

Features & Benefits

- **Rugged, corrosion-resistant, die-cast aluminum housing** ... tolerates the most hostile environments.
- **“Positive-break” NC contacts** ... assure circuit interruption upon pulling of trip wire.
- **Watertight design** ... meets IP65 requirements.
- **Continuous E-stop protection** ... for supported trip-wire spans up to 164 feet (50m).
- **Meets rigid safety agency standards** ... EN 418
- **Available in two operating force models** ... for application compatibility.
- **Mounting accessories** ... ease and extend installation.
- **Satisfies OSHA push/pull operating requirements** ... trips if cable is pulled or goes slack.
- **Explosion protected** ... optional IEC-rated explosion-proof models available.
- **Signal lamp** ... optional lamp signals tripped and latched condition.

Description

The ZS73 is designed to provide a continuous emergency stop along exposed areas of machinery and conveyors which present hazards to operators/maintenance personnel. Unlike E-stop pushbuttons, emergency stop cable-pull systems can be actuated at any point along the “trip-wire.”

The units feature positive-opening NC contacts which are forced open when the trip-wire is pulled. This design also assures machine stoppage if an operator falls into, leans on, or is pulled against the trip wire.

In addition the switch is designed to operate if the trip wire is cut or goes slack. To comply with OSHA and other safety regulations, the ZS73 features a manual mechanical reset which must be actuated before the controlled equipment can be restarted.

Their rugged metal housing and watertight design (IP65) make them ideal for achieving a higher degree of E-stop safety in industrial and hostile environments.

Operation

The ZS73 features an axial actuating shaft and a double-pole contact block with 1 NO and 1 NC contact or 2 NC contacts (with trip-wire attached). When installed, the trip-wire is pre-tensioned until the actuating shaft is pulled out 6 mm, closing the NO contact(s).

When the trip-wire is pulled, the positive-break NC contact(s) are forced open via a direct mechanical linkage with the actuating shaft. If the trip-wire goes slack (e.g. breaks or is cut) the NO contact, closed during pre-tensioning, opens – resulting in equipment stoppage.

Manual pushbutton reset assures the equipment cannot be restarted until the reset is actuated.

Typical Applications

The ZS73 emergency cable-pull switches are ideal for replacing multiple, discrete E-stop pushbuttons or achieving a continuous, immediately accessible emergency stop. Typical applications include conveyor lines, textile machinery, packaging machinery, turret lathes, power plants, gravel processing and transfer lines.

ZS73 AVAILABLE MODELS AND ACCESSORIES

AVAILABLE STANDARD MODELS

Part Number	Contact Configuration	Type Reset	Pre-Tensioned Force	Typical Actuating Force (F)	Recommended Cable Length (Minimum & Maximum)
ZS73-10/1S WVD-98N*	1 NO & 1 NC	Pushbutton	18-22 lbs (79-98N)	1.1-1.7 lbs (5-8N)	<33 ft (<10m)
ZS73-10/1S WVD-177N*	1 NO & 1 NC	Pushbutton	26-40 lbs (118-177N)	4.2 -5.6 lbs (19-25N)	33-65 ft (10-20m)
ZS73-10/1S WVD-275N*	1 NO & 1 NC	Pushbutton	44-62 lbs (197-275N)	7.4-9.2 lbs (33-41N)	65-100 ft (20-30m)
ZS73-10/1S WVD*	1 NO & 1 NC	Pushbutton	66-88 lbs (295-390N)	8.5-13.5 lbs (38-60N)	100-165 ft (30-50m)
ZS73-10/1S WVS-98N*	1 NO & 1 NC	Key	18-22 lbs (79-98N)	1.1-1.7 lbs (5-8N)	<33 ft (<10m)
ZS73-10/1S WVS-177N*	1 NO & 1 NC	Key	26-40 lbs (118-177N)	4.2 -5.6 lbs (19-25N)	33-65 ft (10-20m)
ZS73-10/1S WVS-275N*	1 NO & 1 NC	Key	44-62 lbs (197-275N)	7.4-9.2 lbs (33-41N)	65-100 ft (20-30m)
ZS73-10/1S WVS*	1 NO & 1 NC	Key	66-88 lbs (295-390N)	8.5-13.5 lbs (38-60N)	100-165 ft (30-50m)
ZS73-20 WVD-98N	2 NC	Pushbutton	18-22 lbs (79-98N)	1.1-1.7 lbs (5-8N)	<33 ft (<10m)
ZS73-20 WVD-177N	2 NC	Pushbutton	26-40 lbs (118-177N)	4.2 -5.6 lbs (19-25N)	33-65 ft (10-20m)
ZS73-20 WVD-275N	2 NC	Pushbutton	44-62 lbs (197-275N)	7.4-9.2 lbs (33-41N)	65-100 ft (20-30m)
ZS73-20 WVD	2 NC	Pushbutton	66-88 lbs (295-390N)	8.5-13.5 lbs (38-60N)	100-165 ft (30-50m)
ZS73-20 WVS-98N	2 NC	Key	18-22 lbs (79-98N)	1.1-1.7 lbs (5-8N)	<33 ft (<10m)
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ZS73-20 WVS	2 NC	Key	66-88 lbs (295-390N)	8.5-13.5 lbs (38-60N)	100-165 ft (30-50m)

*Available in an IEC-rated explosion-proof design. To order, add prefix "EEX" to part number.

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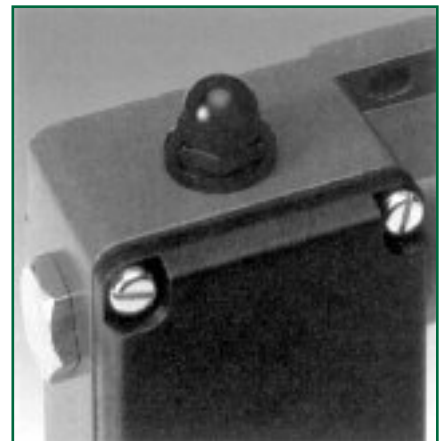
AVAILABLE ACCESSORIES

Part Number	Description
PL-M20-24V	24V Pilot light kit
PL-M20-120V	120V Pilot light kit
STQ441-SC	5mm diameter steel cable, PVC coated
STQ441-EB	M10 eye bolt & hex nut
STQ441-CC	Cable clamp
STQ441-TB	Turnbuckle
STQ441-TH	Thimble
STQ441-PU	Pulley assembly (for cable "cornering")
New! S900	Cable-Pull Switch Wire Tensioner (see page 126)

For recommended installation instructions, please see page 117.



Explosion-proof option



Pilot light option

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ZS73 TECHNICAL DATA

MECHANICAL SPECIFICATIONS

Housing	Die-cast aluminum, color-painted Thermoplastic cover
Degree of Protection	IP65 (pushbutton reset) IP54 (key reset)
Maximum Supported Span	164 feet (50m)
Typical Deflection (S) Required for Operation	5.1" (13cm)
Mechanical Life	1 million operations
Operating Temperature	-13°F to +158°F (-25°C to +70°C)
Conformity to Standards	CE UL BG CSA EN 418 IEC 947-5-1 EN 60947-5-1
Explosion Protection	E Ex dII CT6 ("Ex" models only)

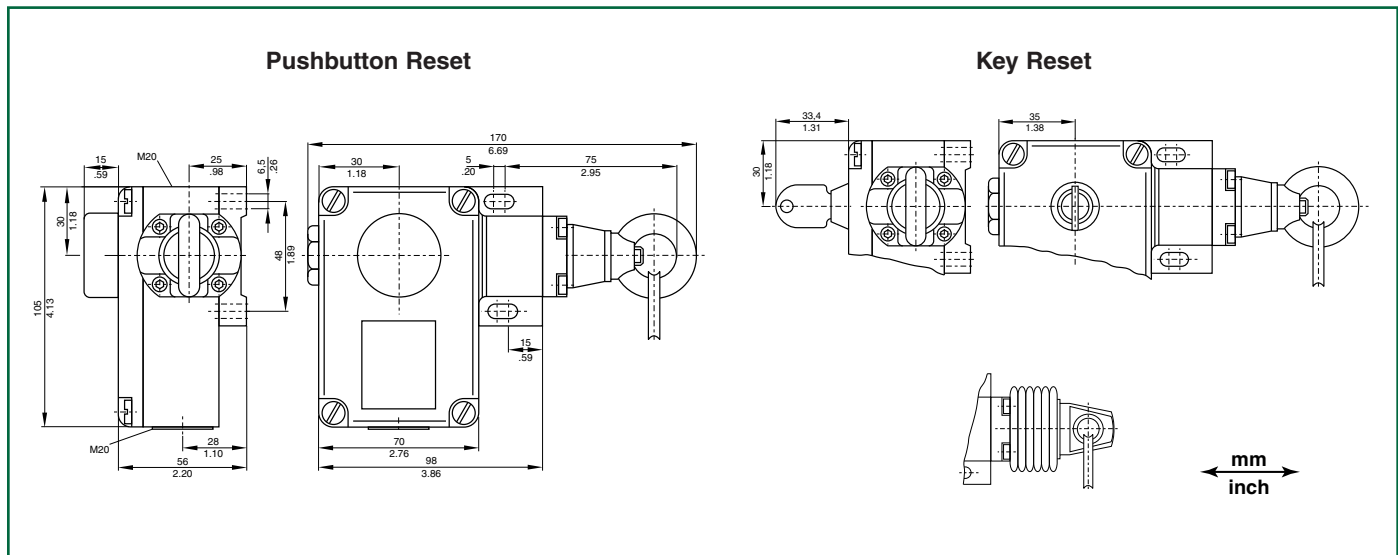
ELECTRICAL SPECIFICATIONS

Contacts	Fine silver
Contact Configuration	Double-pole, double-break with electrically-separated contact bridges
Contact Rating	6A/400VAC
Switching Action	Snap-action, positive-break NC contacts (with wire pulling)
Short Circuit Protection	6A (Slow blow)
Rated Insulation Voltage	400VAC
Type Terminals	Screw terminals with clamping washers

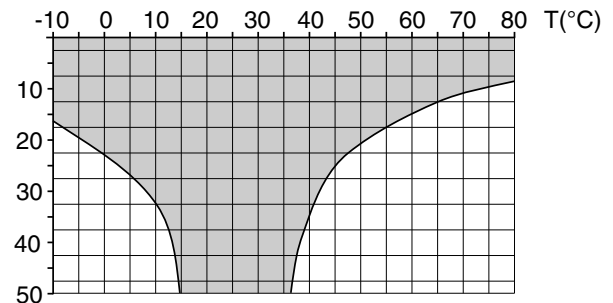
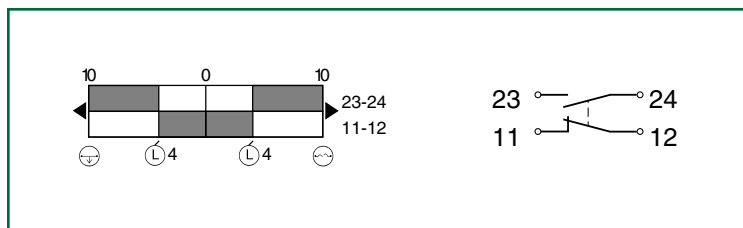
Note: Hard-coated housing available with stainless steel accessories. Please consult factory.

Note: Bi-directional unit available, up to 50m each direction. Please consult factory.

DIMENSIONS



SWITCHING DIAGRAMS & CONTACT SCHEMATICS

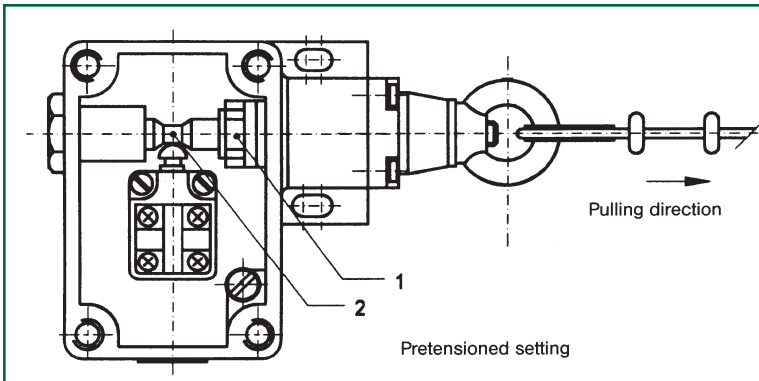


I (m) Cable length vs. temperature range

At 5m distance, intermediate wire supports are required. See accessories.

ZS73 INSTALLATION DETAILS

PRE-TENSIONING ADJUSTMENT



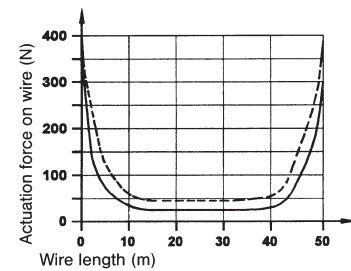
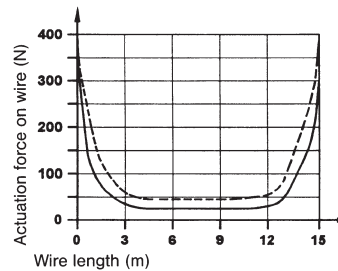
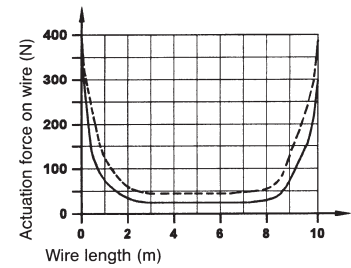
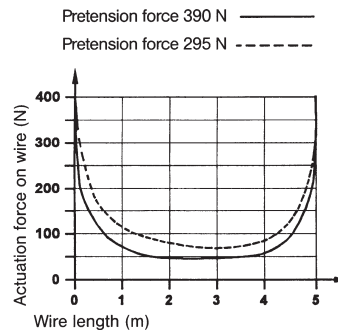
To ensure positive-break operation, the switch should be pinned through the holes shown (1). The trip-wire should be pre-tensioned to the point where the linear switch actuating cam is in the middle position (3). The standard 395N axial pulling force required for pre-tensioning can be reduced by adjusting the grooved nut (2). For trip-wire spans of less than 30m, the unit can be supplied with lighter force pre-tensioning springs.

PRE-TENSIONING FORCE VS. ACTUATION FORCE

The actuating force is a function of the:

- trip-wire span
- pre-tensioning spring
- set pre-tensioning force

as shown. Units are available with lighter springs for trip-wire spans of less than 30m. Please see ordering details under AVAILABLE OPTIONS.



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