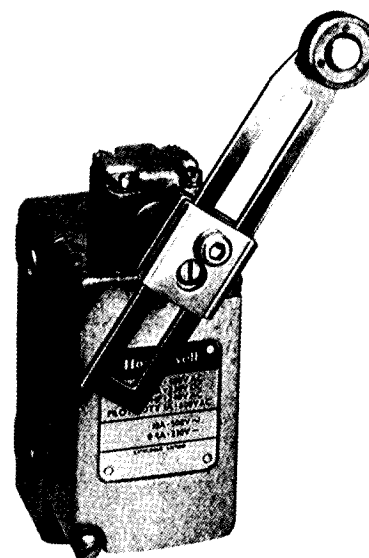
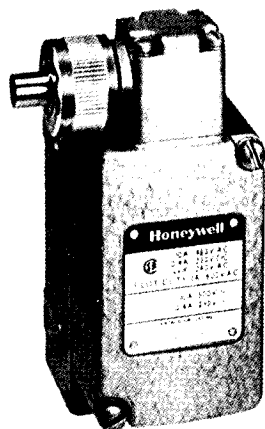
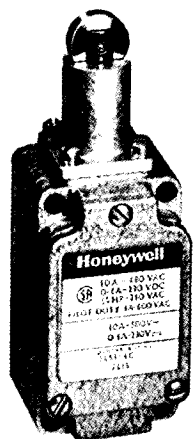


LS and Plug-in 200LS Series Compact Limit Switches



Description

LS and plug-in 200 LS series compact limit switches have a long record of successful performance in industrial applications. Careful design and rugged sealed construction ensures accurate repeatability through millions of operations under the most stringent conditions. Compact size and field adjustable features greatly extend the flexibility of these switches.

Construction

The rugged housings and actuator heads are constructed from cast aluminium, capable of withstanding physical abuse.

Protection against oil, water and dust is achieved by :

- O-Ring seals on actuator shaft.
- Ring seal between head and body.
- Seated compression seal between cover and case for LS-series or between terminal block and body for 200 LS-series.

All LS and 200 LS listings have a 2-circuit, double break snap-acting basic switch as standard. Some of the compact LS-types are available with a 4-circuit, double break basic switch.

A wide range of fully interchangeable heads and actuators are available. Interchangeability with other switches is provided by mounting hole design. Internal earth-connection is provided by means of a 4 mm earthing screw.

Approvals

IEC 947-5-1
EN 60947-5-1

Technical Data

Mechanical

NEMA protection 1,4 & 13.
European protection IP67.

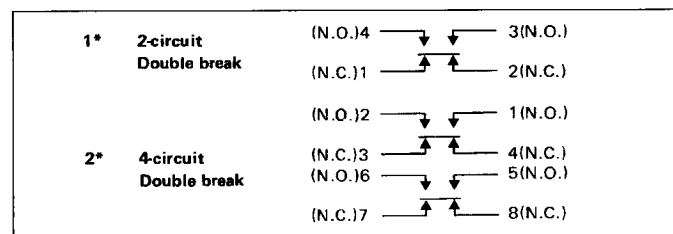
Temperature range

Standard -30 °C to +70 °C
High temperature -30 °C to +120 °C
Oil resistant high temp. -10°C to +150°C

Electrical Ratings

Rating Code*	Electrical Ratings
A	10A, 120, 240, 480 Vac. 0.8A, 115 Vdc. 0.4A, 230 Vdc. 0.1A, 550 Vdc. Pilot Duty Rating - 600 Vac. max.
B	10A, 125, 250 Vac. 1/2 HP, 125 Vac.

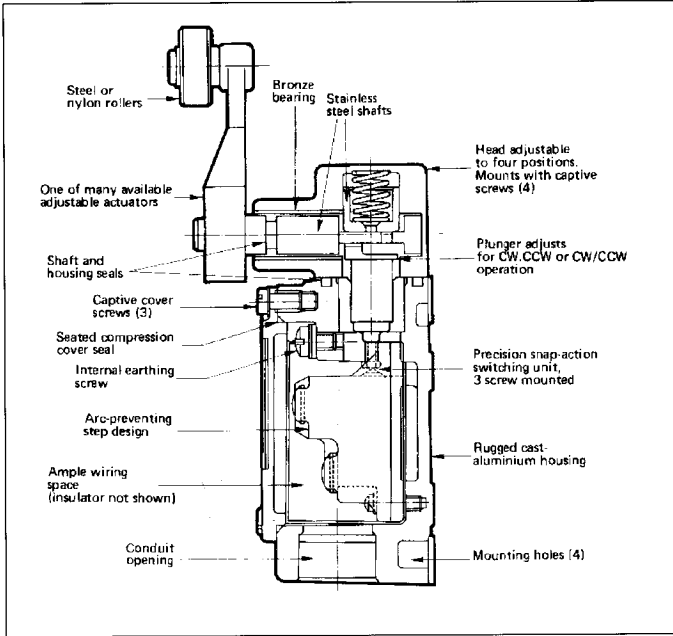
*Referred to in ordering charts.



*Referred to in ordering charts.

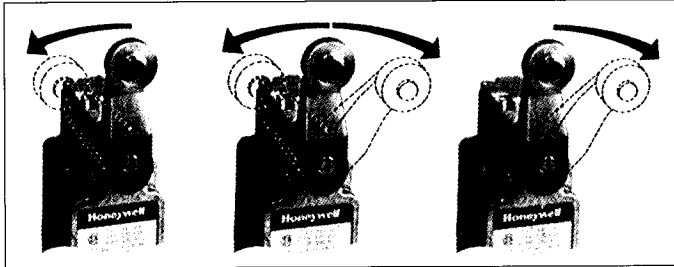
Series LS Compact LS switches are completely sealed

The rugged cast aluminium housing protects the precision basic switch from physical damage, offers a means of mounting and provides a fitting for connecting conduit

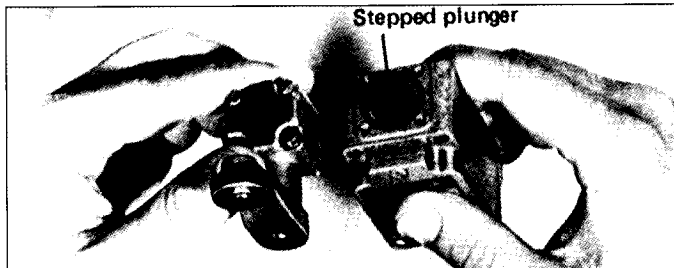


One or two-way actuation

Rotary actuator 'LS' Limit Switches are factory assembled so that the contacts respond when the lever is moved either clockwise or counter-clockwise. Can be easily field-adjusted for clockwise, or counter-clockwise operation only.



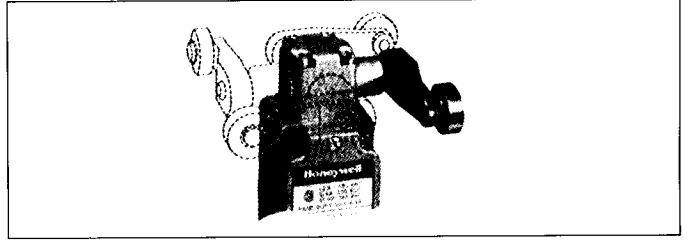
To convert the switch to one direction actuation, remove the actuator head and rotate the stepped plunger 90° clockwise or counterclockwise.



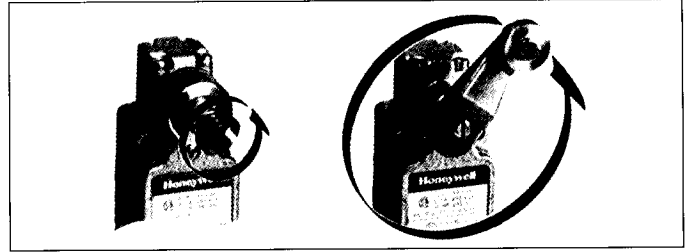
When the switch is adjusted for actuation in one direction only, the lever may be moved to the full overtravel position in the opposite direction without damaging the mechanism.

4 position adjustable head



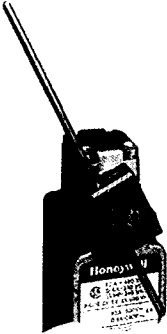
Operating head may be positioned and locked in any of four 90° positions.



Actuators adjustable through 360°.



Actuators can be set and locked in any position through 360°.

Actuator	Catalogue Listing Compact ** Plug-in	Description	Circuitry	Electr.	O.F. Data	P.T.	O.T.	D.T.	Draw. Nr.
	1LS1-4C 201LS1-4	Aluminium arm with steel roller. Standard pretravel 20° Momentary contact.	1	A	1,36 kg max	20° max	30° min	12° max	3
	1LS19-4C 201LS19-4	Aluminium arm with steel roller. Low pretravel 5°. Momentary contact.	1	B	1,36 kg max	5° max	30° min	-	3
	1LS243-4C [▲]	Aluminium arm with steel roller. High temperature +120°C. Momentary contact.	1	A	1,36 kg	20° max	30° min	12° max	3
	1LS244-4C [▲]	Aluminium arm with steel roller. Solvent resistant, high temperature +150°C. Momentary contact.	1	A	1,36 kg max	20° max	30° min	12° max	3
	11LS1-4C [▲]	Aluminium arm with steel roller. 4-circuit double break. Momentary contact.	2	B	1,36 kg max	23° max	27° min	16° max	3
	1LS3-4C 201LS3-4	Adjustable length arm with nylon roller. Roller arm radius is adjustable from 30 to 89 mm. Standard pretravel 20°. Momentary contact.	1	A	1,36 kg max	20° max	30° min	12° max	4
	1LS10-4C 201LS 10-4	Rod actuator. The 140 mm aluminium rod may be easily cut or formed. Two set screws allow adjustment of effective length of rod. Standard pretravel 20°. Momentary contact.	1	A	0,142 kg max	20° max	30° min	12° max	5
	1LS47-4C [▲]	Rod actuator. The 140 mm aluminium rod may be easily cut or formed. Two set screws allow adjustment of effective length of rod. Low pretravel 5°. Momentary contact.	1	B	0,142 kg max	5° max	30° min	-	5

Characteristics


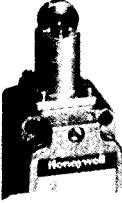


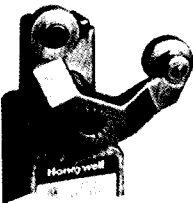

O. F.-Operating Force; O.T.-Overtravel;
P.T.-Pretravel; D.T.-Differential Travel.

*Terminal block 18PAI -4C must be ordered separately if required.

**Suffix to switch Catalogue Listing denotes Conduit Thread :

▲ - 4C = 20 mm Thread to BS4568 and CEE requirements.

- 4PG = PG 13.5 Thread

Actuator	Catalogue Listing Compact ** Plug-in	Description	Circuitry	Electr. Data	O.F.	P.T.	O.T.	D.T.	Draw. Nr.
	2LS1-4C 202LS1-4	Corrosion resistant steel top plunger for inline actuation. Momentary contact.	1	A	3,18 kg max	1,65 max mm	6,35 min mm	0,5 max mm	6
	12LS1-4C [▲]	Corrosion resistant steel top plunger for inline actuation. 4-circuit, double break basic switch Momentary contact.	2	B	3,2 kg max	1,7 max mm	6,4 min mm	1,15 max mm	6
	5LS1-4C 205LS1-4	Compact, corrosion resistant steel top roller and plunger is adjustable in 90° increments for cam or slide operations. Standard version. Momentary contact.	1	A	3,18 kg max	1,65 max mm	5,56 min mm	0,5 max mm	7
	15LS1-4C [▲]	Compact, corrosion resistant steel top roller and plunger is adjustable in 90° increments. for cam or slide operations. 4-circuit double break basic switch Momentary contact	2	B	3,2 kg max	1,9 max mm	5,56 min mm	1,15 max mm	7
	4LS1-4C 204LS1-4	Side plunger designed to be operated in line with plunger travel or by slow-moving cams and slides. Actuator head may be mounted in any of 4 positions, 90° apart. Momentary contact.	1	A	4,09 kg max	2,77 max	6,36 min	1,0 max	8
	3LS1-4C 203LS1-4	Side roller plunger designed for operation by fast-moving cams or slides. Actuator head may be attached to the switch housing in four positions, 90° apart. Roller plunger may be rotated 360° about its axis, positively locking in any position. Momentary contact.	1	A	4,09 kg max	2,77 max mm	5,56 min mm	1,0 max mm	9
	6LS1-4C 206LS1-4	Maintained contact yoke actuator. Steel rollers on opposite sides of the arm. Actuator movement from either extreme position to the other causes the internal switching unit to transfer circuit.	1	A	0,9 kg max	-	-	-	10
	6LS3-4C [▲]	Maintained contact yoke actuator. Nylon rollers on the same side of the arm. Actuator movement from either extreme position to the other causes the internal switching unit to transfer circuit. Momentary contact.	1	A	0,9 kg max	-	-	-10	

Characteristics



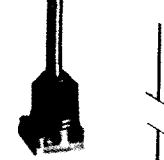
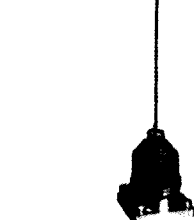


O. F.-Operating Force; O.T.-Overtravel;
P.T.-Pretravel; D.T.-Differential Travel.

*Terminal block 18PAI -4C must be ordered separately if required.

**Suffix to switch Catalogue Listing denotes Conduit Thread :

▲ - 4C = 20 mm Thread to BS4568 and CEE requirements.

- 4PG = PG 13.5 Thread

Actuator	Catalogue Listing Compact ** Plug-in	Description	Circuitry	Electr. Data	O.F.	P.T.	O.T.	D.T.	Draw. Nr.
	8LS1-4C 208LS1-4	Random motion actuator Flexible 4.8 mm Ø cadmium plated steel cable. Can be operated from all directions except direct pull. Momentary contact.	1	A	0.142 kg max	-	-	-	11
	8LS152-4C 208LS152-4	Random motion 6.7 mm Ø actuator stainless steel coil spring actuator. Can be operated from all directions except direct pull. Momentary contact.	1	A	0.142	-	-	-	12
	8LS3-4C [▲]	Random motion combination spring-rod actuator of anodised aluminium. For multidirectional operating motion except direct pull. Momentary contact.	1	A	0.142 kg max	-	-	-	13
	8LS125-4C 208LS125-4	Random motion "Music Wire" actuator with low force mechanism. The resilient spring steel wire can be operated from all directions except direct pull. Actuator can be bent to suit special requirements. Momentary contact.	1	A	0.028 kg max	-	-	-	14
	1LS2-4C 201LS2-4	No actuating lever. Rotary motion. Momentary contact. Standard pretravel. (Levers must be ordered separately from chart on page 46).	1	A	5.2 kg-cm max	20° max	30° min	12° max	1
	1LS56-4C 201LS56-4	No actuating lever. Rotary motion. Momentary contact. Low pretravel and low operating force. (Levers must be ordered separately from chart on page 46).	1	B	1,08 kg-cm max	5° max	30° min	-	1
	11LS2-4C [▲]	No actuating lever. Rotary motion. 4-circuit double break basic switch. Momentary contact. Standard pretravel. (Levers must be ordered separately from chart on page 46).	2	B	5,2 kg-cm max	23° max	27° min	16° max	1
	6LS2-4C [▲]	No actuating lever. Rotary motion. Maintained contacts Standard pretravel. (Levers must be ordered separately from chart on page 46).	1	A	3,42 kg-cm max	-	-	-	1

Characteristics



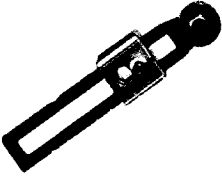

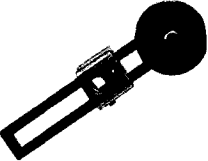
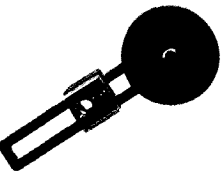


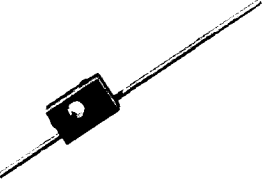
O. F.-Operating Force; O.T.-Overtravel;
P.T.-Pretravel; D.T.-Differential Travel.

*Terminal block 18PAI -4C must be ordered separately if required.

**Suffix to switch Catalogue Listing denotes Conduit Thread :

▲ - 4C = 20 mm Thread to BS4568 and CEE requirements.

- 4PG = PG 13.5 Thread

Auxiliary Actuators	Catalogue Listing	Description	Drawing number
	6PA71-4	Die cast aluminium lever, 19 mm Ø nylon roller	15
	6PA78-4	Die cast aluminium lever, 19 mm Ø steel roller	15
	6PA44-4	Adjustable length roller lever, 19.0 Ø nylon roller, 30-89 mm adjustable radius.	16
	6PA56-4	Adjustable length roller lever 19.0 Ø steel roller, 30-89 mm adjustable radius.	16
	6PA68-4	Adjustable length roller lever 25.4 Ø nylon roller, 35-89 mm adjustable radius.	17
	6PA67-4	Adjustable length roller lever 38.0 Ø nylon roller, 40-89 mm adjustable radius.	18
	6PA64-4	Adjustable length roller lever 50.8 Ø nylon roller, 46-89 mm adjustable radius.	19
	6PA80-4	Yoke roller lever 19 mm Ø steel rollers on opposite sides.	20
	6PA119-4	Yoke roller lever 19 mm Ø nylon rollers on opposite sides.	20
	6PA102-4	Yoke roller lever 19 mm Ø nylon rollers on the same side.	21
	6PA43-4	Adjustable 3,2 mm Ø aluminium rod 140 mm max. adjustable length.	22

Spare Parts

Compact LS	Plug-in 200LS	Basic switches Compact	Operating Head	Actuator Only
1LS1-4C	201LS1-4	2MN1-M	9PA15-4	6PA78-4
1LS2-4C	201LS2-4	2MNI-M	9PA16-4	
1LS3-4C	201LS3-4	2MN1-M	9PA16-4	6PA44-4
1LS10-4C	201LS10-4	2MN1-M	9PA40-4	6PA43-4
1LS19-4C	201LS19-4	2MN8-M	9PA15-4	6PA78-4
1LS23-4C	-	2MN1-M	-	-
1LS47-4C		-	9PA40-4	6PA43-4
1LS56-4C	201LS56-4	-	9PA74-4	**
1LS243-4C	-	-	914PA15	6PA78-4
1LS244-4C		-	914PA15	6PA78-4
2LS1-4C	202LS1-4	2MN1-M	9PA32-4	NA
3LS1-4C	203LS1-4	2MN11-M	9PA45-4	NA
4LS1-4C	204 LS 1-4	2MN11-M	9PA44-4	NA
5LS1-4C	205LS1-4	2MN1-M	9PA33-4	NA
6LS1-4C	206LS1-4	2MN1-M	9PA46-4	6PA80-4
6LS2-4d	206LS2-4	2MN1-M	9PA47-4	***
6 LS3-4C	-	2MN1-M	9PA47-4	6PA102-4
8LS1-4C	208LS1-4	2MN1-M	9PA58-4	N A
8LS3-4C	208LS3-4	2MN1-M	9PA49-4	NA
8LS125-4C	208LS125-4	2MN11-M	9PA54-4	N A
8LS152-4C	208LS152-4	2MN1-M	9PA42-4	NA
11LS1-4C	-	8AS42-2B	9PA15-4	6PA78-4
11LS2-4C	-	8AS42-2B	9PA16-4	*
12LS1-4C	-	8AS42-2B	9PA32-4	NA
15LS1-4C	-	8AS42-2B	9PA33A	NA

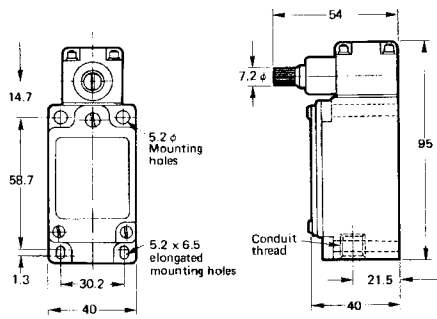
Note: Operating head includes lever where appropriate and internal plunger.

*Actuators shown on page 46 may be used.

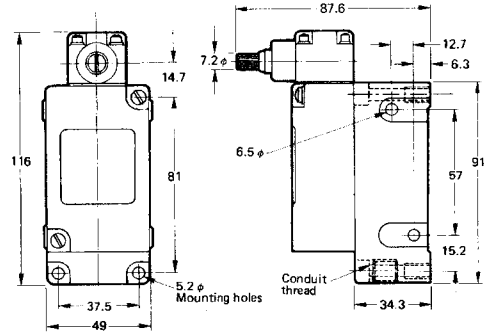
**Because of low operating force 6PA43-4 ; 6PA71-4 or 6PA78-4 auxiliary actuators only are recommended for these listings.

*** Yoke lever actuators only.

Switch Housings

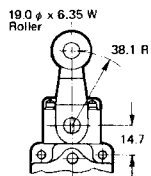


1 **Compact LS without actuator**

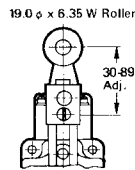


2 **Plug-in 200LS without actuator**

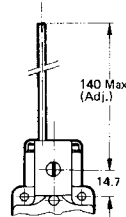
Actuators



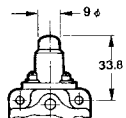
3 **Roller lever**



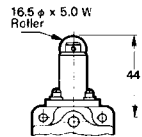
4 **Adjustable length roller lever**



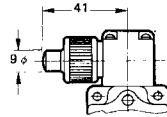
5 **Adjustable length rod**



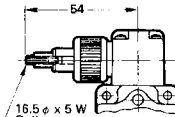
6 **Top plunger**



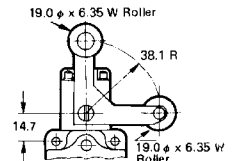
7 **Top roller plunger**



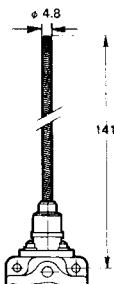
8 **Side plunger**



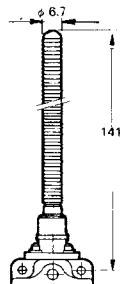
9 **Side roller plunger**



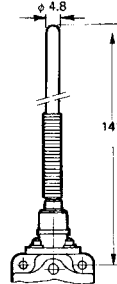
10 **Yoke roller lever**



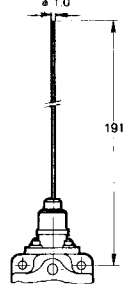
11 **Cable actuator**



12 **Coil spring actuator**



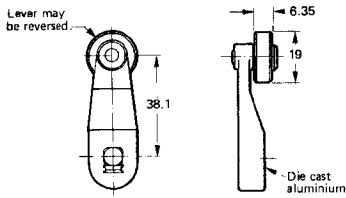
13 **Spring/rod combination**



14 **"Music wire" actuator**

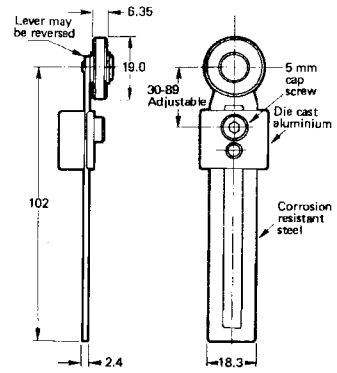
Auxiliary actuators

15



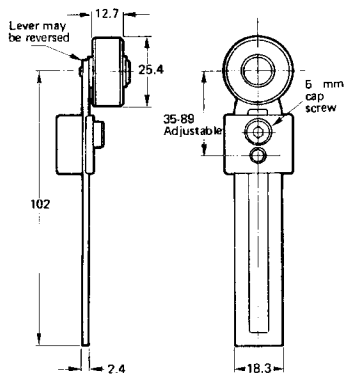
6PA71-4 – 6PA78-4

16



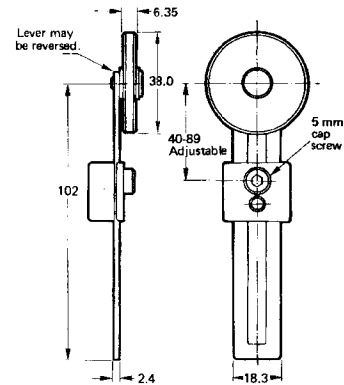
6PA44-4 – 6PA56-4

17



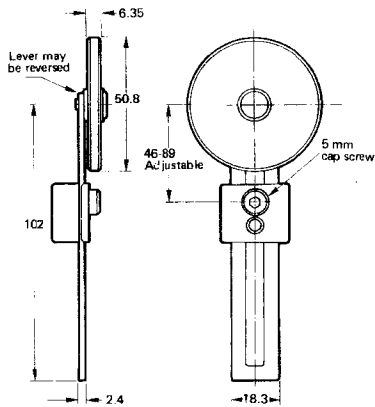
6PA68-4

18



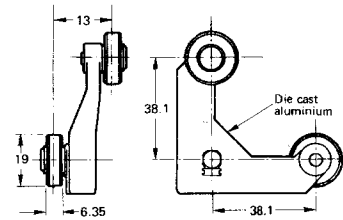
6PA67-4

19



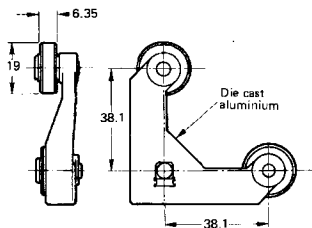
6PA64-4

20



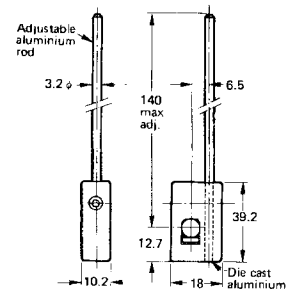
6PA80-4 – 6PA119-4

21



6PA102-4

22



6PA43-4

Dimensions shown in mm are for reference only.