

1.6. Rotary Cam Switch LNSE

LEONARD rotary cam switches LNSE (see figure 1.6.1) are cased in housings made of cast aluminum and fitted out with mechanic switching elements. The technical data of all available switching elements are listed in figure 1.0.1.

The rotary cam switches LNSE are normally available with 3, 6, 9 and 12 switching elements. The cam shaft (spindle) comes out on both sides of the housing so that several switches can be coupled together. The second end of the shaft, which is normally unused, is protected by a safety cover. The cam shaft is mounted in two deep groove ball bearings and maintenance-free.

To actuate the individual switching elements the cam shaft is fitted with cam disk sets in a pitch of 30 mm. Each cam disk set consists of the components listed in figure 1.6.2.

The 180° cam rings, made of wear-resistant plastic, are mounted on the carrier disk, made of die-cast aluminum, by two screws and two clamp pieces. The two screws can be slightly slackened in order to turn the cam ring to any required position. The carrier disks have an angular scale of 360° with a graduation of 2°, though a precise switching angle resolution is provided.

If the screws for turning the cam rings are not accessible, the cam shaft and the driving spindle must be uncoupled (see figure 1.6.2). Therefore the lock ring (item 5) on the driving spindle must be rotated until the lock screws (item 6) are accessible and can be unscrewed. Then the clutch (item 7) is pulled out in the direction towards the bearing plate. The connection between the driving spindle (item 10) and the cam shaft (item 9) is now undone and the cam shaft can be turned into any required position. After adjusting all cam disk sets successfully, the two spindles are reconnected. Because of a lock pin (item 8) it is impossible to connect the clutch wrongly.

All parts of the switching element actuator (see figure 1.6.3) are of zinc die-casting and surface treated or of acid-resisting stainless steel. The roller is produced from wear-resistant plastic and is self lubricating. The rotary cam switches dispose of ideal anti-friction properties. Therefore the wear of the rollers in the roller levers is reduced to a minimum.

The housing of the rotary cam switch is made of aluminum alloy and painted in RAL6011. Optional the switch can be supplied in a seawaterproof performance. The housing is divided into the bottom section and the top section at the spindle centre. Both parts are eternal connected by hinges and screws of stainless steel. The rotary cam switch could be mounted with 3 screws M8. Please have a look at all dimensions in figure 1.6.4 and figure 1.6.5.

For driving the LEONARD rotary cam switch LNSE the gearbox GVL is suitable.



Fig. 1.6.1:
Rotary Cam Switch LNSE 06 RD without Cover

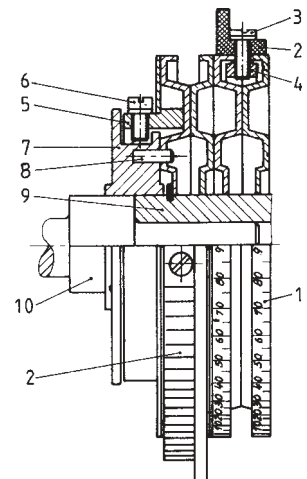


Fig. 1.6.2: Cam Shaft with Clutch LNSE

- | | |
|--------------------|-------------------------|
| 1 = carrier disk | 7 = clutch |
| 2 = cam rings | 8 = lock pin |
| 3 = graduated disk | 9 = cam shaft (spindle) |
| 4 = plate spring | 10 = driving spindle |
| 5 = lock ring | |
| 6 = lock screw | |

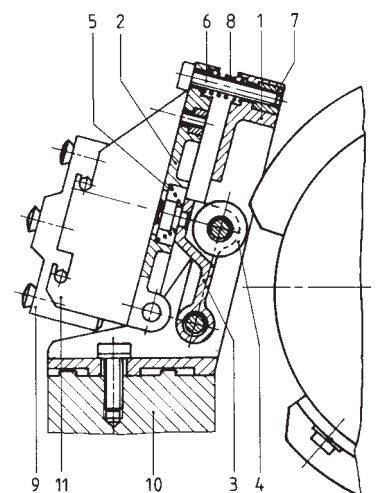


Fig. 1.6.3: Switching Element Actuator LNSE

- | | |
|---------------------|------------------------|
| 1 = bracket | 7 = self-locking nut |
| 2 = contact holder | 8 = compression spring |
| 3 = roller lever | 9 = switching element |
| 4 = roller | 10 = contact strip |
| 5 = return spring | 11 = support frame |
| 6 = adjusting screw | |

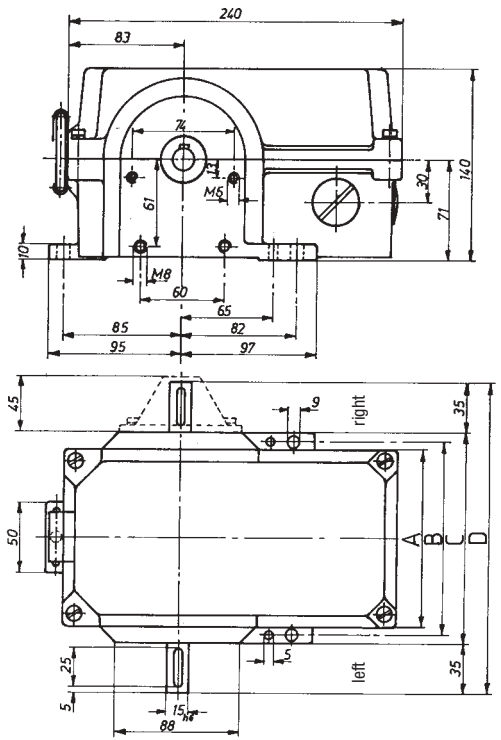


Fig. 1.6.4: Dimensioned Drawing LNSE

Fig. 1.6.5: Table of Dimensions LNSE (without gear)

type	number of cable entries M32	A [mm]	B [mm]	C [mm]	D [mm]	weight [kg]
LNSE 03	3	150	160	175	245	6,0
LNSE 06	4	250	260	275	345	9,0
LNSE 09	5	335	344	360	430	12,5
LNSE 12	6	430	440	455	525	14,5

Ordering instructions for type LNSE:

type	number of switching elements *1)	type of switching elements	gearbox *2)	ratio *2)	drive side (input) *3)

Product overview:

LNSE	03 06 09 12	ADT RD	[no statement] GVL	[no statement] Have a look at the technical data of our gearboxes!	[no statement] l [left side] r [right side]

Example:

LNSE 06 RD GVL 175:1 l

- *1) If the rotary cam switch is not fitted out with the complete number of switching elements, we need the max. possible number of switching elements. The actually fitting must be described "in plain text"!
- *2) We don't need this information for a rotary cam switch without a gearbox.
- *3) If this information is missing, the input is on the right side of the switch. Please pay attention of the drive side, because the cam shaft could not be turned later on!

If you need a rotary cam switch with different switching elements or a switch in a special design, please give a precise description "in plain text"!