

Small Sealed Switch D4E-□N

Slim and Compact Switch with Better Seal and Ensuring Longer Service Life than D4E

- Flat springs with an improved lever ratio of the built-in switch ensure smooth snap action and long life expectancy.
- Protection cover protects the built-in switch from dust and oil. Plunger incorporates a tough seal cap that lasts for a long time.
- One touch connector eliminates need for tedious wiring operations and reduces downtime for wiring and maintenance (models with standard, easy-to-use screw terminals are also available).
- Minute load model with gold cladding is optimal for electronic control.
- Molded terminal types as well as molded terminal types with operating indicator lamps are available for screw terminal systems.
- No difference in mounting pitch and characteristics between D4E-□N and D4E models.
- Approved by EN, UL, CSA, and CCC (Chinese standard).



Model Number Structure

■ Model Number Legend

D4E-□□□□N
1 2 3 4

1. Rated Current

- 1: 5 A at 125 VAC
(1 A at 125 VAC/30 VDC for model with a connector)
- 2: 0.1 A at 125 VAC
(0.1 A at 125 VAC/30 VDC for model with a connector)

2. Actuator

- A: Roller plunger
B: Crossroller plunger
C: Plunger
D: Sealed roller plunger
E: Sealed crossroller plunger
F: Sealed plunger
G: Roller lever
H: One-way action roller lever

3. Terminals

- 00: AC connector
10: DC connector
20: Screw terminals without a cable
21: Screw terminals with a cable (right-hand)
22: Screw terminals with a cable (left-hand)
23: Molded terminals with a cable (right-hand)
24: Molded terminals with a cable (left-hand)
(Cable is S-FLEX VCTF 3 m)

4. Operation Indicator

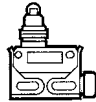
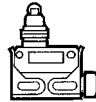
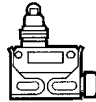
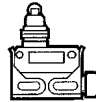
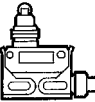
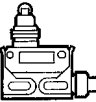








- None: Without operation indicator
L: Neon lamp (250 VAC)
L2: LED (24 VDC)

Note: 1. Only the molded terminal models can be equipped with an operation indicator.

2. Desired Switches may not be manufactured depending on the combination between molds and indicators. Contact our sales representative for further information.

Ordering Information

List of Models

Actuator	One-touch connector type		Screw terminal type			
	General-purpose	Micro load	General-purpose without cable	Micro load without cable	General-purpose with cable	Micro load with cable
						
Roller plunger 	D4E-1A□0N	D4E-2A□0N	D4E-1A20N (see note 2)	D4E-2A20N	D4E-1A21N	D4E-2A21N
Crossroller plunger 	D4E-1B□0N	D4E-2B□0N	D4E-1B20N (see note 2)	D4E-2B20N	D4E-1B21N	D4E-2B21N
Plunger 	D4E-1C□0N	D4E-2C□0N	D4E-1C20N (see note 2)	D4E-2C20N	D4E-1C21N	D4E-2C21N
Sealed roller plunger 	D4E-1D□0N	D4E-2D□0N	D4E-1D20N (see note 2)	D4E-2D20N	D4E-1D21N	D4E-2D21N
Sealed crossroller plunger 	D4E-1E□0N	---	D4E-1E20N (see note 2)	D4E-2E20N	D4E-1E21N	D4E-2E21N
Sealed plunger 	D4E-1F□0N	D4E-2F□0N	D4E-1F20N (see note 2)	D4E-2F20N	D4E-1F21N	D4E-2F21N
Roller lever 	D4E-1G□0N	D4E-2G□0N	D4E-1G20N (see note 2)	D4E-2G20N	D4E-1G21N	D4E-2G21N
One-way action roller lever 	D4E-1H□0N	D4E-2H□0N	D4E-1H20N (see note 2)	D4E-2H20N	D4E-1H21N	D4E-2H21N

- Note:** 1. When ordering, specify the current type by replacing the blank box of the model number with 0 for AC connector or 1 for DC connector.
 2. Approved by UL and CSA.
 3. For the plunger and lever actuator models, the NC and NO terminal indicators are reversed.

Accessories (Order Separately)

Plug

Model	Current	Type	No. of conductors	Cable length	Applicable models
XS2F-A421-D90-A	AC	Straight	4	2 m	D4E-□□00N
XS2F-A421-G90-A				5 m	
XS2F-D421-D80A	DC			2 m	D4E-□□10N
XS2F-D421-G80-A				5 m	

Specifications

■ Approved Standards

Agency	Standard	File No.	Approved models
UL	UL508	E76675	D4E-□□20N Switches only except for Indicator-equipped Switches
CSA	CSA C22.2 No. 14	LR45746	D4E-□□20N Switches only except for Indicator-equipped Switches
TÜV Rheinland	EN60947-5-1	R9551015	All models in the table on page 139 (Ask your OMRON representative about other models.)
CCC (CQC)	GB14048.5	2003010305086795	Ask your OMRON representative for information on approved models.

■ Approved Standard Ratings

UL, CSA

A300

Voltage	Carry current	Current		Volt-amperes	
		Make	Break	Make	Break
120 V	10 A	60 A	6 A	7,200 VA	720 VA
240 V		30 A	3 A		

TÜV (EN60947-5-1), CCC (GB14048.5)

D4E- $\frac{1}{I}$ $\frac{G}{II}$ $\frac{23}{III}$ $\frac{L}{IV}$ $\frac{N}{N}$

	Model				Applicable category and ratings	Thermal current (I_{the})	Indicator
	I	II	III	IV			
1	<input type="checkbox"/>	00			AC-14 0.5 A/125 VAC	5 A	---
1	<input type="checkbox"/>	10			DC-12 0.5 A/30 VDC	5 A	---
1	<input type="checkbox"/>	20, 21, 22			AC-15 2A/250 VAC DC-12 2A/48 VDC	5 A	---
1	<input type="checkbox"/>	23, 24	L		AC-15 2A/250 VAC	5 A	Neon lamp
1	<input type="checkbox"/>	23, 24	L1		DC-12 2A/12 VDC	5 A	LED
1	<input type="checkbox"/>	23, 24	L2		DC-12 2A/24 VDC	5 A	LED
1	<input type="checkbox"/>	23, 24	L3		DC-12 2A/48 VDC	5 A	LED
2	<input type="checkbox"/>	00			AC-14 0.1A/125 VAC	0.5 A	---
2	<input type="checkbox"/>	10			DC-12 0.1A/30 VDC	0.5 A	---
2	<input type="checkbox"/>	20, 21, 22			AC-14 0.1A/125 VAC DC-12 0.1A/48 VDC	0.5 A	---
2	<input type="checkbox"/>	23, 24	L		AC-14 0.1A/125 VAC	0.5 A	Neon lamp
2	<input type="checkbox"/>	23, 24	L1		DC-12 0.1A/12 VDC	0.5 A	LED
2	<input type="checkbox"/>	23, 24	L2		DC-12 0.1A/24 VDC	0.5 A	LED
2	<input type="checkbox"/>	23, 24	L3		DC-12 0.1A/48 VDC	0.5 A	LED

- Note:** 1. : Actuator variation of item II
 2. AC-14 0.5 A/125 VAC means as follows:
 Applicable category: AC-14
 Rated operating current (I_e): 0.5 A
 Rated operating voltage (U_e): 125 VAC

General Ratings

Rated voltage	Standard load								Micro load	
	Non-inductive load				Inductive load				Non-inductive load	
	Resistive load		Lamp load		Inductive load		Motor load		Resistive load	
	NC	NO	NC	NO	NC	NO	NC	NO	NC	NO
125 VAC	5 (1) A		1.5 (1) A		3 (1) A		2 (1) A	1 (1) A		0.1 A
250 VAC	5 (1) A		1.5 (1) A		3 (1) A		1 A	0.5 A		---
8 VDC	5 (1) A		---		1.5 (1) A		---			0.1 A
14 VDC	5 (1) A		---		1.5 (1) A		---			0.1 A
30 VDC	5 (1) A		---		1.5 (1) A		---			0.1 A
125 VDC	0.5 A		---		0.05 A		---			---
250 VDC	0.25 A		---		0.03 A		---			---

Inrush current	NC	10 A max.
	NO	10 A max.

- Note:**
- The above current ratings are for a standard current and the values in parentheses are for models with a connector.
 - Inductive loads have a power factor of 0.4 min. (AC) and a time constant of 7 ms max. (DC).
 - Lamp load has an inrush current of 10 times the steady-state current.
 - Motor load has an inrush current of 6 times the steady-state current.

Characteristics

Degree of protection	IP67
Durability (see note 3)	Mechanical: 10,000,000 operations min. Electrical: 500,000 operations min. (5 A at 250 VAC, resistive load) 5,000,000 operations min. (10 mA at 24 VDC, resistive load)
Operating speed	0.1 mm to 0.5 m/sec
Operating frequency	Mechanical: 120 operations/min Electrical: 30 operations/min
Rated frequency	50/60 Hz
Insulation resistance	100 MΩ min. (at 500 VDC)
Contact resistance	15 mΩ max. (initial value)
Dielectric strength	1,000 VAC, 50/60 Hz for 1 min between terminals of same polarity 1,500 VAC, 50/60 Hz for 1 min/Uimp at 2.5 kV (EN60947-5-1) between current-carrying metal parts and ground, and between each terminal and non-current-carrying metal part
Rated insulation voltage (Ui)	250 VAC
Switching overvoltage	1,000 VAC max. (EN60947-5-1)
Pollution degree (operating environment)	3 (EN60947-5-1)
Short-circuit protective device (SCPD)	10 A fuse (type gG or gI, IEC269 approved)
Conditional short-circuit current	100 A (EN60947-5-1)
Conventional enclosed thermal current (I _{the})	5 A (EN60947-5-1)
Protection against electric shock	Class II (grounding not required with double insulation)
Vibration resistance	Malfunction: 10 to 55 Hz, 1.5-mm double amplitude
Shock resistance	Destruction: 1,000 m/s ² min. Malfunction: 300 m/s ² min.
Ambient temperature	Operating: -10°C to 80°C (with no icing)
Ambient humidity	Operating: 35% to 95%
Weight	Approx. 86 g (in case of roller plunger)

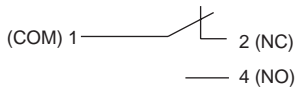
- Note:**
- The above values are initial values.
 - The above ratings may vary depending on the model. Contact your OMRON representative for further details.
 - Durability values are calculated at an operating temperature of 5°C to 35°C, and an operating humidity of 40% to 70%. Contact your OMRON sales representative for more detailed information on other operating environments.

Connections

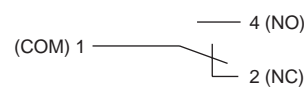
Contact Form

Screw Terminal Type

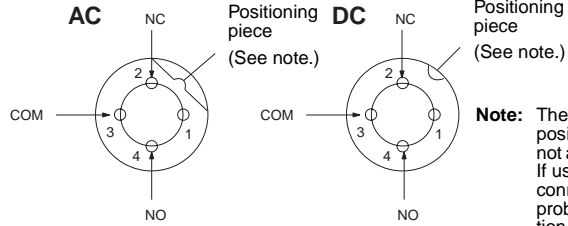
Plunger



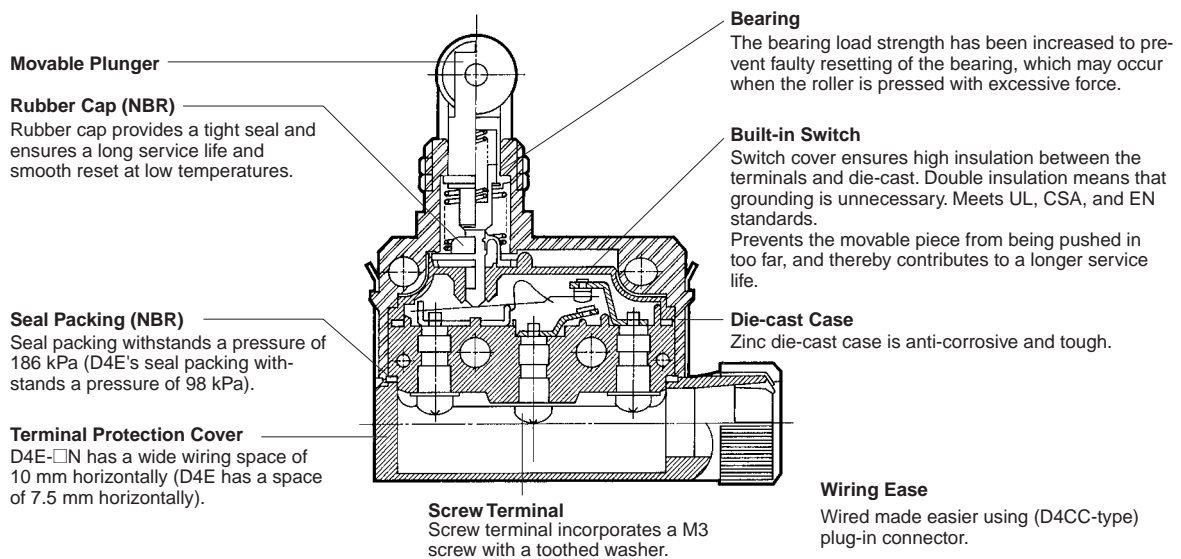
Lever



Connector Type

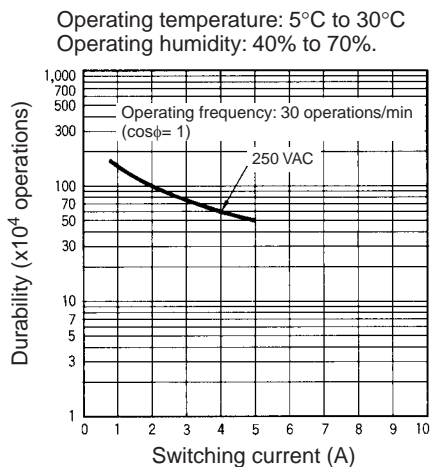


Nomenclature



Engineering Data

Electrical Durability (cosφ=1)

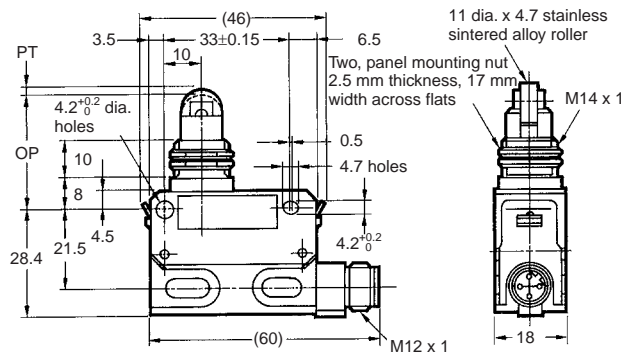
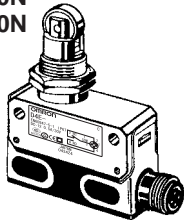


Dimensions

- Note:** 1. All units are in millimeters unless otherwise indicated.
 2. Unless otherwise specified, a tolerance of ± 0.4 mm applies to all dimensions.
 3. A 3-m lead wire cable equivalent to the 3-conductor VCTF S-FLEX cable (0.75 mm², 7 mm in dia.) is provided.
 4. A 5.8- to 7.6-dia. cable can be applied to the seal rubber for the lead wire outlet.

Roller Plunger

D4E-1A00N
 D4E-1A10N
 D4E-2A00N
 D4E-2A10N

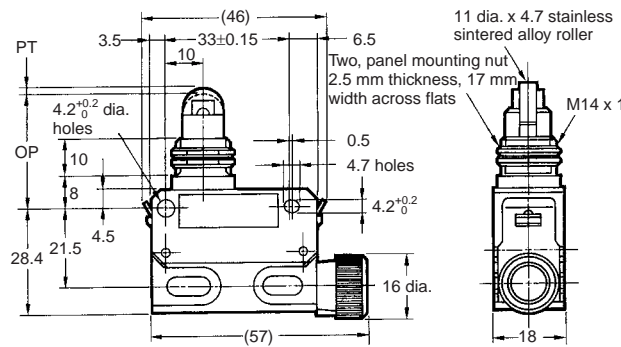
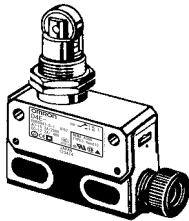


Model	D4E-1A□□N D4E-2A□□N
OF max.	11.77 N
RF min.	4.90 N
PT max.	1.5 mm
OT min.	3 mm
MD (reference value)	(0.1 mm)
OP	31.4±0.8 mm

Note: The values given in parentheses are reference values.

Roller Plunger

D4E-1A20N (See note 4.)
 D4E-2A20N (See note 4.)
 D4E-1A21N (See note 3.)
 D4E-2A21N (See note 3.)

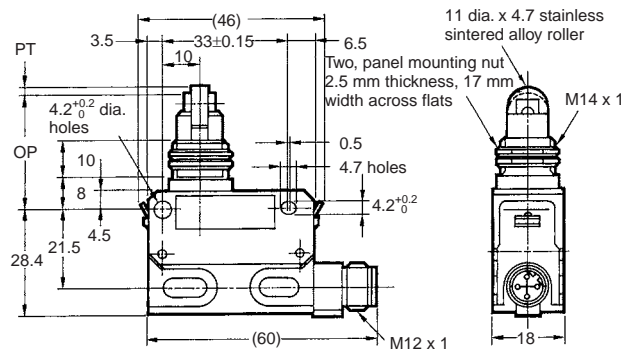
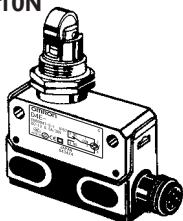


Model	D4E-1A□□N D4E-2A□□N
OF max.	11.77 N
RF min.	4.90 N
PT max.	1.5 mm
OT min.	3 mm
MD (reference value)	(0.1 mm)
OP	31.4±0.8 mm

Note: The values given in parentheses are reference values.

Cross Roller Plunger

D4E-1B00N
 D4E-1B10N
 D4E-2B00N
 D4E-2B10N

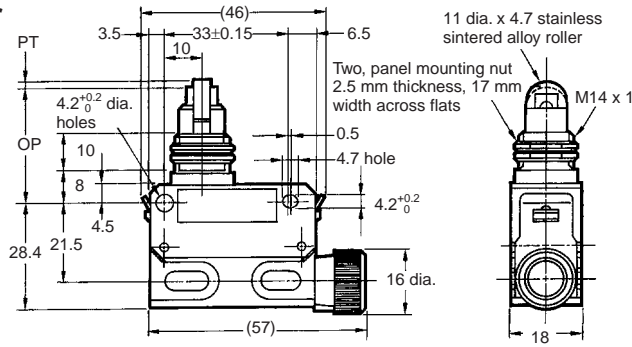
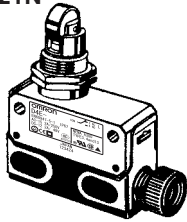


Model	D4E-1B□□N D4E-2B□□N
OF max.	11.77 N
RF min.	4.90 N
PT max.	1.5 mm
OT min.	3 mm
MD (reference value)	(0.1 mm)
OP	31.4±0.8 mm

Note: The values given in parentheses are reference values.

Cross Roller Plunger

D4E-1B20N
D4E-2B20N
D4E-1B21N
D4E-2B21N

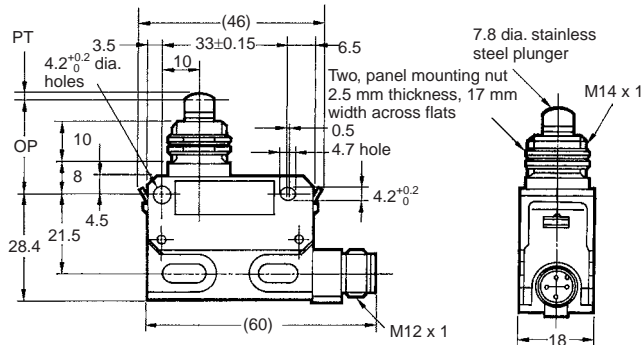
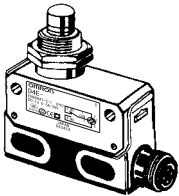


Model	D4E-1B□□N D4E-2B□□N
OF max.	11.77 N
RF min.	4.90 N
PT max.	1.5 mm
OT min.	3 mm
MD (reference value)	(0.1 mm)
OP	31.4±0.8 mm

Note: The values given in parentheses are reference values.

Plunger

D4E-1C00N
D4E-1C10N
D4E-2C00N
D4E-2C10N

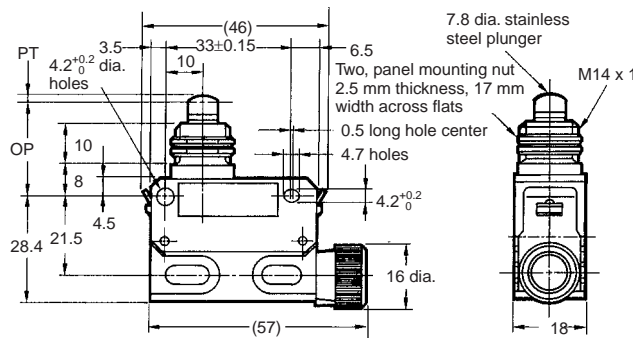
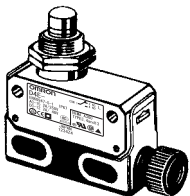


Model	D4E-1C□□N D4E-2C□□N
OF max.	11.77 N
RF min.	4.90 N
PT max.	1.5 mm
OT min.	3 mm
MD (reference value)	(0.1 mm)
OP	25.4±0.8 mm

Note: The values given in parentheses are reference values.

Plunger

D4E-1C20N (See note 4.)
D4E-2C20N (See note 4.)
D4E-1C21N (See note 3.)
D4E-2C21N (See note 3.)

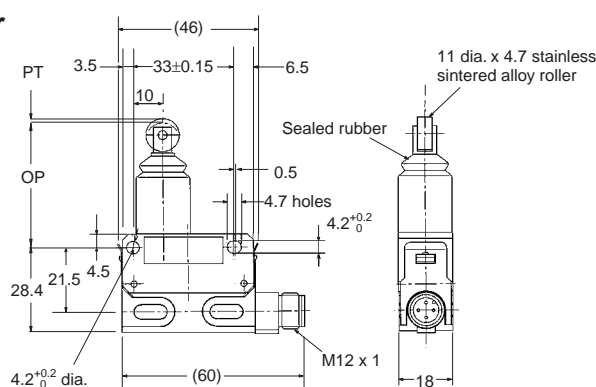
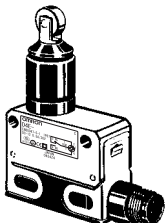


Model	D4E-1C□□N D4E-2C□□N
OF max.	11.77 N
RF min.	4.90 N
PT max.	1.5 mm
OT min.	3 mm
MD (reference value)	(0.1 mm)
OP	25.4±0.8 mm

Note: The values given in parentheses are reference values.

Sealed Roller Plunger

D4E-1D00N
D4E-1D10N
D4E-2D00N
D4E-2D10N

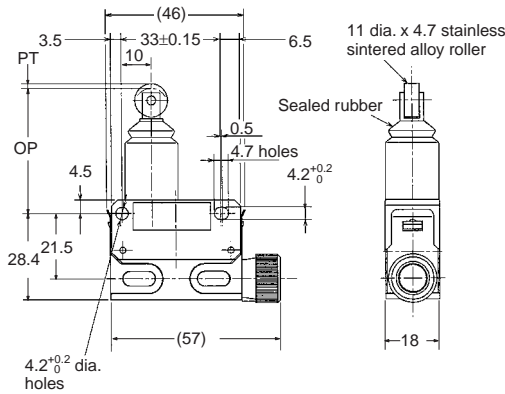
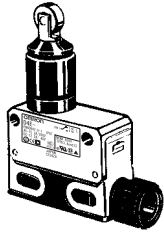


Model	D4E-1D□□N D4E-2D□□N
OF max.	11.77 N
RF min.	4.90 N
PT max.	1.5 mm
OT min.	3 mm
MD (reference value)	(0.1 mm)
OP	41.3±0.8 mm

Note: The values given in parentheses are reference values.

Sealed Roller Plunger

D4E-1D20N (See note 4.)
 D4E-2D20N (See note 4.)
 D4E-1D21N (See note 3.)
 D4E-2D21N (See note 3.)

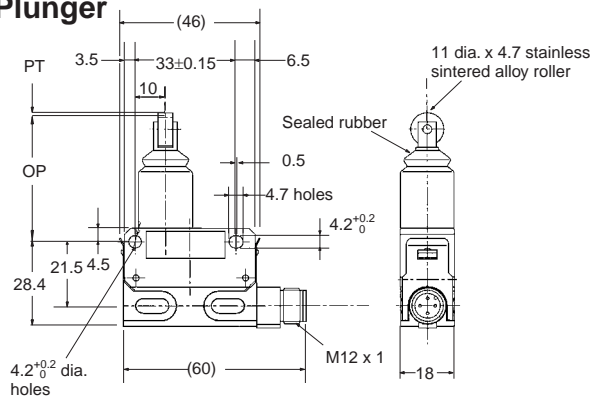
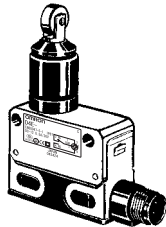


Model	D4E-1D□□N D4E-2D□□N
OF max.	11.77 N
RF min.	4.90 N
PT max.	1.5 mm
OT min.	3 mm
MD(reference value)	(0.1 mm)
OP	41.3±0.8 mm

Note: The values given in parentheses are reference values.

Sealed Cross Roller Plunger

D4E-1E00N
 D4E-1E10N

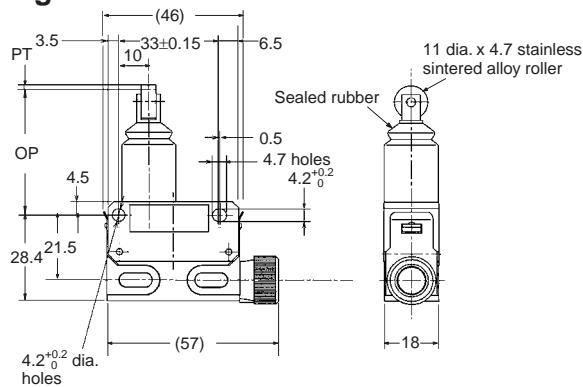
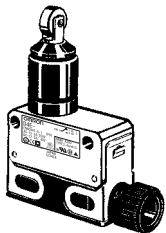


Model	D4E-1E□□N
OF max.	11.77 N
RF min.	4.90 N
PT max.	1.5 mm
OT min.	3 mm
MD(reference value)	(0.1 mm)
OP	41.3±0.8 mm

Note: The values given in parentheses are reference values.

Sealed Cross Roller Plunger

D4E-1E20N (See note 4.)
 D4E-2E20N (See note 4.)
 D4E-1E21N (See note 3.)
 D4E-2E21N (See note 3.)

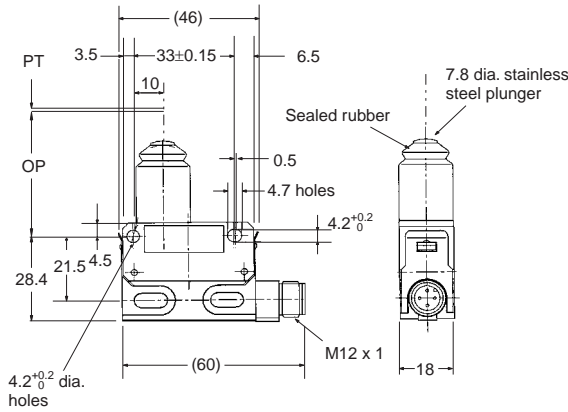
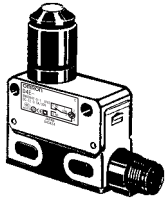


Model	D4E-1E□□N D4E-2E□□N
OF max.	11.77 N
RF min.	4.90 N
PT max.	1.5 mm
OT min.	3 mm
MD(reference value)	(0.1 mm)
OP	41.3±0.8 mm

Note: The values given in parentheses are reference values.

Sealed Plunger

D4E-1F00N
D4E-1F10N
D4E-2F00N
D4E-2F10N

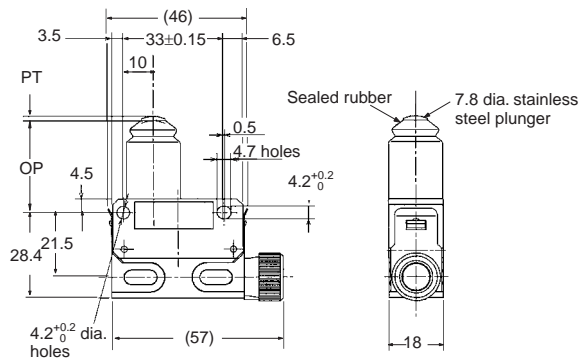
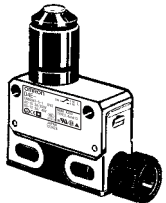


Model	D4E-1F□□N D4E-2F□□N
OF max.	11.77 N
RF min.	4.90 N
PT max.	1.5 mm
OT min.	3 mm
MD(reference value)	(0.1 mm)
OP	30±0.8 mm

Note: The values given in parentheses are reference values.

Sealed Plunger

D4E-1F20N (See note 4.)
D4E-2F20N (See note 4.)
D4E-1F21N (See note 3.)
D4E-2F21N (See note 3.)

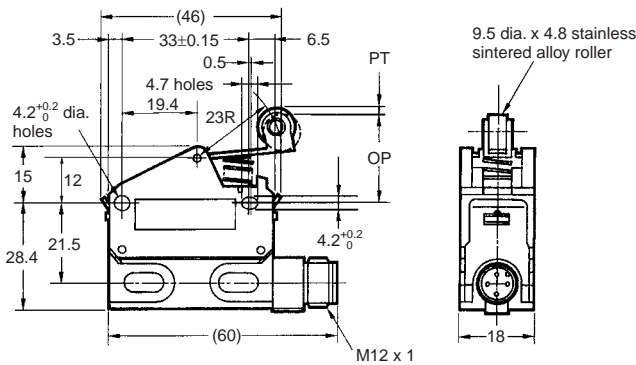


Model	D4E-1F□□N D4E-2F□□N
OF max.	11.77 N
RF min.	4.90 N
PT max.	1.5 mm
OT min.	3 mm
MD(reference value)	(0.1 mm)
OP	30±0.8 mm

Note: The values given in parentheses are reference values.

Roller Lever

D4E-1G00N
D4E-1G10N
D4E-2G00N
D4E-2G10N

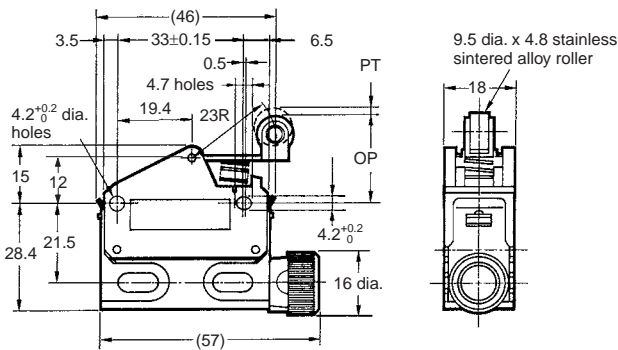
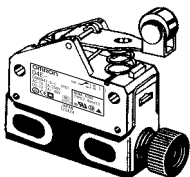


Model	D4E-1G□□N D4E-2G□□N
OF max.	3.92 N
RF min.	0.78 N
PT max.	2 mm
OT min.	4 mm
MD(reference value)	(0.3 mm)
OP	23.1±0.8 mm

Note: The values given in parentheses are reference values.

Roller Lever

D4E-1G20N (See note 4.)
D4E-2G20N (See note 4.)
D4E-1G21N (See note 3.)
D4E-2G21N (See note 3.)

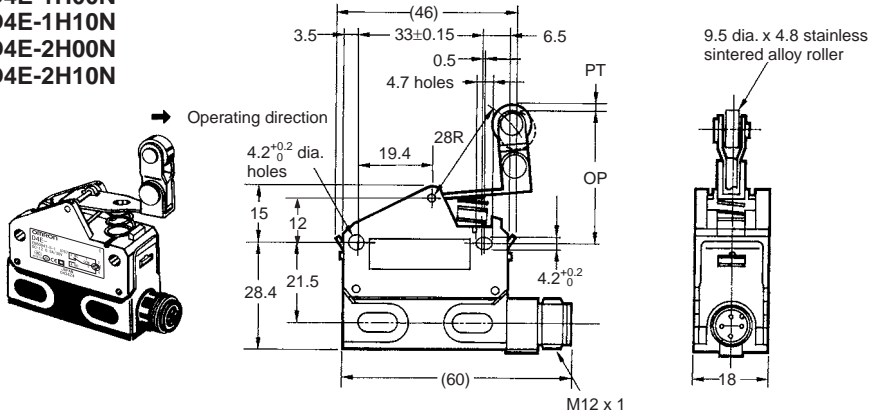


Model	D4E-1G□□N D4E-2G□□N
OF max.	3.92 N
RF min.	0.78 N
PT max.	2 mm
OT min.	4 mm
MD(reference value)	(0.3 mm)
OP	23.1±0.8 mm

Note: The values given in parentheses are reference values.

One-way Action Roller Lever

D4E-1H00N
D4E-1H10N
D4E-2H00N
D4E-2H10N

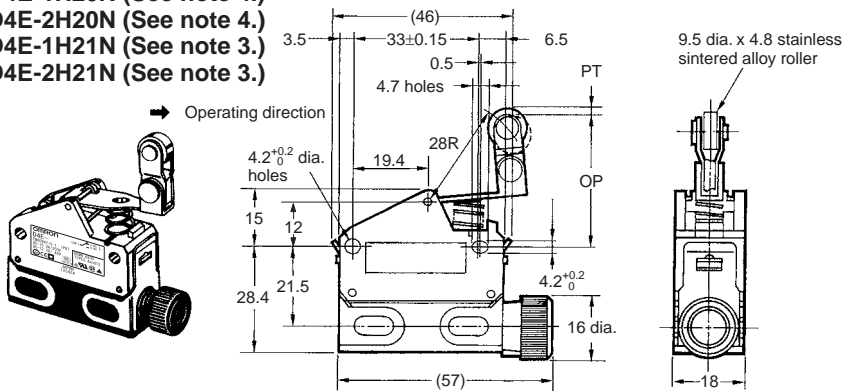


Model	D4E-1H□□N D4E-2H□□N
OF max.	3.92 N
RF min.	0.78 N
PT max.	2 mm
OT min.	4 mm
MD (reference value)	(0.3 mm)
OP	34.3±0.8 mm

Note: The values given in parentheses are reference values.

One-way Action Roller Lever

D4E-1H20N (See note 4.)
D4E-2H20N (See note 4.)
D4E-1H21N (See note 3.)
D4E-2H21N (See note 3.)



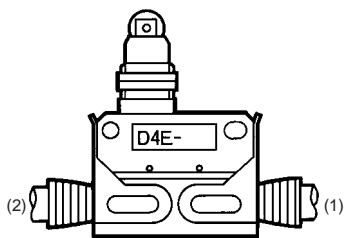
Model	D4E-1H□□N D4E-2H□□N
OF max.	3.92 N
RF min.	0.78 N
PT max.	2 mm
OT min.	4 mm
MD (reference value)	(0.3 mm)
OP	34.3±0.8 mm

Note: The values given in parentheses are reference values.

Molded Terminal Models

■ Molded Terminal Models

The molded-terminal model is available with right-hand, left-hand and underside leads and is recommended for use where the Switch is exposed to dust, oil or moisture. It can be used like a screw-terminal model (with a cable), and the dimensions and operating characteristics are the same as for standard models.



Example:

Standard type: D4E-1A20N
Location of lead output: Right-hand → D4E-1A23N

Suffix by Location of Lead Outlet

Location of lead output	Suffix for pre-wired terminal COM, NC, NO
	(1) Right-hand
(2) Left-hand	D4E-□□24N

Lead Supplies

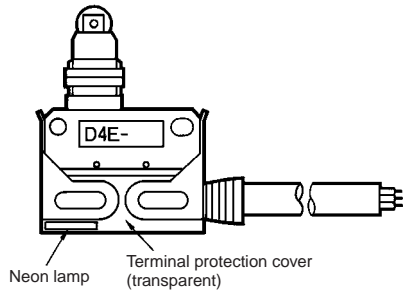
Leads	Nominal cross-sectional area	Finished outside diameter	Terminal connections	Standard length
V.C.T.F. S-FLEX (vinyl cabtire coat)	0.75 mm ²	3 conductors	Black: COM	3 m
		7 mm dia.	White: NO Red: NC	

■ Operation of Indicator-equipped Models

The molded terminal model may be equipped with an operation indicator (neon lamp or LED) upon request to facilitate maintenance and inspection. The operation indicator is designed to illuminate when the Switch is not operating. (Because of the molded terminal model, any change to the Switch wiring cannot be made.)

AC Operation

A neon lamp indicator is provided. The operating voltage is 90 to 250 VAC.



There is no difference in operating characteristics between D4E AC Models and corresponding D4E Standard Models.

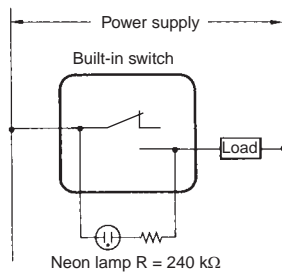
There is no difference in dimensions between D4E AC Models and D4E Standard Models.

Example:

Basic type: D4E-1A23N

When placing your order for the molded terminal model with a neon lamp operation indicator, specify the model number as D4E-1A23LN.

Internal Circuit



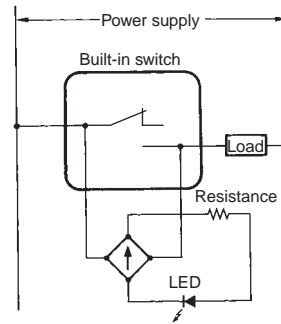
DC Operation

LED indicator is provided.

As a rectifier stack is incorporated, into the unit and no directionality exists for connection of + and -, this type can also be operated on AC.

Voltage ratings of LED indicators are as shown in the table below.

Internal Circuit



Type	Voltage rating	Lamp current	Internal resistance
L2	24 V	Approx. 1.2 mA	18 kΩ

Example:

When ordering a D4E DC Model, add the following suffix to the model number.

Basic Model: The model number of the D4E-1A23N with a built-in 24-V LED indicator is D4E-1A23L2N.

Precautions

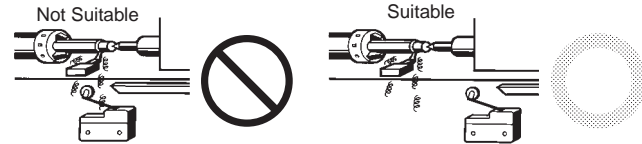
Refer to the "Precautions for General-purpose Limit Switches (Including Multiple Limit Switches, Mechanical Touch Switches, High-precision Switches, Touch Switches, On-site Flexible Switches; Not Including Safety Switches)" on page 17.

Correct Use

Operating Environment

Seal material may deteriorate if a Switch is used outdoor or where subject to special cutting oils, solvents, or chemicals. Always appraise performance under actual application conditions and set suitable maintenance and replacement periods.

Install Switches where they will not be directly subject to cutting chips, dust, or dirt. The Actuator and Switch must also be protected from the accumulation of cutting chips or sludge.



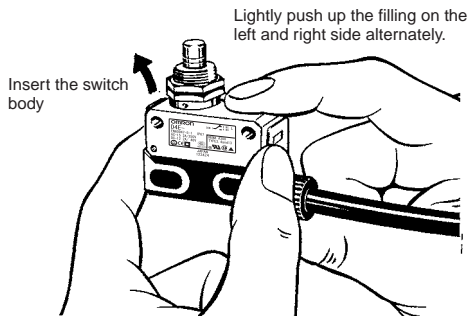
Constantly subjecting a Switch to vibration or shock can result in wear, which can lead to contact interference with contacts, operation failure, reduced durability, and other problems. Excessive vibration or shock can lead to false contact operation or damage. Install Switches in locations not subject to shock and vibration and in orientations that will not produce resonance.

The Switches have physical contacts. Using them in environments containing silicon gas will result in the formation of silicon oxide (SiO₂) due to arc energy. If silicon oxide accumulates on the contacts, contact interference can occur. If silicon oil, silicon filling agents, silicon cables, or other silicon products are present near the Switch, suppress arcing with contact protective circuits (surge killers) or remove the source of silicon gas.

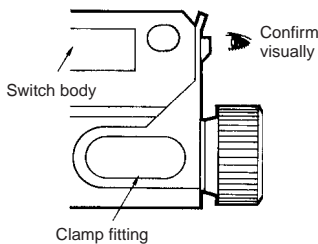
Do not solder the screw terminals.

Sealing materials may deteriorate when used outdoors or when exposed to cutting oil, solvents, or chemicals. Check this on actual equipment and, if deterioration is foreseen, consult your OMRON representative in advance.

If the one-touch connector is to be mounted onto the switch body, lightly push up the fitting so that the switch body can then be inserted into the clamp.



Be sure that the clamp is inserted to the full depth, because the Switch will not function properly if one of the clamps is improperly inserted.



If the clamp is properly inserted up to the full depth, it will not slide out easily. Be sure to carefully confirm all the above items.

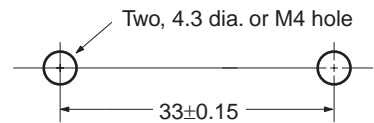
Be sure to connect a fuse with a breaking current 1.5 to 2 times the rated current to the Limit Switch in series in order to protect the Limit Switch from damage due to short-circuiting.

When using the Limit under the EN ratings, use a gl or gG 10-A fuse that conforms to IEC269.

Mounting

Secure the Switch with two M4 screws and washers. The tightening torque applied to each terminal must be 1.18 to 1.37 N·m. Tighten the screws to the specified torque. An excessive tightening torque may damage the Switch and cause a malfunction.

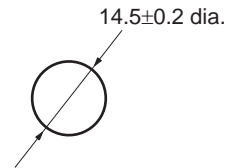
Mounting Holes



When mounting the panel mount-type Switch with screws on a side surface, remove the hexagonal nuts from the actuator.

When mounting the panel mount type on a panel, tighten the hexagonal nuts of the actuator to a torque less than 7.85 N·m.

Mounting Hole



Operating method, shape of cam or dog, operating frequency, and the overtravel (OT) have significant effect on the service life and precision of the Limit Switch. Make sure that the shape of the cam is smooth enough.

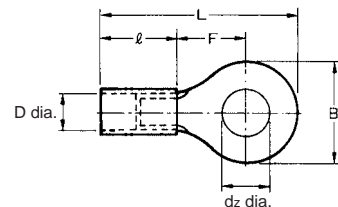
Check that OT has a sufficient margin. The actual OT should be rated OT x 0.7 to 1.

Do not change the operating position by remodeling the actuator.

Wiring

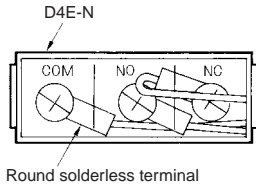
When wiring screw terminals, M3-size round solderless terminals with an insulation tube is recommended. The conductor size should be 0.75 mm² and cable diameter should be 7 mm.

Refer to the following when wiring.



dz dia.:	3.2
D dia.:	1.9
B:	5.2
L:	16.4
F:	5.8
l:	8.0 (mm)

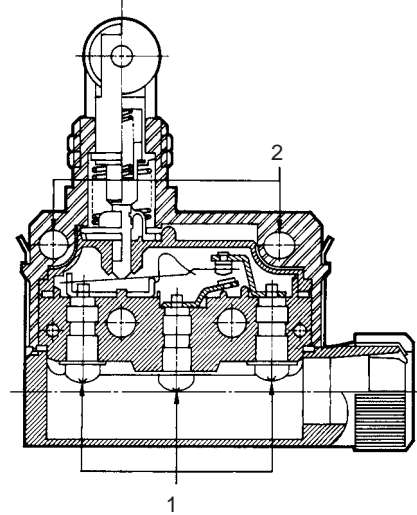
Wiring Method



Tightening Torque

A loose screw may result in a malfunction. Be sure to tighten each screw to the proper tightening torque as shown below.

No.	Type	Torque
1	Terminal screw (M3)	0.24 to 0.44 N·m
2	Switch mounting screw (M4)	1.18 to 1.37 N·m



Terms and Conditions of Sale

1. **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.
2. **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.
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 Omron's payment terms and (ii) Buyer has no past due amounts.
4. **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.
5. **Orders.** Omron will accept no order less than \$200 net billing.
6. **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.
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 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.
8. **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.
9. **Cancellation; Etc.** Orders are not subject to rescheduling or cancellation unless Buyer indemnifies Omron against all related costs or expenses.
10. **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.
11. **Shipping; Delivery.** Unless otherwise expressly agreed in writing by Omron:
 - a. Shipments shall be by a carrier selected by Omron; Omron will not drop ship except in "break down" situations.
 - 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 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;
 - d. Delivery and shipping dates are estimates only; and
 - e. Omron 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 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.
13. **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://oeweb.omron.com> or contact your Omron representative for published information.
14. **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.
15. **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.
16. **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.
17. **Export Controls.** Buyer shall comply with all applicable laws, regulations and licenses regarding (i) export of products or information; (ii) sale of products to "forbidden" or other proscribed persons; and (iii) disclosure to non-citizens of regulated technology or information.
18. **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

1. **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: (i) Outdoor use, uses involving potential chemical contamination or electrical interference, or conditions or uses not described in this document. (ii) Use in consumer products or any use in significant quantities. (iii) 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. (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 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.
2. **Programmable Products.** Omron Companies shall not be responsible for the user's programming of a programmable Product, or any consequence thereof.
3. **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.
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 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.
5. **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.

Complete “Terms and Conditions of Sale” for product purchase and use are on Omron’s website at www.omron247.com – 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

1 Commerce Drive
Schaumburg, IL 60173
Tel: 847.843.7900

For U.S. technical support or other inquiries: 800.556.6766

OMRON CANADA, INC.

885 Milner Avenue
Toronto, Ontario M1B 5V8
Tel: 416.286.6465

MEXICO SALES OFFICES

Mexico, D.F. 555.660.3144
Ciudad Juárez 656.623.7083
Monterrey, N.L. 818.377.4281
Querétaro 442.135.4510

BRAZIL SALES OFFICE

Sao Paulo 55.11.2101.6310

ARGENTINA SALES OFFICE

Cono Sur 54.114.787.1129

CHILE SALES OFFICE

Santiago 562.206.4592

OTHER LATIN AMERICAN SALES

mela@omron.com

OMRON ON-LINE

Global -

www.omron.com

USA -

www.omron247.com

Canada -

www.omron.ca

Brazil -

www.omron.com.br

Latin America -

www.espanol.omron.com