

Type GE1-40-6P-U...

The gearing limit switch GE 1 / GE 2 is a rugged switching device to IEC 947-5-1 EN 60947 DIN VDE 0660-200 designed for hoisting applications. The modular micro changeover contacts are positive opening to VDE 0113.

Contact complement 2 A 250 V AC 15 res. 3 A 24 V DC 13

The device is programmed by means of stepless adjustment of double cam disks, which can be provided from 18° to 192° contact disks according to the switching program required.

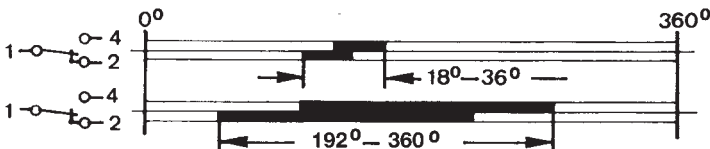
The type GE 1 includes a double cam disk conjointly lockable. The type GE 2 includes a double cam disk individually lockable.

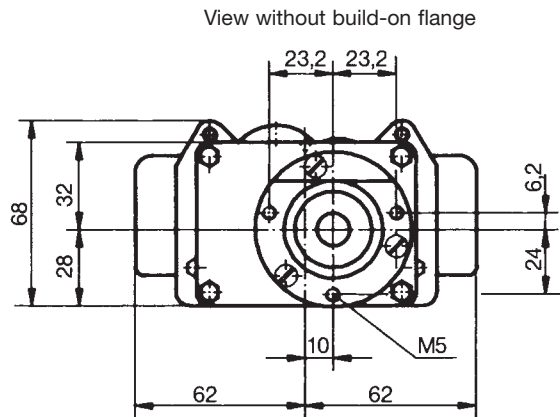
The following gear ratios (n:1) are possible:
from 2 to 320
Further ratios can be provided as required.
The maximum usable rotational angle at the spindle is 342°.

Surface treatment	Primer, top coat: 2 coats of epoxy-resin paint, standard colour RAL 7032 pebble-grey textured varnish
Mechanical life	10 million (operating cycles)
Permissible ambient temperature	Operation -40° C to +60° C Storage -50° C to +80° C
Climate resistance	
Damp heat constant	DIN IEC 68 part 2-3
Damp heat cyclic	DIN IEC 68 part 2-30
Degree of protection (in housing)	IP 65 IEC 529 DIN 40050

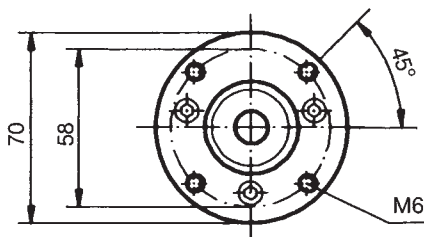
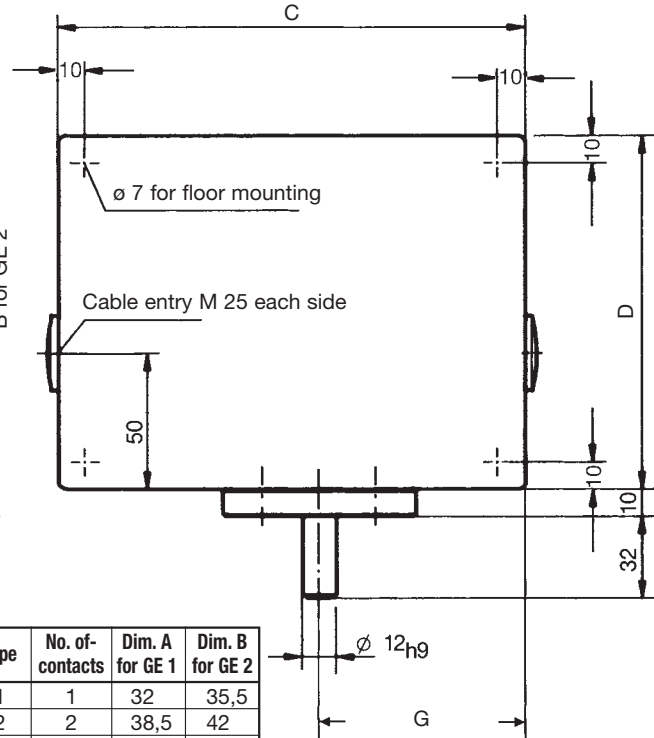
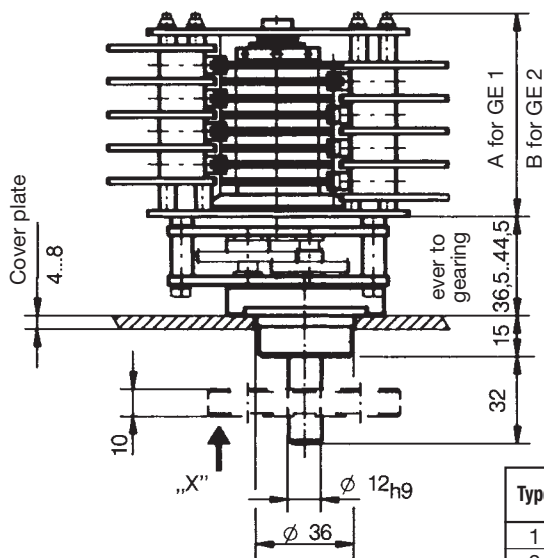
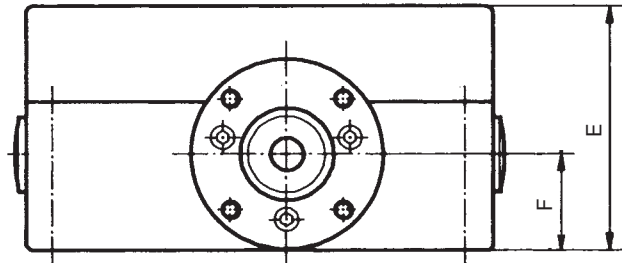
Technical data look catalog 5/100, GE 1 T 576, GE 2 T 577

Pos.		Type-expansion		Weight gramm	Type	Price EURO
1	Drive with drive shaft, with mounting flange			350	GE1	
2	Drive with drive shaft, with mounting flange			350	GE2	
3	Gearing Ratios (n : 1) 2 : 1 to 10 : 1			400		
4				450		
5				500		
6				550		
7				600		
8				650		
9	or ratios to your instructions					
10	Limit switch		No. of contacts 2	350	2	
11			3	400	3	
12	Switching program with 18°, 24°, 30°, 36°, 45°, 60°, 75°, 90°, 110°, 120°, 176° or 192° contact ways program-disks (please select)		4	450	4	
13			5	500	5	
14			6	550	6	
15			7	600	7	
16	The program-disks are infinitely adjustable within 360°.		8	650	8	
17			9	700	9	
18			10	750	10	
19			11	800	11	
20			12	850	12	
21			13	900	13	
22			14	950	14	
23			15	1000	15	
24	or to your contact-arrangement		16	1050	16	
25	Double cam disk individually lockable for GE 2		1			
27	Potentiometer e.t.c. with mounted Wire-wound potentiometer PW 70 d linear, 5 Watt wiper current max. 30 mA resistance 1k ± P992, 2k ± P993, 5k ± P994, 10k ± P995	P99 □		100	P	
28	Prepared for mounting potentiometer (gearing metal)				(P)	
29	Prepared for mounting potentiometer e.t.c. adjusting angle variable More potentiometer e.t.c. look catalog 1/240...	P...			(P)	
30	Aluminium housing U 17 / 13 for max. 8 contacts GE 1			1500	U5	
31	Aluminium housing U 16 / 16 for max. 12 contacts GE 1 , max. 6 contacts GE 2			2000	U6	
32	Aluminium housing U 16 / 20 for max. 16 contacts GE 1 , max. 10 contacts GE 2			2500	U7	
33	Aluminium housing U 16 / 26 for max 16 contacts GE 1			3000	U8	
34	Aluminium housing U 16 / 35			3500	U9	





Protection IP 65



Build-on flange, view „X”

Type	No. of contacts	Dim. A for GE 1	Dim. B for GE 2
1	1	32	35,5
2	2	38,5	42
3	3	44,5	48
4	4	50,5	54
5	5	56,5	60
6	6	63	66,5
7	7	69	72,5
8	8	75	78,5
9	9	81	84,5
10	10	87	90,5
11	11	93	96,5
12	12	99	102,5
13	13	105,5	109
14	14	111,5	115
15	15	117,5	121
16	16	123,5	127

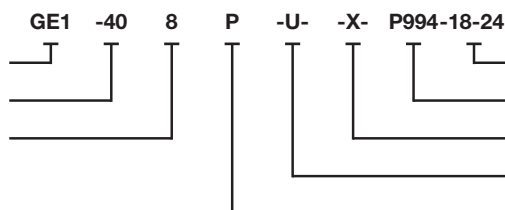
Type	Dim. C	Dim. D	Dim. E	Dim. F	Dim. G
U17/13	170	130	90	35,5	75
U16/16	160	160	91	45	70
U16/20	160	200	100	45	70
U16/26	160	260	91	45	70
U16/35	160	350	100	45	70

Example for type-sign

gear limit switch

gear ratios

No. of contacts



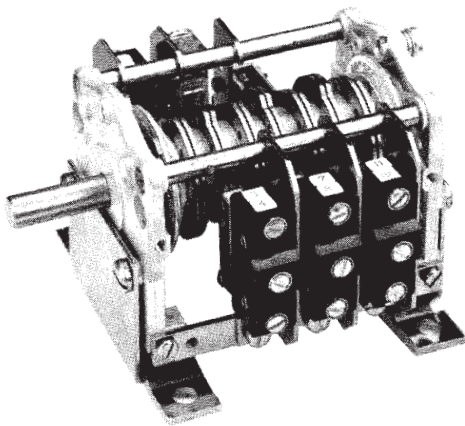
program-disk contact 1, 2...

Potentiometer description

special please describe

aluminium housing

Potentiometer e.t.c.



Type KVS-03-...

The copy-cam controller KVS is a rugged switching device to IEC 947-5-1 EN 60947 DIN VDE 0660-200 and is designed for packing machines. The free spindle end is intended for a gearwheel, sprocket wheel or for direct coupling to the driven machine. Gearing for matching rotational speed can be supplied (see 3/200).

The work sequence of the machine is "copied". The drum controller is supported in a bearing, is extremely accurate and has a long service life. The contact blocks, micro-switches, proximity initiators (items 15-19) can be replaced individually or can be combined.

The unit is programmed via double cam disks which can be adjusted steplessly and which have a 180° contact deck.

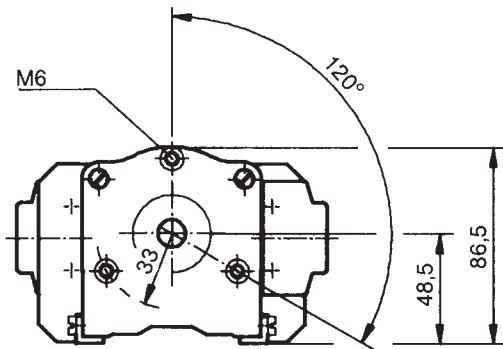
Surface treatment	Primer, top coat: 2 coats of epoxy-resin paint, standard colour RAL 7032 pebble-grey textured varnish
Mechanical life	20 million (operating cycles)
Permissible ambient temperature	Operation -40° C to +60° C Storage -50° C to +80° C

Climate resistance	DIN IEC 68 part 2-3
Damp heat constant	DIN IEC 68 part 2-30
Damp heat cyclic	IP 65 IEC 529 DIN 40050
Degree of protection (in housing)	

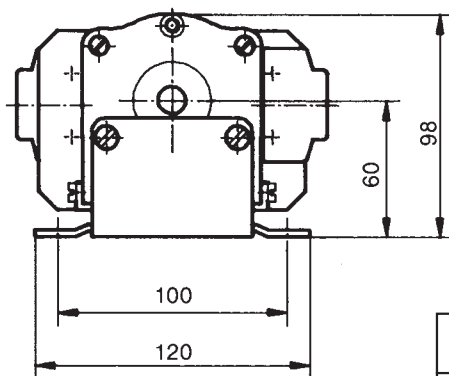
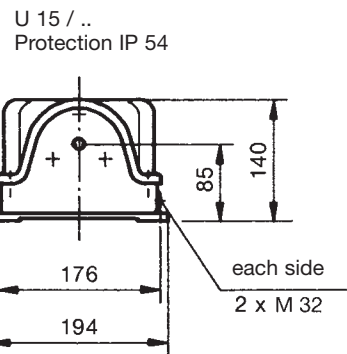
Technical data look catalog 5/100, T 104

Proximity initiator	
Type IN 5002-FPKG plus switching	
Type IN 5002-FNKG minus switching	
Connection voltage	18-30 V DC
Current loading	100 mA
Current consumption, not switched	10 mA
Ambient temperature, compensated	-25° C/+80° C
Output: contact-free, short-circuit proof and protected against polarity reversal, switching state displayed via LED	

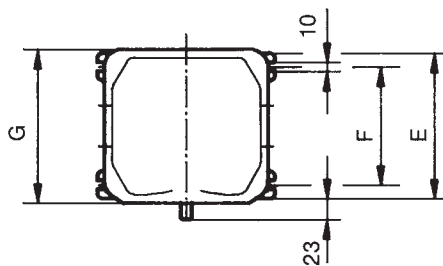
Pos.				Weight kp	Type	Price EURO
1	Copy-cam controller		No. of contacts 3	0,7	01	
2	with free shaft end 12 mm ø		5	0,9	02	
3	without contacts		7	1,1	03	
4	without proximity initiator		9	1,3	04	
5			11	1,5	05	
6	Switching program 180° each contact way		13	1,7	06	
7			15	1,9	07	
8		The program-disks are infinitely adjustable within 360°.	17	2,1	08	
9			19	2,3	09	
10			21	2,5	10	
11			23	2,7	11	
12						
15	Cam operated switch 4 A 350 V AC 15	1 NC	1	0,08	5	
16						
17	Microswitch 8 A 250 V AC 15	1 NC + 1 NO	1	0,08	7	
18	Proximity initiator plus switching	1 NC or 1 NO	1	0,08	8	
19	Proximity initiator minus switching	1 NC or 1 NO	1	0,08	8	
20	Impulse device hall generator 15 Imp./rev via slot disk			0,08	I	
25	Second, free shaftend 12 mm ø				F	
26	Mounting angles 2 pieces each copy-cam controller			0,1	W	
30	Aluminium housing U 15 / 14 IP 54 up to type 03			1,7	U1	
31						
32	Aluminium housing U 15 / 30 IP 54 up to type 11			2,9	U3	



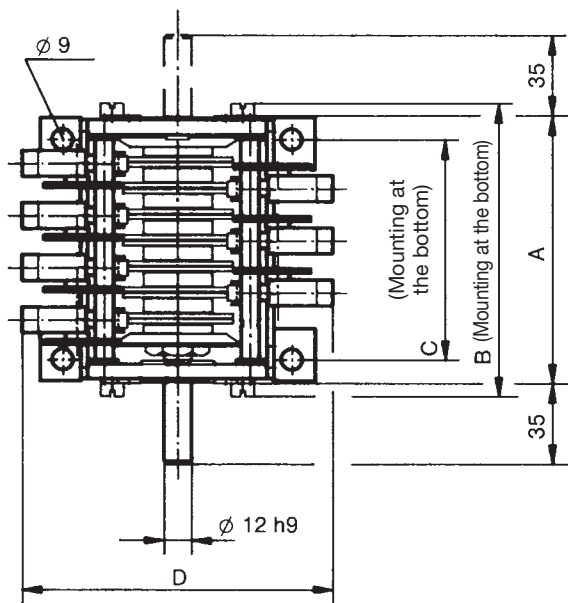
Mounting at the top



Mounting at the bottom
(with mounting angles)



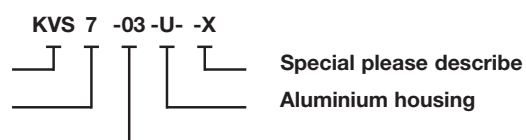
U 15 / ..	Dimension E	Dimension F	Dimension G
/14	160	130	169
/30	320	290	329

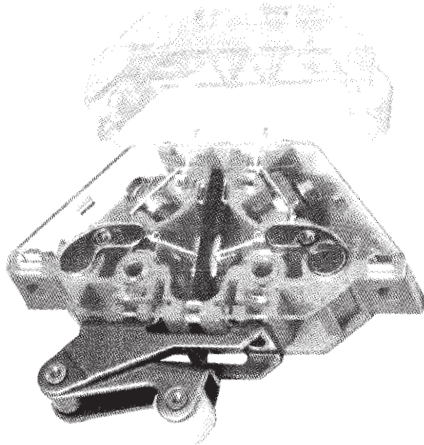


Type	No. of contact	Dimension A	Dimension B	Dimension C
01	3	72	87	51
02	5	95	110	74
03	7	118	133	97
04	9	141	156	120
05	11	164	180	143
06	13	187	202	166
07	15	210	225	189
08	17	233	248	212
09	19	256	271	235
10	21	279	294	258
11	23	302	317	281

Type	Dimension D	Screw-connection
KVS 5	125	M 4
KVS 7	145	M 3
KVS 8	140	M 3

Example for type-sign
Copy-cam controller
No. of contacts
Contact-type





Type SO1.10-R-...

The DC contact block to IEC 947-5-1 EN 60947 DIN VDE 0660-200 and VDE 0670/4 § 20 is used for signalling and announcement applications. The snap-action mechanism prevents slow contact opening when the plunger is operated slowly. Quenching of the arc that occurs with DC is supported by two-capacity permanent magnets. These are arranged so that the polarity can be ignored when connecting +/- cabling.

However, the polarity of the quenching magnets must be noted when installing the contact blocks to prevent the magnets adversely affecting each other. Contact blocks in four different colours are available for polarity identification of the magnets when fitted (see diagram below left).

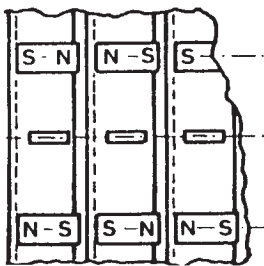
The contact blocks may only be installed on non-magnetizable materials with screws, etc. made of non-ferrous metal. The self-cleaning silver contacts are designed for low switching frequency, low currents and voltages. Gold coated contacts can be supplied (approx. 0,2 µ, less than 42 Volt required). The screw connection M3.5 at the side is suitable for 2 conductors max. 2.5 mm². The plug-in connection at the top 4.8 x 0.8 mm DIN 46247.

Several contact blocks can be plugged on top of each other and operated jointly. The plug-type terminals are then only accessible on the top unit. The contact blocks can be provided with shock protection to DIN VDE 0106 Part 100.

Please consult our technical department in the event of: application in extreme nuisance, confined switching points or increased breaking currents.

blue grey blue
green yellow green

———— Normally closed (NC)
———— Normally open (NO)



Unless otherwise requested, equal quantities grey/blue or yellow/green will be supplied.

Switching capacity

	NC	NO	Time constant
250 V DC	2 A	1 A	20 ms
125 V DC	4 A	3 A	20 ms
50 V DC	6 A	6 A	20 ms
30 V DC	10 A	10 A	20 ms
250 V AC 15	6 A	6 A	

Mechanical life
Electrical service life

2 million operating cycles
50.000 operating cycles
at 2 A 250 V DC L/R 20 ms

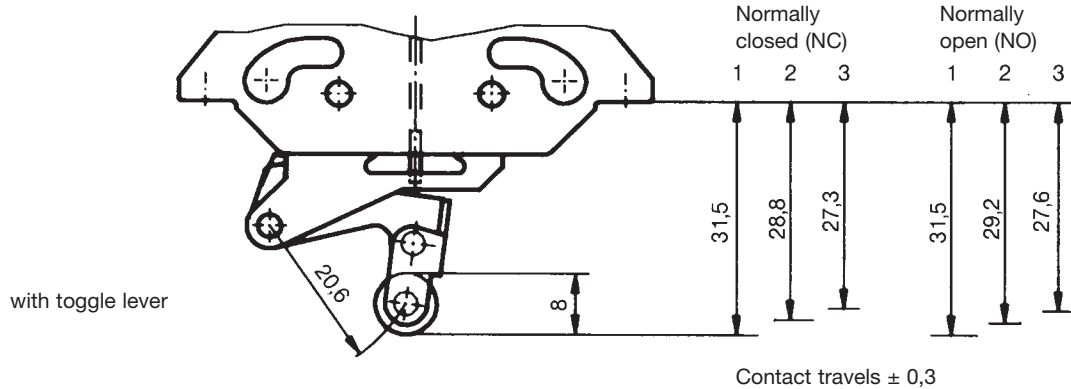
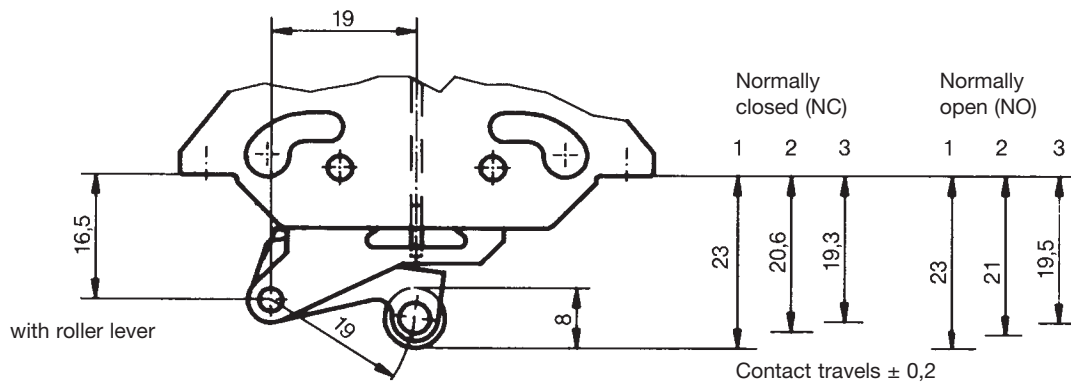
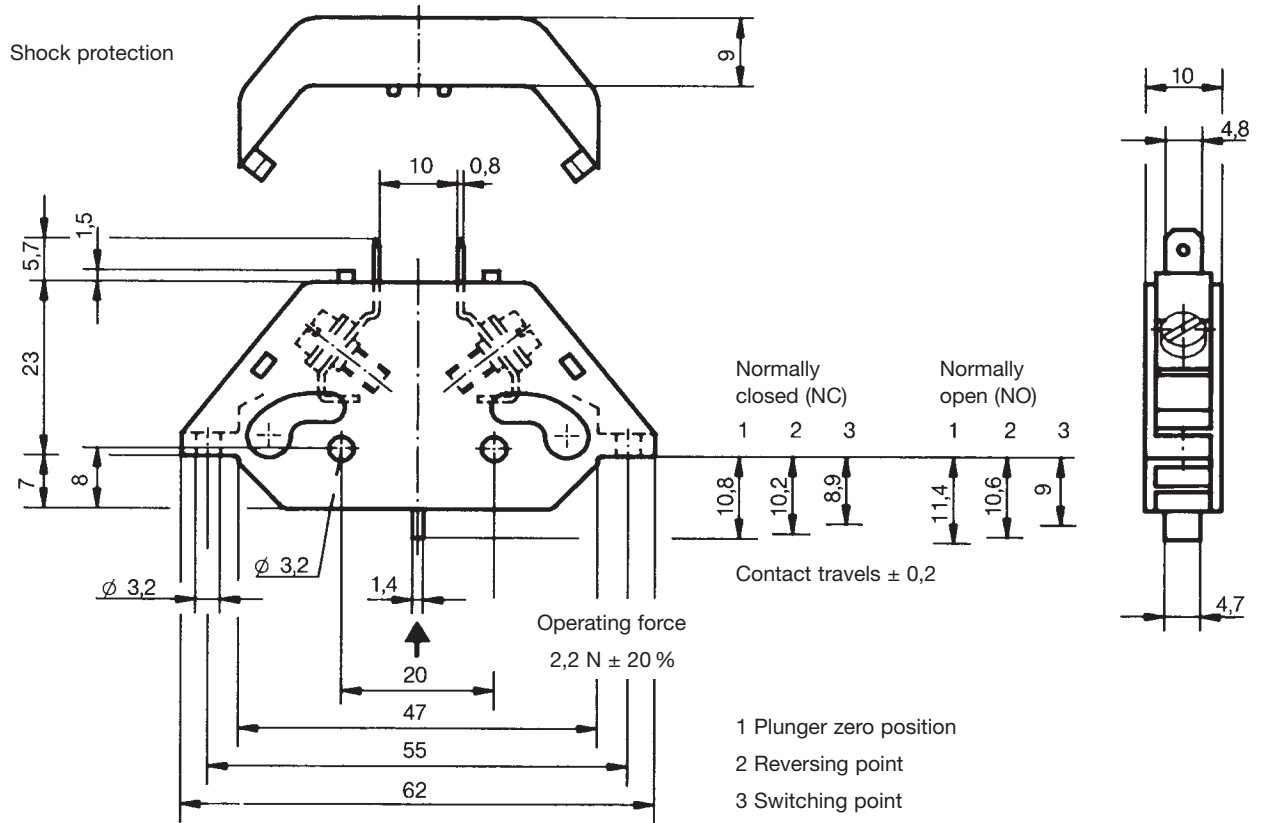
Permissible ambient temperature

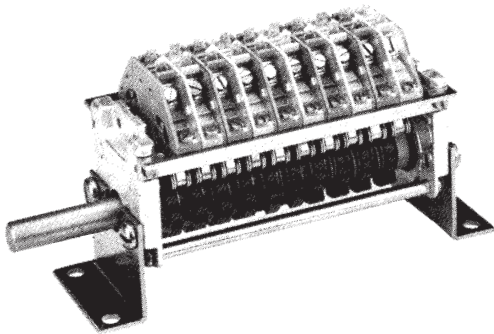
Operation -40° C to +60° C
Storage -50° C to +80° C

Climate resistance
Damp heat constant
Damp heat cyclic
Degree of protection

DIN IEC 68 part 2-3
DIN IEC 68 part 2-30
IP 40 IEC 529 DIN 40050

Pos.				Weight gramm	Type	Price EURO
1	DC-contact normally closed (NC)			20	SO 1.10	
	Colour code grey or blue					
2	DC-contact normally open (NO)			20	SS 1.10	
	Colour code yellow or green					
3	Shock protection KEG 142 to DIN VDE 0106 Part 100				B	
4	Roller lever			10	R	
5	Toggle lever (switching in one direction only)			15	K	
6	Plug-in connection at side 4,8 x 0,8 mm (2 pieces)				F	
7	Contacts gold-coated approx. 0,2 µm				AU	
8	Contact without quenching magnets (for AC only) subtract price					
9	Contact without quenching magnets (for AC only) and without snap-action mechanism subtract price					



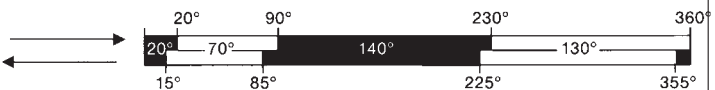


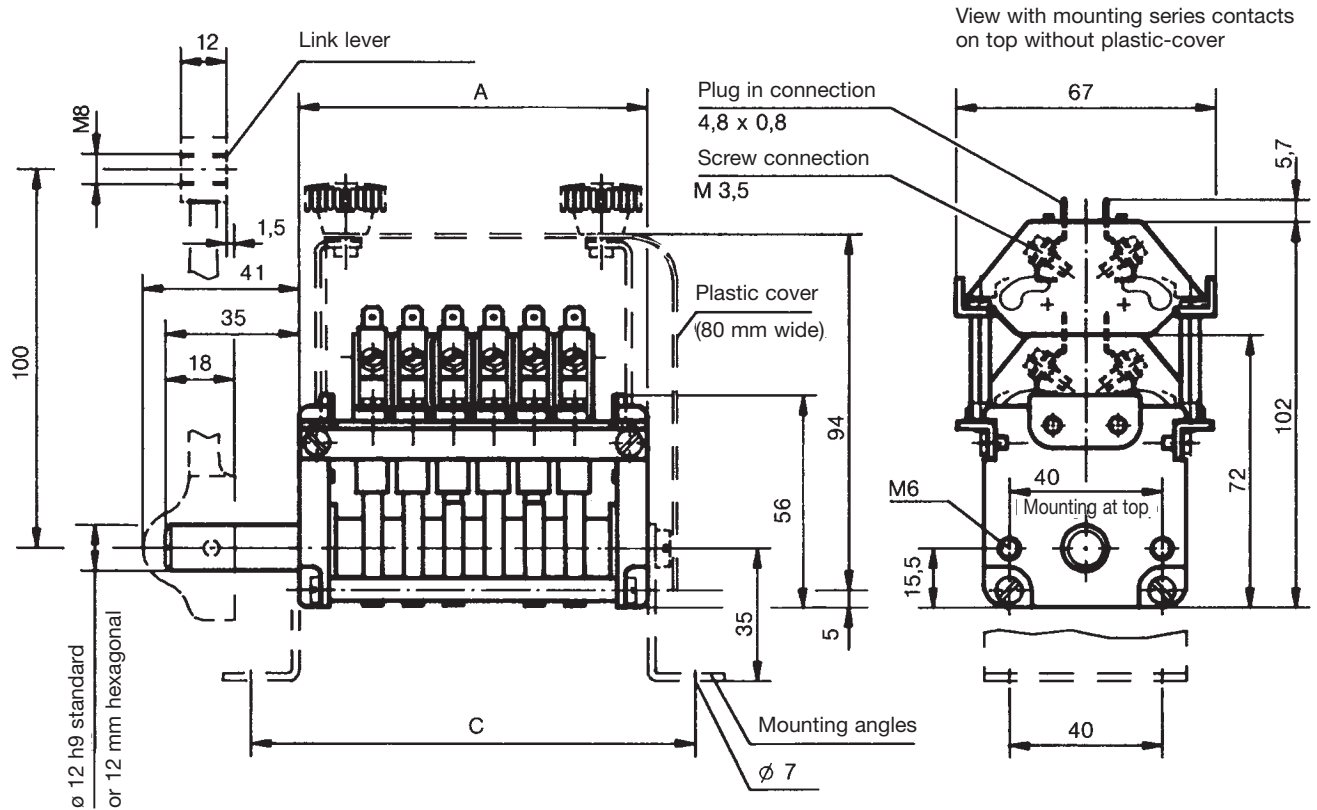
Type NU1-10-W...

The cam controller NU 1 is used as a signal and annunciation switch in HV systems. This rugged switching device to IEC 947-5-1 EN 60947 DIN VDE 0660-200 and VDE 0670/4 § 20 has cam disks made of insulation material that can be set at 10° intervals. **The switching rating of the contacts (NC with snap-action mechanism) is 6 A 250 V AC 15 or 2 A 250 V DC. Time constant L/R = 20 ms.** NO contacts can also be supplied. The DC contact blocks are designed to permit series assembly, which can then be operated simultaneously. This requires additional components for mounting the contacts.

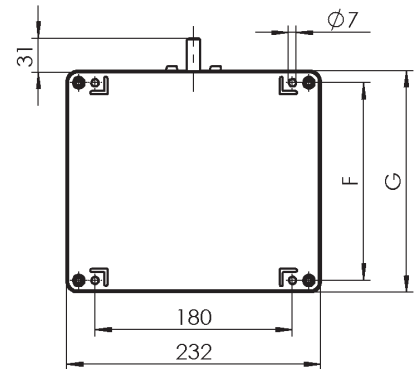
Mechanical life	2 million operating cycles
Permissible ambient temperature	Operation -40° C to +60° C Storage -50° C to +80° C
Climate resistance	
Damp heat constant	DIN IEC 68 part 2-3
Damp heat cyclic	DIN IEC 68 part 2-30
Degree of protection (in housing)	IP 65 IEC 529 DIN 40050
Technical data look catalog 5/100	

Pos.				Weight gramm	Type	Price EURO
1	Signal-cam controller	No. of contacts	2	350	2	
2	with free shaftend 12 mm ø standard		4	460	4	
3	or 12 mm hexagonal		6	570	6	
4	Switching program		8	680	8	
5			10	790	10	
6			12	900	12	
7			14	1010	14	
8	or to your contact-arrangement		16	1120	16	
9	Switching program to your contact-arrangement		2			
10	Components for mounting series contacts on top		4	110	+4	
11	with DC-contacts		8	200	+8	
12			12	290	+12	
13			16	380	+16	
14						
15	Second free shaftend 12 mm ø standard or 12 mm hexagonal				F	
16	Spring return in 0-position			110	Z	
17	Switching sequence 4-0-4					
18	Mounting angles 2 pieces each signal-cam controller			80	W	
19	Link lever for shaft 12 mm ø standard or 12 mm hexagonal			70	GH	
21	Plastic-cover (Astralon)	up to max	4		A	
22	(Dust and shock protection)		8		A	
23			12		A	
24			16		A	
25	Shock protection KEG 142 for DC-contacts to DIN VDE 0106 Part 100					
30	Aluminium housing U 23 / 20 up to type 10			2500	U11	
31	Aluminium housing U 23 / 28 up to type 16			3000	U12	

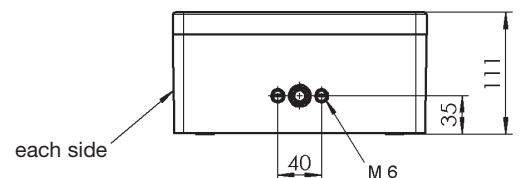




Type	No. of contact	Dimens. A	Dimens. C	Housing	Dimens. F	Dimens. G
2	2	49	74	U 23/20	180	202
4	4	70	95			
6	6	91	117			
8	8	113	138			
10	10	134	159			
12	12	155	180	U 23/28	260	280
14	14	176	201			
16	16	197	222			



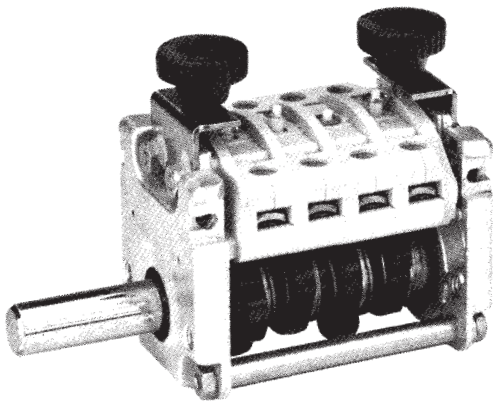
Aluminium housing protection IP 65



Example for type-sign
Signal-cam controller
No. of contacts
Link rod



Special please describe
Plastic-cover
Mounting angles



Type NU2-14-...

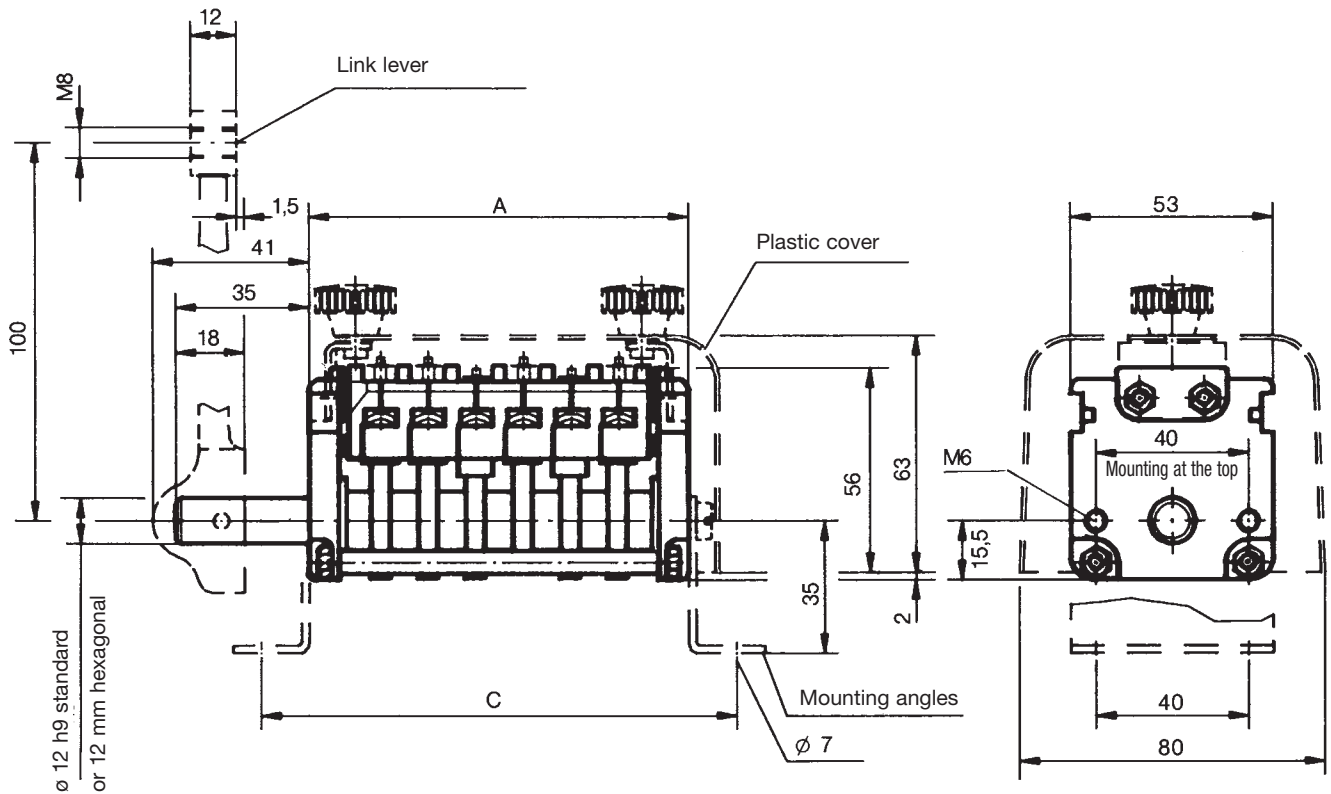
The cam controller NU 2 is used as a signal and announcement switch in HV systems. This rugged switching device to IEC 947-5-1 EN 60947 DIN VDE 0660-200 has cam disks made of insulation material that can be set at 10° intervals.

The switching rating of the contacts (positively opened) is 4 A 350 V AC 15 res. 1 A 24 V DC 13.

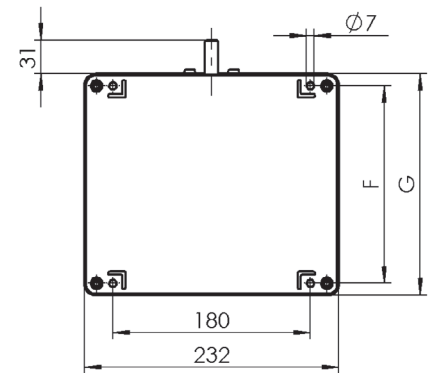
Mechanical life	6 million operating cycles
Permissible ambient temperature	Operation -40° C to +60° C Storage -50° C to +80° C
Climate resistance	DIN IEC 68 part 2-3
Damp heat constant	DIN IEC 68 part 2-30
Damp heat cyclic	IP 65 IEC 529 DIN 40050
Degree of protection (in housing)	

Technical data look catalog 5/100

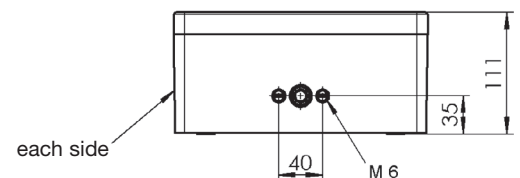
Pos.				Weight gramm	Type	Price EURO
1	Signal-cam controller	No. of contact	2	280	2	
2	with free shaftend 12 mm ø standard		4	380	4	
3	or 12 mm hexagonal		6	480	6	
4	Switching program		8	580	8	
5			10	680	10	
6			12	780	12	
7			14	880	14	
8	or to your contact-arrangement		16	980	16	
9	Switching program to your contact-arrangement		2			
10						
11	Second free shaftend 12 mm ø standard or 12 mm hexagonal				F	
12	Spring return in 0-position			110	Z	
13	Switching sequence 4-0-4					
14	Mounting angles 2 pieces each signal-cam controller			80	W	
15	Link lever for shaft 12 mm ø standard or 12 mm hexagonal			70	GH	
21	Plastic-cover (Astralon)	up to max.	4		A	
22	(Dust and shock protection)		8		A	
23			12		A	
24			16		A	
25						
30	Aluminium housing U 23 / 20 up to type 10			2500	U11	
31	Aluminium housing U 23 / 28 up to type 16			3000	U12	



Type	No. of contact	Dimens. A	Dimens. C	Housing	Dimens. F	Dimens. G
2	2	50	75	U 23/20	180	202
4	4	75	100			
6	6	100	125			
8	8	125	150			
10	10	152	177			
12	12	177	202	U 23/28	260	280
14	14	202	227			
16	16	227	252			



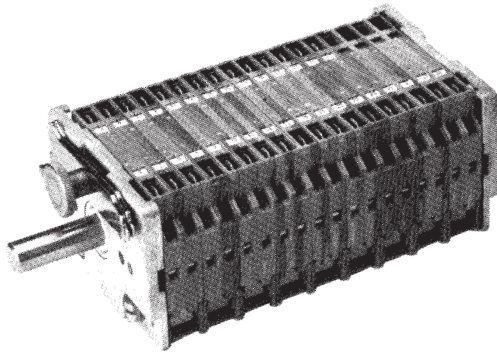
Aluminium housing protection IP 65



Example for type-sign
Signal-cam controller
No. of contacts
Spring return



Special please describe
Aluminium housing
Link rod

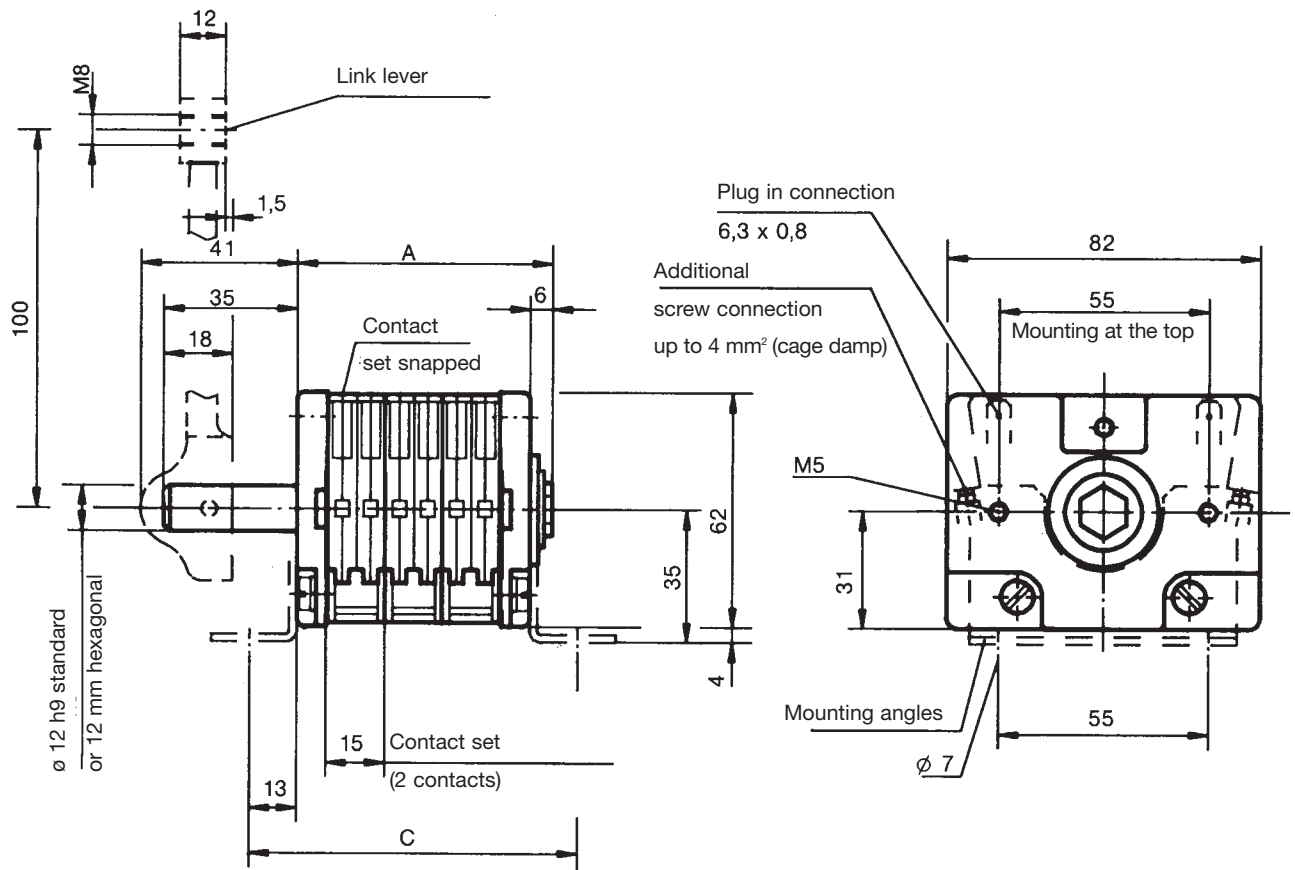


Type NU3-09-...

The cam controller NU 3 is used as a signal and announcement switch in HV systems. This rugged switching device to IEC 947-5-1 EN 60947 DIN VDE 0660-200 and VDE 0670/4 § 20 has cam disk that can be programmed.
The switching rating of the contacts (positively opened and positively closed) is 8 A 250 V AC 15 res. 2,5 A 250 V DC.
Time constant L/R = 20 ms.

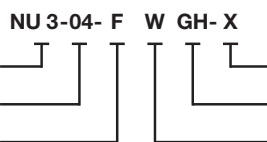
Mechanical life	1 million operating cycles
Permissible ambient temperature	Operation -40° C to +60° C Storage -50° C to +80° C
Climate resistance	DIN IEC 68 part 2-3
Damp heat constant	DIN IEC 68 part 2-30
Damp heat cyclic	DIN IEC 68 part 2-30
Degree of protection (in housing)	IP 54 IEC 529 DIN 40050
Technical data look catalog 5/100	

Pos.				Weight gramm	Type	Price EURO
1	Signal-cam controller	No. of contacts 2		450	01	
2	with free shaftend 12 mm ø standard	4		600	02	
3	or 12 mm hexagonal	6		750	03	
4	Contacts with connector lugs	8		900	04	
5	Switching program to your	10		1050	05	
6	contact-arrangement	12		1200	06	
7		14		1350	07	
8		16		1500	08	
9		18		1650	09	
10		20		1800	10	
11		22		1950	11	
12		24		2100	12	
13		26		2250	13	
14		28		2400	14	
15		30		2550	15	
16		32		2700	16	
20	Contacts with additional screw connection each	2				
21	Second free shaftend 12 mm ø standard or 12 mm hexagonal				F	
22	Spring return in 0-position			110	Z	
23	Switching sequence 4-0-4					
24	Mounting angles 2 pieces each signal-cam controller			80	W	
25	Link lever for shaft 12 mm ø standard or 12 mm hexagonal			70	GH	



Type	No. of contacts	Dimension A	Dimension C
01	2	37	57
02	4	52	72
03	6	67	87
04	8	82	102
05	10	97	117
06	12	112	132
07	14	127	147
08	16	142	162
09	18	157	177
10	20	172	192
11	22	187	207
12	24	202	222
13	26	217	237
14	28	232	252
15	30	247	267
16	32	262	282

Example for type-sign
Signal-cam controller
No. of contacts
Second free shaftend



Special please describe
Link rod
Mounting angles