

Safety Rope Pull Switches

SRM, SR



General information on safety rope pull switches

The series SR and SRM safety rope pull switching devices developed and manufactured by BERNSTEIN AG are designed and approved in accordance with the standards IEC 947-5-5, DIN EN 60947-5-5 and ISO 13850, i.e. on actuation or in the event of cable breakage, the emergency stop switching device locks automatically and can only be reset to its initial setting by means of the resetting device on the switch.

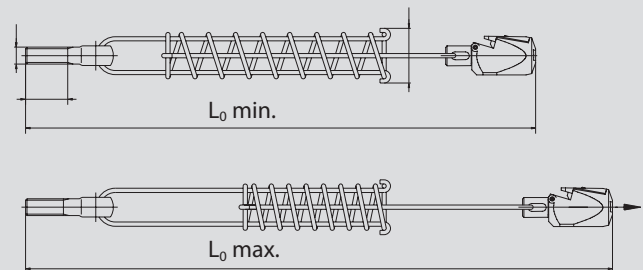
In order for the overall system to conform to the standards EN 60947-5-5 and EN 13850 governing the emergency stop function of rope pull switches it is necessary to integrate a spring in the system. The reasoning behind this requirement is that a person who triggers the emergency stop functions does not need to consider the activation direction. With the spring it is possible to pull the cable in the direction of the rope pull switch, thus activating the emergency stop function.

Safety rope pull switches may only be used in control power circuits. Safety rope pull switches are used on accessible sides of conveyor systems or machines. In contrast to Emergency Stop switching devices (e.g. mushroom pushbuttons) installed at intervals, with which the emergency stop signal can only be generated at the device itself, with the safety rope pull switch it is possible to generate the signal at any point in a section. Depending on the type of switching device, a span of up to 75 m can be achieved with a pull cable connected to the pulling element.

The maximum possible span length of a pull cable switch is always dependent on the temperature fluctuations to which the system is exposed. It is possible that the pull cable switch may trip due to the fact that, owing to its temperature coefficient, the length of the steel cable can change in response to changes in temperature. Ultimately, this change in length is dependent on the length of the cable, the difference in the temperature change and the type of springs used in the pull cable switch. Overview 1 shows which cable lengths are possible as a function of change in temperature.

Pull cable counterspring

With overstretch safeguard based on compression spring principle



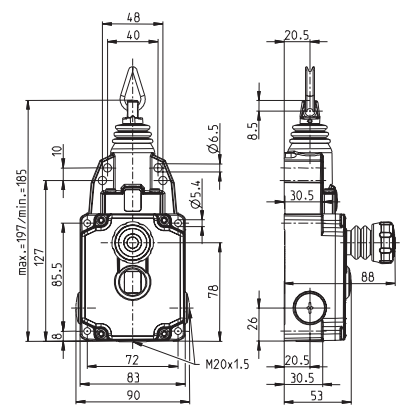
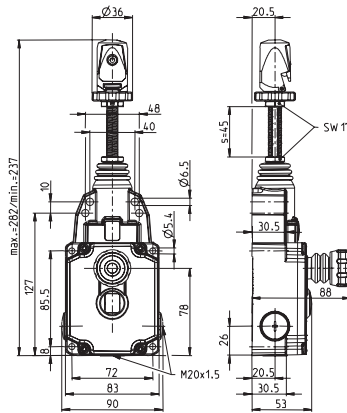
Application		
Type	SR...100/SR...175/SRM...175	SR...300/SRM...300
Spring Art. No.	3911042153	3911042154
L _{0 min.}	383	483
L _{0 max.}	487	653

Safety Rope Pull Switches

Max. span length

75 metres (Dimensioned drawing 1)

37,5 metres (Dimensioned drawing 2)



2 NC / 2 NO

3 NC / 1 NO

2 NC / 2 NO

3 NC / 1 NO

Quickfix
(Dimensioned drawing 1)

6012929087
SRM-U1Z/U1Z-QF-300

6012999096
SRM-A2Z/U1Z-QF-300

6012929085
SRM-U1Z/U1Z-QF-175

6012999094
SRM-A2Z/U1Z-QF-175

Eye
(Dimensioned drawing 2)

6012921091
SRM-U1Z/U1Z-LU-300

6012991100
SRM-A2Z/U1Z-LU-300

6012921089
SRM-U1Z/U1Z-LU-175

6012991098
SRM-A2Z/U1Z-LU-175

Quickfix
with remote monitoring
(Dimensioned drawing 1)

6012929088
SRM-U1Z/U1Z-QF-300-E

6012999097
SRM-A2Z/U1Z-QF-300-E

6012929086
SRM-U1Z/U1Z-QF-175-E

6012999095
SRM-A2Z/U1Z-QF-175-E

Eye
with remote monitoring
(Dimensioned drawing 2)

6012921092
SRM-U1Z/U1Z-LU-300-E

6012991101
SRM-A2Z/U1Z-LU-300-E

6012921090
SRM-U1Z/U1Z-LU-175-E

6012991099
SRM-A2Z/U1Z-LU-175-E

Approvals



Technical data

Electrical data		
Rated insulation voltage	U_i max.	250 V AC
Rated operating voltage	U_e max.	240 V
Conventional thermal current	I_{the}	10 A
Utilisation category	U_e / I_e	AC-15, U_e / I_e 240 V / 3 A; 120 V/6 A DC-13 U_e / I_e 250 V/0.27 A; 125 V/0.55 A
Short-circuit protection		6 A gL/gG
Protection class		I
Mechanical data		
Enclosure	Aluminium pressure die-casting	
Ambient temperature	-30°C to + 80°C	
Mechanical service life	1×10^5	
Switching frequency max.	≤ 20 / min.	
Mounting	4 x M6 or 4 x M5	
B10d	0.2 mill.	
Type of connection	Screw connections	
Conductor cross sections	Single-wire 0.5 – 1.5 mm ²	
Cable entry	3 x M20 x 1.5	
Protection class	IP 67 conforming to IEC/EN 60529	
Standards		
VDE 0660 T100, DIN EN 60947-1, IEC 60947-1 VDE 0660 T200, DIN EN 60947-5-1, IEC 60947-5-1 VDE 0660 T210, DIN EN 60947-5-5, IEC 60947-5-5 ISO 13850		

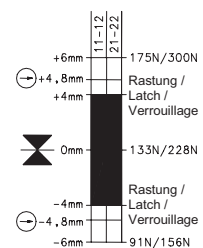
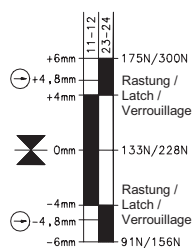
Contact type	1 NC / 1 NO (Zb)	2 NC (Zb)
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Action contacts	U1Z	A2Z
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Switching diagram		
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On
 OFF



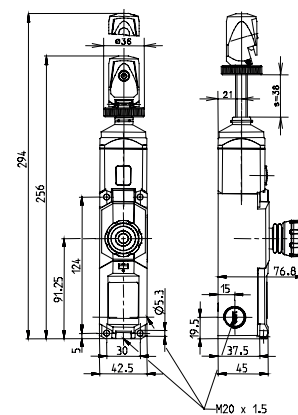
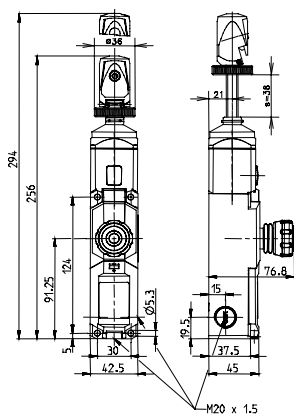
The pulling force data depend on the type of switch used. (SRM...175/SRM...300)
 Tolerances: Switching point + / - 0.5 mm, actuating force + / - 15 %

Safety Rope Pull Switches

Max. span length

75 metres (Dimensioned drawing 1)

37.5 metres (Dimensioned drawing 2)



2 NC / 2 NO

4 NC

2 NC/2 NO

4 NC

Quickfix
(Dimensioned drawing 1)

6011629072
SR-U2Z-0-QF-300-L0-0-0

6011691082
SR-A4Z-0-QF-300-L0-0-0

6011629071
SR-U2Z-0-QF-175-L0-0-0

6011691081
SR-A4Z-0-QF-175-L0-0-0

Quickfix N.A.
(Dimensioned drawing 2)

6011629069
SR-U2Z-NA-QF-300-L0-0-0

6011691079
SR-A4Z-NA-QF-300-L0-0-0

6011629068
SR-U2Z-NA-QF-175-L0-0-0

6011691078
SR-A4Z-NA-QF-175-L0-0-0

Eye
(Dimensioned drawing 3)

6011621066
SR-U2Z-0-LU-300-L0-0-0

6011691076
SR-A4Z-0-LU-300-L0-0-0

6011621065
SR-U2Z-0-LU-175-L0-0-0

6011691075
SR-A4Z-0-LU-175-L0-0-0

Approvals



Technical data

Electrical data		
Rated insulation voltage	U_i max.	250 V AC
Rated operating voltage	U_e max.	240 V
Conventional thermal current	I_{the}	10 A
Utilisation category	U_e / I_e	AC-15, U_e / I_e 240 V / 3 A
Short-circuit protection		6 A gL/gG
Protection class		II, Insulated
Mechanical data		
Enclosure		PA 6 GV (UL94-V0)
Ambient temperature		-25°C to +70°C
Mechanical service life		1 x 10 ⁵ switching cycles
Switching frequency max.		≤ 20 / min.
Mounting		4 x M5
B10d		1 x 10 ⁵ million
Type of connection		Cage clamp terminal
Conductor cross sections		≤ 1.5 – 2 mm ²
Cable entry		3 x M20 x 1.5
Protection class		IP 67 conforming to IEC/EN 60529
Standards		
VDE 0660 T100, DIN EN 60947-1, IEC 60947-1		
VDE 0660 T200, DIN EN 60947-5-1, IEC 60947-5-1		
VDE 0660 T210, DIN EN 60947-5-5, IEC 60947-5-5		
ISO 13850		

