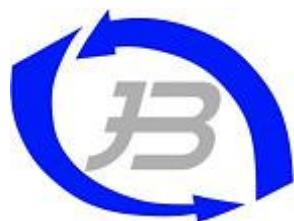


# Multiple Position Switches according to DIN 43697

Catalogue RP/12





**Caution!**

**The devices presented in this range are not intended for private consumers, i.e. they are not consumer products within the meaning of the European Directives (in Germany within the meaning of Section 5 GPSG) or other national laws. Assembly and commissioning of the devices requires personnel with the appropriate basic electrotechnical training or require personnel who have been initiated accordingly.**

Subject to technical modifications and errors. The data specified in this catalogue are carefully checked typical standard values.

Descriptions of technical correlations, details on external control units, installation and operating instructions or similar have been provided to the best of our knowledge. However, this does not mean that warranted characteristics or other properties under liability law may be assumed which extend beyond the "General Terms of Delivery of Products and Services of the Electrical Industry".

We trust you will understand that the user must therefore check our information and recommendations before using our equipment.

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# Multiple Position Switches according to DIN 43697

## Introducing

Controlling the positions of machine tools, in particular, the table positions of milling and drilling machines as well as of the lathe saddles, is performed mainly using cams and multiple position switches.

This mode of command input offers the advantage of codeless operation without encrypted data. In this mode, the setting for motion sequences and positions remain transparent and can be corrected by technicians or by semi-skilled personnel, if the need arises.

For these control systems, Bremer supplies appropriate components and devices - fully compliant with the standards:

- For lengthwise movements: cams and T-slot trip dogs according to catalogue N-NT/12
- For rotational movements: radial cams, T-slot cam semicircles and T-slot cam drums according to catalogue N-NR/12
- For signalling: multi-position switch with electromechanical mode of operation according to catalogue RP/12

All accuracy requirements must be met by adjustment and setting devices

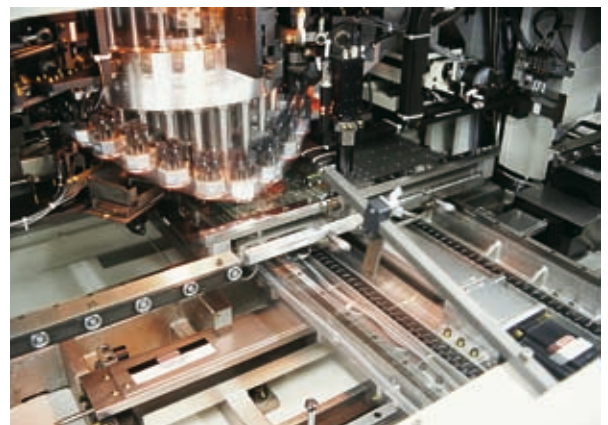
Quick program changing helps reducing the set-up times considerably.

All multiple position switch models can be used for T-slot fields.

Catalogue RP/12 summarizes only the components for multiple position switches.

### Versions

- Long-term stability due to protection type IP 67
- Low-wear precision plungers
- Optional slow action contact for final switch-off acc. VDE 0113
- Magnetic snap-action switch for precision circuits
- Easy automation for displacement and positioning control systems



## General Description



With program-controlled machines (line motion or point-to-point positioning control), the technological parameters for a work process, such as r.p.m., feed, high-speed motion, etc. are stored in a cross-bar selector plug panel or a program card. Program step positioning is performed by the switching elements of the multiple positioning switch, the plunger or sensing heads of which are actuated via a position or angle-dependent cam (displacement information). Several switching elements are installed side by side in a standard housing. The elements are firmly mounted to the housing by means of screws and adjusted to a standard switching point using the internal set screw.

The continuous sealing plate of the mechanical multiple position switches protects the switching elements reliably against contamination (protection type IP 67). To protect the plunger bearings, the version with sealing boot can be selected.

### Versions

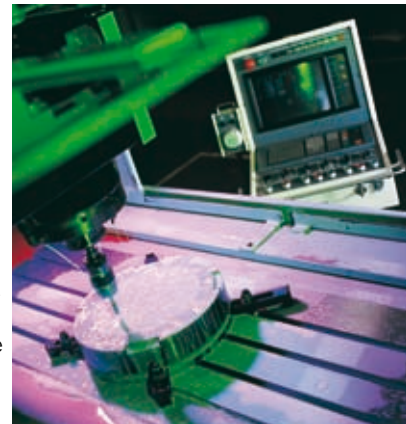
The multiple position switches are light metal encapsulated, protection type IP 67. The housing color is dark gray to RAL 7012. The color of the lid is silver-gray to RAL 9006.

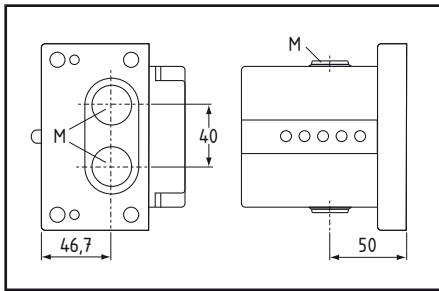
Various switching elements can be used :

- Switching elements with magnetic snap-action system SPE 85 (see Page 5)

- Switching elements with slow acting contacts ST 102/1 with positive opening for position switches that are used for safety purposes (see Page 5)
- Electronic switching elements (see Page 7)

If multiple position switches containing electronic switching elements must be combined with mechanical switching elements for implementation of positive opening, the first two lines are provided for this purpose. For design reasons, a space between mechanical and electronic switching elements is required on these combined versions.

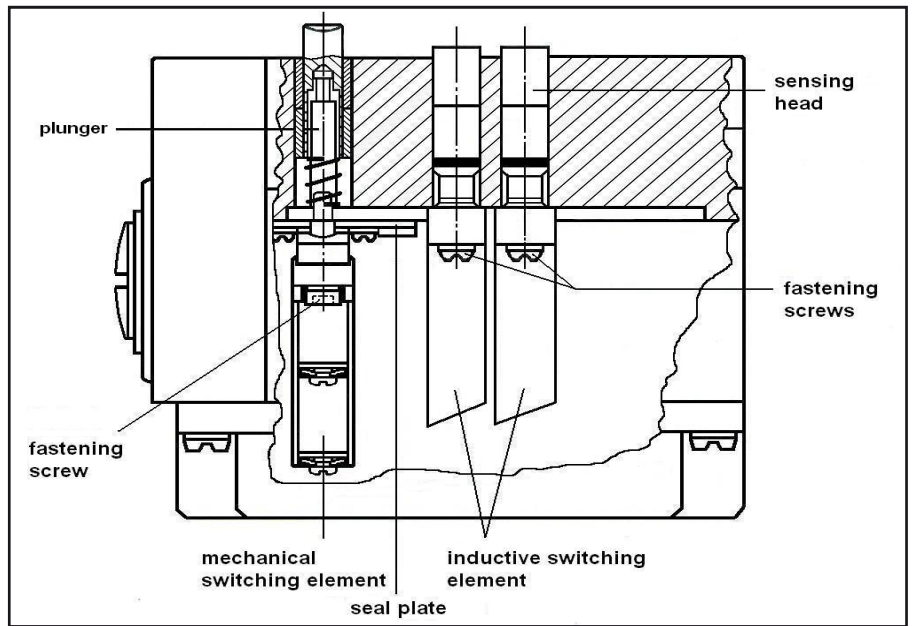




**Cable entry**

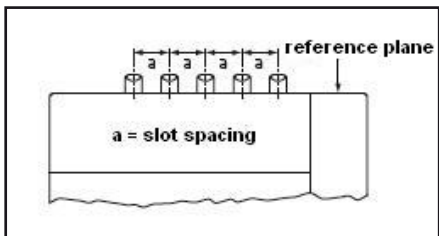
The cable entry takes place on cable glands in the flange or on the sides with the dimensions :

- M 20 x 1,5 mm  
up to 5 plungers
- M 25 x 1,5 mm  
6 and more plungers



**Slot spacing**

The limit switches are available for a line spacing of 12 or 16 mm.



**Mounting and functional dimensions**

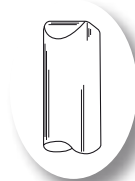
When using switching elements with mechanical, contact, the functional dimensions correspond to DIN 43 697 4/82. With snap-action switching elements, the switch point is the snap point and with slow acting contacts (ST 102/1), the switch point is the opening of the normally closed contact (13-14), the actuating plunger must be driven further down by 1 mm.

**Controls**

The mechanical switching elements are actuated via plunger. The standard plunger has a roof-shaped, semi-circular end, i.e there is a linear contact between plunger and cam.

Optionally, the plunger can be equipped with a rustproof steel roller and a maintenance-free bearing of compound material, or with a closed ball bearing.

The highest mechanical durability is realized when using the standard plunger in conjunction with a plastic cam (nylon). In this combination, there is no measurable wear even after 30 million switching cycles.



Chisel plunger



Chisel plunger with outer sealing boot



Roller plunger



Roller bearing plunger

Start-up speed with standard 26°34' start-up angle:

cam	Chisel plunger	Roller plunger
plastic	45 m/min	60 m/min
steel	12 m/min	30 m/min



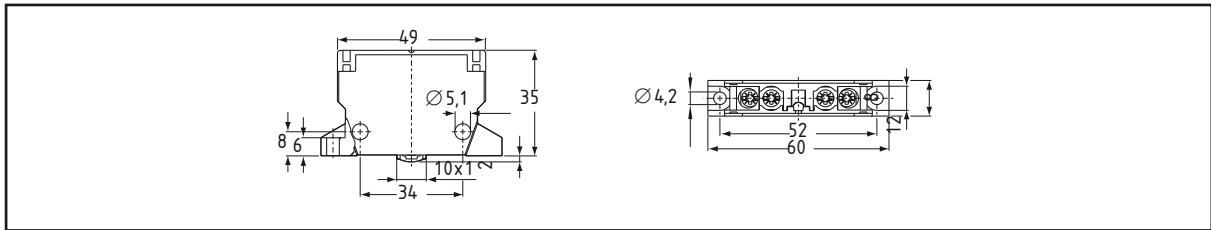
Inductive sensing head

# Mechanical switching elements for multiple position switches

## Product range



Positively driven slow action switch ST 102/01 Positively driven snap-action switch SPE 85



Dimension drawing ST 102/01 / SPE 85

Description	function	circuit symbol	switch travel	form	order no.
Positively driven slow action contact block for safety switch acc. VDE 0660, Part 206; positive opening approx. 1,5 mm. Mounting dimensions acc. DIN 43 695, Page 2, with longer plunger adapted to a stroke of 4,5 mm. Galvanic isolation of NC and NO contacts. Plastic Parts made of self-extinguishing polyamide, fiber-glass reinforced. Contacts silver-plated und gold flashed.	1 NC contact 1 NO contact		0 2 4 	ST 102/01	109 0102
Positively driven snap-action switch acc. VDE 0660, Part 200 with magnetic snap-action system and galvanically isolated contact bridges for NC and NO contacts; positive opening approx. 2,0 mm. Snapping in the direction of the actuating movement ensures reliable positive opening of the NC contact.	1 NC contact 1 NO contact		0 1 2 	SPE 85	109 0085

switching elements in Multiple Position Switches are factory-adjusted.

# Mechanical switching elements for multiple position switches

## Technical Data

Regulations	<ul style="list-style-type: none"> <li>• IEC 947</li> <li>• EN 60947-5-1</li> <li>• DIN VDE 0660</li> </ul>
Rated voltage	250 VAC / 380 VAC
Permanent current	10 A / 8A
Actuation element	Rigid chisel
Rated nominal voltage $U_e$ max.	400 V
Utilization categories	acc. to DIN VDE 0660 Part 200 : <ul style="list-style-type: none"> <li>• AC-15</li> <li>• DC-13</li> </ul>
Rated nominal current $I_e$ depending on Utilization and test voltage	<ul style="list-style-type: none"> <li>• 8 A; AC-15; 250 VAC</li> <li>• 5 A; DC-13; 24 VDC</li> </ul>
Thermal nominal current $I_{th}$ (Air)	10 A
Short circuit protection	gG 10 A
Clearance and creepage distances acc. DIN VDE 0110 (1.89)	<ul style="list-style-type: none"> <li>• pollution degree 3</li> <li>• overvoltage category III</li> </ul>
Proof of forced opening	<ul style="list-style-type: none"> <li>• ST 102/1 : 2,5 kV impulse voltage</li> <li>• SPE 85: non positive opening</li> </ul>
Positive opening path	<ul style="list-style-type: none"> <li>• ST 102/1 : min. 3 mm</li> <li>• SPE 85: non positive opening</li> </ul>
Contact system	<ul style="list-style-type: none"> <li>• ST 102/1 : creep switch, contacts galvanically isolated</li> <li>• SPE 85 : magnetic snap-action system</li> </ul>
Contact material	Fk-Ag gold plated
Contact force	1 N per contact point = 2 N per contact
Switching of small loads	min. 24 VDC / 10 mA
Switching frequency acc. DIN VDE 0660 Part 200	3600 s/h
Bounce time	<ul style="list-style-type: none"> <li>• ST 102/1 : &lt; 5 ms</li> <li>• SPE 85: &lt; 2 ms</li> </ul> at 100 mm/s actuation speed
Climatic proofing acc. DIN EN 60 068	Part 2-30
Ambient Temperature Range	-25°C ... + 80°C
Installation position	any
Mechanical life acc. DIN VDE 0660 Part 200	30 x 10E6 operations
Switch travel (Lift)	<ul style="list-style-type: none"> <li>• ST 102/1 : approx. 4,5 mm</li> <li>• SPE 85: approx. 2,7 mm</li> </ul>
Shock resistance	30 g / 18 ms
Vibration resistance	20 g / 10 ... 200 Hz
Terminal identifications acc. DIN EN 50 005 or DIN EN 50 013	X
Actuation force at lift end (1 NC / 1 NO)	<ul style="list-style-type: none"> <li>• ST 102/1 : approx. 10 N</li> <li>• SPE 85: approx. 15 N</li> </ul>
Switchings points	<ul style="list-style-type: none"> <li>• ST 102/1 : NC = 1 mm/S = 2 mm</li> <li>• SPE 85: snap-action contact approx. 1,7 mm</li> </ul>
Housing material	• PA 66 GV, self-extinguishing, flame resistant
Connection types	screw connection up to 2 x 0,5 ... 1,5 mm <sup>2</sup> (with wire end ferrule up to 1,5 mm <sup>2</sup> ), single and multiple wire
Rated insulation voltage $U_i$	440 V, test voltage 2.500 V
Protection class switching element	IP 00 (built-in unit)
Protection against contact with live components	no protection, built-in unit
Protection class for protection against contact acc. DIN EN 60947-1/A2	no protection, built-in unit
Approvals	CSA



# Electronic switching elements for multiple position switches

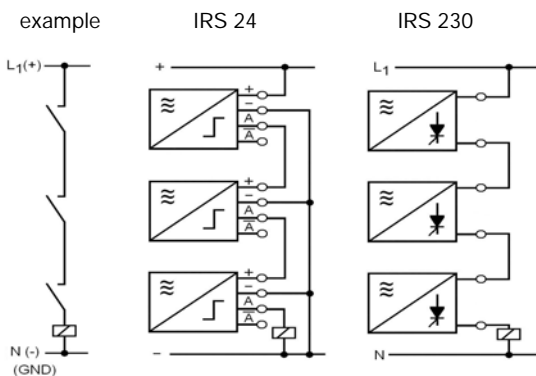
## Product range

As the electronic elements operate contactlessly, they are completely free from wear. Faulty switching due to contact contaminations or impurity layers, e.g. due to chemical reactions of the gas and vapor loaded atmosphere is excluded. The elements are insensitive to cooling and cleaning agents, oils and abrasive dust. Control is via an approximating metal part (metal cam, preferably of steel). When reaching the response area the oscillator head is attenuated and this signal is output as a switching signal by the amplifier unit. Metal cuttings or metal dust (abrasive dust) are not attracted magnetically by the oscillator head, i.e. displacement of the switching point is excluded. Electronic switching elements are used preferably at high switching frequencies. The switching elements are protected against inductive voltage peaks and wrong polarity.

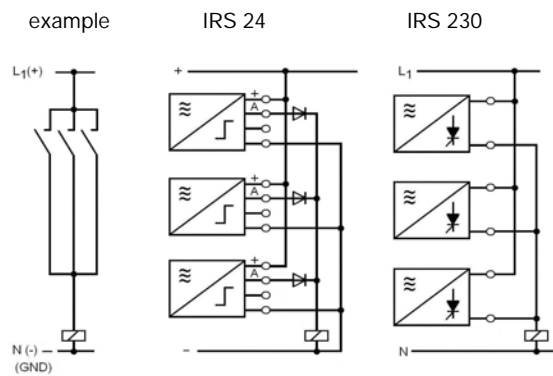
Series and parallel connection of electronic switching elements is possible. For perfect operation, a number of prerequisites must be met :


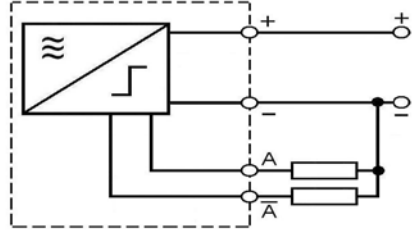

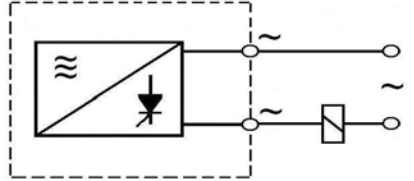

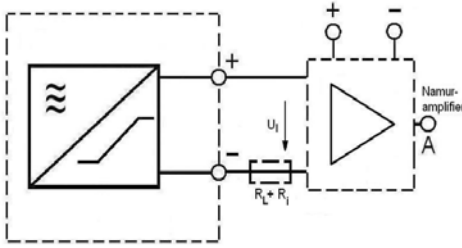
- The IRS 24 elements operate in a supply voltage range of 10 ... 60 V DC. With 24 V nominal supply and residual voltages  $\leq 1,5$  V at energized outputs, max. three elements - or, if the operating voltage is higher - an accordingly higher number of elements can be connected in series.
- Depending on the attenuation of individual lines at supply voltage switch-on, the condition for series connection can be fulfilled temporarily (approx. 20 ms).
- With IRS 24 elements connected in parallel connection, protective diodes must be fitted in the output circuit.
- If the IRS 230 elements are connected in series, the residual voltage of 5 V must be taken into account: To ensure correct operation, the supply voltage must not be lower than 198 V AC.

### series connection



### parallel connection



form	description	order no.	function	circuit
IRS 24 P	for 24 V DC supply, 4-wire version with built-in bistable amplifier (antivalent output) 	193 7041	1 NC contact 1 NO contact or 1 antivalent output PNP NPN on request	
IRS 230	for 230 V AC supply, 2-wire version with built-in preamplifier and thyristor output stage, switching element with mechanical contact. 	193 7051	1 NO contact or 1 active AC voltage output	
IRS N	Namur 2-wire version acc. DIN 19234 for connection to input stages as a Namur amplifier. 	193 7031	dependent of Namur amplifier IRS: non-attenuated $I > 2,2$ mA attenuated $I < 1$ mA	

# Electronic switching elements for multiple position switches

## Technical Data

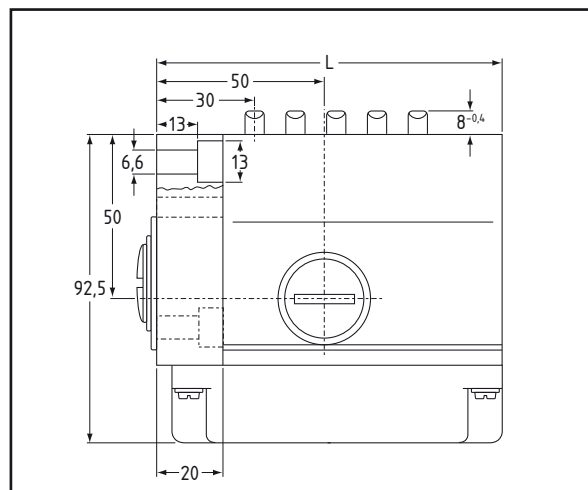
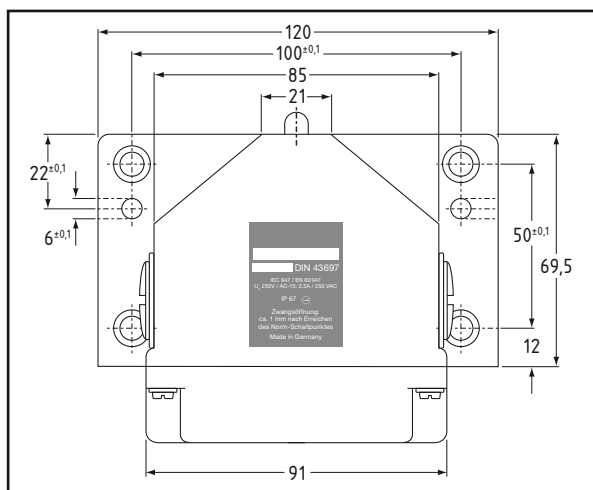
Inductive switch elements	IRS 24 P	IRS 230	IRSN
Rated operating distance	2 mm	2 mm	2 mm
Switching point accuracy [mm] at 20° C	+ - 0,01	+ - 0,01	+ - 0,01
Connection	screw terminals	screw terminals	screw terminals
Supply voltage [V] = U <sub>B</sub>	10...60 V DC	35...250 V AC	--
Protected Against Polarity Reversal	yes	--	yes
Voltage tolerance [%]	+25% - 15%	+10% - 10%	--
Residual ripple [%] DIN 41755	10%	--	--
Load resistance R <sub>a</sub> [Ω] ≥	250 Ω	--	--
Rated operational current	200 mA	80 VA	--
Peak-switching power [VA] < 1 sec	--	1000 VA	--
Minimum load [VA] >	--	7 VA	--
Current consumption (with LED)	≤ 40 mA	--	--
Residual voltage [V] <	≤ 1,5 V DC	5 V DC	--
Residual current [mA] <	0,001 mA	--	--
Switching frequency	1 kHz max.	20 Hz max.	1 kHz max.
Material of the metal tag or the cam	Steel	Steel	Steel
Switching point hysteresis [mm]	ca. 0,1 mm	ca. 0,1 mm	--
Temperature drift of the switching point	< 0,02 mm/10 K	< 0,02 mm/10 K	< 0,02 mm/10 K
Ambient Temperature Range	- 25° ... + 65° C	- 25° ... + 65° C	- 25° ... + 65° C
Output function	antivalent PNP*	NO contact	--
H (High)-Signal (L-Signal) *2	≤ 1,5 V toward plus	--	--
L (Low)-Signal (O-Signal) *2	≥ 90 % U <sub>B</sub> toward plus	--	--
No-load voltage U <sub>l</sub>	--	--	7,7 ... 9 V
Internal resistance R <sub>i</sub>	--	--	550 ... 1050 Ω
Max. line resistance R <sub>L</sub>	--	--	50 Ω
Current consumption non-attenuated state	--	--	≥ 2,2 mA
attenuated state	--	--	≤ 1 mA
Current range for the position of the switching points	--	--	1,2 ... 2,1 mA
Shock resistance	20 g / 18 ms	20 g / 18 ms	20 g / 18 ms
Vibration resistance	10 g / 10 ... 200 Hz	10 g / 10 ... 200 Hz	10 g / 10 ... 200 Hz

\* NPN version on request

# Multiple Position Switches

Basic Version RSD

encapsulated in light metal, enclosure rating IP 67, acc. DIN 43697



dimensioned drawing RSD, Type ST102; dimensions cable entry (flange side): see page 4

with switching element	slot spacing	length	number of plungers	with chisel plunger	order no.	with chisel plunger and outer sealing boot	order no.	with roller plunger	order no.	with roller bearing plunger	order no.
	mm	mm		RSD ...		RSD ...		RSD ...		RSD ...	
for limit switching acc. DIN EN 60204-1 /VDE 0113: <b>ST 102/1</b> with slow-action contacts	12	70	2	02 D 12.102	185 5055	--	--	02 R 12.102	185 5105	02 K 12.102	185 5155
		80	3	03 D 12.102	185 5060	--	--	03 R 12.102	185 5110	03 K 12.102	185 5160
		90	4	04 D 12.102	185 5065	--	--	04 R 12.102	185 5115	04 K 12.102	185 5165
		105	5	05 D 12.102	185 5070	--	--	05 R 12.102	185 5120	05 K 12.102	185 5170
		120	6	06 D 12.102	185 5075	--	--	06 R 12.102	185 5125	06 K 12.102	185 5175
		140	8	08 D 12.102	185 5080	--	--	08 R 12.102	185 5130	08 K 12.102	185 5180
		170	10	10 D 12.102	185 5085	--	--	10 R 12.102	185 5135	10 K 12.102	185 5185
		200	12	12 D 12.102	185 5090	--	--	12 R 12.102	185 5140	12 K 12.102	185 5190
		240	14	14 D 12.102	185 5095	--	--	14 R 12.102	185 5145	14 K 12.102	185 5195
		240	16	16 D 12.102	185 5100	--	--	16 R 12.102	185 5150	16 K 12.102	185 5200
		72	2	02 D 16.102	185 7055	02 B 16.102	185 7105	02 R 16.102	185 7155	02 K 16.102	185 7205
		90	3	03 D 16.102	185 7060	03 B 16.102	185 7110	03 R 16.102	185 7160	03 K 16.102	185 7210
		105	4	04 D 16.102	185 7065	04 B 16.102	185 7115	04 R 16.102	185 7165	04 K 16.102	185 7215
		120	5	05 D 16.102	185 7070	05 B 16.102	185 7120	05 R 16.102	185 7170	05 K 16.102	185 7220
	16	140	6	06 D 16.102	185 7075	06 B 16.102	185 7125	06 R 16.102	185 7175	06 K 16.102	185 7225
		170	8	08 D 16.102	185 7080	08 B 16.102	185 7130	08 R 16.102	185 7180	08 K 16.102	185 7230
		200	10	10 D 16.102	185 7085	10 B 16.102	185 7135	10 R 16.102	185 7185	10 K 16.102	185 7235
		240	12	12 D 16.102	185 7090	12 B 16.102	185 7140	12 R 16.102	185 7190	12 K 16.102	185 7240
safety circuit <b>SPE 85</b> with magnetic snap-action system	12	70	2	02 D 12.85	185 0055	--	--	02 R 12.85	185 0105	02 K 12.85	185 0155
		80	3	03 D 12.85	185 0060	--	--	03 R 12.85	185 0110	03 K 12.85	185 0160
		90	4	04 D 12.85	185 0065	--	--	04 R 12.85	185 0115	04 K 12.85	185 0165
		105	5	05 D 12.85	185 0070	--	--	05 R 12.85	185 0120	05 K 12.85	185 0170
		120	6	06 D 12.85	185 0075	--	--	06 R 12.85	185 0125	06 K 12.85	185 0175
		140	8	08 D 12.85	185 0080	--	--	08 R 12.85	185 0130	08 K 12.85	185 0180
		170	10	10 D 12.85	185 0085	--	--	10 R 12.85	185 0135	10 K 12.85	185 0185
		200	12	12 D 12.85	185 0090	--	--	12 R 12.85	185 0140	12 K 12.85	185 0190
		240	14	14 D 12.85	185 0095	--	--	14 R 12.85	185 0145	14 K 12.85	185 0195
		240	16	16 D 12.85	185 0100	--	--	16 R 12.85	185 0150	16 K 12.85	185 0200
		72	2	02 D 16.85	185 2055	02 B 16.85	185 2105	02 R 16.85	185 2155	02 K 16.85	185 2205
		80	3	03 D 16.85	185 2060	03 B 16.85	185 2110	03 R 16.85	185 2160	03 K 16.85	185 2210
		105	4	04 D 16.85	185 2065	04 B 16.85	185 2115	04 R 16.85	185 2165	04 K 16.85	185 2215
		125	5	05 D 16.85	185 2070	05 B 16.85	185 2120	05 R 16.85	185 2170	05 K 16.85	185 2220
	16	140	6	06 D 16.85	185 2075	06 B 16.85	185 2125	06 R 16.85	185 2175	06 K 16.85	185 2225
		170	8	08 D 16.85	185 2080	08 B 16.85	185 2130	08 R 16.85	185 2180	08 K 16.85	185 2230
		200	10	10 D 16.85	185 2085	10 B 16.85	185 2135	10 R 16.85	185 2185	10 K 16.85	185 2235
		240	12	12 D 16.85	185 2090	12 B 16.85	185 2140	12 R 16.85	185 2190	12 K 16.85	185 2240

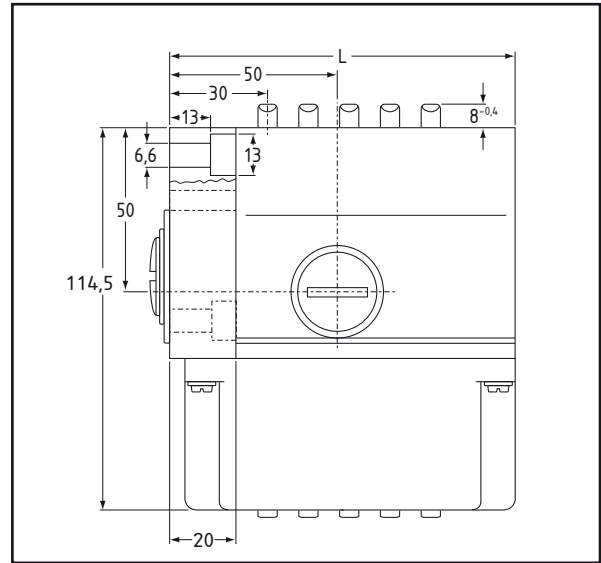
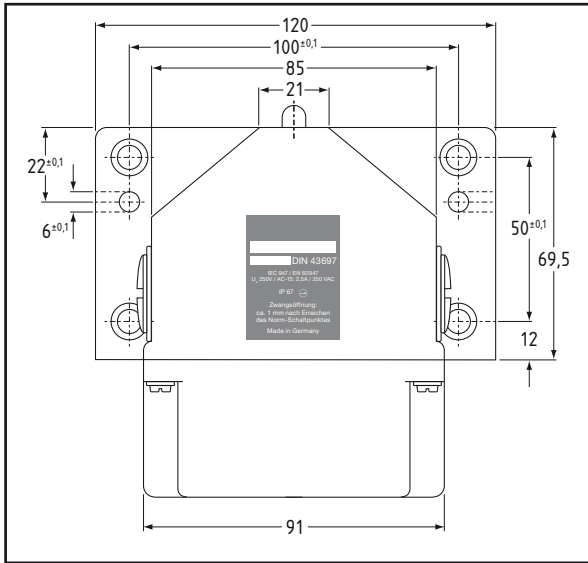
Multiple Position Switches with combined switching elements on request

# Multiple Position Switches

Basic Version RLD

encapsulated in light metal, enclosure rating IP 67, acc. DIN 43697

with indicator lamps sockets (without lamps)



dimension drawing basic version RLD, Type SPE85; dimensions cable entry (flange side): see page 4

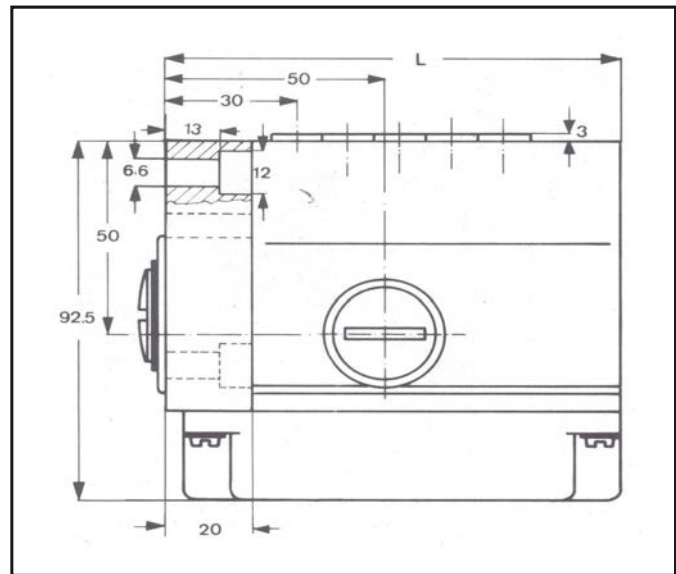
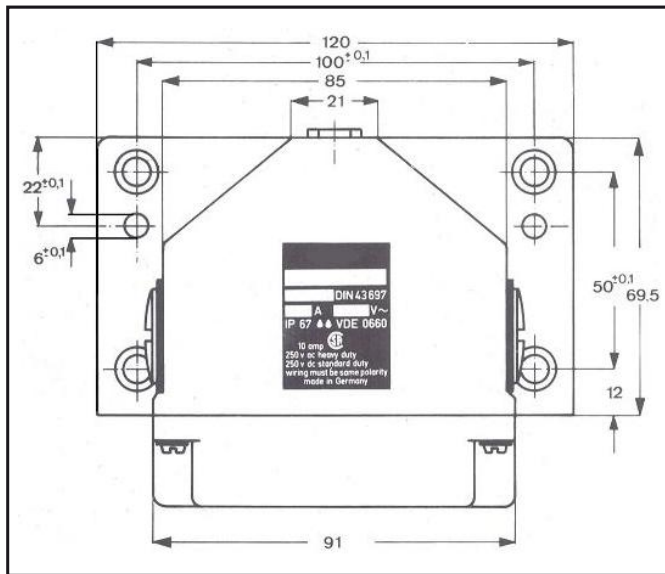
with switch- ing element	slot spacing	length	number of plungers	with chisel plunger	order no.	with chisel plunger and outer sealing boot	order no.	with roller plunger	order no.	with roller bearing plunger	order no.
	mm	mm		RLD ...		RLD ...		RLD ...		RLD ...	
<b>SPE 85</b>		70	2	02 D 12.85	189 0051	--	--	02 R 12.85	189 1154	02 K 12.85	189 2258
with magnetic snap-action system and indicator lamps sockets, socket Ba7s	12	80	3	03 D 12.85	189 0107	--	--	03 R 12.85	189 1201	03 K 12.85	189 2264
		90	4	04 D 12.85	189 0158	--	--	04 R 12.85	189 1251	04 K 12.85	189 2270
		105	5	05 D 12.85	189 0204	--	--	05 R 12.85	189 1308	05 K 12.85	189 2276
		120	6	06 D 12.85	189 0255	--	--	06 R 12.85	189 1359	06 K 12.85	189 2290
		140	8	08 D 12.85	189 0301	--	--	08 R 12.85	189 1405	08 K 12.85	189 2296
		170	10	10 D 12.85	189 0352	--	--	10 R 12.85	189 1456	10 K 12.85	189 2302
		200	12	12 D 12.85	189 0409	--	--	12 R 12.85	189 1502	12 K 12.85	189 2308
		240	14	14 D 12.85	189 0450	--	--	14 R 12.85	189 1553	14 K 12.85	189 2314
		240	16	16 D 12.85	189 0506	--	--	16 R 12.85	189 1600	16 K 12.85	189 2703
		72	2	02 D 16.85	189 4005	02 B 16.85	189 4901	02 R 16.85	189 5800	02 K 16.85	189 6709
		80	3	03 D 16.85	189 4056	03 B 16.85	189 4951	03 R 16.85	189 5881	03 K 16.85	189 6717
		105	4	04 D 16.85	189 4102	04 B 16.85	189 5001	04 R 16.85	189 5907	04 K 16.85	189 6725
		125	5	05 D 16.85	189 4153	05 B 16.85	189 5052	05 R 16.85	189 5958	05 K 16.85	189 6733
	16	140	6	06 D 16.85	189 4200	06 B 16.85	189 5109	06 R 16.85	189 6008	06 K 16.85	189 6741
		170	8	08 D 16.85	189 4251	08 B 16.85	189 5150	08 R 16.85	189 6059	08 K 16.85	189 6768
		200	10	10 D 16.85	189 4307	10 B 16.85	189 5206	10 R 16.85	189 6105	10 K 16.85	189 6776
		240	12	12 D 16.85	189 4358	12 B 16.85	189 5257	12 R 16.85	189 6156	12 K 16.85	189 7055

Multiple Position Switches with combined switching elements on request

# Multiple Position Switches with inductive switching elements

Basic Version IRSD

encapsulated in light metal, enclosure rating IP 67, acc. DIN 43697



dimension drawing basic version, dimensions cable entry (flange side): see page 4

slot spacing	number of initiators	length	for 24 VDC with LED-display*	order no.	for 230 VAC with LED-display	order no.	acc. Namur	order no.
mm		mm	IRSD ...		IRSD ...		IRSD ...	
12	2	70	02.12.24	186 0010	02.12.230	186 1010	02.12.NAM	186 2010
	3	80	03.12.24	186 0015	03.12.230	186 1015	03.12.NAM	186 2015
	4	90	04.12.24	186 0020	04.12.230	186 1020	04.12.NAM	186 2020
	5	105	05.12.24	186 0025	05.12.230	186 1025	05.12.NAM	186 2025
	6	120	06.12.24	186 0030	06.12.230	186 1030	06.12.NAM	186 2030
	8	140	08.12.24	186 0035	08.12.230	186 1035	08.12.NAM	186 2035
	10	170	10.12.24	186 0040	10.12.230	186 1040	10.12.NAM	186 2040
	12	200	12.12.24	186 0045	12.12.230	186 1060	12.12.NAM	186 2045
16	14	240	14.12.24	186 0050	14.12.230	186 1065	14.12.NAM	186 2050
	16	240	16.12.24	186 0055	16.12.230	186 1070	16.12.NAM	186 2055
	2	70	02.16.24	186 0070	02.16.230	186 1110	02.16.NAM	186 2110
	3	90	03.16.24	186 0075	03.16.230	186 1115	03.16.NAM	186 2115
	4	105	04.16.24	186 0080	04.16.230	186 1120	04.16.NAM	186 2120
	5	120	05.16.24	186 0085	05.16.230	186 1125	05.16.NAM	186 2125
	6	140	06.16.24	186 0090	06.16.230	186 1130	06.16.NAM	186 2130
	8	170	08.16.24	186 0095	08.16.230	186 1135	08.16.NAM	186 2135
	10	200	10.16.24	186 0101	10.16.230	186 1140	10.16.NAM	186 2140
	12	240	12.16.24	186 0105	12.16.230	186 1145	12.16.NAM	186 2145

\* when the Switch should be equipped with different electronic switching elements, the voltage or Namur in the desired order must be added to the form (seen from housing flange, example: IRSD 02.12.24.230)

## Components- / Spare Parts

For Multiple Position Switches (Type RSD, RLD)		
description	form	order no.
chisel, rigid version for SPE 85 / ST 102 :		
- chisel plunger	RS-U10	103 1322
- chisel plunger with sealing boot	RS-U13	103 1325
- roller plunger	RS-U12	103 1324
- roller bearing plunger	RS-U11	103 1323
sealing boot for chisel plunger	SEN-130	100 0337
mechanical locking for chisel fastening	RS-8	100 0430
snap-action switch retail set, SPE 85, incl. mounting material	SPE85_Ersatz Set	109 0085
slow-action switch retail set, ST 102/01, incl. mounting material	ST102/01_Ersatz Set	109 0102
assembly kit for case mounting RSD,RLD,IRSD	RSD_Montage Set	109 7056

Seal Kits for Multiple Position Switches (Type RSD, RLD)					
slot spacing	number of plungers	with chisel- / roller plunger	order no.	with chisel plunger and outer sealing boot	order no.
mm		DS ...		DS ...	
12	2	02 D 12	109 1202	-	-
	3	03 D 12	109 1203	-	-
	4	04 D 12	109 1204	-	-
	5	05 D 12	109 1205	-	-
	6	06 D 12	109 1206	-	-
	8	08 D 12	109 1208	-	-
	10	10 D 12	109 1210	-	-
	12	12 D 12	109 1212	-	-
	14	14 D 12	109 1214	-	-
	16	16 D 12	109 1216	-	-
16	2	02 D 16	109 1602	02 B 16	110 1602
	3	03 D 16	109 1603	03 B 16	110 1603
	4	04 D 16	109 1604	04 B 16	110 1604
	5	05 D 16	109 1605	05 B 16	110 1605
	6	06 D 16	109 1606	06 B 16	110 1606
	8	08 D 16	109 1608	08 B 16	110 1608
	10	10 D 16	109 1610	10 B 16	110 1610
	12	12 D 16	109 1612	12 B 16	110 1612

each seal kit contains :  
seal plate, pressure plate, cover seal, flange seal, fastening screws incl. washers

For Multiple Position Switches with inductive switching elements (Type IRSD)		
description	form	order no.
inductive switch element 10-60 VDC *	IRS-U8_Ersatz Set	109 0086
inductive switch element 35-250 VAC *	IRS-U9_Ersatz Set	109 0087
inductive switch element 10-60 VDC NAMUR *	IRS-U10_Ersatz Set	109 0088

\* incl. mounting material



**Request**

Account no. : \_\_\_\_\_ Phone : \_\_\_\_\_  
Company : \_\_\_\_\_ Fax : \_\_\_\_\_  
First name / Surname : \_\_\_\_\_ Email-Adress : \_\_\_\_\_  
Street / Hausenumber : \_\_\_\_\_ Date : \_\_\_\_\_  
Country / Town / Zip : \_\_\_\_\_

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Please send us your quote for the following product(s) :

Version RSD       Version RLD       Version IRSD

order no. *	catalogue no. *	part no. / description	Quantity
<input type="text"/>	<input type="text"/>	<input type="text"/>	<input type="text"/>
<input type="text"/>	<input type="text"/>	<input type="text"/>	<input type="text"/>
<input type="text"/>	<input type="text"/>	<input type="text"/>	<input type="text"/>
<input type="text"/>	<input type="text"/>	<input type="text"/>	<input type="text"/>
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<input type="text"/>	<input type="text"/>	<input type="text"/>	<input type="text"/>
<input type="text"/>	<input type="text"/>	<input type="text"/>	<input type="text"/>

Requested delivery date : \_\_\_\_\_

\* in our download area on [www.bremer-schaltelemente.de](http://www.bremer-schaltelemente.de), you find our product catalogue with all order- and catalogue numbers

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contact:  
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