

## Miniature Enclosed Limit Switch

## D4MC






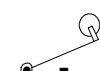
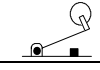

Economical, General-Purpose,  
Enclosed Switch

- High precision and long life (10,000,000 mechanical operations)
- Gasket diaphragm seal provides high environmental resistance
- Suitable for applications demanding higher mechanical strength, dustproof and drip-proof properties
- Pre-wired types with molded terminals are available on special request



## Ordering Information

### ■ LIMIT SWITCHES

Actuator type	Part number
Panel-mount plunger 	D4MC-5000
Panel-mount roller plunger 	D4MC-5020
Panel-mount crossroller plunger 	D4MC-5040
Short hinge lever 	D4MC-1020
Hinge lever 	D4MC-1000
Hinge roller lever 	D4MC-2000
Short hinge roller lever 	D4MC-2020
One-way action short hinge roller lever 	D4MC-3030

Note: For customized applications requiring molded terminal models, refer to customized models at the end of this data sheet.

# Specifications

## ■ RATINGS

Rated voltage	Non-inductive load				Inductive load				Inrush current	
	Resistive load		Lamp load		Inductive load		Motor load			
	NC	NO	NC	NO	NC	NO	NC	NO	NC	NO
125 VAC	10 A		3 A	1.5 A	10 A		5 A	2.5 A	30 A max.	15 A max.
250 VAC	10 A		2.5 A	1.25 A	10 A		3 A	1.5 A		
8 VDC	10 A		3 A	1.5 A	6 A		5 A	2.5 A		
14 VDC	10 A		3 A	1.5 A	6 A		5 A	2.5 A		
30 VDC	6 A		3 A	1.5 A	5 A		5 A	2.5 A		
125 VDC	0.5 A		0.4 A		0.05 A		0.05 A			
250 VDC	0.25 A		0.2 A		0.03 A		0.03 A			

Note: 1. Inductive loads have a power factor of 0.4 min. (AC) and a time constant of 7 ms max. (DC).  
 2. Lamp load has an inrush current of 10 times the steady-state current.  
 3. Motor load has an inrush current of 6 times the steady-state current.

## ■ CHARACTERISTICS

Operating speed		0.05 mm/s to 0.5 m/s (0.002 to 19.69 in/s) at panel mount plunger
Operating frequency	Mechanical	120 operations/min
	Electrical	20 operations/min
Insulation resistance		100 M $\Omega$ min. (at 500 VDC)
Contact resistance		15 m $\Omega$ (initial)
Dielectric strength		1,000 VAC, 50/60 Hz for 1 min between non-continuous terminals 2,000 VAC, 50/60 Hz for 1 min between current-carrying metal parts and ground, and between each terminal and non-current-carrying part
Vibration resistance	Malfunction	10 to 55 Hz, 1.5-mm double amplitude
Shock resistance	Destruction	1,000 m/s <sup>2</sup> (approx. 100G) 3280 ft/s <sup>2</sup>
	Malfunction	100 m/s <sup>2</sup> (approx. 10G) 328.1 ft/s <sup>2</sup>
Ambient temperature	Operating	-10°C to 80°C (14°F to 176°F) with no icing
Ambient humidity	Operating	35% to 95%
Life expectancy	Mechanical	10,000,000 operations min. (at rated OT value)
	Electrical	See <i>Engineering Data</i> .
Weight		Approx. 60 g (2.17 oz) at panel mount plunger
Enclosure rating		IP67

## ■ APPROVED STANDARDS

### UL/CSA

D4MC Series A300: 0.5 A at 125 VDC, 0.25 A at 250 VDC (except molded terminal models)

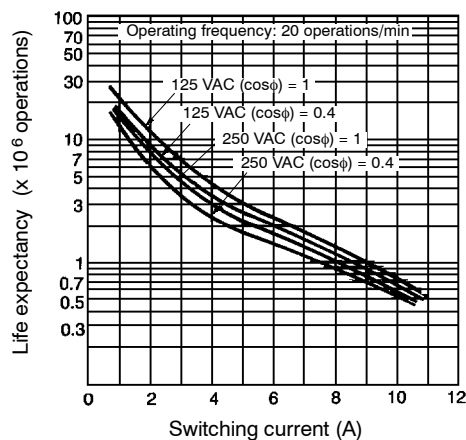
## ■ OPERATING CHARACTERISTICS

Model	D4MC-5000	D4MC-5020	D4MC-5040	D4MC-1020	D4MC-1000	D4MC-2000	D4MC-2020	D4MC-3030
OF max.	5.88 N (600 gf) 1.32 lbf	5.88 N (600 gf) 1.32 lbf		2.55 N (260 gf) 0.57 lbf	1.67 N (170 gf) 0.38 lbf	1.96 N (200 gf) 0.44 lbf	2.94 N (300 gf) 0.66 lbf	2.94 N (300 gf) 0.66 lbf
RF min.	0.98 N (100 gf) 0.22 lbf	0.98 N (100 gf) 0.22 lbf		0.34 N (35 gf) 0.08 lbf	0.25 N (25 gf) 0.06 lbf	0.39 N (40 gf) 0.08 lbf	0.39 N (40 gf) 0.08 lbf	0.39 N (40 gf) 0.08 lbf
PT max.	1.6 mm	1.6 mm		7 mm (See Note.)	10 mm (See Note.)	10 mm	6 mm (See Note.)	6 mm (See Note.)
OT min.	5 mm	5 mm		2.5 mm	4 mm	5 mm	2 mm	2 mm
MD max.	0.2 mm	0.2 mm		1.7 mm	3 mm	3 mm	1.5 mm	1.5 mm
OP	21.8±1.2 mm	33.4±1.2 mm		25±1 mm	25±1 mm	40±1 mm	40±1 mm	50±1 mm
FP max.	---	---		33 mm	36 mm	51 mm	47 mm	57.2 mm

Note: Reference values

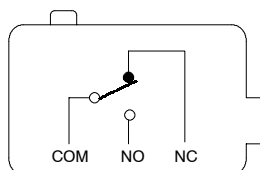
## Engineering Data

### ■ ELECTRICAL LIFE EXPECTANCY



## Operation

### ■ CONTACT FORM

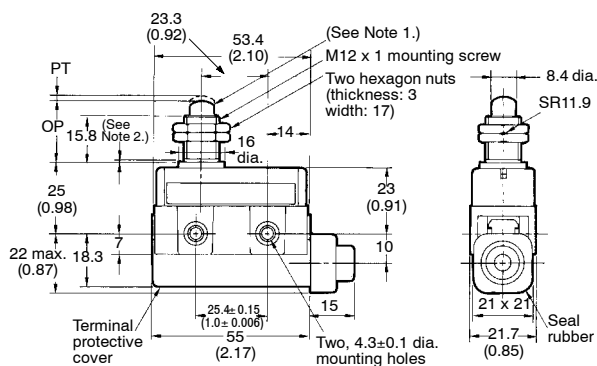


## Dimensions

Unit: mm (inch)

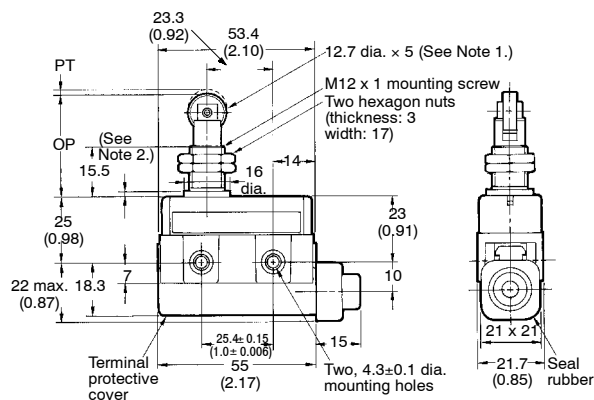
### ■ LIMIT SWITCHES

#### D4MC-5000



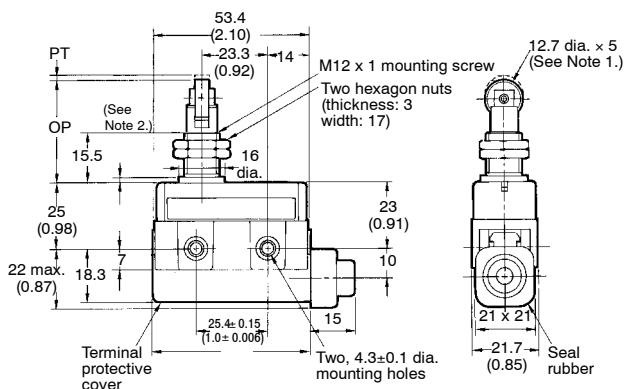
- Note: 1. Stainless steel plunger  
2. The length of the imperfect threads is 1.5 mm maximum.

#### D4MC-5020



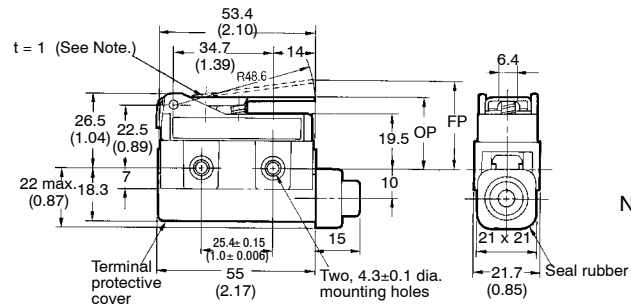
- Note: 1. Stainless steel roller  
2. The length of the imperfect threads is 1.5 mm maximum.

#### D4MC-5040



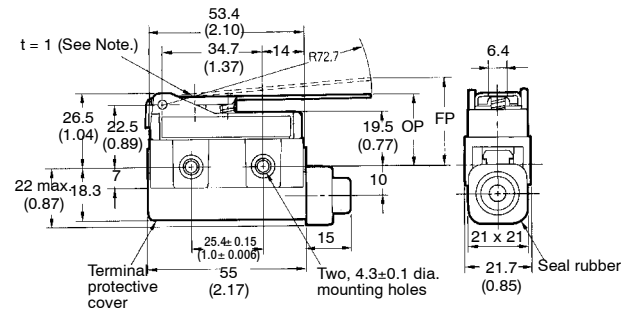
- Note: 1. Stainless steel roller  
2. The length of the imperfect threads is 1.5 mm maximum.

## D4MC-1020



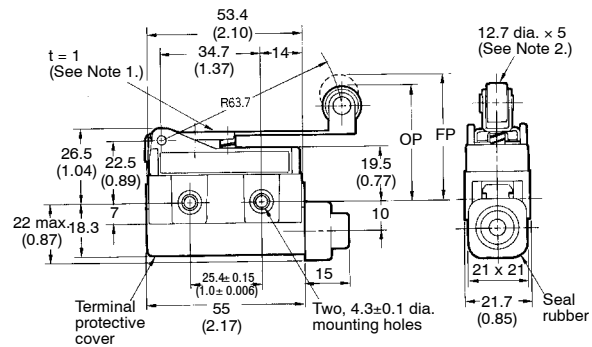
Note: Stainless steel lever

## D4MC-1000



Note: Stainless steel lever

## D4MC-2000

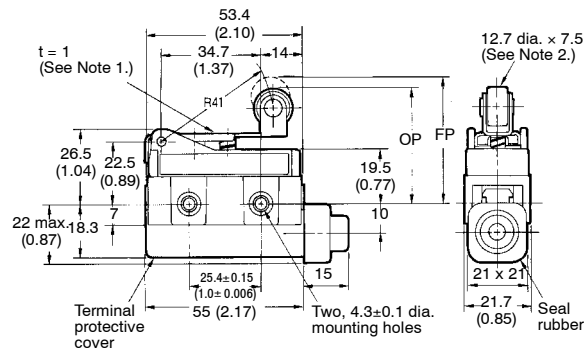


Note: 1. Stainless steel lever  
2. Plastic roller

Note: Unless otherwise specified, a tolerance of  $\pm 0.4$  mm applies to all dimensions.

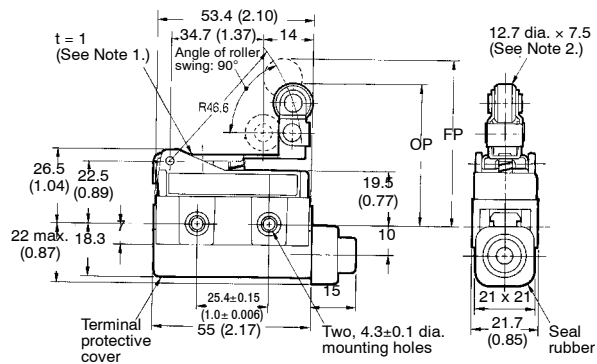
Unit: mm (inch)

### D4MC-2020



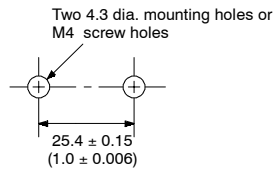
- Note: 1. Stainless steel lever  
2. Plastic roller

### D4MC-3030



- Note: 1. Stainless steel lever  
2. Plastic roller

#### Mounting Holes



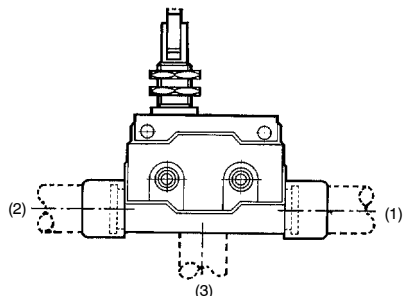
Note: Unless otherwise specified, a tolerance of ±0.4 mm applies to all dimensions.

# Customized Models

## Molded Terminal Model

### ■ ORDERING INFORMATION

The molded terminal model is available with right-hand, left-hand and underside leads and is recommended for use in applications where the switch is exposed to dust, oil, or moisture.



When placing your order for the switch, specify the required length of V.S.F. or V.C.T. cable in addition to the model number of the switch.

#### Example:

Standard type: D4MC-5040

Location of lead outlet: Underside

Length of lead: 1 m (V.C.T. lead)

When placing your order for the above switch, specify the model number as D4MC-5043 (V.C.T 1 m)

#### Suffix by Location of lead Outlet

Location of lead outlet	Part number		
	COM, NC, and NO	COM and NC	COM and NO
Right-hand	D4MC-□□□1	D4MC-□□□4	D4MC-□□□7
Left-hand	D4MC-□□□2	D4MC-□□□5	D4MC-□□□8
Underside	D4MC-□□□3	D4MC-□□□6	D4MC-□□□9

#### Leads Supplied

Leads	Nominal cross-sectional area	Finished outside diameter	Terminal connections	Standard length
V.S.F. (Single-conductor vinyl cable)	1.25 mm <sup>2</sup>	3.1 mm dia.	Black: COM White: NO Red: NC	1, 3, 5 m
V.C.T. (Vinyl cabtyre cable)	1.25 mm <sup>2</sup>	Double conductor: 9.6 mm dia. Triple conductor: 10.5 mm dia.		

NOTE: DIMENSIONS SHOWN ARE IN MILLIMETERS. To convert millimeters to inches divide by 25.4.

**OMRON**<sup>®</sup>  
**OMRON ELECTRONICS LLC**  
One East Commerce Drive  
Schaumburg, IL 60173  
**1-800-55-OMRON**

**OMRON ON-LINE**  
Global - <http://www.omron.com>  
USA - <http://www.omron.com/oei>  
Canada - <http://www.omron.com/oci>

**OMRON CANADA, INC.**  
885 Milner Avenue  
Scarborough, Ontario M1B 5V8  
**416-286-6465**