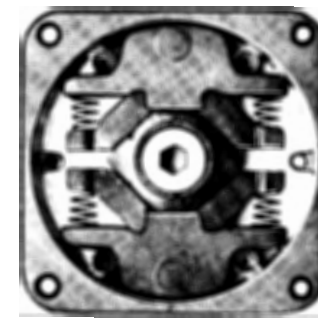
Following components are common to all types of switches: handles, escutcheon plates, latching mechanisms, mounting units and enclosures, optional extras.

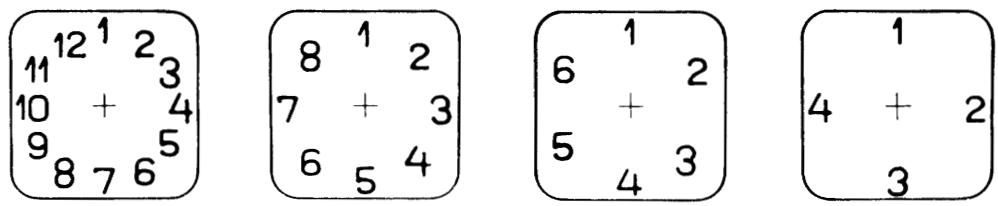
In principle, all types of switches contain two main elements, the latching mechanism and the switching unit. The switch assembly and the stop mechanisms are carried on a common drive shaft of solid aluminium or (on larger sizes) steel, and rigidly clamped together in their relative positions by metal tie-rods. Switching is absolutely positive regardless of switch length.

Superior quality melamine injection mouldings are used having high levels of mechanical and thermal stability which are uneffected by humid conditions.

A notched cam type mechanism, embodying nylon stops operating in conjunction with spring levers, controls switching at predetermined positions. In principle all switches can be arranged with positions at either 90° (max. four positions), 60° (max. six positions), 45° (max. eight positions) or 30° (max. twelve positions). Switches of series T 310 and T 316 are only available with switch angles 30° or 60°.



stop mechanism N 100



The stop springs are in the form of thrust springs proportioned for a service life of 5 million switch operations.
Large terminals, ensure easy accessibility for wiring on site. Identification is by tags which are available to suit any circuit code. Angled or AMP flat plug terminals can be provided if required.

The switch assembly

The switch assembly consists of one or more switch cells in each of which provision is made for accommodating two, fully independent pairs of contacts. In this instance a pair of contacts is interpreted as two fixed contact members with the connecting or opening contact bridge, i. e. the shortest form of a complete current path in the switch. The T 310 and T 316 switch cell contains 3 independant pairs of contacts.

full stage N 100

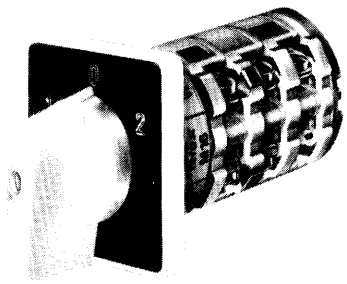
In those instances where the total switching angle exceeds 180° (for T 310 and T 316 120° the switch cell can be utilised fully only if two corresponding contact pairs can be found in the switch programmes. This relationship is attributable to the fact that only one cam located centrally in the cell controls all contacts. With overall switching angles below 180° (for T 310 and T 316 less than 120°) the number of switch cells required is calculated as half the number of contact pairs required for the overall switchprogramme. The radial thrust of the cam is transmitted by rollers to switching plungers which act against the contact springs. When the contact is closed no thrust force is present, as the contact bridge lies on the fixed contact members held by the contact spring. The switch cell walls are of high quality mouldings having high mechanical and electrical properties. Punched circuit connections are provided for connecting adjacent switch terminals in the switch assembly and these do not in any way obstruct attachements of the connecting lead terminals. Where terminals which do not lie adjacent or superimposed have to be connected this must be done with the aid of suitable wire connections. Each terminals is designed to allow connection of two leads of a cross-section appropriate for the switch size. A number of suitable handles and legend plates are available for each switch size.

Basic designs for TELUX Cam Switches

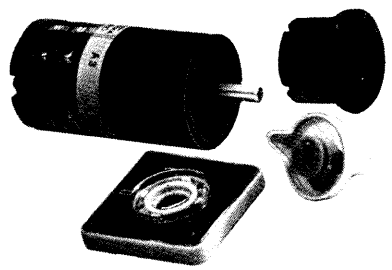
Panel mounting E

Protection Class:
Distribution Boards: From the front IP 40
From the rear IP 00

Switches of this type are suitable for mounting in Distribution Boards, Machines and similar appliances. It is possible to mount the switch from the front through a circular cut-out or from the rear in the normal way, making a hole for the shaft and mounting the front panel and knob on the surface of the board.
In each case the fixing screws are covered by the escutcheon plate. Each switch is supplied with a star shaped plastic adaptor plate to enable different escutcheon plates to be fitted.
The only holes needed are for the fixing screws and shaft.
A special design feature of the knob enables the knob to be fixed without consideration for the length of the shaft.
For panels above 7 mm, special switches must be ordered.
Optionally, a sealing element can be supplied to seal the shaft to comply with Protection Class IP 44 (+ Wd).



Panel mounting E, M 16



Panel mounting central fixing EZ (DIN 43696)

Protection Class: From front and rear IP 00

The following versions are available:

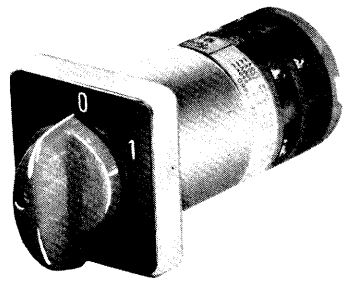
EZO: The switch is supplied without escutcheon plate. The marking of the switch position is done by other means. On request we can supply a black oxidised aluminium plate (60 mm x 60 mm or 60 mm x 72 mm) with a centre hole 30.5 mm.

EZS: Each switch is supplied with a square escutcheon plate (E size).

EZSRE: The same as EZS, but the escutcheon plate is rectangular to allow additional space for markings.

EZ 30: Switches of size M 10, M 16, N 16, N 20, N 32 can be supplied for one hole central fixing with a standard of 30.5 mm diameter.

EZ 22: Switches of size M 10 and M 16 are also available for one hole central fixing of 22.5 mm diameter.

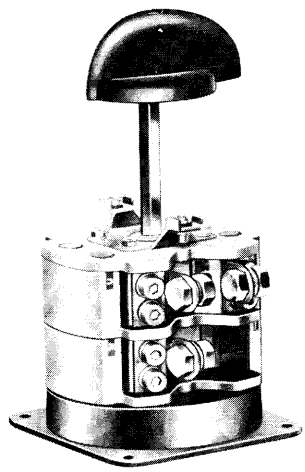


Central Fixing EZS

Base mounting V

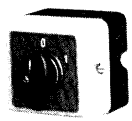
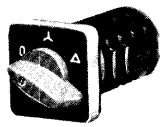
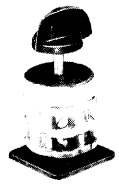
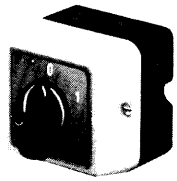
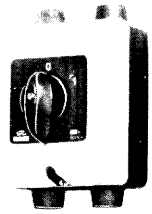
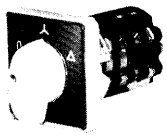
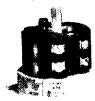
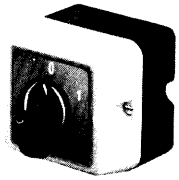
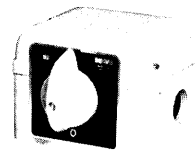
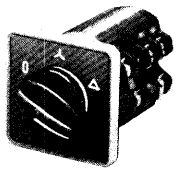
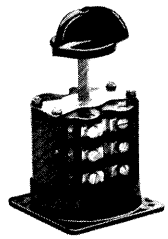
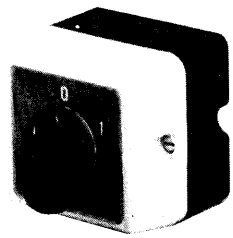
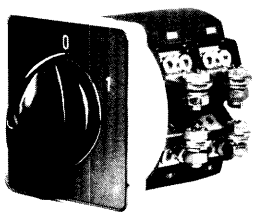
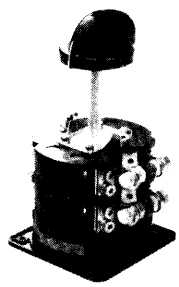
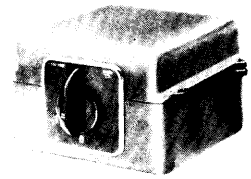
Protection Class: From the front IP 40
From the rear IP 00

This type can be mounted by the base to distribution boards with detachable covers to avoid flexible connection cables.
Optionally, a sealing element can be supplied to seal the shaft to comply with Protection Class IP 44. (+ Wd)
For switch boxes with hinged doors, a door coupling has been developed which allows the door to be opened without having to remove the knobs. (Please see Page 23.)
On request, the shaft can be supplied with special shaft lengths. Standard lengths are shown on Page 56.
Where it is difficult to reach the screwheads, special angled brackets at 45° can be supplied.

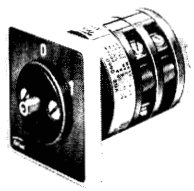
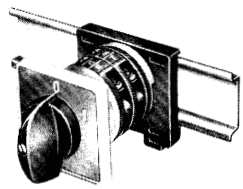
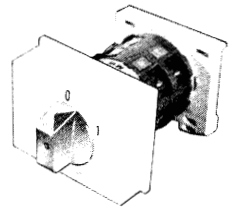
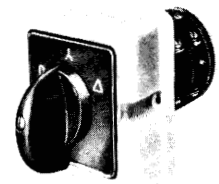
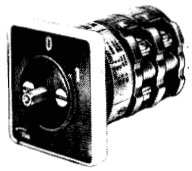
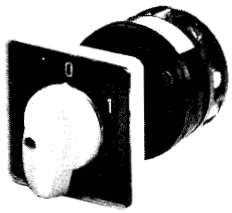
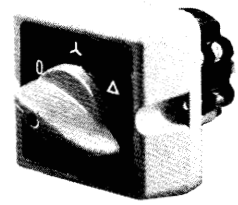
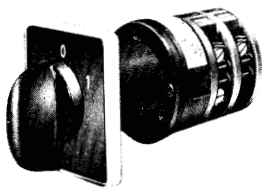
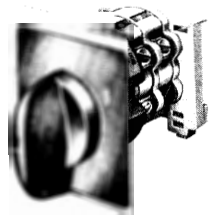


Base Mounting V, N 200

Basic designs of Telux CAM SWITCHES

	panel mounting E	base mounting V	in moulded case P/PF	in cast case G/GF
M 10				—
M 16				—
T 310 **T 316**				—
N 16 **N 20** **N 32**				
N 40 **N 60**				
N 100 **N 200**			—	

Further designs of Telux CAM SWITCHES

panel mounting central fixing EZ 22	panel mounting central fixing EZ 30	quick mounting for DIN-rail SM	quick mounting with installation cover SMA	mounting within the terminal boxes KE
				
				
—		—	—	
—			—	
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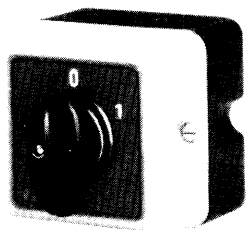
Plastic cases P and PF



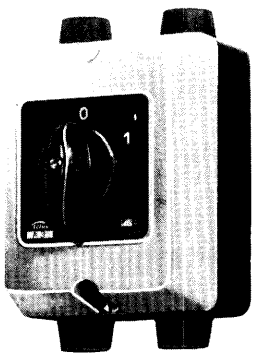
ON-OFF 3 Pole, 10 Amp.
M 10 PA 3

These switches have unbreakable plastic cases intended for wall mounting or for direct fixing to machines and similar equipment.

The standard version, Type P, conforms to protection class IP 40. The two-colour case is a light grey top and dark grey (anthracite) base, but on request they can be supplied in white or, for alarm switches, in red.

For cable entry 4-threaded PG knock-outs are provided.

Switch size	M 10	M 16, N 16, N 20	N 32, N 40, N 60	T 310, T 316
Conduit entries	PG 11	PG 16	PG 21	Rubber cable inlets



ON-OFF 3 Pole, 16 Amp.
T 316 PA 3

In case sizes T 310 and T 316 flexible sleeves may be cut in accordance with the size of the cables. All plastic cases have facilities for base entry and these are 35 mm diameter or 50 mm diameter depending upon case size.

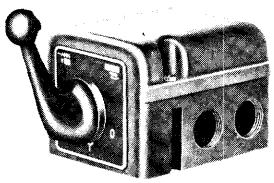
The switches are not fixed to the base in sizes M 10, M 16, T 310, T 316, N 16, N 20, N 32, N 40 and N 60, making it easier to remove for wiring.

On special request in all plastic housings, two terminals can be provided for through earth connections.

Facilities exist on these switches for fitting 1 or 2 neon lamps through the front and escutcheon plate. Details on request.

Housings of all sizes can be sealed for use in dusty and moist atmospheres (Type PF), which comply with IP 44 (Protection against harmful dust deposits and protection against splashed water).

Cast Aluminium Enclosures G and GF



Star-Delta switch in
Cast Alum. Enclos. N 20 GSD

These switches are particularly used in the more arduous conditions or in very humid or dusty rooms.

The standard G version complies with IP 40, when only up to 6 switching cells are used on types N 16, N 20, N 32, N 40, N 60 and N 100 and up to 4 cells on the size N 200. Switches with cast enclosure can be supplied to conform to IP 54 (complete protection against dust and also hose proof [Type GF]) at extra cost.

Tapped holes are provided at top and bottom cable entries.

With switches up to 2 switching cells only one entry, top and bottom, is provided.