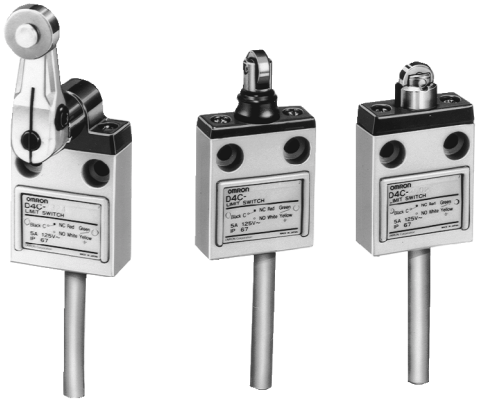
OMRON

Slim Enclosed Limit Switches

D4C

Sealed, Compact, Slim Prewired Limit Switch

- Rugged diecast housing
- Meets UL types 3, 4 and 13
- Triple-sealed construction
- Designed for easy gang mounting
- Rated load of 5 amps, 250 VAC
- Prewired with 3 m (9.8 ft) or 5 m (16.4 ft) of cable



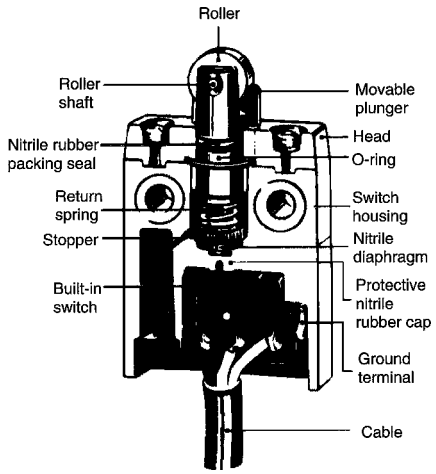
Ordering Information

■ LIMIT SWITCHES

Actuator	3 m (9.8 ft) cable	5 m (16.4 ft) cable (See Note.)
Pin plunger	**D4C-1601**	**D4C-1701**
Sealed plunger	**D4C-1631**	**D4C-1731**
Roller plunger	**D4C-1602**	**D4C-1702**
Sealed roller plunger	**D4C-1632**	**D4C-1732**
Cross roller plunger	**D4C-1603**	**D4C-1703**
Sealed cross roller plunger	**D4C-1633**	**D4C-1733**
Bevel plunger	**D4C-1610**	**D4C-1710**
Coil spring	**D4C-1650**	**D4C-1750**
Roller lever	**D4C-1620**	**D4C-1720**

Note: 5 m cable types are available on special order only.

Construction



Specifications

■ RATINGS

Model	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
D4C-1□□□	125 VAC	5 A	5 A	1.5 A	0.7 A	3 A	3 A	2.5 A	1.3 A	20 A max	10 A max
	250 VAC	5 A	5 A	1 A	0.5 A	2 A	2 A	1.5 A	0.8 A		
	8 VDC	5 A	5 A	2 A	2 A	5 A	4 A	3 A	3 A		
	14 VDC	5 A	5 A	2 A	2 A	4 A	4 A	3 A	3 A		
	30 VDC	4 A	4 A	2 A	2 A	3 A	3 A	3 A	3 A		
	125 VDC	0.4 A	0.4 A	0.05 A	0.05 A	0.4 A	0.4 A	0.05 A	0.05 A		
	250 VDC	0.2 A	0.2 A	0.03 A	0.03 A	0.2 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 loads have an inrush current of 10 times the steady-state current.
3. Motor loads have an inrush current of 6 times the steady-state current.

■ APPROVED RATINGS

Approval	Standard	File no.
UL	UL508	E76675
CSA	CSA C22.2 No. 14	LR45746

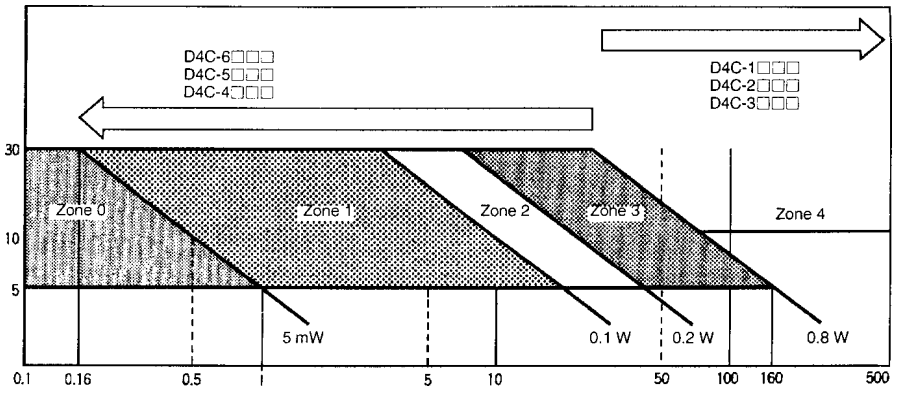
UL/CSA Approved Ratings

B300 (D4C-16□□, -17□□)

NEMA B300 (D4C-16□□, -17□□)

Rated voltage	Current		Voltamperes	
	Make	Break	Make	Break
120 VAC	30 A	3 A	3,600 VA	360 VA
250 VAC	15 A	1.5 A		

Applicable Load Range



■ CHARACTERISTICS

Operating speed		0.1 mm to 0.5 m/s (D4C-oo20:1 mm to 1 m/s)
Operating frequency	Mechanical	120 operations/min
	Electrical	30 operations/min
Insulation resistance		100 MΩ min. (at 500 VDC)
Rated insulation voltage (U_i)		300 V (IEC947-5-1)
Rated impulse withstand voltage (U_{imp})		2.5 kV (IEC947-5-1)
Switching overvoltage		1,000 VAC, 300 VDC max. (IEC947-5-1)
Short-circuit protective device		10 A fuse (type gG) (IEC269)
Conditional short-circuit current		100 A (IEC947-5-1)
Contact resistance		300 mΩ (initial value with 3 m VCTF cable) 400 mΩ (initial value with 5 m VCTF cable)
Dielectic strength		1,000 VAC, 50/60 Hz for 1 min between non-continuous terminals 1,500 VAC, 50/60 Hz for 1 min between current-carrying metal part and ground, and between each terminal and non-current-carrying metal part
Vibration resistance	Malfunction	10 to 55 Hz, 1.5 mm double amplitude
Shock resistance	Destruction	Approx. 1,000 m/s^2 (approx. 100 G)
	Malfunction	Approx. 500 m/s^2 (approx. 50 G)
Ambient temperature	Operating	-10°C to 70°C (14°F to 158°F)
Ambient humidity	Operating	95% max
Operating environmental pollution level		Pollution degree 3 (IEC947-5-1)
Life expectancy	Mechanical	10,000,000 operations min. (at 1.5 to 2 mm OT)
	Electrical	See: *Engineering Data*
Enclosure ratings	UL	Types 3, 4 and 13
	NEMA	Types 1, 3, 3R, 4, 5, 6, 12 and 13
	IEC	IP67
Weight		With 3 m VCTF cable: 360 g With 5 m VCTF cable: 540 g

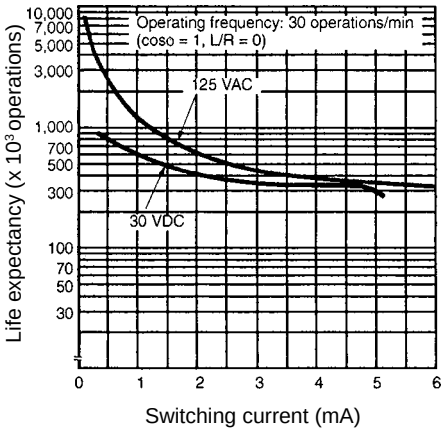
■ OPERATING CHARACTERISTICS

Legend: OF = Operating Force (max.); RF = Reset Force (min.); OT = Overtravel (min.); PT = Pretravel
MD = Movement Differential (max.); OP = Operating Position

Part number	Description	OF	RF	OT	PT	MD	OP
D4C-□□01	Pin plunger	1.2 kg (42.32 oz)	450 g (15.87 oz)	3 mm (0.118 in)	1.8 mm (0.07 in)	0.2 mm (0.008 in)	15.7 ±1 mm (0.62 ±0.04 in)
D4C-□□31	Sealed plunger	1.8 kg (63.49 oz)	450 g (15.87 oz)	3 mm (0.118 in)	1.8 mm (0.07 in)	0.2 mm (0.008 in)	24.9 ±1 mm (0.99 ±0.04 in)
D4C-□□02	Roller plunger	1.2 kg (42.32 oz)	450 g (15.87 oz)	3 mm (0.118 in)	1.8 mm (0.07 in)	0.2 mm (0.008 in)	28.5 ±1 mm (1.12 ±0.04 in)
D4C-□□32	Sealed roller plunger	1.8 kg (63.49 oz)	450 g (15.87 oz)	3 mm (0.118 in)	1.8 mm (0.07 in)	0.2 mm (0.008 in)	34.3 ±1 mm (1.35 ±0.04 in)
D4C-□□03	Cross roller plunger	1.2 kg (42.32 oz)	450 g (15.87 oz)	3 mm (0.118 in)	1.8 mm (0.07 in)	0.2 mm (0.008 in)	28.5 ±1 mm (1.12 ±0.04 in)
D4C-□□33	Sealed cross roller plunger	1.8 kg (63.49 oz)	450 g (15.87 oz)	3 mm (0.118 in)	1.8 mm (0.07 in)	0.2 mm (0.008 in)	34.3 ±1 mm (1.35 ±0.04 in)
D4C-□□10	Bevel plunger	1.2 kg (42.32 oz)	450 g (15.87 oz)	3 mm (0.118 in)	1.8 mm (0.07 in)	0.2 mm (0.008 in)	28.5 ±1 mm (1.12 ±0.04 in)
D4C-□□50	Coil spring	150 g (5.29 oz)	—	—	15°	—	—
D4C-□□20	Roller lever	580 g (20.46 oz)	150 g (5.29 oz)	40°	25°	3°	—

Engineering Data

■ ELECTRICAL LIFE EXPECTANCY



■ CONTACT RATINGS

NEMA B300

■ CONTACT RESISTANCE

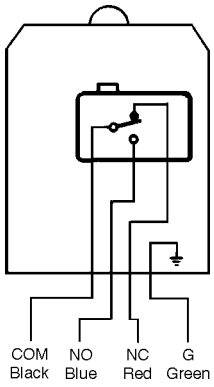
30 mΩ max, initial value with 3 m (9.84 ft) cable

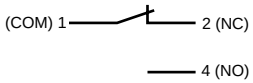
■ ELECTRICAL APPROVALS

UL Recognized, File No. E76675
CSA Certified, File No. LR45746

Operation

■ CONTACT FORM





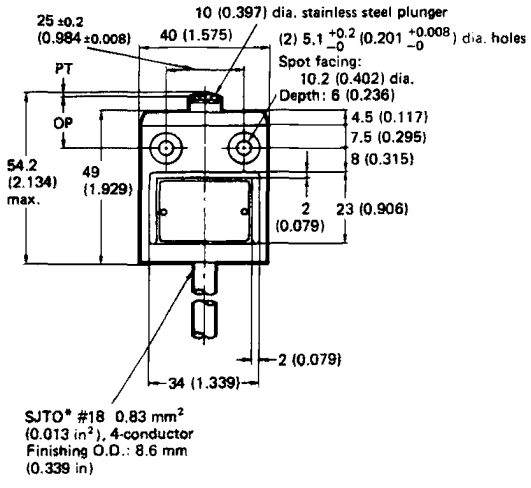
EN60947-1

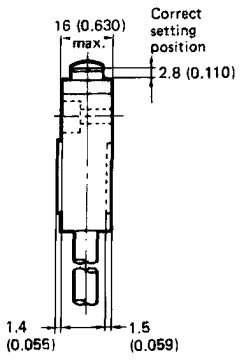
Dimensions

Unit: mm (inch)

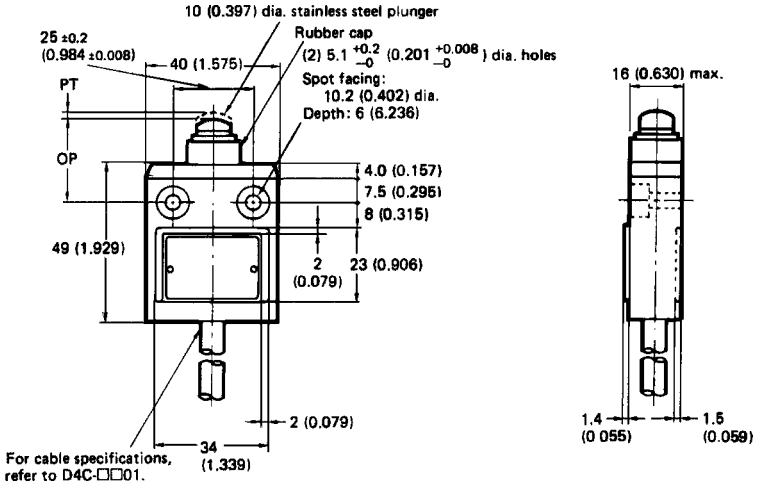
■ LIMIT SWITCHES

D4C-□□01 Pin Plunger Switch

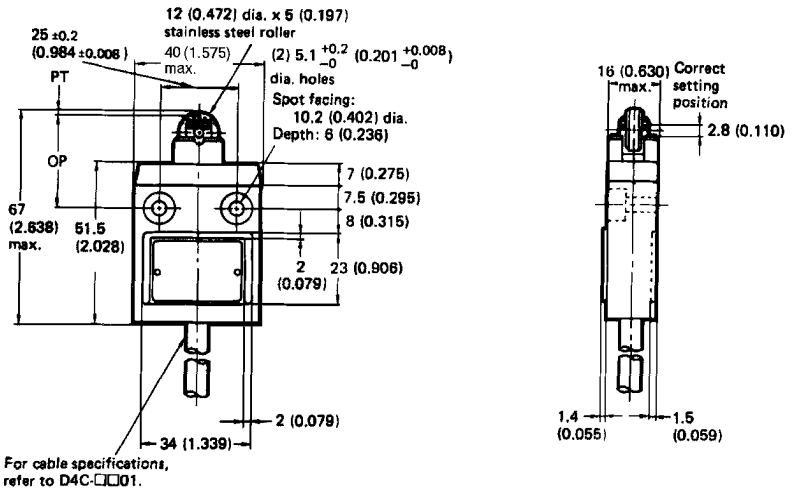




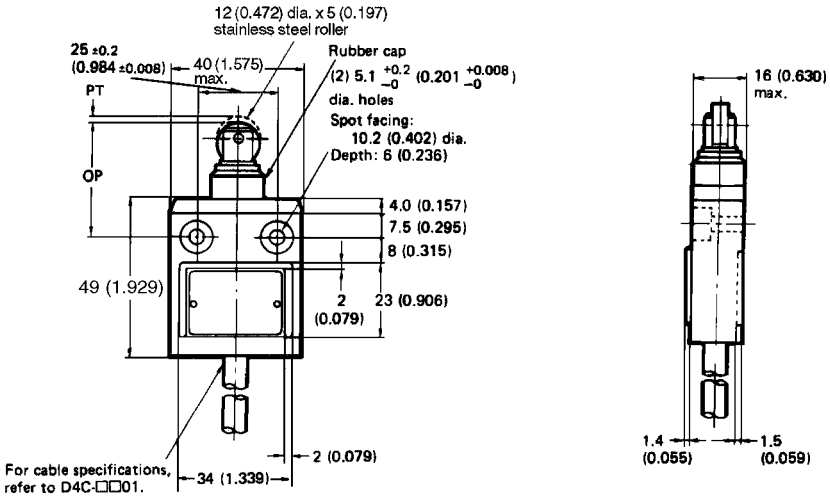
D4C-□□31 Sealed Plunger Switch



D4C-□□02 Roller Plunger Switch

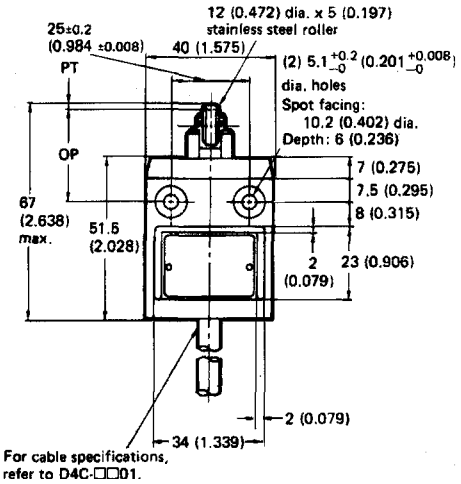


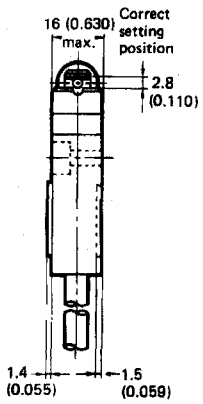
D4C-□□32 Sealed Roller Plunger Switch



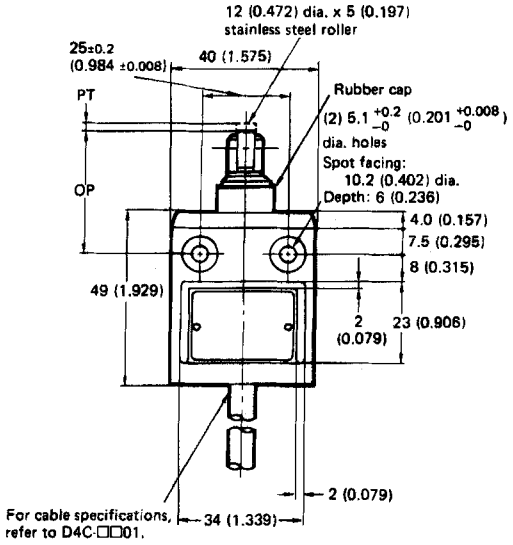
Unit: mm (inch)

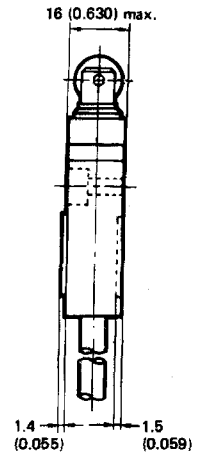
D4C-□□03 Cross Roller Plunger Switch



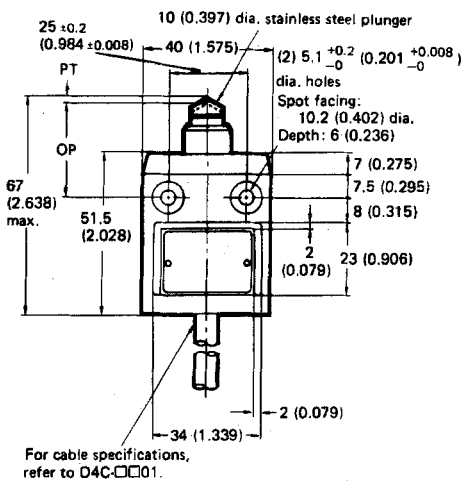


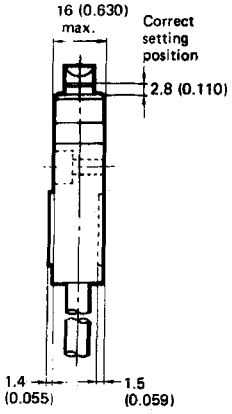
D4C-□□33 Sealed Cross Roller Plunger Switch



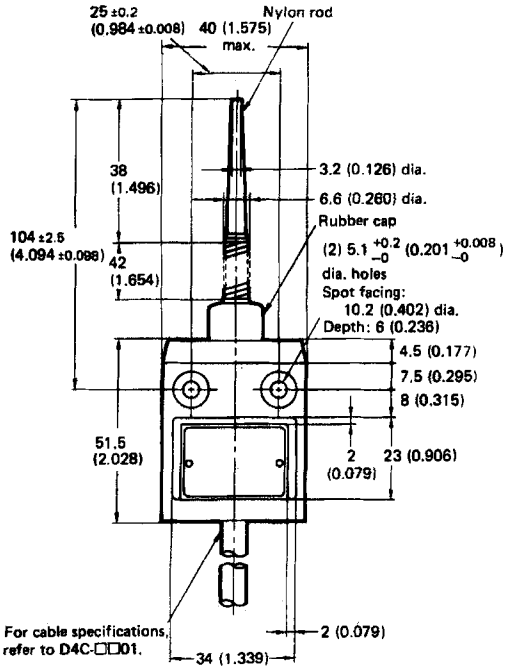


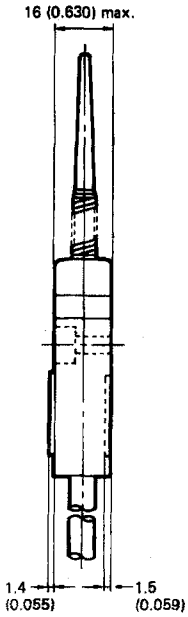
D4C-□□10 Bevel Plunger Switch



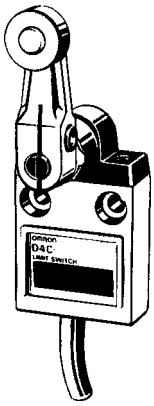


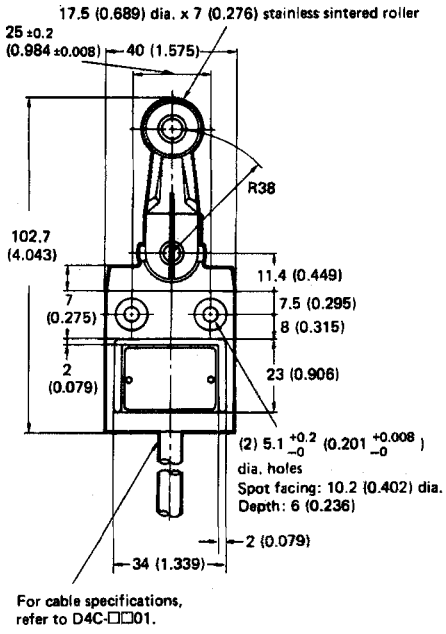
D4C-□□50 Coil Spring Switch

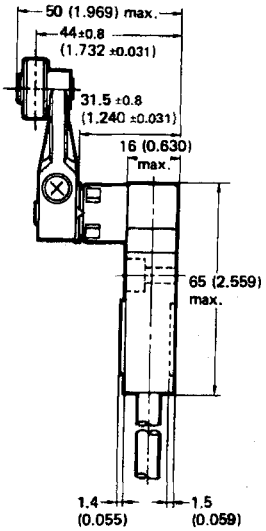




D4C-□□20 Roller Lever Switch

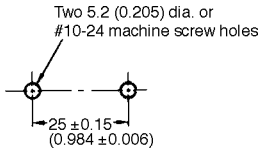






Installation

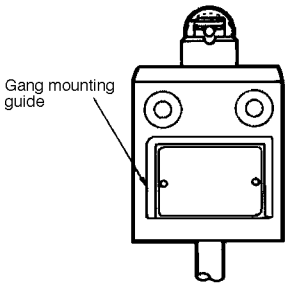
■ MOUNTING HOLES

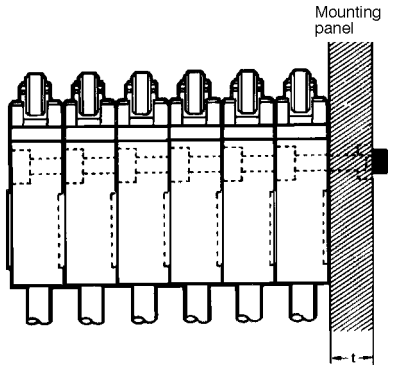


Secure the switch to the mounting panel with two #10-24 machine screws and washers and tighten them from 3.6 ft•lb to 4.3 ft•lb torque.

■ GANG MOUNTING SWITCHES

A maximum of 6 switch units may be gang mounted. See the figures for proper orientation of switches.



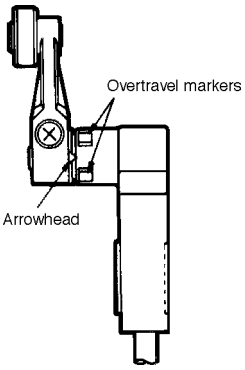


■ PROPER CAM SHAPE

Operation method, shapes of cam and dog, operating frequency, and overtravel have a significant effect on the service life and precision of a limit switch. For this reason, the cam angle should be 30° max. The surface roughness of the cam should be 6.3 microns min., and the hardness of the cam must be about Hv450 (Brinell #425).

■ OVERTRAVEL MARKERS

To allow the roller lever type actuator to travel properly, set the roller lever according to the dog or cam stroke so that the arrowhead of the lever is positioned between the two overtravel markers as shown.



■ CABLE TIE POSITIONING

The bottom of the enclosed switch at the cable outlet is resin-molded. Secure the cable at a point 5 cm (1.97 in) from the switch bottom to prevent exertion of undue force on the cable.

OMRON

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

Cat. No. CEDSAX4 11/01 Specifications subject to change without notice. Printed in the U.S.A.