

# Emergency Stop Grab Wire Safety Switch LineStrong2

## Approvals:



## Application:

- Machines
- Transportation lines

## Features:

- Duplicate extraction in two directions
- Up to 100 m length
- Up to IP69K
- Integrated emergency stop button
- 2NO + 2NC
- EX version



### Switch operational description

LineStrong2 is an emergency stop grab wire safety switch used for easy reach of an emergency stop along machines, conveyors and processes. LineStrong2 is a robust switch that can handle wires up to 80 meters on a single switch (up to 100 meters on two switches). A grab wire emergency stop is easier to install than a system of several emergency stop buttons along a carriage path. LineStrong2 can be used as protection, for example along conveyors with low risks, where the wire can be installed at waist height in front of the conveyor, which provides an emergency stop if someone walks or falls towards the conveyor. LineStrong2 has double switching in both directions of the wire. If someone pulls the wire or if the wire is broken, the switch goes to a safe state, e.g. the machine is emergency-stopped. After a safe state the LineStrong2 needs to be reset to be able to run again and this is made with the local reset button. Additional features on the LineStrong2 are a "normal" emergency stop that is fitted on the side of the grab wire safety switch and also a two coloured LED for indication. LineStrong2 is equipped with an indication of how taut the wire is, which make the installation and adjustment easy.

### Material

Depending on the environment where the switch will be used, different material can be chosen for the LineStrong2. The basic version has a rugged yellow die cast housing with a rating of IP67. In severe applications as for food processing and chemical industry there is a LineStrong2Z with a total rugged stainless steel 316 body. This version has IP69K enclosure protection (maintained by a double seal lid gasket and seals)

and can be high pressure hosed with detergent at high temperature.

### Positive forced disconnected contacts

A positive forced contact provides a forced disconnect of the safety contacts when the wire is being pulled or broken. The design of the LineStrong2 ensures that the contacts will not fail or be held in a normally closed position, due to failure of the spring mechanism or that welding/sticking of the contacts can occur. The LineStrong2 switch has 2NC and 2NO contacts.

### Safety level

The forced disconnected contacts provide a high level of safety. To achieve a maximum safety level in the connection with the machine control system, it is recommended that the LineStrong2 is monitored by an appropriate ABB Jokab Safety safety relay, Pluto safety-PLC or a Vital system.

### Explosion Proof version (X)

LineStrong2 also exist in versions with certified explosion proof contact block (X-versions). LineStrong2ZX have a stainless steel body and can be used in European Zone 1, 2, 21, 22 environments (Gas and Dust). Preassembled with 3 meter cable.

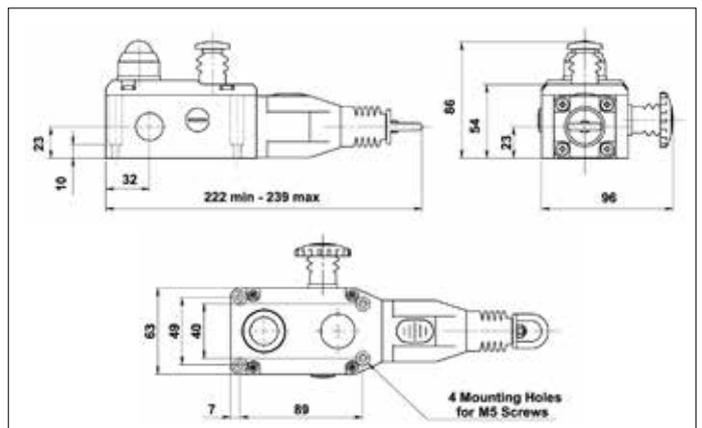
### Regulations and Standards

The LineStrong2 is designed and approved in accordance to relevant standards. Examples of relevant standards are IEC/EN 60947-5-1, IEC/EN 60947-5-5, EN 62061, UL 508, EN ISO 13850 and EN ISO 13849-1.

## Technical data – LineStrong2 series

<b>Article number</b>	
LineStrong2	2TLA050202R0332
LineStrong2Z	2TLA050202R0322
LineStrong2ZX (EX)	2TLA050202R7125
<b>Level of Safety</b>	
EN ISO 13849-1	Up to PL e/Cat. 4 depending upon system architecture
EN 62061	Up to SIL3 depending upon system architecture
<b>Safety data</b>	
Mechanical Reliability $B_{10d}$	$1.5 \times 10^6$ operations at 100mA load
Proof test interval (life)	21 years
MTTF <sub>d</sub>	214 years (8 cycles per hour/24 hours per day/365 days)
<b>Wire span</b>	
LineStrong2	Up to 80 m
LineStrong2Z(X)	Up to 100 m
<b>Wire tension device</b>	
	Tensioner / Gripper- Quick Fixing
<b>Wire type</b>	
	PVC sheath steel wire 4.0 mm outside diameter
<b>Torque settings</b>	
	Mounting M5 4.0Nm lid T20 Torx M4 1.5Nm terminals 1.0Nm
<b>Termination</b>	
	Clamp up to 2.5 mm <sup>2</sup> conductors
<b>Tension force (typical mid setting)</b>	
	130N
<b>Tension operating force (wire pulled)</b>	
	< 125N < 300 mm deflection
<b>Short circuit overload protection</b>	
	Fuse externally 10A (FF)
<b>Rated insulation/withstand voltages</b>	
	500VAC / 2500VAC
<b>Utilisation category</b>	
	AC15 A300 3A
<b>Vibration resistance</b>	
	10-500Hz 0.35 mm
<b>Shock resistance</b>	
	15 g 11 ms
<b>Thermal current (I<sub>th</sub>)</b>	
	10A
<b>LED</b>	
	24 VDC

<b>Contact type</b>	
	IEC/EN 60947-5-1 double break Typ Zb snap action
<b>Contact material</b>	
	Silver
<b>Conduit entries</b>	
	3 x M20 x 1.5
<b>Enclosure classification</b>	
LineStrong2	IP67
LineStrong2Z(X)	IP69K and IP67
<b>Ambient temperature:</b>	
LineStrong2	-25°C to +80°C
LineStrong2Z(X)	-25°C to +80°C (100°C cleaning)
<b>Enclosure material/cover</b>	
LineStrong2	Die cast painted yellow
LineStrong2Z(X)	Stainless steel 316
<b>Mounting position</b>	
	Any
<b>Mounting bolts</b>	
	4 x M5
<b>Explosion Proof version (X)</b>	
Classification	Ex d IIC T6 (-20°C ≤ Ta ≤ +60°C) Gb Ex tb IIIC T85°C (-20°C ≤ Ta ≤ +60°C) Db
Rated Voltage	250V AC/DC
Rated Current	2 pole 4A 4 pole 2.5A



Dimensions LineStrong2 and LineStrong2Z

