

T5009 & T5009-6

Universal Tongue-Operated Safety Interlock Switch

- Strong and versatile—the compact size of the strong, glass-filled polyester housing and metal reinforced cam allows this popular switch to be used in most applications
- NEMA 6 enclosure enables these switches to withstand water washdown cleaning.
- Rotatable head gives four possible actuator entry points for versatile installation. A blanking plug is supplied for the unused entry.
- Small swing radius allows use on doors with a swing radius as small as 2.5 in. when using the optional flexible actuators
- Hi-Hold models reduce nuisance rips and allow the switch to also serve as the gate catch without the need to mount any additional hardware.
- The 4 contact poles provide 2 poles for dual channel safety monitoring and 2 additional poles for status monitoring
- Optional connector makes installation easy
- An optional stainless steel head is available
- A Rapid Delivery Product: Select models are available for shipment today or within 3 to 5 days



HI-HOLD
MODELS
AVAILABLE



Conforms to EN1088, EN292,
EN60947-5-1, EN60204-1
UL and C-UL listed

Specifications

Electrical	All Models	T5009	T5009-6
Contact Configurations:		2 N/C + 1 N/O	2 N/C + 2 N/O, 3 N/C + 1 N/O, 4 N/C
Safety Contacts:	2 N/C positive break		
Switching Ability	AC: 500 V–1 A, 240 V–3 A, 120 V–6 A DC: 250 V–0.5 A, 24 V–2.5 A		
Safety Contact Gap:	> 2 mm (0.079 in.)		
Auxiliary Contacts:		1 N/O	1 N/C + 1 N/O, 2 N/C, 2 N/O
Max Switching Current/Volt/Amp:	500 V/500 VA		
Minimum Current:	5 V 5 mA DC		
Electrical Life:	1 x 10 ⁶ minimum		
Mechanical			
Mounting:	Any position		
Mounting Hardware:	2 x M5 screws		
Actuator Travel for Positive Opening:	7 mm (0.275 in.)		
Min Operating Radius:	60 mm (2.5 in.) with Flex 1 actuator; 175 mm (6.89 in.) with standard actuator		
Break Contact Min Force:	12 N (2.7 lb.); Hi-Hold models are 50 N (11.2 lbs.)		
Max Actuation Speed:	160 mm/sec (6.30 in./sec)		
Max Actuation Frequency:	2 cycles/sec		
Case Material:	UL listed, glass-filled polyester, optional stainless steel head		
Actuator Material:	Stainless steel		
Wiring Entry:	M20 with 1/2 in. NPT adapter included, 1/2 in. NPT, 6-pin micro AC connector 1/2 in.–20		
Weight:	160 g (5.6 oz.)		
Color:	Red		
Mechanical Life:	1 x 10 ⁶ minimum		
Environmental			
Protection:	IP67 (NEMA 6)		
Operating Temperature:	-25 to 80°C (-13 to 176°F)		
Cleaning:	Water washdown		
Compliance			
Standards:	EN1088, EN292, EN60947-5-1, EN60204-1, UL508		
Approvals/Listings:	CE marked for all applicable directives, UL and C-UL		

Specifications are subject to change without notice.

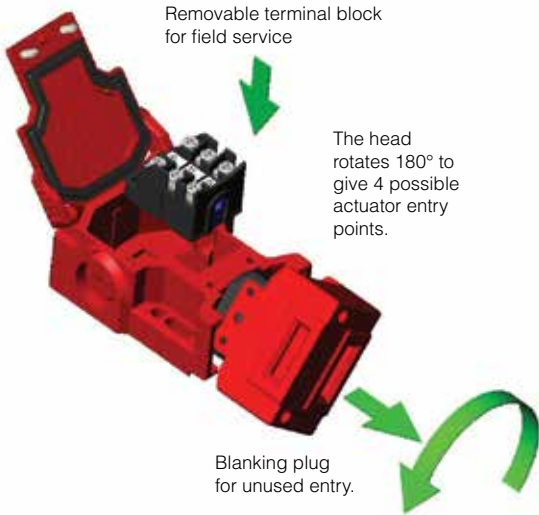
Note: The safety contacts of the STI switches are described as normally closed (N/C)—i.e., with the guard closed, actuator in place, and the machine able to be started.



Select models are available for Rapid Delivery.

Visit this product on www.sti.com for details..

Operation



Flex 1
15° flexibility in any direction.



Flex 2
15° flexibility in two directions.



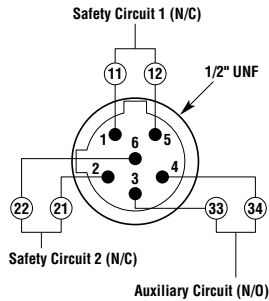
Optional SLD Series

Optional switch locking devices are available. See accessories section for details.

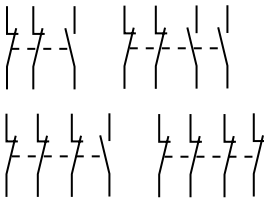


Optional Connector for 3-Pole Switches

6-Pin Male, Micro AC, 1/2-20 UN2A

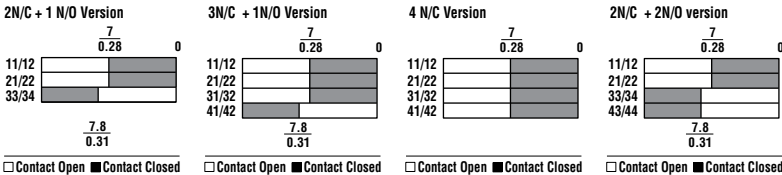


Contact Arrangements



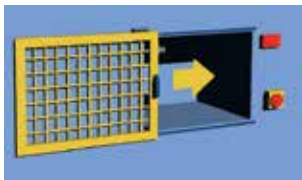
Minimum Allowable Radius for Actuator Entry				
44501-0755	175 mm	175 mm	175 mm	175 mm
44501-0785	175 mm	175 mm	175 mm	175 mm
44501-0790	175 mm	175 mm	175 mm	175 mm
44501-0765	175 mm	50 mm	60 mm	175 mm
44501-0760	60 mm	60 mm	60 mm	60 mm

Contact Block Operation at Withdrawal of Actuator

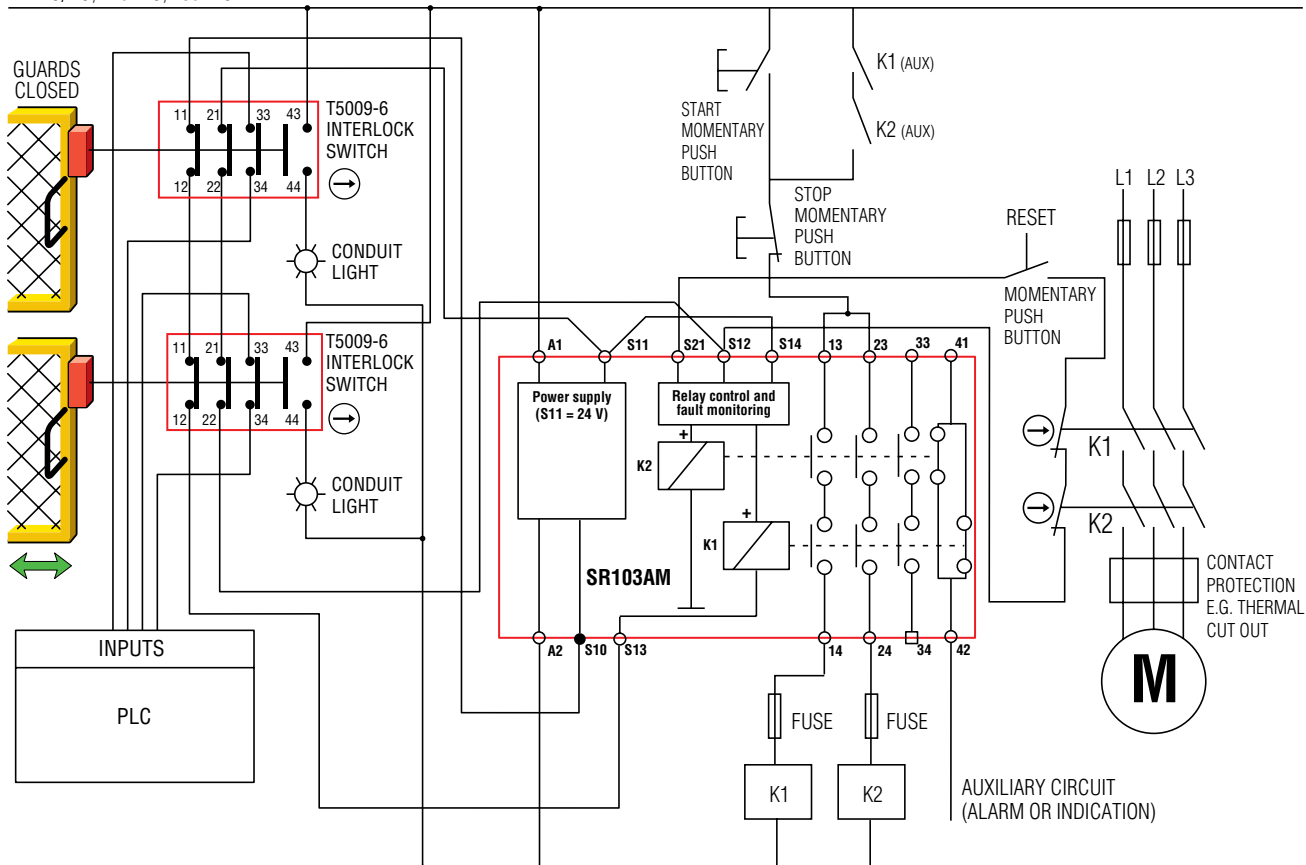


Applications

Typical applications are on sliding guard doors or swinging guard doors with a 2.5 in. minimum swing radius when using the flexible actuators.



24VAC/DC, 110VAC, 230VAC



 For a full explanation of the circuit operating principle and fault detection, see "Common Circuit Examples" in the Expert Area Section of this catalog on page A-31

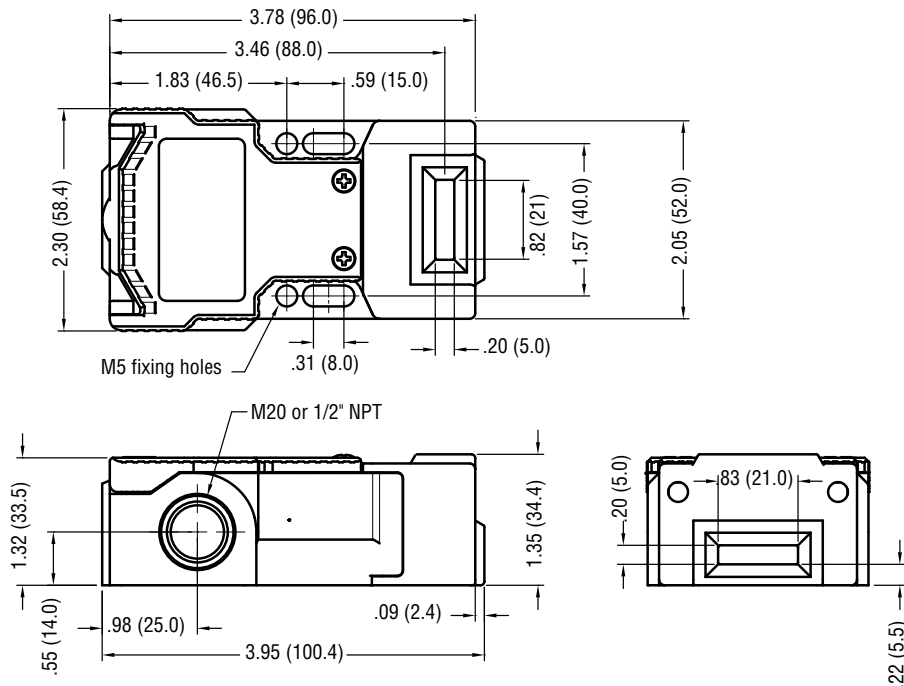
 Select models are available for Rapid Delivery.

Visit this product on www.sti.com for details..

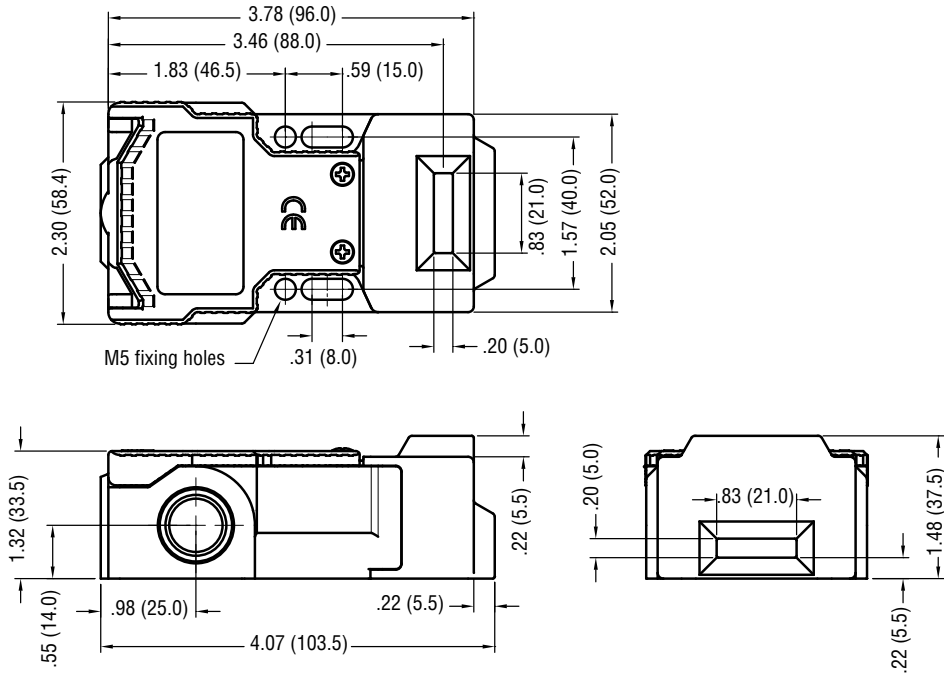
Dimensions

(mm/in.)

T5009, T5009-6 Switch with Plastic Head



T5009, T5009-6 Switch with Stainless Steel Head



 Select models are available for Rapid Delivery.

Visit this product on www.sti.com for details..

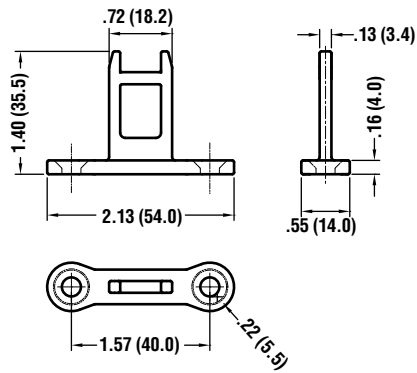
Dimensions (continued)

(mm/in.)

Standard & Flat Actuator Selections

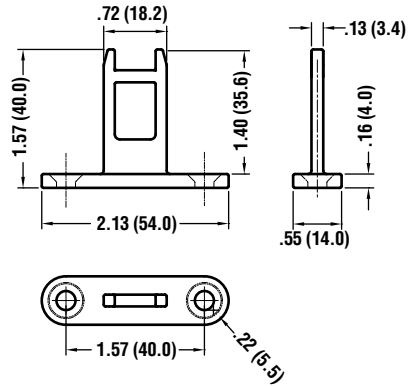
SA01-STD

44501-0755 (for use with plastic headed switches)



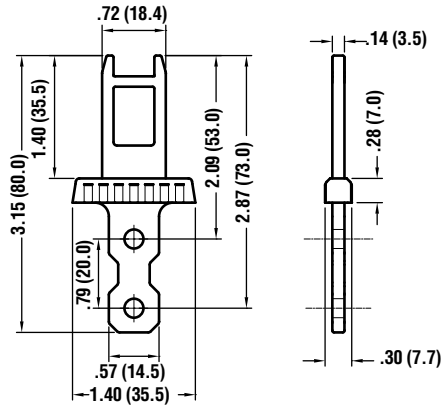
SA01-SSTD

44501-0785 (for use with stainless steel headed switches)



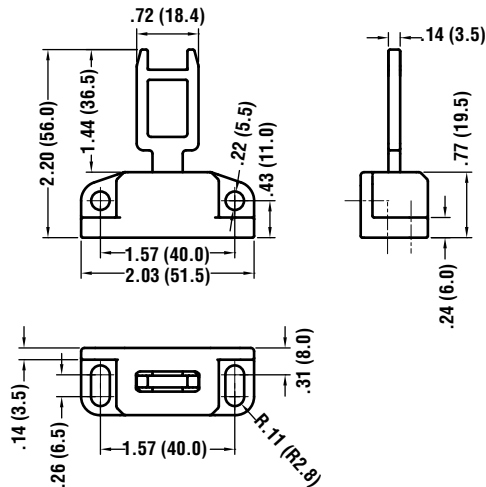
SA01-FSTD

44501-0790 (for use with plastic or stainless steel headed switches)



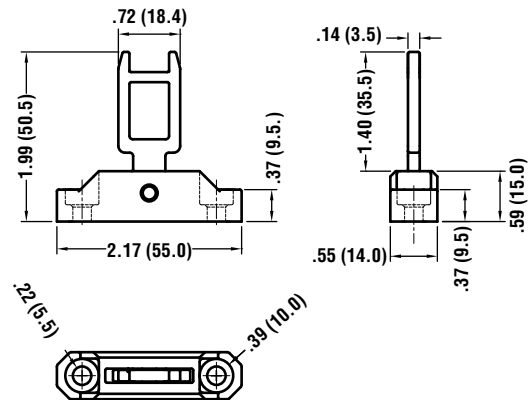
SA01-FLX1

44501-0760 (for use with plastic or stainless steel headed switches)



SA01-FLX2

44501-0765 (for use with plastic or stainless steel headed switches)



Select models are available for Rapid Delivery.

Visit this product on www.sti.com for details..

Ordering

Model	Contacts	Wiring Entry	Part No.
T5009 Switch Only			
T5009-021M	2NC+1NO BBM	3 x M20/NPT	44501-0010
T5009-021MHH (High-Hold Model)	2NC+1NO BBM	3 x M20/NPT	44501-5010
T5009-021N	2NC+1NO BBM	3 X 1/2 NPT	44501-0020
T5009-021NHH (High-Hold Model)	2NC+1NO BBM	3 x 1/2 NPT	44501-5020
T5009-021QD	2NC+1NO BBM	6-pin Micro AC Conn.	44501-0030
T5009-021QDHH (High-Hold Model)	2NC+1NO BBM	6-pin Micro AC Conn.	44501-5030
T5009-021SSM (Stainless Steel Head)	2NC+1NO BBM	3 x M20/NPT	44501-0040
T5009-021SSMHH (Stainless Steel Head, High-Hold Model)	2NC+1NO BBM	3 x M20/NPT	44501-5040
T5009-021SSN (Stainless Steel Head)	2NC+1NO BBM	3 X 1/2 NPT	44501-0050
T5009-021SSNHH (Stainless Steel Head, High-Hold Model)	2NC+1NO BBM	3 x 1/2 NPT	44501-5050
T5009-021SSCC (Stainless Steel Head)	2NC+1NO BBM	6-pin Micro AC Conn.	44501-0060
T5009-021SSCCHH (Stainless Steel Head, High-Hold Model)	2NC+1NO BBM	6-pin Micro AC Conn.	44501-5060
T5009 Standard Actuator			
T5009-021SM	2NC+1NO BBM	3 x M20/NPT	44501-0110
T5009-021SMHH (High-Hold Model)	2NC+1NO BBM	3 x M20/NPT	44501-5110
T5009-021SN	2NC+1NO BBM	3 X 1/2 NPT	44501-0450
T5009-021SCC	2NC+1NO BBM	6-pin Micro AC Conn.	44501-0410
T5009-021FSSM (Stainless Steel Head)	2NC+1NO BBM	3 x M20/NPT	44501-0500
T5009-021FSSN (Stainless Steel Head)	2NC+1NO BBM	3 X 1/2 NPT	44501-0520
T5009 Flex 1 Actuator			
T5009-021F1M	2NC+1NO BBM	3 x M20/NPT	44501-0120
T5009-021F1MHH (High-Hold Model)	2NC+1NO	3 x M20/NPT	44501-5120
T5009-021F1N	2NC+1NO BBM	3 X 1/2 NPT	44501-0170
T5009 Flex 2 Actuator			
T5009-021F2M	2NC+1NO BBM	3 x M20/NPT	44501-0440
T5009-021F2N	2NC+1NO BBM	3 X 1/2 NPT	44501-0470
T5009-6 Switch Only			
T5009-6022M	2NC+2NO BBM	3 x M20/NPT	44501-1020
T5009-6022N	2NC+2NO BBM	3 X 1/2 NPT	44501-1025
T5009-6031M	3NC+1NO BBM	3 x M20/NPT	44501-1030
T5009-6031N	3NC+1NO BBM	3 X 1/2 NPT	44501-1035
T5009-6040M	4NC BBM	3 x M20/NPT	44501-1040
T5009-6040N	4NC BBM	3 X 1/2 NPT	44501-1045
T5009-6022SSM (Stainless Steel Head)	2NC+2NO BBM	3 x M20/NPT	44501-2020
T5009-6022SSN (Stainless Steel Head)	2NC+2NO BBM	3 X 1/2 NPT	44501-2025
T5009-6031SSM (Stainless Steel Head)	3NC+1NO BBM	3 x M20/NPT	44501-2030
T5009-6031SSN (Stainless Steel Head)	3NC+1NO BBM	3 X 1/2 NPT	44501-2035
T5009-6040SSM (Stainless Steel Head)	4NC BBM	3 x M20/NPT	44501-2040
T5009-6040SSN (Stainless Steel Head)	4NC BBM	3 X 1/2 NPT	44501-2045
T5009-6 Standard Actuator			
T5009-6022SM	2NC+2NO BBM	3 x M20/NPT	44501-3020
T5009-6022SN	2NC+2NO BBM	3 X 1/2 NPT	44501-3025
T5009-6031SM	3NC+1NO BBM	3 x M20/NPT	44501-3030
T5009-6031SN	3NC+1NO BBM	3 X 1/2 NPT	44501-3035
T5009-6040SM	4NC BBM	3 x M20/NPT	44501-3040
T5009-6040SN	4NC BBM	3 X 1/2 NPT	44501-3045
Actuators For Plastic Headed T5009, T5009-6 Switches			
SA01-STD, Standard Actuator T5009, T5009-6, Plastic Head Switches			44501-0755
Actuators For Stainless Steel Headed T5009, T5009-6 Switches			
SA01-SSTD, Standard Actuator for T5009, T5009-6 Stainless Steel Head Switches			44501-0785
Actuators Compatible with both Plastic and Stainless Steel Headed T5009, T5009-6 Switches			
SA01-FLX1, Flex 1 Actuator T5009, T5009-6, Plastic or SS Headed Switches			44501-0760
SA01-FSTD, Flat Actuator T5009, T5009-6, Plastic or SS Headed Switches			44501-0790
SA01-FLX2, Flex 2 Actuator T5009, T5009-6, Plastic Head Switches			44501-0765
Accessories			
Spare M20 to 1/2" NPT Adapter			44512-0110
M20 Cord Grip			44512-0090

BBM = Break Before Make Contacts

 **Select models are available for Rapid Delivery.**
Visit this product on www.sti.com for details..

For information on Accessories, including Conduit Lights and Cables with Mating Connectors, see page G-209.

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 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.
- 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 stated terms.
- 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 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.
- Cancellation; Etc.** Orders are not subject to rescheduling or cancellation unless Buyer indemnifies Omron against all related costs or expenses.
- 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.
- Shipping; Delivery.** Unless otherwise expressly agreed in writing by Omron:
 - Shipments shall be by a carrier selected by Omron; Omron will not drop ship except in "break down" situations.
 - Such carrier shall act as the agent of Buyer and delivery to such carrier shall constitute delivery to Buyer;
 - 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;
 - Delivery and shipping dates are estimates only; and
 - Omron will package Products as it deems proper for protection against normal handling and extra charges apply to special conditions.
- 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 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) **Limitations.** OMRON MAKES NO WARRANTY OR REPRESENTATION, EXPRESS OR IMPLIED, ABOUT NON-INFRINGEMENT, MERCHANTABILITY

OR FITNESS FOR A PARTICULAR PURPOSE OF THE PRODUCTS. BUYER ACKNOWLEDGES THAT IT ALONE HAS DETERMINED THAT THE PRODUCTS WILL SUITABLY MEET THE REQUIREMENTS OF THEIR INTENDED USE. Omron further disclaims all warranties and responsibility of any type for claims or expenses based on infringement by the Products or otherwise of any intellectual property right. (c) **Buyer Remedy.** Omron's sole obligation hereunder shall be, at Omron's election, to (i) replace (in the form originally shipped with Buyer responsible for labor charges for removal or replacement thereof) the non-complying Product, (ii) repair the non-complying Product, or (iii) repay or credit Buyer an amount equal to the purchase price of the non-complying Product; provided that in no event shall Omron be responsible for warranty, repair, indemnity or any other claims or expenses regarding the Products unless Omron's analysis confirms that the Products were properly 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 Omron before shipment. Omron Companies shall not be liable for the suitability or unsuitability or the results from the use of Products 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 construed as an amendment or addition to the above warranty. See <http://www.omron247.com> or contact your Omron representative for published information.

- Limitation on Liability; Etc.** OMRON COMPANIES 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 Omron Companies exceed the individual price of the Product on which liability is asserted.
- Indemnities.** Buyer shall indemnify and hold harmless Omron Companies and their 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 Omron 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. Without limiting the foregoing, Buyer (at its own expense) shall indemnify and hold harmless Omron and defend or settle any action brought against such Companies to the extent based on a claim that any Product made to Buyer specifications infringed intellectual property rights of another party.
- Property; Confidentiality.** Any intellectual property in the Products is the exclusive property of Omron Companies and Buyer shall not attempt to duplicate it in any way without the written permission of Omron. Notwithstanding any charges to Buyer for engineering or tooling, all engineering and tooling shall remain the exclusive property of Omron. All information and materials supplied by Omron 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.
- Export Controls.** Buyer shall comply with all applicable laws, regulations and licenses regarding (i) export of products or information; (iii) sale of products to "forbidden" or other proscribed persons; and (ii) disclosure to non-citizens of regulated technology or information.
- 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 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) **Definitions.** As used herein, "including" means "including without limitation"; and "Omron Companies" (or similar words) mean Omron Corporation and any direct or indirect subsidiary or affiliate thereof.

Certain Precautions on Specifications and Use

- 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 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:
 - Outdoor use, uses involving potential chemical contamination or electrical interference, or conditions or uses not described in this document.
 - 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.
 - 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 OR IN LARGE QUANTITIES WITHOUT ENSURING THAT THE SYSTEM AS A WHOLE HAS BEEN DESIGNED TO

ADDRESS THE RISKS, AND THAT THE OMRON'S PRODUCT IS PROPERLY RATED AND INSTALLED FOR THE INTENDED USE WITHIN THE OVERALL EQUIPMENT OR SYSTEM.

- Programmable Products.** Omron Companies shall not be responsible for the user's programming of a programmable Product, or any consequence thereof.
- Performance Data.** Data presented in Omron Company websites, catalogs and other materials is provided as a guide for the user in determining suitability and does not constitute a warranty. It may represent the result of Omron's test conditions, and the user must correlate it to actual application requirements. Actual performance is subject to the Omron's Warranty and Limitations of Liability.
- Change in Specifications.** Product specifications and accessories may be changed at any time based on improvements and other reasons. It is our practice to change part numbers when published ratings or features are changed, or when significant construction changes are made. However, some specifications of the Product 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 Omron's representative at any time to confirm actual specifications of purchased Product.
- Errors and Omissions.** Information presented by Omron Companies has been checked and is believed to be accurate; however, no responsibility is assumed for clerical, typographical or proofreading errors or omissions.

OMRON AUTOMATION AND SAFETY • THE AMERICAS HEADQUARTERS • Chicago, IL USA • 847.843.7900 • 800.556.6766 • www.omron247.com

OMRON CANADA, INC. • HEAD OFFICE

Toronto, ON, Canada • 416.286.6465 • 866.986.6766 • www.omron247.com

OMRON ELECTRONICS DE MEXICO • HEAD OFFICE

México DF • 52.55.59.01.43.00 • 01-800-226-6766 • mela@omron.com

OMRON ELECTRONICS DE MEXICO • SALES OFFICE

Apodaca, N.L. • 52.81.11.56.99.20 • 01-800-226-6766 • mela@omron.com

OMRON ELETRÔNICA DO BRASIL LTDA • HEAD OFFICE

São Paulo, SP, Brasil • 55.11.2101.6300 • www.omron.com.br

OMRON ARGENTINA • SALES OFFICE

Cono Sur • 54.11.4783.5300

OMRON CHILE • SALES OFFICE

Santiago • 56.9.9917.3920

OTHER OMRON LATIN AMERICA SALES

54.11.4783.5300

OMRON EUROPE B.V. • Wegalaan 67-69, NL-2132 JD, Hoofddorp, The Netherlands. • +31 (0) 23 568 13 00 • www.industrial.omron.eu

Authorized Distributor:

Automation Control Systems

- Machine Automation Controllers (MAC) • Programmable Controllers (PLC)
- Operator interfaces (HMI) • Distributed I/O • Software

Drives & Motion Controls

- Servo & AC Drives • Motion Controllers & Encoders

Temperature & Process Controllers

- Single and Multi-loop Controllers

Sensors & Vision

- Proximity Sensors • Photoelectric Sensors • Fiber-Optic Sensors
- Amplified Photomicrosensors • Measurement Sensors
- Ultrasonic Sensors • Vision Sensors

Industrial Components

- RFID/Code Readers • Relays • Pushbuttons & Indicators
- Limit and Basic Switches • Timers • Counters • Metering Devices
- Power Supplies

Safety

- Laser Scanners • Safety Mats • Edges and Bumpers • Programmable Safety Controllers • Light Curtains • Safety Relays • Safety Interlock Switches