

Small Safety Limit Switch D4F

The Smallest Safety Limit Switch Ever Produced For Small-scale Machinery Equipment



- A noticeable reduction to 1/4 the size of Omron's conventional model.
- High-sensitivity, requires only 6 degrees to respond.
- Built-in switches with two- or four-contact construction are available.
- Degree of protection: IP67 (EN60947-5-1).



Ordering Information

■ List of Models

Stock Note: Shaded items are normally stocked.

Actuator	Cable length	Cable direction	Built-in switch			
			1NC/1NO (slow-action)	2NC (slow-action)	2NC/2NO (slow-action)	4NC (slow-action)
Roller lever (Metallic lever, resin roller) 	3 m	Horizontal	D4F-120-3R	D4F-220-3R	D4F-320-3R	D4F-420-3R
Roller plunger (Metallic roller) 	3 m	Horizontal	D4F-102-3R	D4F-202-3R	D4F-302-3R	D4F-402-3R

■ Model Number Legend

D4F-□□-□□
 1 2 3 4

1. Built-in Switch

- 1: 1NC/1NO (slow-action)
- 2: 2NC (slow-action)
- 3: 2NC/2NO (slow-action)
- 4: 4NC (slow-action)

2. Actuator

- 02: Roller plunger
(Metallic roller)
- 20: Roller lever
(Metallic lever, resin roller)

3. Cable Length

- 1: 1 m
- 3: 3 m
- 5: 5 m

4. Pull-out direction of cable

- R: Horizontal
- D: Vertical

Specifications

■ Standards and EC Directives

Conforms to the Following EC Directives

- Machinery Directive
- Low Voltage Directive
- EN60204-1
- EN1088
- EN50047
- EN81
- EN115
- GS-ET-15
- JIS C 8201-5-1

Approved Standards

Agency	Standards	File No.
TÜV Product Service	EN60947-5-1 (Direct opening: approved)	(See note 1)
UL (See note 2)	UL508 CSA C22.2 No. 14	E76675

- Note:** 1. Contact your Omron sales representative.
 2. Approval has been obtained for CSA C22.2 No. 14 under UL.

■ Approved Standard Ratings

TÜV (EN60947-5-1)

Item	Utilization category	AC-15	DC-13
Rated operating current (Ie)		0.75 A	0.27 A
Rated operating voltage (Ue)		240 V	250 V

Note: Use a 10-A fuse type gI or gG that conforms to IEC269 as a short-circuit protection device.

UL/CSA (UL508, CSA C22.2 No. 14)

C300

Rated voltage	Carry current	Current		Volt-amperes	
		Make	Break	Make	Break
120 VAC	2.5 A	15 A	1.5 A	1,800 VA	180 VA
240 VAC		7.5 A	0.75 A		

Q300

Rated voltage	Carry current	Current		Volt-amperes	
		Make	Break	Make	Break
125 VAC	2.5 A	0.55 A	0.55 A	69 VA	69 VA
250 VAC		0.27 A	0.27 A		

■ Characteristics

Degree of protection (See note 1)		IP67 (EN60947-5-1)
Durability (See note 2)		Mechanical: 10,000,000 times min. Electrical: 1,000,000 times min. (4-mA resistive load at 24 VDC, 4 circuits) 150,000 times min. (1-A resistive load at 125 VAC, 2 circuits/4-mA resistive load at 24 VDC, 2 circuits) (See note 3)
Operating speed		1 mm to 0.5 m/s
Operating frequency		Mechanical: 120 operations/minute Electrical: 30 operations/minute
Insulation resistance		100 M Ω min. (at 500 VDC) between terminals of the same polarities, between terminals of different polarities, between current-carrying metal parts and grounds, and between each terminal and non-current carrying metal parts
Minimum applicable load (See note 4)		4-mA resistive load at 24 VDC, 4 circuits (Level N reference value)
Contact resistance (See note 5)		300 m Ω max. (initial value with 1-m cable), 500 m Ω max. (initial value with 3-m cable), 700 m Ω max. (initial value with 5-m cable)
Dielectric strength		Between terminals of same polarities: Uimp 2.5 kV (EN60947-5-1) Between terminals of different polarities: Uimp 4 kV (EN60947-5-1) Between current-carrying metal parts and grounds: Uimp 4 kV (EN60947-5-1) Between each terminal and non-current carrying metal parts: Uimp 4 kV (EN60947-5-1)
Conditional short-circuit current		100 A (EN60947-5-1)
Pollution degree (operating environment)		3 (EN60947-5-1)
Conventional free air-thermal current (Ith)		2.5 A (EN60947-5-1)
Protection against electric shock		Class I (with a ground wire)
Vibration resistance	Malfunction	10 to 55 Hz, 0.75-mm single amplitude
Shock resistance	Destruction	1,000 m/s ² min.
	Malfunction	300 m/s ² min.
Ambient temperature		Operating: -30°C to 70°C (with no icing)
Ambient humidity		Operating: 95% max.
Cable		UL2464 No. 22 AWG, finishing O.D.: 8.3 mm
Weight		Approx. 190 g (D4F-102-1R, with 1-m cable) Approx. 220 g (D4F-120-1R, with 1-m cable)

- Note:** 1. The degree of protection shown above is based on the test method specified in EN60947-5-1. Be sure to confirm in advance the sealing performance under the actual operating environment and conditions.
2. Durability values are calculated at an operating temperature of 5°C to 35°C, and an operating humidity of 40% to 70%. Contact your Omron sales representative for more detailed information on other operating environments.
3. When the ambient temperature is 35°C or higher, do not apply 1 A at 125 VAC to more than two circuits.
4. The value will vary depending on factors such as the switching frequency, the ambient environment, and the reliability level. Be sure to confirm correct operation with the actual load before application.
5. The contact resistance was measured with 0.1 A at 5 to 8 VDC with a fall-of-potential method.

■ Operating Characteristics

Slow-action (1NC/1NO, 2NC, 2NC/NO and 4NC)

Operating Characteristics	Model	D4F-□20-□R D4F-□20-□D	D4F-□02-□R D4F-□02-□R
Operating force max.: OF (See note 1)	5 N	12 N	
Release force min.: RF (See note 2)	0.5 N	1.5 N	
Pretravel: PT1 (11-12 and 21-22) PT1 (31-32 and 41-42) PT2 (See note 3)	6±3° (NC) 9±3° (NC) (12°) (NO)	1 mm max. (NC) 1.3 mm max. (NC) (1.2 mm) (NO)	
Overtravel min.: OT	40°	3.2 mm	
Operating position: OP (11-12 and 21-22) OP (31-32 and 41-42)	-- --	29.4±1 mm 29±1 mm	
Total travel: TT (See note 3)	(55°)	(4.5 mm)	
Min. direct opening travel: DOT (See note 4)	18°	1.8 mm	
Min. direct opening force: DOF	20 N	20 N	

- Note:** 1. The OF value is the maximum load that opens an NC contact (11-12, 21-22, 31-32, 41, 42).
 2. The RF value is the minimum load that closes an NC contact (11-12, 21-22, 31-32, 41-42).
 3. The PT2 and TT values are reference values.
 4. The D4F is used in accordance with EN81 and EN115 at a minimum DOT of 30° and 2.8 mm.

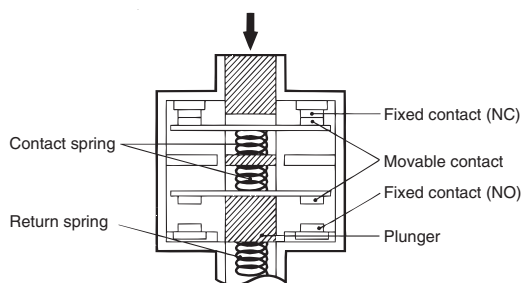
Operation

■ Contact Form

Contact	Diagram	Remarks	Model
1NC/1NO (slow-action)		Only NC contact 11-12 has an approved direct opening mechanism. The terminals 11-12 and 33-34 can be used as unlike poles.	D4F-1□-□□
2NC (slow-action)		NC contacts 11-12 and 21-22 have an approved direct opening mechanism. The terminals 11-12 and 21-22 can be used as unlike poles.	D4F-2□-□□
2NC/2NO (slow-action)		NC contacts 11-12 and 21-22 have an approved direct opening mechanism. The terminals 11-12, 21-22, 33-34 and 43-44 can be used as unlike poles.	D4F-3□-□□
4NC (slow-action)		NC contacts 11-12, 21-22, 31-32 and 41-42 have an approved direct opening mechanism. The terminals 11-12, 21-22, 31-32 and 41-42 can be used as unlike poles.	D4F-4□-□□

■ Direct Opening Mechanism

1NC/1NO Contact (slow-action)



Note: Conforms to EN60947-5-1 Direct Opening.
(Only the NC contacts have a direct opening function).
When metal weld occurs, the NC contacts are separated from each other by pushing in the plunger.



Nomenclature

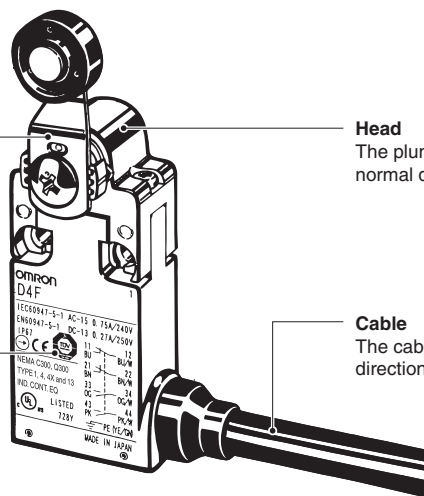


Improved safety of the lever-setting (Form lock configuration). Many grooves are incised on the lever and the rotating shaft that mesh with each other to prevent a slip between the lever and the rotating shaft.
The lever can be set for positioning in steps of 9 degrees.

The lever can be set for positioning in steps of 9 degrees.

Built-in Switch

Has a direct opening mechanism separating the contacts when the NC contacts are welded.



- Head

The plunger type of actuator can be used in a normal direction and reverse direction.

- **Cable**

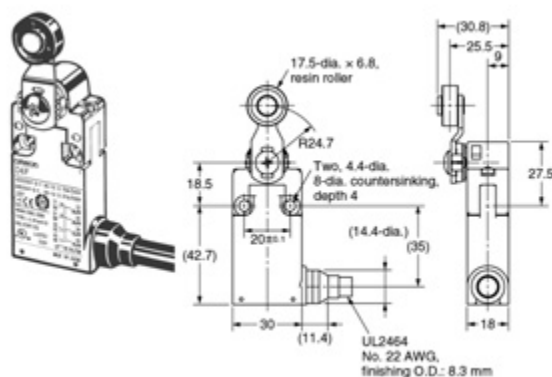
The cable can be pulled out in a horizontal direction or in a vertical direction.

Dimensions

Unit: mm

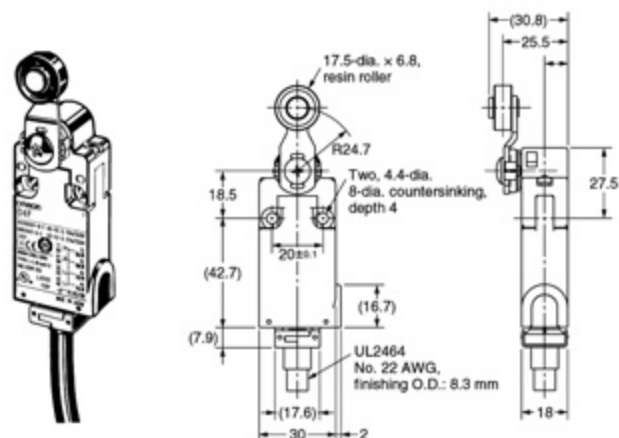
■ Roller Lever (metallic lever, resin roller)

D4F-□20-□R



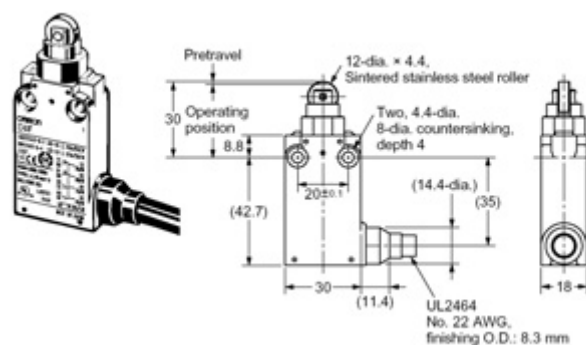
■ Roller lever (metallic lever resin roller)

D4F-□20-□D



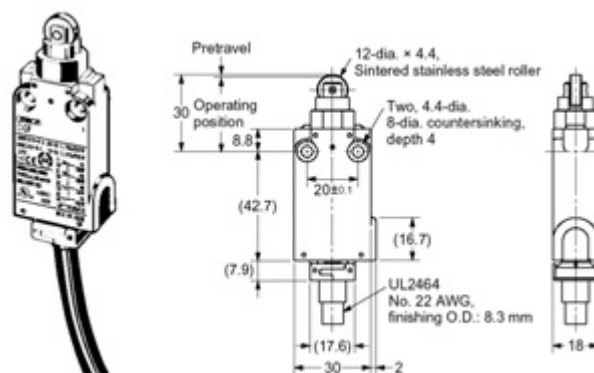
■ Roller plunger (metallic roller)

D4F-□02-□R



■ Roller plunger (metallic roller)

D4F-□02-□D



Precautions

■ Notice

Be sure to connect a ground line, otherwise an electric shock may occur.

If the D4F is to be used as a switch in an emergency stop circuit or in a safety circuit for preventing accidents resulting in injuries or deaths, use NC contacts with a forced release mechanism and set the D4F so that it will operate in direct opening mode. For safety, install the switch using one-way rotational screws or other similar means to prevent it from easily coming off. Protect the D4F with an appropriate cover and post a warning sign near the D4F.

To prevent the D4F from damage due to circuit short-circuiting, connect a fuse with a breaking current 1.5 to 2 times larger than the rated current of the D4F in series to the D4F.

If the D4F is used under EN-approved conditions, use a gl or gG 10-A fuse approved by IEC269.

Actuation of the switch over a long time may deteriorate parts of the switch and a return failure may result. Be sure to check the condition of the switch regularly.

Do not supply electric power when wiring.

Do not use the switch where explosive gas, flammable gas, or any other dangerous gas may be present.

Keep the electrical load below the rated value.

Never wire to a wrong terminal.

Be sure to evaluate the switch under actual working conditions after installation.

Do not drop or disassemble the D4F.

Do not use in closely contacted mounting.

Do not use the switch as a stopper.

Conduct periodic inspections.

Do not use it in an activating circuit. (Use it as a safety signal).

Contacts of the D4F can be used both for ordinary load and microload; however, once the contact is opened or closed with an ordinary load, it cannot be used for a load smaller than that. The contact surface may be rough, which impairs the reliability of contacting.

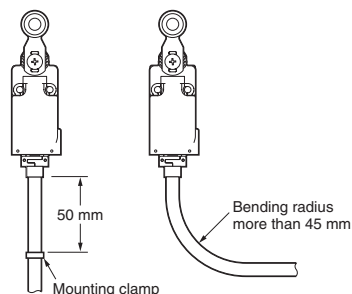
Handling of Cables

Cables cannot be flexed repeatedly.

The cable is fixed with sealing materials on the bottom of the switch. When excessive force may be imposed on the cable, fasten the cable with a mounting clamp at a distance of 50 mm from the bottom of the switch as shown.

Do not pull or press the cable at an excessive force (50 N max.)

When bending the cable, secure the cable with more than 45-mm bending radius so as not to cause damage to the insulator or sheath of the cable. Doing so may result in current leakage or burning.



Note: When wiring, be sure to prevent penetration of a liquid such as water or oil through the cable end.

Operating Environment

Keep the D4F away from oil and water, as these may enter the casing. (Though the switch construction complies with IP67 and prevents immersion of water even when held in water for a specified time, its use is not guaranteed when it is immersed in a liquid).

Make sure in advance that the environment is suitable, with the presence of oil, water, or chemicals, as these may cause the seal to deteriorate, resulting in faulty contact, faulty isolation, current leakage, or burning.

Do not use the D4F in the following locations:

- Locations subject to corrosive gas
- Locations with severe changes in temperature
- Locations with excessive humidity that may cause condensation
- Locations with excessive vibration
- Locations that may be covered with processing chips or dust
- Locations subject to high temperature or excessive humidity

■ Correct Use

Operating Environment

The D4F is for indoor use only. Do not use the D4F outdoors. Otherwise, the D4F may malfunction.

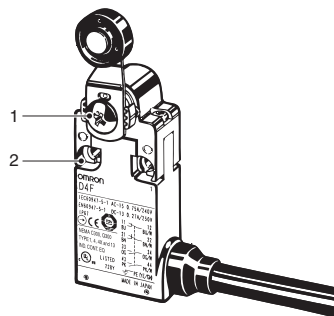
Durability

The life of the D4F will vary with the switching conditions. Before applying the D4F, test the D4F under actual operating conditions and be sure to use the D4F in actual operation within switching times that will not lower the performance of the D4F.

Tightening Torque

Be sure to tighten each screw of the D4F properly, otherwise the D4F may soon malfunction.

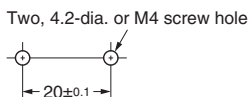
No.	Type	Proper tightening torque
1	Lever mounting screw (M5)	2.4 to 2.8 N-m
2	Body mounting screw (M4)	1.18 to 1.37 N-m



Mounting

Use two M4 screws and washers to mount the D4F securely. The D4F can be mounted more securely with proper tightening torque.

Mounting Holes (Unit: mm)



Changing the Lever Angle

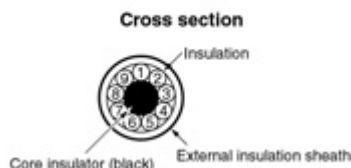
Unfasten the screw that holds the lever to set the position of the lever at any angle through 360° (in steps of 9°).

After unfastening the screws that hold the lever, mount the lever the other way (normal side or reverse side). Set an angle of the lever to complete adjustment within a range in which the lever does not touch the switch body.

Wiring

Identifying Wires

Identify wires according to the color (with or without white lines) of the insulation on the wire.



Wire Colors

No.	Color of Insulation	No.	Color of Insulation
1	Blue/white	6	Brown
2	Orange/white	7	Pink
3	Pink/white	8	Orange
4	Brown/white	9	Blue
5	Green/yellow		

Note: "Blue/white, orange/white, pink/white, or brown/white" means that the cover is blue, orange, pink, or brown with a white line.

Terminal Numbers

Identify terminal numbers based on the color (with or without white lines) of the insulation on the wire.

The safety and auxiliary contacts of D4F models of four-terminal contact construction and those of two-terminal contact construction are described below.

The safety contacts are direct-opening NC contacts (11-12 and 21-22); they are used for safety circuits, and each of them is indicated with the appropriate mark.



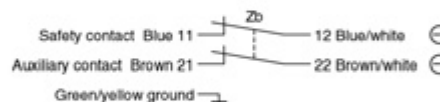
Auxiliary contacts are used to check (to monitor) the operating state of the switch, which are equivalent to NO contacts (33-34 and 43-44) or NC contacts (31-32 and 41-42).

The NC contacts 31-32 and 41-42 of auxiliary contacts (orange or pink) can be used as safety contacts

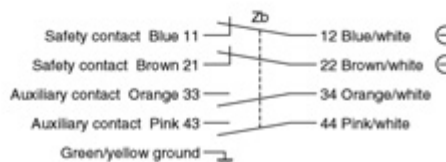
1NC/1NO contacts



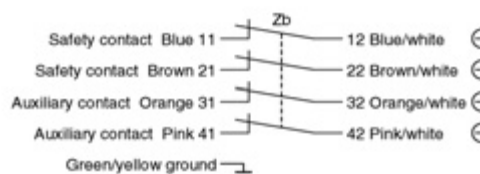
2NC contacts



2NC/2NO contacts



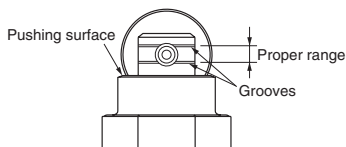
4NC contacts



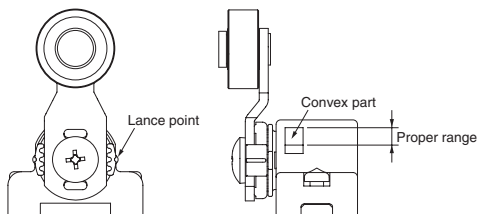
Cut the black core insulator and all unused wires at the end of the external insulation sheath when wiring the cable.

■ Operating

To set the plunger stroke correctly, press-fit the plunger until the top of the pushing surface comes between two grooves on the plunger.

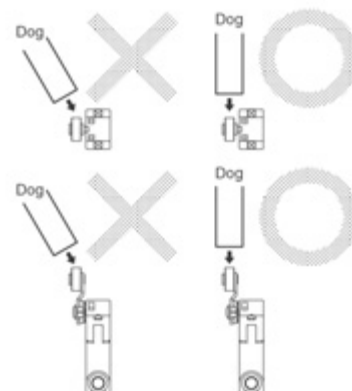


To set the roller lever stroke correctly, push the dog and cam until the lance point comes within the range of the convex part that is the correct setting position.



■ Others

Actuating the switch from an angle other than 90 degrees to the switch face may deform or damage the actuator, or deform or damage the rotary spindle, so make sure that the dog is straight.



Do not remove the head. Otherwise, a failure may occur.

To avoid telegraphing, take the following precautions.

1. Set the switch to operate in one direction.
2. Modify the rear end of the dog to an angle of 15° to 30° as shown below or to a secondary-degree curve.



3. Modify the circuit so as not to detect the wrong operating signals.

■ SI Units Conversion Table

To fully comply with international standards, this catalogue is based on the International System of Units (SI). Refer to the following table to convert conventional units.

(is non-SI unit.)

Acceleration	m/s ²	G			
	1	$1.01972 \cdot 10^{-1}$			
	9.80665	1			
Force	N	kgf			
	1	$1.01972 \cdot 10^{-1}$			
	9.80665	1			
Torque	N·m	kgf·cm	kgf·m		
	1	$1.01972 \cdot 10$	$1.01972 \cdot 10^{-1}$		
	$9.80665 \cdot 10^2$	1	$1 \cdot 10^{-2}$		
	9.80665	$1 \cdot 10^2$	1		
Pressure	Pa	kPa	kgf/cm ²	mmHg (Torr)	mmH ₂ O
	1	$1 \cdot 10^{-3}$	$1.01972 \cdot 10^{-5}$	$7.50062 \cdot 10^{-3}$	$1.01972 \cdot 10^{-1}$
	$1 \cdot 10^3$	1	$1.01972 \cdot 10^{-2}$	7.50062	$1.01972 \cdot 10^2$
	$9.80665 \cdot 10^4$	$9.80665 \cdot 10$	1	$7.35559 \cdot 10^2$	$1 \cdot 10^4$
	$1.33322 \cdot 10^2$	$1.33322 \cdot 10^{-1}$	$1.35951 \cdot 10^{-3}$	1	$1.35951 \cdot 10$

Certain Terms and Conditions of Sale

1. **Offer; Acceptance.** These terms and conditions (these "Terms") are deemed part of all catalogs, manuals or other documents, whether electronic or in writing, relating to the sale of goods or services (collectively, the "Goods") by Omron Electronics LLC and its subsidiary companies ("Seller"). 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.
2. **Prices.** All prices stated are current, subject to change without notice by Seller. Buyer agrees to pay the price in effect at time of shipment.
3. **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 Seller's payment terms and (ii) Buyer has no past due amounts owing to Seller.
4. **Orders.** Seller will accept no order less than \$200 net billing.
5. **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 Goods.
6. **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 Goods sold hereunder (including customs duties and sales, excise, use, turnover and license taxes) shall be charged to and remitted by Buyer to Seller.
7. **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 Goods sold hereunder and stop any Goods 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.
8. **Cancellation; Etc.** Orders are not subject to rescheduling or cancellation unless Buyer indemnifies Seller fully against all costs or expenses arising in connection therewith.
9. **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.
10. **Shipping; Delivery.** 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 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. **Claims.** 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.
12. **Warranties.** (a) **Exclusive Warranty.** 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 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, MERCHANTABILITY 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 otherwise of any intellectual property right. (c) **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 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 warranty, 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 construed as an amendment or addition to the above warranty.
13. **Damage Limits; Etc.** SELLER SHALL NOT BE LIABLE FOR SPECIAL, INDIRECT 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.
14. **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 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.
15. **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. 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 Goods are confidential and proprietary, and Buyer shall limit distribution thereof to its trusted employees and strictly prevent disclosure to any third party.
16. **Miscellaneous.** (a) **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. (b) **Assignment.** Buyer may not assign its rights hereunder without Seller's written consent. (c) **Amendment.** These Terms constitute the entire agreement between Buyer and Seller relating to the Goods, and no provision may be changed or waived unless in writing signed by the parties. (d) **Severability.** If any provision hereof is rendered ineffective or invalid, such provision shall not invalidate any other provision. (e) **Setoff.** Buyer shall have no right to set off any amounts against the amount owing in respect of this invoice. (f) As used herein, "including" means "including without limitation".

Certain Precautions on Specifications and Use

1. **Suitability of Use.** Seller shall not be responsible for conformity with any standards, 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.
 - (iii) Systems, machines and equipment that could present a risk to life or property. Please know and observe all prohibitions of use applicable to this Good.

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 SELLER'S PRODUCT IS PROPERLY RATED AND INSTALLED FOR THE INTENDED USE WITHIN THE OVERALL EQUIPMENT OR SYSTEM.
2. **Programmable Products.** Seller shall not be responsible for the user's programming of a programmable Good, or any consequence thereof.
3. **Performance Data.** Performance data given in this catalog is provided as a guide for the user in determining suitability and does not constitute a warranty. It may represent the result of Seller's test conditions, and the user must correlate it to actual application requirements. Actual performance is subject to the Seller's Warranty and Limitations of Liability.
4. **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 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 confirm actual specifications of purchased Good.
5. **Errors and Omissions.** The information in this catalog has been carefully checked and is believed to be accurate; however, no responsibility is assumed for clerical, typographical or proofreading errors, or omissions.

Complete "Terms and Conditions of Sale" for product purchase and use are on Omron's website at www.omron.com/oei – under the "About Us" tab, in the Legal Matters section.

ALL DIMENSIONS SHOWN ARE IN MILLIMETERS.

To convert millimeters into inches, multiply by 0.03937. To convert grams into ounces, multiply by 0.03527.



OMRON ELECTRONICS LLC

One Commerce Drive
Schaumburg, IL 60173

847-843-7900

For US technical support or other inquiries:

800-556-6766

OMRON CANADA, INC.

885 Milner Avenue
Toronto, Ontario M1B 5V8

416-286-6465

OMRON ON-LINE

Global - <http://www.omron.com>
USA - <http://www.omron.com/oei>
Canada - <http://www.omron.ca>