

SRM and SR



SRM



SR

General information on safety cable pull switches

The SR and SRM safety cable pull switches are designed and approved in accordance with the standards IEC 947-5-5, DIN EN 60947-5-5 and ISO 13850, which state that 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.

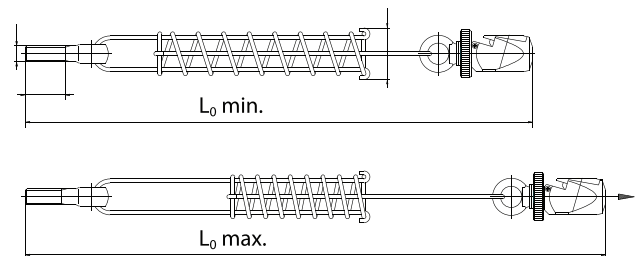
In order for the overall system to conform to the standards EN 60947-5-5 and EN 13850 governing the emergency stop function of cable pull switches, it is necessary to integrate a spring in the system. The reasoning behind this requirement is that a person who triggers the emergency stop functions does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

Safety cable pull switches may only be used in control power circuits. Safety cable 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, where the emergency stop signal can only be generated at the device itself, with the safety cable 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, because of 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 counter-spring

With overstretch safeguard based on compression spring principle



Application		
Type	SR...100/SR...175/SRM...175	SR...300/SRM...300
Spring Art. No.	391.1042.153	391.1042.154
$L_0 \text{ min.}$	383	483
$L_0 \text{ max.}$	487	653

SRM and SR Series

Advantages of SRM/SR safety cable pull switches:

- The SR (plastic enclosure) and SRM (metal enclosure) safety cable pull switches are available with the Quickfix quick-connect system, which eliminates the need for cable eye stiffeners, cable clamps and turnbuckles that are otherwise required for mounting the cable. Added to this, the time required to install the cable is drastically reduced. Versions with a conventional eye are, of course, also available.
- All variants of the SRM and especially of the SR are equipped with an integrated emergency stop impact button that can be actuated by pressing in hazardous situations. In the same way as pulling the pull cable, the safety contacts are opened and the switch is locked.
- The type SRM...E-... safety cable pull switches are optionally available with a remote indicator for monitoring the cable tension. This option has an integrated sensor unit that monitors situations in which the cable tension may overshoot or undershoot the permissible value or triggering of the safety

cable pull switch is imminent. This electronic output signals in advance that maintenance/adjustment is required otherwise the machine will shut down. This output can also be used for event signaling purposes or optionally available indicator lamps can be connected. This connection configuration conforms to "preventative maintenance" requirements.

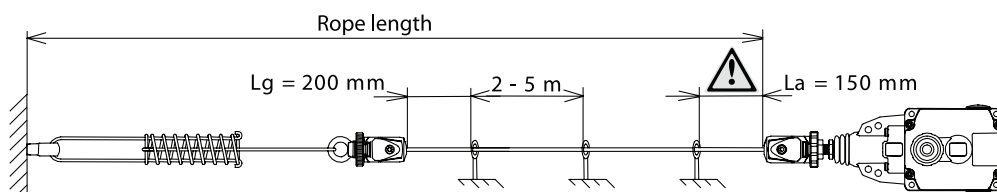
- During installation/adjustment of the cable span, the correct tension of the cable can be checked through the integrated inspection window. To ensure optimum cable tension as part of the adjustment procedure, the tips of the indicator arrows should be aligned with the marking.
- A second inspection window integrated in the SRM version makes it possible to check the status of the locking function and of the contacts. Yellow in the inspection window indicates that the safety cable pull switch is locked. Green in the inspection window indicates that the cable pull switch is ready for operation and the cable assembly is monitored.

Overview 1

	Span L max. in meters [m]																																						
	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	22	24	26	28	30	32	34	36	38	40	42	44	46	48	50	55	60	65	70
Max. temperature variation in Kelvin (K)	+/- 40 K																																						
	+/- 35 K																																						
	+/- 30 K																																						
	+/- 25 K																																						
	+/- 20 K																																						
	+/- 15 K																																						
	+/- 10 K																																						
	+/- 5 K																																						
+/- 3.5 K																																							
SR...100	Max. span 25 meters																																						
SR...175/SRM...175	Max. span 37.5 meters																																						
SR...300/SRM...300	Max. span 75 meters																																						

The parameter 100, 175 and 300 in the product designation indicates the force of the springs used in the cable pull switch. It should be noted that a greater actuating force is required for higher spring forces.

Installation example

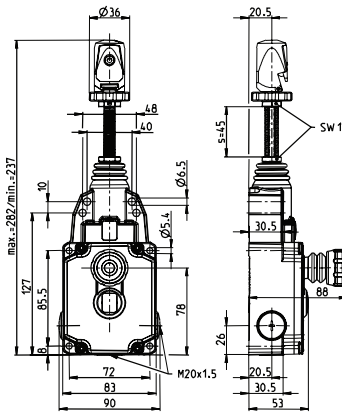


SRM Safety Rope Pull Switches

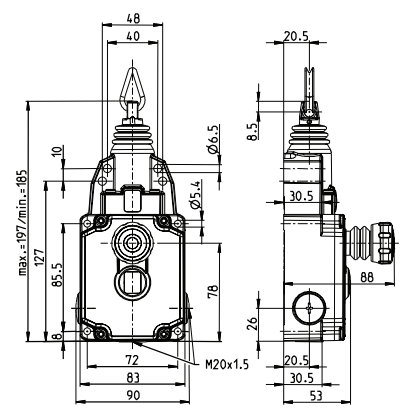
Max. span length



Quick Fix Cable Mounting



Cable Ring Cable Mounting



2 NC/2 NO

3 NC/1 NO

2 NC/2 NO

3 NC/1 NO

123 Ft. (37.5 Meters)

601.2929.085
SRM-U1Z/U1Z-QF-175

601.2999.094
SRM-A2Z/U1Z-QF-175

601.2921.089
SRM-U1Z/U1Z-LU-175

601.2991.098
SRM-A2Z/U1Z-LU-175

246 Ft. (75 Meters)

601.2929.087
SRM-U1Z/U1Z-QF-300

601.2999.096
SRM-A2Z/U1Z-QF-300

601.2921.091
SRM-U1Z/U1Z-LU-300

601.2991.100
SRM-A2Z/U1Z-LU-300

123 Ft. (37.5 Meters)
with remote monitoring

601.2929.086
SRM-U1Z/U1Z-QF-175-E

601.2999.095
SRM-A2Z/U1Z-QF-175-E

601.2921.090
SRM-U1Z/U1Z-LU-175-E

601.2991.099
SRM-A2Z/U1Z-LU-175-E

246 Ft. (75 Meters)
with remote monitoring

601.2929.088
SRM-U1Z/U1Z-QF-300-E

601.2999.097
SRM-A2Z/U1Z-QF-300-E

601.2921.092
SRM-U1Z/U1Z-LU-300-E

601.2991.101
SRM-A2Z/U1Z-LU-300-E

Technical Information

Maximum Switching Voltage
Maximum Switching Amperage
B10d
Mechanical Service Life
Switching Frequency
Operating Temperature
Protection Rating
Utilization Category
Rate Insulation Voltage
Approvals

240V
10A
0.2 Million
1 x 10 ⁵
≤ 20/min
-30 °C to +80 °C
IP67
AC-15, Ue/Ie 240V 3A; 120V/6A DC-13Ue/Ue 250V/0.27A; 125V/0.55A
250VAC



240V
10A
0.2 Million
1 x 10 ⁵
≤ 20/min
-30 °C to +80 °C
IP67
AC-15, Ue/Ie 240V 3A; 120V/6A DC-13Ue/Ue 250V/0.27A; 125V/0.55A
250VAC



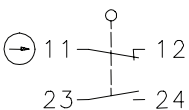
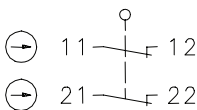
Drawing dimensions in mm

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
Utilization 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	Aluminum pressure die-casting	
Ambient temperature	-30°C to +80°C	
Mechanical service life	1 x 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	IP67 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		

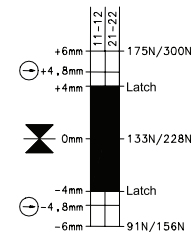
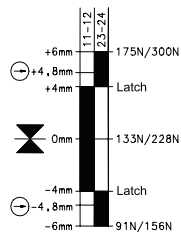
Contact type	1 NC/1 NO (Zb)	2 NC (Zb)
---------------------	-----------------------	------------------

Action contacts	U1Z	A2Z
------------------------	------------	------------

Circuit symbol	Slow-action contacts		Slow-action contacts	
-----------------------	-----------------------------	---	-----------------------------	---

Switching Diagram		
--------------------------	--	--

On
 OFF

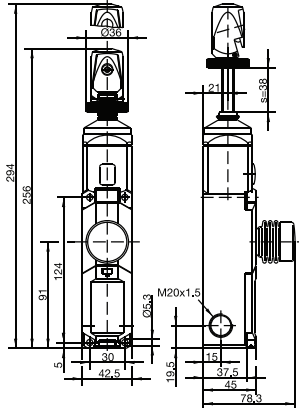


The pulling force data depend on the type of switch used. (SRM...175/SRM...300)
Tolerances: Switching point +/- 0.5 mm, actuating force +/- 15 %

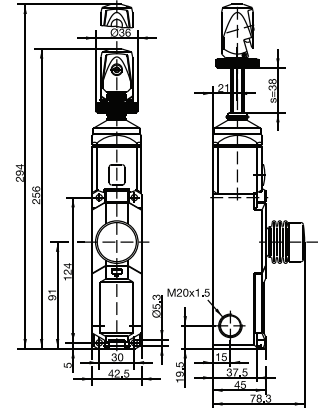
SR Series - Safety Rope Pull Switches



Quick Fix with E-Stop & Reset



Quick Fix with Reset Only



Max. span length

2 NC/2 NO

4 NO

2 NC/2 NO

4 NC

601.1629.067
SR-U2Z-NA-QF-100-L0-0-0

601.1691.077
SR-A4Z-NA-QF-100-L0-0-0

601.1629.070
SR-U2Z-0-QF-100-L0-0-0

601.1691.080
SR-A4Z-0-QF-100-L0-0-0

82 Ft. (25 Meters)

Replaces
601.1629.031
SR-U2Z-NA-QF 100

Replaces
601.1691.052
SR-A4Z-NA-QF 100

Replaces
601.1629.032
SR-U2Z-QF 100

Replaces
601.1691.049
SR-A4Z-QF 100

123 Ft. (37.5 Meters)

601.1629.068
SR-U2Z-NA-QF-175-L0-0-0

601.1691.078
SR-A4Z-NA-QF-175-L0-0-0

601.1629.071
SR-U2Z-0-QF-175-L0-0-0

601.1691.081
SR-A4Z-0-QF-175-L0-0-0

Replaces
601.1629.027
SR-U2Z-NA-QF 175

Replaces
601.1691.053
SR-A4Z-NA-QF 175

Replaces
601.1629.024
SR-U2Z-QF 175

Replaces
601.1691.050
SR-A4Z-QF 175

601.1629.069
SR-U2Z-NA-QF-300-L0-0-0

601.1691.079
SR-A4Z-NA-QF-300-L0-0-0

601.1629.072
SR-U2Z-0-QF-300-L0-0-0

601.1691.082
SR-A4Z-0-QF-300-L0-0-0

246 Ft. (75 Meters)

Replaces
601.1629.019
SR-U2Z-NA-QF 300

Replaces
601.1691.054
SR-A4Z-NA-QF 300

Replaces
601.1629.028
SR-U2Z-QF 300

Replaces
601.1691.051
SR-A4Z-QF 300

Approvals



Technical data

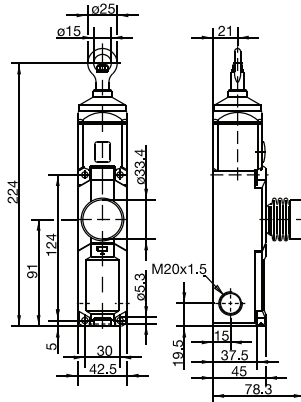
Electrical data		
Rated insulation voltage	U_i max.	250 V AC
Rated operating voltage	U_e max.	240 V
Conventional thermal current	I_{the}	10 A
Utilization category	U_e / I_e	AC-15, U_e / I_e 240 V / 3 A
Short-circuit protection		6 A gL/gG
Protection class		II, Insulated
Mechanical data		
Enclosure		PA 6 GV (UL94-V0)
Ambient temperature		-25°C to +70°C
Mechanical service life		100,000 Cycles
Switching frequency max.		≤ 20 / min.
Mounting		4 x M5
B10d		10,000
Type of connection		Cage clamp terminal
Conductor cross sections		≤ 1.5 - 2 mm ²
Cable entry		3 x M20 x 1.5
Protection class		IP67 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		

Drawing dimensions in mm

SR Series - Safety Rope Pull Switches

Max. span length

Cable Ring with Reset Only



82 Ft. (25 Meters)

2 NC / 2 NO

4 NC

601.1621.064

SR-U2Z-0-LU-100-L0-0-0

601.1691.074

SR-A4Z-0-LU-100-L0-0-0

Replaces

601.1621.030

SR-U2Z 100

Replaces

601.1691.033

SR-A4Z 100

123 Ft. (37.5 Meters)

601.1621.065

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

601.1691.075

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

Replaces

601.1621.026

SR-U2Z 175

Replaces

601.1691.047

SR-A4Z 175

246 Ft. (75 Meters)

601.1621.066

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

601.1691.076

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

Replaces

601.1620.020

SR-U2Z 300

Replaces

601.1691.048

SR-A4Z 300

Approvals



Contact type

2 NC/2 NO (Zb)

4 NC

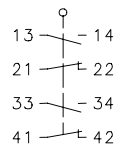
Action contacts

U2Z

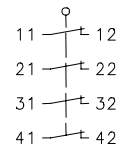
A4Z

Circuit symbol

Slow-action contacts

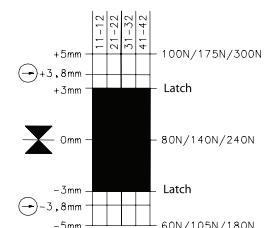
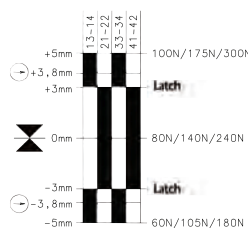


Slow-action contacts



Switching Diagram

■ On
□ Off



Drawing dimensions in mm