

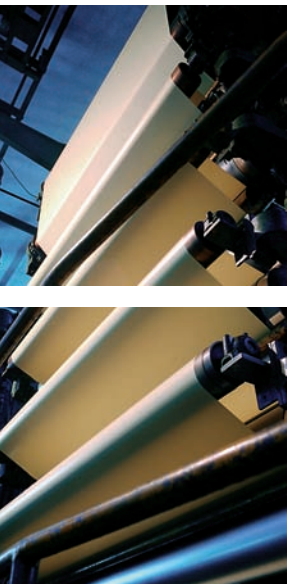
Pull-wire emergency stop switches and pull-wire switches

Product overview



SCHMERSAL

Pull-wire emergency stop



Application

Pull-wire emergency stop switches are highly important at the man-machine interface in industrial applications. They are mounted, for instance, on transportation plants and conveyor systems. When actuated by hand, these devices trigger or switch off work cycles and functional processes.

All the pull-wire emergency stop switches described in this brochure meet the requirements of the harmonised European standard IEC/EN 60947-5-5 regarding the functional aspects and recommendations for the design and the arrangement of emergency stop devices.

Pull-wire switches are used as signal transmitter to start machines and to open or close electrically driven doors, gates and barriers.



Features of the ZQ 900

- The position indicator facilitates the set-up and the maintenance of systems with spans of up to 50 m
- The integrated emergency-stop push-button enables actuation directly at the device as well
- Reset pushbutton
- The indicator lamp can be screwed in the cable entry

o switches and pull-wire switches

Design and operating principle

On the ZQ 900 pull-wire emergency stop switches, the emergency stop function can be initiated from any point of the wire. This feature meets the requirements of EN 418.

The pull-wire emergency stop switch are brought into operational condition by pre-tensioning the wire, i.e. the NC contacts are closed and the NO contacts are opened.

All pull-wire switches are equipped with wire-breakage monitoring. The integrated emergency-stop pushbutton enables actuation directly at the device as well.

Pull-wire switches without mechanical locking are not EN 418-compliant.



Innovation: S 900 rope tensioner

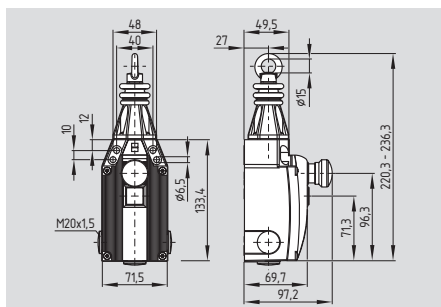
The new rope tensioner is a unique wire-tensioning system, accelerating the installation of wire-operated systems. Conventional systems usually are time consuming and difficult to adjust.

Features:

- Smooth adjustment
- Only one tool
- Antiskid
- Time-saving
- Ergonomic
- No risk of injury

Pull-wire emergency stop switches

ZQ 900



- To EN 418 / IEC 60947-5-5
- Metal enclosure
- 4 contacts
- Integrated emergency-stop pushbutton
- Position indicator
- Robust design
- Large wiring compartment
- 3 cable entries M20 x 1.5
- One tension force for wire lengths from 5 to 50 m
- Wire up to 50 m long
- Reset pushbutton
- Twisting of towing eye not possible
- Optional signalling lamp
- External watertight collar
- Wire pull and breakage function

Technical data

Standards: IEC/EN 60947-5-1
IEC/EN 60947-5-5

Enclosure: zinc die-cast, enamelled
Cover: thermoplastic
Protection class: IP 65 to IEC/EN 60529
Contact material: silver
Contact type: 1 NC/1 NO
or 2 NC/2 NO
or 3 NC/1 NO
or 2 NC
or 4 NC

Switching system: $\ominus$ IEC 60947-5-1
snap action with positive
break NC contacts

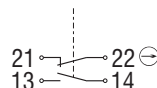
Connection: screw terminals
Cable section: max. 2.5 mm²
(incl. conductor ferrules)
3 x M20 x 1.5

Cable entry: 3 x M20 x 1.5
Rated impulse
withstand voltage U_{imp} : 6 kV
Rated insulation voltage U_i : 500 V
Thermal test current I_{the} : 6 A
Utilisation category: AC-15, DC-13
Rated operating
current/voltage I_e/U_e : 4 A / 230 VAC
1 A / 24 VDC

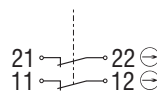
Max. fuse rating: 6 A gG D-fuse
to DIN EN 60269-1
Ambient temperature: -25 °C ... +70 °C
Mechanical life: > 1 million operations
Indicator lamp: optionally
Maximum cable length: 50 m
(please observe ambient
temperature range
and wire supports)
Features: wire pull and
breakage detection

Contact variants

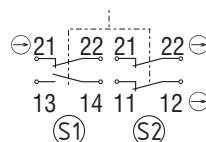
1 NO/1 NC



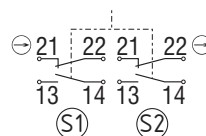
2 NC



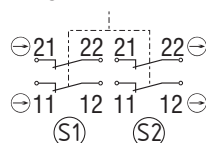
1 NO/3 NC



2 NO/2 NC



4 NC



Approvals



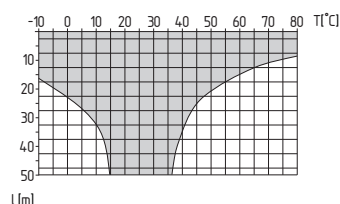
Ordering details

ZQ 900-①②

No.	Replace	Description
①	11	1 NO/1 NC
	13	1 NO/3 NC
	22	2 NO/2 NC
	02	2 NC
	04	4 NC
②		Without emergency-stop pushbutton
	N	With emergency-stop pushbutton

Note

Recommended cable lengths for pull-wire
Emergency-Stop switches in relation to the
range of ambient temperature.
At 5 m distance intermediate wire supports
are required, see accessories on page 7.

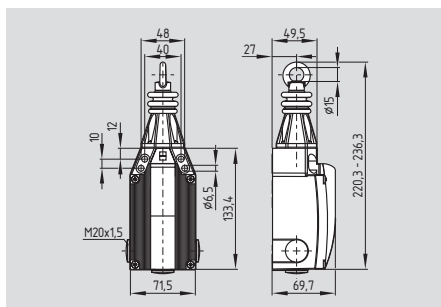


Note

The screwed G24-M20 indicator lamp
must be ordered separately, see page 7.

Pull-wire switches

TQ 900



- Metal enclosure
- 4 contacts
- Position indicator
- Robust design
- Large wiring compartment
- 3 cable entries M20 x 1.5
- One tension force for wire lengths from 5 to 50 m
- Wire up to 50 m long
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 Enclosure: zinc die-cast, enamelled
 Cover: thermoplastic
 Protection class: IP 65 to IEC/EN 60529
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 Contact type:

1 NC/1 NO
 or 2 NC/2 NO
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Switching system: $\ominus$ IEC 60947-5-1
 slow action with positive
 break NC contacts

Connection: screw terminals
 Cable section: max. 2.5 mm²
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Cable entry: 3 x M20 x 1.5
 Rated impulse withstand voltage U_{imp} : 6 kV
 Rated insulation voltage U_i : 500 V
 Thermal test current I_{the} : 6 A
 Utilisation category: AC-15, DC-13
 Rated operating current/voltage I_e/U_e :

4 A / 230 VAC
 1 A / 24 VDC
 6 A gG D-fuse
 to DIN EN 60269-1

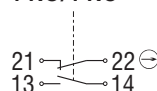
Max. fuse rating: 6 A gG D-fuse
 Ambient temperature: -25 °C ... +70 °C

Mechanical life: > 1 million operations
 Indicator lamp: optionally

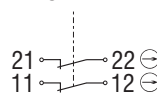
Maximum cable length: 50 m
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 temperature range
 and wire supports)
 Features: wire pull and
 breakage detection

Contact variants

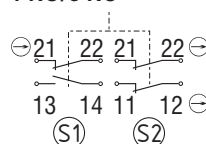
1 NO/1 NC



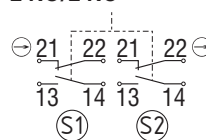
2 NC



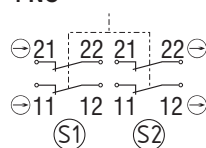
1 NO/3 NC



2 NO/2 NC



4 NC



Approvals



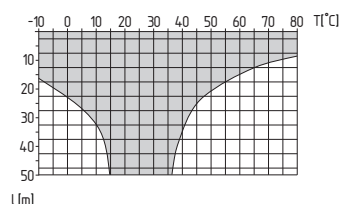
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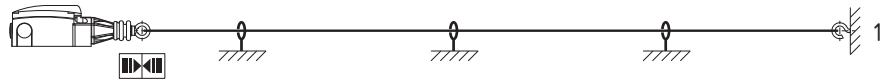
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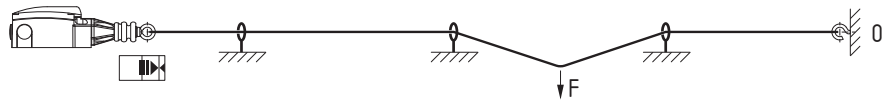
Pull-wire emergency stop switches

Mode of operation

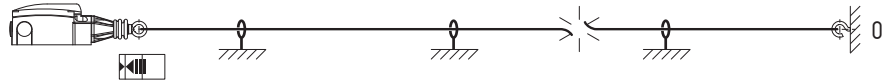
Not actuated



Wire pull detection



Wire breakage detection

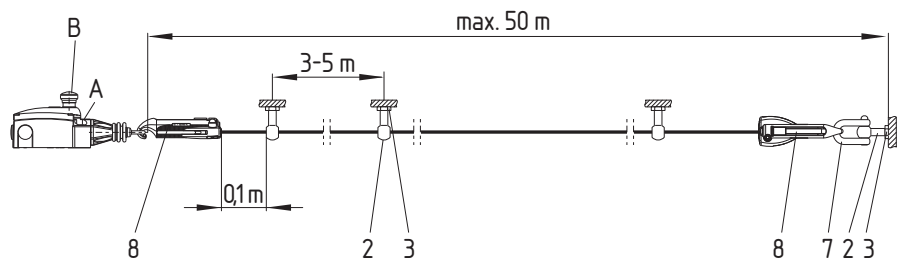
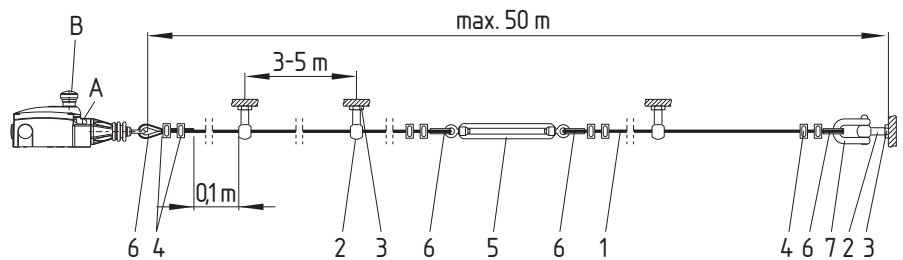


Mounting instructions

- 1 = Wire rope
- 2 = Eyebolt
- 3 = Nut
- 4 = Wire clamp
- 5 = Tensioner
- 6 = Wire thimble
- 7 = Shackle
- 8 = Rope tensioner

A = Position indicator
B = Emergency-stop pushbutton

One-side operation

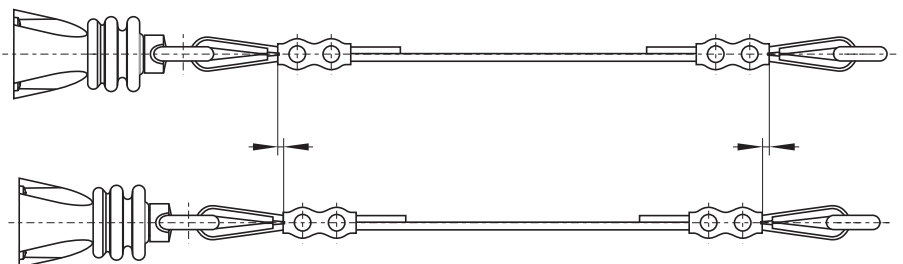


Mounting instructions

Note:

As the thimbles are subject to deformation in case of wire pull, the wire should be pulled several times after fitting. After that, the wire must be re-tensioned using the eyebolt or the tensioner.

Thimble deformation



Pull-wire emergency stop switches

System components



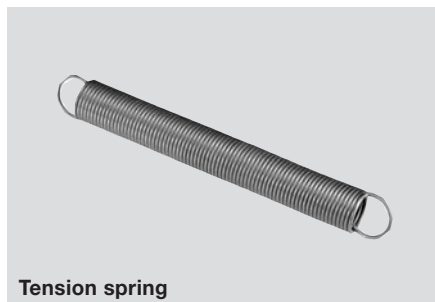
Eyebolt

System components



Pulley

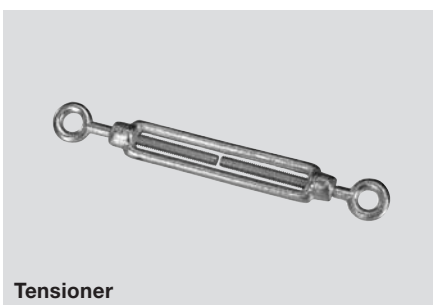
System components



Tension spring



Wire clamp



Tensioner



Rope tensioner S 900



Egg-shaped wire clamp



Wire rope



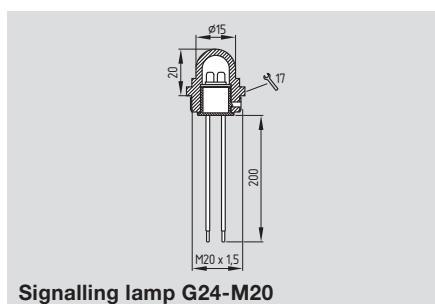
Shackle



Wire thimble



Wire unit complete



Signalling lamp G24-M20

Ordering details

Eyebolt	
BM 10 x 40	1084928
BM 8 x 70	1162986
Wire clamp 3 mm	1144548
Egg-shaped wire clamp	1077072
Wire thimble 3B	1144551

Ordering details

Pulley	1186699
Tensioner M6	1087930
Wire rope per m	on request
Wire unit complete 50 m	1163146
(other lengths on request)	

Ordering details

Tension spring	1186696
Rope tensioner S 900	1186704
Shackle	1186490
Signalling lamp G24-M20	1186263
(LED 24 VDC)	

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