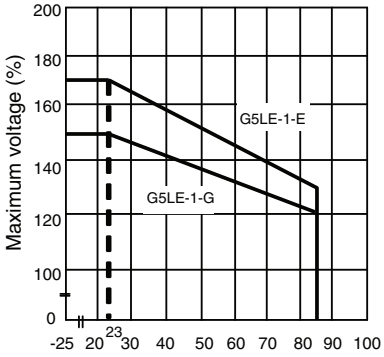
Max. Switching Capacity



Life Expectancy



Ambient Temp. Vs. Max. Voltage

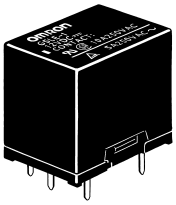


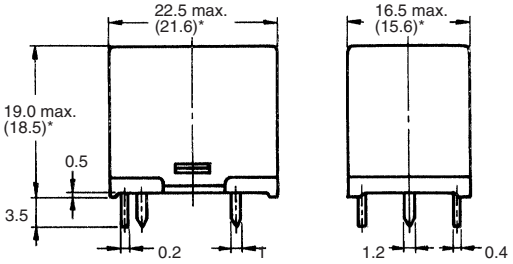
Note: The maximum coil voltage refers to the maximum value in a varying range of operating power voltage, not a continuous voltage.

Dimensions

Note: 1. All units are in millimeters unless otherwise indicated.
2. Orientation marks are indicated as follows: ▭ □

G5LE-1
G5LE-1A

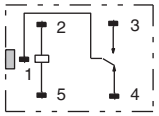




*Average value

Terminal Arrangement/Internal Connections (Bottom View)

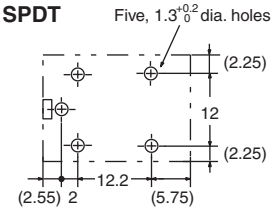
SPDT



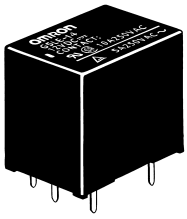
Mounting Holes (Bottom View)

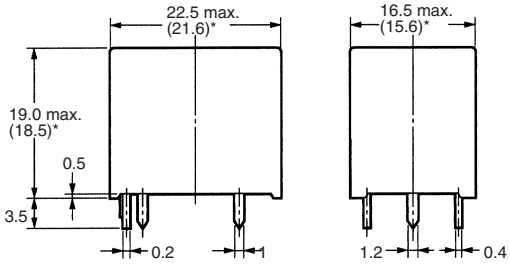
Tolerance: ±0.1 mm unless specified

SPDT



G5LE-14
G5LE-1A4

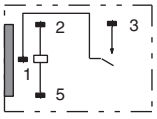




*Average value

Terminal Arrangement/Internal Connections (Bottom View)

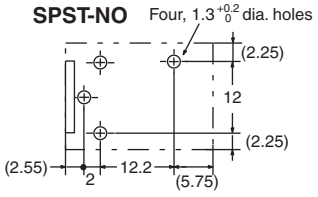
SPST-NO



Mounting Holes (Bottom View)

Tolerance: ±0.1 mm unless specified

SPST-NO



MEMO

Omron Electronic Components, LLC

Terms and Conditions of Sales

I. GENERAL

1. Definitions: The words used herein are defined as follows.
   (a) Terms: These terms and conditions
   (b) Seller: Omron Electronic Components LLC and its subsidiaries
   (c) Buyer: The buyer of Products, including any end user in section III through VI
   (d) Products: Products and/or services of Seller
   (e) Including: Including without limitation
2. Offer: Acceptance: These Terms are deemed part of all quotations, acknowledgments, invoices, purchase orders and other documents, whether electronic or in writing, relating to the sale of Products by Seller. Seller hereby objects to any Terms proposed in Buyer's purchase order or other documents which are inconsistent with, or in addition to, these Terms.
3. Distributor: Any distributor shall inform its customer of the contents after and including section III of these Terms.

II. SALES

1. Prices; Payment: All prices stated are current, subject to change without notice by Seller. Buyer agrees to pay the price in effect at the time the purchase order is accepted by Seller. Payments for Products received are due net 30 days unless otherwise stated in the invoice. Buyer shall have no right to set off any amounts against the amount owing in respect of this invoice.
2. 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 (a) the invoice is paid according to Seller's payment terms and (b) Buyer has no past due amounts owing to Seller.
3. Interest: Seller, at its option, may charge Buyer 1.5% interest per month or the maximum legal rate, whichever is less, on any balance not paid within the stated terms.
4. Orders: Seller will accept no order less than 200 U.S. dollars net billing.
5. Currencies: If the prices quoted herein are in a currency other than U.S. dollars, Buyer shall make remittance to Seller at the then current exchange rate most favorable to Seller; provided that if remittance is not made when due, Buyer will convert the amount to U.S. dollars at the then current exchange rate most favorable to Seller available during the period between the due date and the date remittance is actually made.
6. Governmental Approvals: Buyer shall be responsible for all costs involved in obtaining any government approvals regarding the importation or sale of the Products.
7. 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 Seller or required to be collected directly or indirectly by Seller 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 Seller.
8. Financial: 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 comply with these Terms or any related agreement, Seller 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.
9. Cancellation; Etc: Orders are not subject to rescheduling or cancellation unless Buyer indemnifies Seller fully against all costs or expenses arising in connection therewith.
10. 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 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 Seller:
    (a) All sales and shipments of Products shall be FOB shipping point (unless otherwise stated in writing by Seller), at which point title to and all risk of loss of the Products shall pass from Seller to Buyer, provided that Seller shall retain a security interest in the Products until the full purchase price is paid by Buyer;
    (b) Delivery and shipping dates are estimates only; and
    (c) Seller 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 Seller for shortage or damage to the Products occurring before delivery to the carrier or any claim related to pricing or other charges must be presented in detail in writing to Seller within 30 days of receipt of shipment.

III. PRECAUTIONS

1. Suitability: IT IS THE BUYER'S SOLE RESPOINSIBILITY TO ENSURE THAT ANY OMRON PRODUCT IS FIT AND SUFFICIENT FOR USE IN A MOTORIZED VEHICLE APPLICATION. BUYER SHALL BE SOLELY RESPONSIBLE FOR DETERMINING APPROPRIATENESS OF THE PARTICULAR PRODUCT WITH RESPECT TO THE BUYER'S APPLICATION INCLUDING (A) ELECTRICAL OR ELECTRONIC COMPONENTS, (B) CIRCUITS, (C) SYSTEM ASSEMBLIES, (D) END PRODUCT, (E) SYSTEM, (F) MATERIALS OR SUBSTANCES OR (G) OPERATING ENVIRONMENT. Buyer acknowledges that it alone has determined that the Products will meet their requirements of the intended use in all cases. Buyer must know and observe all prohibitions of use applicable to the Product/s.
2. Use with Attention: The followings are some examples of applications for which particular attention must be given. This is not intended to be an exhaustive list of all possible use of any Product, nor to imply that any use listed may be suitable for any Product:
   (a) Outdoor use, use involving potential chemical contamination or electrical interference.
   (b) Use in consumer Products or any use in significant quantities.
   (c) 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.
   (d) Systems, machines, and equipment that could present a risk to life or property.
3. Prohibited Use: NEVER USE THE PRODUCT FOR AN APPLICATION INVOLVING SERIOUS RISK TO LIFE OR PROPERTY WITHOUT ENSURING THAT THE SYSTEM AS A WHOLE HAS BEEN DESIGNED TO ADDRESS THE RISKS, AND THAT THE PRODUCT IS PROPERLY RATED AND INSTALLED FOR THE INTENDED USE WITHIN THE OVERALL EQUIPMENT OR SYSTEM.
4. Motorized Vehicle Application: USE OF ANY PRODUCT/S FOR A MOTORIZED VEHICLE APPLICATION MUST BE EXPRESSLY STATED IN THE SPECIFICATION BY SELLER.
5. Programmable Products: Seller shall not be responsible for the Buyer's programming of a programmable Product.

IV. WARRANTY AND LIMITATION

1. Warranty: Seller'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 Seller (or such other period expressed in writing by Seller). SELLER MAKES NO WARRANTY OR REPRESENTATION, EXPRESS OR IMPLIED, ABOUT ALL OTHER WARRANTIES, NON-INFRINGEMENT, MERCHANTABILITY OR FITNESS FOR A PARTICULAR PURPOSE OF THE PRODUCTS.
2. Buyer Remedy: Seller's sole obligation hereunder shall be to replace (in the form originally shipped with Buyer responsible for labor charges for removal or replacement thereof) the non-complying Product or, at Seller's election, to repay or credit Buyer an amount equal to the purchase price of the Product; provided that there shall be no liability for Seller or its affiliates unless Seller's analysis confirms that the Products were correctly handled, stored, installed and maintained and not subject to contamination, abuse, misuse or inappropriate modification. Return of any Products by Buyer must be approved in writing by Seller before shipment.
3. Limitation on Liability: SELLER AND ITS AFFILIATES SHALL NOT BE LIABLE FOR SPECIAL, INDIRECT, INCIDENTAL OR CONSEQUENTIAL DAMAGES, LOSS OF PROFITS OR PRODUCTION OR COMMERCIAL LOSS IN ANY WAY CONNECTED WITH THE PRODUCTS, WHETHER SUCH CLAIM IS BASED IN CONTRACT, WARRANTY, NEGLIGENCE OR STRICT LIABILITY. FURTHER, IN NO EVENT SHALL LIABILITY OF SELLER OR ITS AFFILITATES EXCEED THE INDIVIDUAL PRICE OF THE PRODUCT ON WHICH LIABILITY IS ASSERTED.
4. Indemnities: Buyer shall indemnify and hold harmless Seller, its affiliates and its employees from and against all liabilities, losses, claims, costs and expenses (including attorney's fees and expenses) related to any claim, investigation, 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 Products.

V. INFORMATION; ETC.

1. Intellectual Property: The intellectual property embodied in the Products 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. 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 Product made to Buyer specifications infringed intellectual property rights of another party.
2. Property; Confidentiality: Notwithstanding any charges to Buyer for engineering or tooling, all engineering and tooling shall remain the exclusive property of Seller. All information and materials supplied by Seller to Buyer relating to the Products are confidential and proprietary, and Buyer shall limit distribution thereof to its trusted employees and strictly prevent disclosure to any third party.
3. Performance Data: Performance data is provided as a guide in determining suitability and does not constitute a warranty. It may represent the result of Seller's test conditions, and the users must correlate it to actual application requirements.
4. Change In Specifications: Product specifications and descriptions may be changed at any time based on improvements or other reasons. It is Seller's practice to change part numbers when published ratings or features are changed, or when significant engineering changes are made. However, some specifications of the Product may be changed without any notice.
5. Errors And Omissions: The information on Seller's website or in other documentation has been carefully checked and is believed to be accurate; however, no responsibility is assumed for clerical, typographical or proofreading errors or omissions.
6. Export Controls: Buyer shall comply with all applicable laws, regulations and licenses regarding (a) export of the Products or information provided by Seller; (b) sale of Products to forbidden or other proscribed persons or organizations; (c) disclosure to non-citizens of regulated technology or information.

VI. MISCELLANEOUS

1. Waiver: No failure or delay by Seller in exercising any right and no course of dealing between Buyer and Seller shall operate as a waiver of rights by Seller.
2. Assignment: Buyer may not assign its rights hereunder without Seller's written consent.
3. Law: These Terms are governed by Illinois law (without regard to conflict of laws). Federal and state courts in Cook County, Illinois have exclusive jurisdiction for any dispute hereunder.
4. Amendment: These Terms constitute the entire agreement between Buyer and Seller relating to the Products, and no provision may be changed or waived unless in writing signed by the parties.
5. Severability: If any provision hereof is rendered ineffective or invalid, such provision shall not invalidate any other provision.

Certain Precautions on Specifications and Use

1. Suitability for Use. Seller shall not be responsible for conformity with any standards, codes or regulations which apply to the combination of the Product in Buyer's application or use of the Product. At Buyer's request, Seller 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. 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) 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.
   (iii) Use in consumer products or any use in significant quantities.
   (iv) Systems, machines and equipment that could present a risk to life or property. Please know and observe all prohibitions of use applicable to this product.

   NEVER USE THE PRODUCT FOR AN APPLICATION INVOLVING SERIOUS RISK TO LIFE OR PROPERTY WITHOUT ENSURING THAT THE SYSTEM AS A WHOLE HAS BEEN DESIGNED TO ADDRESS THE RISKS, AND THAT THE OMRON PRODUCT IS PROPERLY RATED AND INSTALLED FOR THE INTENDED USE WITHIN THE OVERALL EQUIPMENT OR SYSTEM.
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