Power PCB Relay

SPST-NO Type Breaks 10-A Loads; SPST-NO + SPST-NC Breaks 8-A Load

- Compact: 20 x 15 x 10 mm (L x W x H).
- Low power consumption: 200 mW.
- Semi-sealed or fully sealed construction available.
- Unique moving loop armature reduces relay size, magnetic interference, and contact bounce.
- Single and Dual coil latching types also available
- RoHS Compliant







Ordering Information

Classification	Contact form	Straight Thr	ough-hole PCB	Self-clinching	Self-clinching Through-hole PCB		
		Semi-sealed	Fully sealed	Semi-sealed	Fully sealed		
Non-latching	SPST-NO	G6C-1117P-US	G6C-1114P-US	G6C-1117C-US	G6C-1114C-US		
	SPST-NO + SPST-NC	G6C-2117P-US	G6C-2114P-US	G6C-2117C-US	G6C-2114C-US		
Single coil latching	SPST-NO	G6CU-1117P-US	G6CU-1114P-US	G6CU-1117C-US	G6CU-1114C-US		
	SPST-NO + SPST-NC	G6CU-2117P-US	G6CU-2114P-US	G6CU-2117C-US	G6CU-2114C-US		
Dual coil latching	SPST-NO	G6CK-1117P-US	G6CK-1114P-US	G6CK-1117C-US	G6CK-1114C-US		
I	SPST-NO + SPST-NC	G6CK-2117P-US	G6CK-2114P-US	G6CK-2117C-US	G6CK-2114C-US		

Note:	When ordering, add the rated coil voltage to the model number
	Evample: C6C 1117D LIC DC12

Rated coil voltage

Model Number Legend

G6C ___ - __ _ _ _ _ _ _ _ _ _ _ _ DC __

1. Relay Function

None: Non-latching
U: Single coil latching
K: Dual coil latching

2. Contact Form

11: SPST-NO

21: SPST-NO + SPST-NC

3. Contact Type

1: Standard

4. Enclosure Ratings

4: Fully sealed 7: Semi-sealed

5. Terminals

P: Straight Through-hole PCB
C: Self-clinching Through-hole PCB

6. Approved Standards US: UL/CSA certified

7. Mounting Method

None: Mount directly to PCB P6C: Mount to Socket

8. Rated Coil Voltage 3, 5, 6, 12, or 24 VDC

■ Accessories (Order Separately)

Back Connecting Sockets

Applicable Relay	Back Connecting Socket (See note 1.)
G6C(U)-1114P-US-P6C G6C(U)-1117P-US-P6C G6C(U)-2114P-US-P6C G6C(U)-2117P-US-P6C	P6C-06P
G6CK-1114P-US-P6C G6CK-1117P-US-P6C G6CK-2114P-US-P6C G6CK-2117P-US-P6C	P6C-08P

Note: 1. Not applicable to the self-clinching versions. The operating current for the socket is 5 A max.

2. Use the G6C(U)-DDDP-US-P6C if mounting relays in a P6C Socket.

Removal Tool	P6B-Y1
Hold-down Clips	P6B-C2

Specifications

■ Contact Ratings

Item	SP	ST-NO	SPST-NO+SPST-NC		
Load	Resistive load (cos\phi = 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; 8A at 30 VDC	3.5 A at 250 VAC; 3.5 A at 30 VDC	
Contact material	Ag Alloy (Cd free)				
Rated carry current	10 A		8 A		
Max. switching voltage	380 VAC, 125 VDC (the	case of latching 250 VAC,	125 VDC)		
Max. switching current	10 A		8 A		
Max. switching capacity	2,500 VA, 300 W	1,250 VA, 220 W	2,000 VA, 240 W 875 VA, 170 W		
Min. permissible load (reference value - see note)	10 mA at 5 VDC				

Note: P level: $\lambda_{60} = 0.1 \text{ x } 10^{-6} \text{ operations}$

■ Coil Data

Non-latching

Rated Rated		Coil resistance	(rei. value) (n)		Pick-up voltage	Dropout voltage	Maximum voltage	Power consumption
(VDC)	3		Armature OFF	Armature ON	% of rated voltage			(mW)
3	67	45	0.078	0.067	70% max.	10% min.	160% max.	Approx. 200
5	40	125	0.22	0.18			at 23°C	
6	33.30	180	0.36	0.29				
12	16.70	720	1.32	1.13]			
24	8.30	2,880	4.96	4.19				

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.

Single Coil Latching Type

Rated voltage	Rated current	Coil resistance		uctance lue) (H)	Set pick-up voltage	Reset pick-up voltage	Maximum	Power consumption	
(VDC)	(mA)	(Ω)	Armature OFF	Armature ON	% of rated voltage		voltage	(mW)	
3	67	45	0.09	0.06	70% max.	70% min.	160% max.	Approx. 200	
5	40	125	0.25	0.20			at 23°C		
6	33.30	180	0.36	0.24					
12	16.70	720	1.75	1.17					
24	8.30	2,880	5.83	3.84					

Dual Coil Latching Type

	Coil	Coil inductance (ref. value) (H)				Set pick-up	Reset pick-up	Maximum voltage	Power	
	resistance	Set Coil		Reset Coil		voltage voltage		voitage	consumption	
(VDC)	(mA)	(Ω)	Armature OFF	Armature ON	Armature OFF	Armature ON	%	of rated voltage		(mW)
3	93.50	32.10	0.03	0.02	0.03	0.02	70% max.	70% max.	130% max.	Approx. 280
5	56	89.30	0.07	0.06	0.08	0.07			at 23°C)	
6	46.70	129	0.10	0.08	0.12	0.10	1			
12	23.30	514	0.37	0.32	0.47	0.38	1			
24	11.70	2,056	1.56	1.18	1.46	1.13				

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.
- ${\bf 3.}\,$ The minimum pulse width of the set and reset voltage is 20 ms.

■ Characteristics

Contact resistance		30 m Ω max.			
Operate (set) time		10 ms max. (mean value: approx. 5 ms)			
Release (reset) time		10 ms max. (mean value: approx. 2 ms; latching types: mean value: approx. 5 ms)			
Bounce time		5 ms max. (Approx. 3 ms typical)			
Min. set/reset signal wid	th	Latching type: 20 ms (at 23°C)			
Max. switching Mechanical		18,000 operations/hr			
frequency	Electrical	1,800 operations/hr (under rated load)			
Insulation resistance		1,000 M Ω min. (at 500 VDC, at 250 VDC between set coil and reset coil)			
Dielectric strength		2,000 VAC, 50/60 Hz for 1 min between coil and contacts 2,000 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 250 VAC, 50/60 Hz for 1 min between set and reset coils (double winding latching type)			
Surge withstand voltage		6.000 V (1.2 x 50 μs) between coil and contacts (latching types: 4,500 V, 1.2 x 50 μs)			
Vibration resistance	Mechanical durability	10 to 55 Hz, 1.5-mm double amplitude			
	Malfunction durability	10 to 55 Hz, 1.5-mm double amplitude			
Shock resistance	Mechanical durability	1,000 m/s ² (Appox. 100G)			
	Malfunction durability	100 m/s ² (Approx. 10G)			
Ambient temperature		Operating: -25°C to 70°C (with no icing)			
Ambient humidity		Operating: 5% to 85%			
Service Life Mechanical:		50,000,000 operations min. (at 18,000 operations/hr)			
	Electrical:	100,000 operations min. (at 1,800 operations/hr) See "Characteristic Data"			
Weight		Approx. 5.6 g			

■ Approved Standards

UL Recognized (File No. E41643) -- See note

Model	Contact form	Coil rating	Contact rating
G6C-1114P-US G6C-1114C-US G6C-1117P-US G6C-1117C-US	SPST-NO	3 to 60 VDC	10 A, 250 VAC (general use) 10 A, 30 VDC (resistive load) 1/6 hp, 125 VAC 1/4 hp, 125 VAC 1/4 hp, 250 VAC 1/3 hp, 250 VAC TV-5 (40°C, 25,000 operations) 600 W, 120 VAC (tungsten) 530 VA, 20 to 265 VAC, 2 A max. (pilot duty) 43.2 VA, 30 VDC (pilot duty) 12LRA, 2.2FLA, 30 VDC (30,000 operations)
G6C-2114P-US G6C-2114C-US G6C-2117P-US G6C-2117C-US	SPST-NO + SPST-NC		8 A, 250 VAC (general use) 8 A, 30 VDC (resistive load) 1/6 hp, 125 VAC 1/4 hp, 125 VAC 1/4 hp, 250 VAC 1/3 hp, 250 VAC TV-5 (40°C, 25,000 operations) 600 W, 120 VAC (tungsten) 530 VA, 20 to 265 VAC, 2 A max. (pilot duty) 43.2 VA, 30 VDC (pilot duty) 12LRA, 2.2FLA, 30 VDC (30,000 operations)

Note: UL Recognition tests performed at 80°C for 6,000 operations unless otherwise specified.

CSA Certified (File No. LR31928)

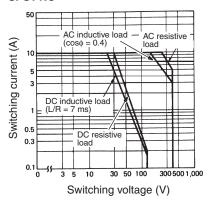
Model	Contact form	Coil rating	Contact rating
G6C-1114P-US G6C-1114C-US G6C-1117P-US G6C-1117C-US	SPST-NO	3 to 60 VDC	10 A, 250 VAC (general use) 10 A, 30 VDC (resistive load) 1/6 hp, 125 VAC 1/4 hp, 125 VAC 1/4 hp, 250 VAC 1/3 hp, 250 VAC TV-5 600 W, 120 VAC (tungsten)
G6C-2114P-US G6C-2114C-US G6C-2117P-US G6C-2117C-US	SPST-NO + SPST-NC	3 to 60 VDC	8 A, 250 VAC (general use) 8 A, 30 VDC (resistive load) 1/6 hp, 125 VAC 1/4 hp, 125 VAC 1/4 hp, 250 VAC TV-5 600 W, 120 VAC (tungsten)

VDE (Approval No. 2413) EN61810-1

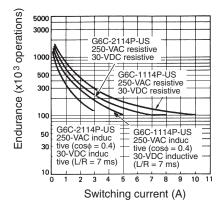
Model	Contact form	Coil rating	Contact rating	Number of test operations
G6C-1114P-US G6C-1114C-US G6C-1117P-US G6C-1117C-US	SPST-NO	3, 12, 24 VDC	10 A, 250 VAC ($\cos\phi = 1$) 5 A, 250 VAC ($\cos\phi = 0.4$)	100,000 operations
G6C-2114P-US G6C-2114C-US G6C-2117P-US G6C-2117C-US	SPST-NO + SPST-NC	Single-stable: 3, 5, 12, 24 VDC Latching: 5 VDC G6CU-2117P-VD: 3 VDC	7 A, 250 VAC $(\cos\phi = 1)$ 3.5 A, 250 VAC $(\cos\phi = 0.4)$	100,000 operations

Engineering Data

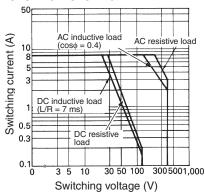
Maximum Switching Capacity SPST-NO



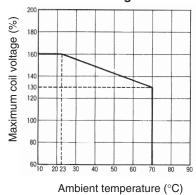
Service Life



SPST-NO + SPST-NC



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.

Dimensions

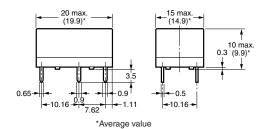
Note: 1. All units are in millimeters unless otherwise indicated.

2. Orientation mark is indicated as follows:

■ Non-latching

G6C-□117P-US





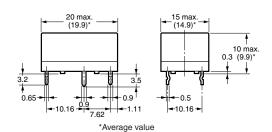
G6C-1117P-US, G6C-1117C-US G6C-1114P-US, G6C-1114C-US

Terminal Arrangement/Internal Connections (Bottom View)



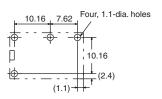
G6C-□117C-US





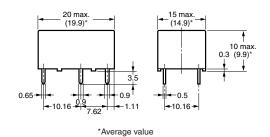
Mounting Holes (Bottom View)

Tolerance: ±0.1



G6C-U114P-US



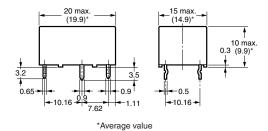


G6C-2117P-US, G6C-2117C-US G6C-2114P-US, G6C-2114C-US Terminal Arrangement/Internal Connections (Bottom View)



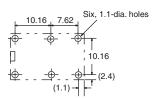
G6C-□114C-US





Mounting Holes (Bottom View)

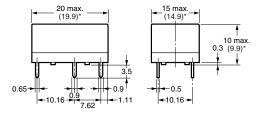
Tolerance: ±0.1



■ Single Coil Latching

G6CU-117P-US



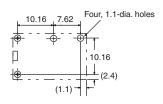


*Average value

G6CU-1117P-US, G6CU-1117C-US G6CU-1114P-US, G6CU-1114C-US **Terminal Arrangement/Internal** Connections (Bottom View)

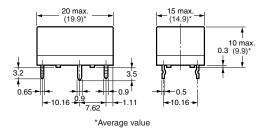


Mounting Holes (Bottom View)



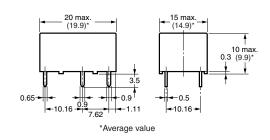
G6CU-U117C-US





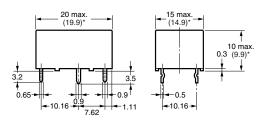
G6CU-1114P-US





G6CU-1114C-US





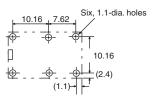
*Average value

G6CU-2117P-US, G6CU-2117C-US G6CU-2114P-US, G6CU-2114C-US

Terminal Arrangement/Internal Connections (Bottom View)



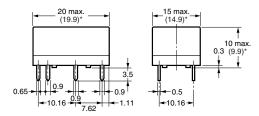
Mounting Holes (Bottom View)



■ Dual Coil Latching

G6CK-U117P-US





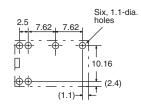
*Average value

G6CK-1117P-US, G6CK-1117C-US G6CK-1114P-US, G6CK-1114C-US Terminal Arrangement/Internal

Terminal Arrangement/Internal Connections (Bottom View)

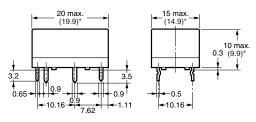


Mounting Holes (Bottom View)



G6CK-U117C-US

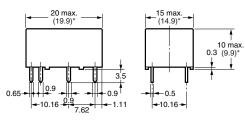




*Average value

G6CK-□114P-US





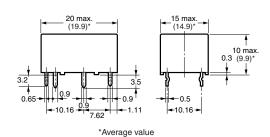
*Average value

G6CK-2117P-US, G6CK-2117C-US G6CK-2114P-US, G6CK-2114C-US Terminal Arrangement/Internal Connections (Bottom View)

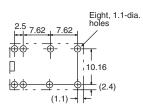


G6CK-U114C-US





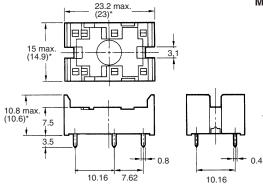
Mounting Holes (Bottom View)



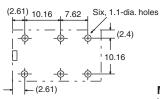
■ Accessories

Back Connecting Sockets P6C-06P

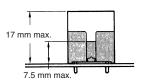




Mounting Holes (Bottom View)

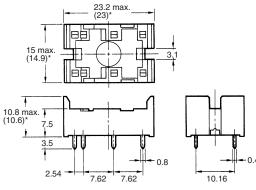


Mounting Height of Relay with Connecting Socket

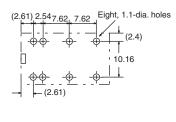


P6C-08P





Mounting Holes (Bottom View)

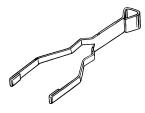


*Average value

*Average value

Note: Rated current of socket max. 5 A

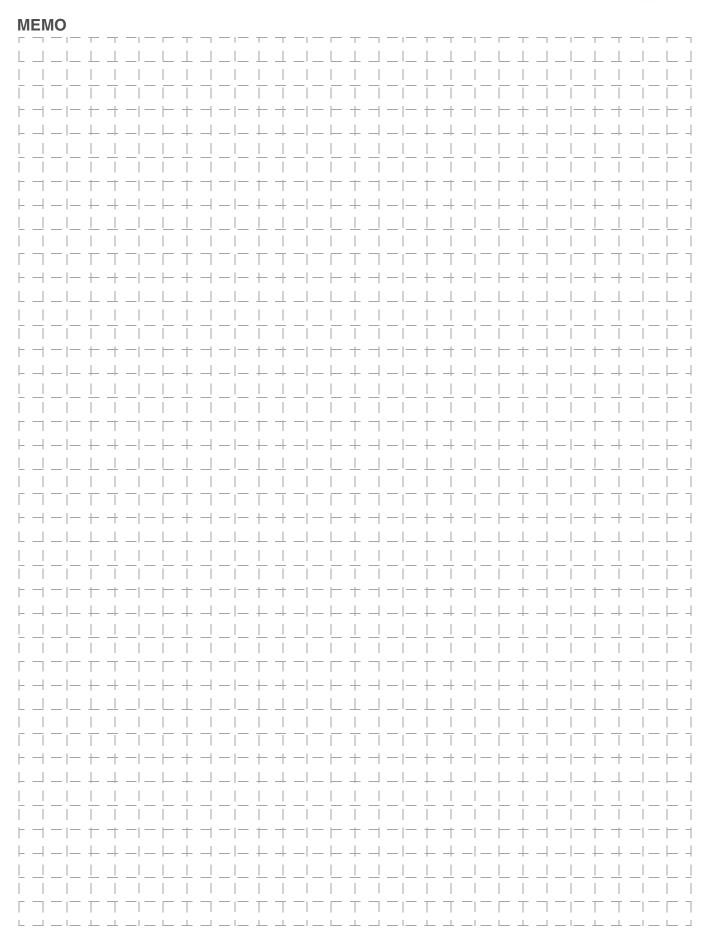
Removal Tool P6B-Y1



Hold-down Clips P6B-C2







Omron Electronic Components, LLC

Terms and Conditions of Sales

I. GENERAL

Definitions: The words used herein are defined as follows.

Terms: These terms and conditions

(b) Seller: Omron Electronic Components LLC and its subsidiaries

The buyer of Products, including any end user in section III through VI Buyer: (c)

Products: Products and/or services of Seller Including without limitation Including:

- 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
- Distributor: Any distributor shall inform its customer of the contents after and including section III of these Terms.

- 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.
- 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.
- 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. Orders: Seller will accept no order less than 200 U.S. dollars net billing.

- 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.
- Governmental Approvals: Buyer shall be responsible for all costs involved in obtaining any government approvals regarding 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 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.
- 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
- Cancellation; Etc: Orders are not subject to rescheduling or cancellation unless Buyer indemnifies Seller fully against all costs or expenses arising in connection therewith.
- 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.

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;

Delivery and shipping dates are estimates only; and

- 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

- 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 (E) MATERIALS OR SUBSTANCES OR (C) OPERATING ENVIRONMENT SYSTEM, (F) MATÉRIALS 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 <u>all</u> cases. Buyer must know and observe all prohibitions of use applicable to the Product/s.
- 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:
 - Outdoor use, use involving potential chemical contamination or electrical interference.

(b) Use in consumer Products or any use in significant quantities.

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.

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.

Motorized Vehicle Application: USE OF ANY PRODUCT/S FOR A MOTORIZED VEHICLE APPLICATION MUST BE EXPRESSLY STATED IN THE SPECIFICATION BY

SELLER.

<u>Programmable Products:</u> Seller shall not be responsible for the Buyer's programming of a programmable Product.

IV. WARRANTY AND LIMITATION

- 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.
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