1.1. Rotary Cam Switch GSW100

LEONARD rotary cam switches GSW100 (see figure 1.1.1 and 1.1.2) 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 GSW100 are normally available with 3, 6, 9, 12, 15 and 20 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 transparent safety cover has some index marks for the scale ring underneath. 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 20 mm (see figure 1.1.5). Each cam disk set consists of the components listed in figure 1.1.3.

The infinitely adjustable cam disk sets, which run almost entirely free from unbalance by virtue of their special design, are individually tensioned by disc springs. This tension is such that all cam disk sets can be adjusted when the clamp nut is slackened. After setting all the cam disk sets the complete adjustment can be checked on start up for trial operation. Only after all switching adjustments have been tested, the clamp nut is tightened against the disc spring. All cam disk sets are positively located in the position set.

The normal cam rings have 180° long cams. For switching elements with force separation the cam rings are available with cam length of 15°, 30°, 45° or 90°.

For the application from rotary cam switches on presses our switches are optionally available with an additional clamping device. In this case, after all adjustments have been carried out, the clamping element of each cam disk set is tightened against the cam disk set by turning the clamping screw clockwise form underneath. When the cam disk sets have been locked in this way they cannot be moved out of position even though the clamp nut is slackened and the preliminary tension has got over. The cam disk sets can be permanently secured to prevent unintentional or unauthorized adjustment by additionally caulking the clamping screw slots.

The cam rings and graduated disks have a diameter of 100 mm and a scale of 360° with a graduation of 2°, though a high and precise switching angle resolution is provided. The accurate adjustment of the switching points is guaranteed, because the cam rings have a switch-on and switch-off point index mark. The cam rings as well as the graduated disks are made of die-cast aluminum. Thus reduces the inertia forces and increases the life of the deep groove ball bearings. Based on the surface protection of the cam rings and the graduated disks, they are “hard coated”, a maximum of surface hardness, a maximum of corrosion protection and a maximum of resistance to seawater and many chemical substances is guaranteed.

All parts of the switching element actuator (see figure 1.1.4) are of zinc die-casting and surface traded 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.

Fig. 1.1.1: Rotary Cam Switch
GSW100-06 MNS without Cover

Fig. 1.1.2:
Presses Safety Cam Switch
GSW100-03 MNS-2PI without Cover

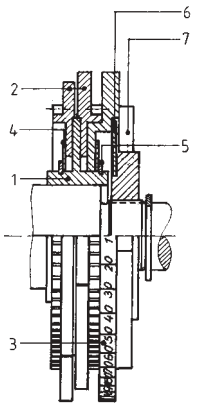

Fig. 1.1.3:
Cam Disk Set
GSW100
1 = carrier disk
2 = cam rings
3 = graduated disk
4 = plate spring
5 = retainer ring
6 = clamp spring
7 = clamp nut

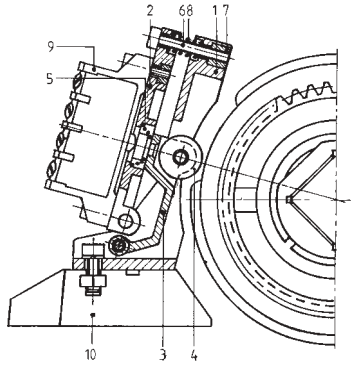

Fig. 1.1.4:
Switching Element Actuator GSW100

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

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 4 screws M8. Please have a look at all dimensions in figure 1.1.6 and figure 1.1.7.

For driving the LEONARD rotary cam switch GSW100 the gearbox GV is suitable.

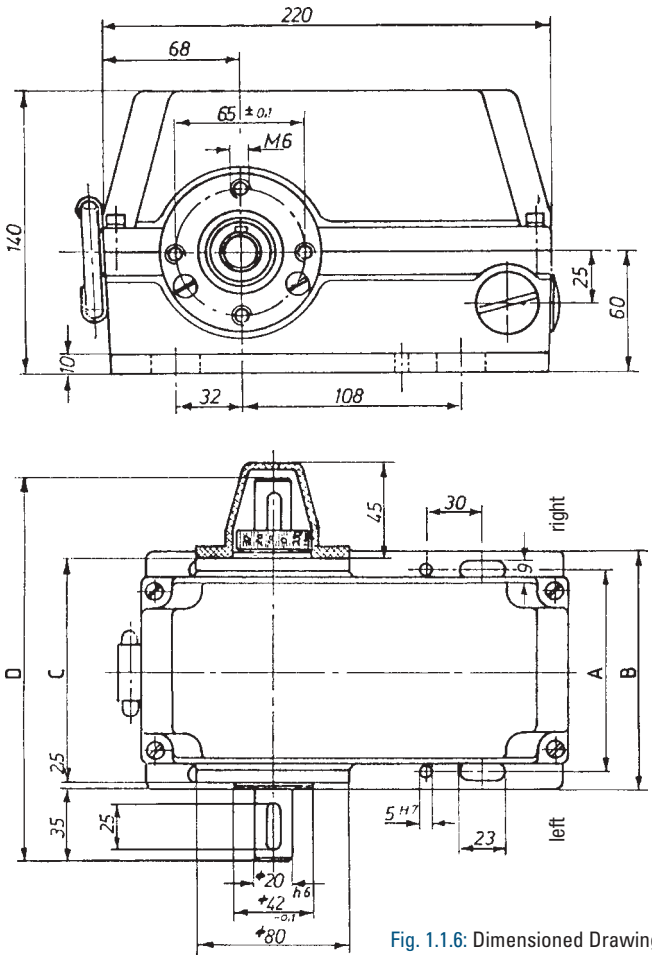

Fig. 1.1.6: Dimensioned Drawing GSW100

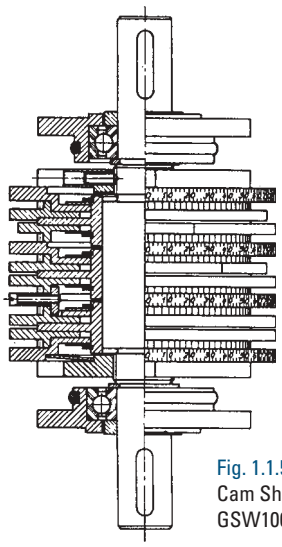

Fig. 1.1.5:
Cam Shaft
GSW100-03

Fig. 1.1.7: Table of Dimensions GSW100 (without gear)

type	number of cable entries M32	A [mm]	B [mm]	C [mm]	D [mm]	weight [kg]
GSW100-03	3	105	124	114	184	4,0
GSW100-06	4	165	184	174	249	6,5
GSW100-09	5	225	244	234	309	9,5
GSW100-12	6	285	304	294	369	12,0
GSW100-15	7	370	390	380	455	15,5
GSW100-20	8	483	503	492	576	20,0

Ordering instructions for type GSW100:

type *0)	number of switching elements *1)	type of switching elements	gearbox *2)	ratio *2)	drive side (input) *3)

Product overview:

GSW100-	03 06 09 12 15 20	MNS MNSG MNST RD	[no statement] GV	[no statement] Have a look at the technical data of our gearboxes!	[no statement] l [left side] r [right side]

Example:

GSW100-06 MNS GV 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.

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”!