Line Strong Series - Grab wire safety rope switches

Application:

Safety Rope Emergency Stop switches are mounted on machines and sections of plant conveyors which cannot be protected by guards. In contrast to traditional mushroom head type Emergency Stop buttons, Safety Rope Switches can initiate the emergency command from any point along the installed rope length.

In combination with any dual channel safety monitoring controller, ABB Jokab Safety Rope Systems can be used as emergency stop devices and monitored for up to Category 4 / Ple to ISO 13849.

Operation:

All ABB Jokab Safety Rope Emergency stop switches conform to European Standard ISO 13850 (EN418) and IEC 947-5-5. They have a positive mechanical linkage between the switch contacts and the wire rope as per IEC 947-5-1. The emergency stop switches are brought into the operational condition by pre-tensioning the rope by use of a tensioner / gripper device which clamps the rope and then hooks to the switch eyebolts. Correct tension can be observed by viewing the tension indicator on the switch housing. Once tensioned, the switch contact blocks can be set to the operational condition (safety contacts closed, auxiliary contacts open) by pressing a blue reset button on the switch cover. All of the Safety Rope Switches have wire-breaking monitoring. On pulling or breakage (tension loss) of the rope, the safety contacts are positively opened and the auxiliary contacts are closed. The switches are mechanically latched and can then only be returned to the operational condition by pressing the reset button a required by EN418, (ISO 13850).

Features:

- LED visual indication of Rope status: Steady Green – Machine running
  Steady or Flashing Red – Machine stopped.

- Rugged die-cast metal body - Yellow colour

- Stainless steel 317 Housings are available (Z versions) - ideal for the food industry

- All internal and external screws and fittings are Stainless Steel

- Enclosure protected to IP67 - washdown suitable (IP69K on Stainless Steel Versions)

- Easy to wire – up to 4 conduit entries

A patented Tensioner / Gripper accessory is available in Stainless Steel to provide rapid installation significantly reducing installation connection to the switch eyebolts and prevents frequent re-tensioning or maintenance caused by cable tension loss, therefore reducing machine down time.

Screw fitting mushroom type E Stop Button
Using safety rope switches

Use of Safety Rope Switches.

ABB Jokab Safety Line Strong switches are designed to be mounted on machines and sections of conveyors which cannot be protected by guards. In contrast to traditional mushroom head type Emergency Stop buttons, Safety Rope Switches can initiate the emergency command from any point along the installed rope length and provide robust Emergency Stop Rope Pull protection for exposed conveyors or machines.

In combination with a dual channel safety monitoring relay, ABB Jokab Safety Rope Systems can be used as emergency stop devices monitored for up to Category 4 to EN 954-1 or PL e ISO13849-1. All ABB Jokab Safety Rope Emergency stop switches conform to ISO13850 and IEC 947-5-5. They have a positive mechanical linkage between the switch contacts and the wire rope. The switches have wire-breaking monitoring.

On pulling the rope the safety contacts are positively opened and the auxiliary contacts are closed. The switches are mechanically latched and can then only be returned to the operational condition by a pressing the blue reset button as required by ISO13850. An optional 2 colour LED indicator is available to enable switch status to be viewed from a distance.

System set up:

Rope support eyebolts must be fitted at 2.5 m. min. to 3m. maximum intervals along all rope lengths between switches. The rope must be supported no more than 500mm from the switch eyebolt or Safety Spring (if used). It is important that this first 500mm is not used as part of the active protection coverage. When using one switch the rope must be anchored at the other end using a Safety Spring. When using a Safety Spring a maximum of one corner pulley only may be used to ensure complete lengths of rope are visible to either the switch or the spring anchorage.
Using safety rope switches

Reliable connectivity:

Tensioning of rope is achieved by the use of ABB Jokab Safety’s new patented Tensioner / Gripper accessory. Traditional turnbuckle and and clamp systems are difficult to tension and adjust and frequent re-tensioning or maintenance is normally required of either the turnbuckle or the clamps. Viewing of the switch tension window is difficult.

For greater reliability and ease of installation the Tensioner / Gripper accessory significantly reduces the installation time by offering an eyebolt and tensioner thimble and high strength gripper in one assembly to enable rapid connection to the switch eyebolts and fast and accurate tensioning of the Rope. By being in close proximity to the switch viewing window systems can be easily tensioned accurately and quickly. The double clamp mechanism prevents rope slippage and significantly reduces machine ‘down time’ which can occur with traditional turnbuckle systems.

Navigating Corners:

Because of the added friction on the eyebolts and rope when navigating corners, ABB Jokab Safety’s unique “universal” pulley can be used to navigate inside or outside corners without causing damage to the rope. They are stainless steel and can be rigidly mounted.

Examples of using the Universal Pulley:

The end of the safety rope is fed through a central hole in a cone shaped guide which protrudes from the main housing.

After being fed through the guide hole the rope enters the main housing by going through a feed hole and then is looped back through 180 degrees and is fed through a second feed hole on the opposite side of the mechanism.

The rope is then pulled for maximum tension and is locked in position by a locking bar inside the main housing which is moved by turning an Allen type locking bolt.

For systems up to 50m, a Quick Link termination is provided for easy connection to either a Safety Spring or Switch eyebolt.

(Note for systems above 50m a Tensioner / Gripper is required each side).
Line Strong 1 Mini-duty switches

**Protection up to 50 meters**

Line Strong 1 is a compact, yet robust die-cast Mini Duty Safety Reop Pull switch designed to protect short conveyor lengths where protection is required up to 50m using two switches or up to 30m using a single switch.

They provide reliable, cost effective safety solutions for conveyor systems and can be enhanced by adding external mushroom Type E Stope at the switch or bi-color LED available to show switch status from a distance.

They have 4 pole contact to ensure flexibility with all modern control applications. Rugged integral sealing bellows means they can be high pressure hosed.

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**Line Strong 1**

<table>
<thead>
<tr>
<th>Code</th>
<th>Description</th>
<th>Mounting</th>
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<tbody>
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</tbody>
</table>

For all ABB Jokab Safety Rope Switches, the normally closed (NC) circuits are closed when the system is tensioned correctly and the switch has been reset.

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**Safety Classification and Reliability Data:**

- **Mechanical Reliability:** 90d
- **Electrical Reliability:** 1.5 x 10^6 operations at 100mA load
- **Safety Data:** - Annual Usage up to Category 4 with Safety Reop Switches
- **Rope Span:** up to 50m
- **Rope Tension dev: Tensional / Gripper – Quick Fixing**
- **Rope Type:** 4.0 mm Outside Dia. Steel inner – PVC sheath
- **Mounting:** 4 x M6
- **Ambient Temperature:** -20°C to +55°C
- **Vibration resistance:** 10-500 Hz, 0.3mm
- **Shock resistance:** 15g, 11ms
- **Tension Force:** < 125N, < 300mm Deflection
- **Weight:** 700g
- **Contact type:** EC 47-5-1 Double break Type 2b
- **Terminal Rating:** Clamp up to 2.5 mm, mm conductors
- **Operational Rating:** 240V, 3A
- **Thermal Current (Ith):** 180A
- **Rated Insulation Voltage (UL):** 500V
- **Withstand Voltage (Um):** 2500V
- **Short Circuit Overload Protection:** Fuse Externally 10A (F)
**Line Strong 2 Standard duty switches**

**Protection up to 80 meters**

Line Strong 2 is a General Duty robust die-cast Safety Rope Pull switch designed to protect conveyor lengths where protection is required up to 80m using two switches or up to 60m using a single switch. They provide a reliable general purpose safety solution for conveyors and offer a choice of fittings depending upon the application. They can be supplied with a mushroom type emergency Stop button which can be fitted to the side of the switch to offer an extra traditional Emergency Stop function close to the switch or can be fitted later after installation without any extra wiring.

A Bi-color LED is available to show switch status from a distance and they have 4 pole contact blocks to ensure flexibility with all modern control applications. Rugged integral sealing bellows means they can be high pressure hosed and the choice of materials makes them suitable for inside or outside use.

For all ABB Jokab Safety Rope Switches, the normally closed (NC) circuits are closed when the system is tensioned correctly and the switch has been reset.

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**Line Strong 2**

- **2TLA050202R0030** LineStrong2, 2NC/2NO, M20
- **2TLA050202R1030** LineStrong2, 2NC/2NO, NPT
- **2TLA050202R0232** LineStrong2, 2NC/2NO, M20 LED 24VDC
- **2TLA050202R1232** LineStrong2, 2NC/2NO, NPT LED 24VDC
- **2TLA050202R0233** LineStrong2, 2NC/2NO, M20 LED 110VAC
- **2TLA050202R1233** LineStrong2, 2NC/2NO, NPT LED 110VAC
- **2TLA050202R0234** LineStrong2, 2NC/2NO, M20 LED 230VAC
- **2TLA050202R1234** LineStrong2, 2NC/2NO, NPT LED 230VAC
- **2TLA050202R0130** LineStrong2, 2NC/2NO, M20, ESTOP
- **2TLA050202R1130** LineStrong2, 2NC/2NO, NPT ESTOP
- **2TLA050202R0332** LineStrong2, 2NC/2NO, M20 ESTOP/LED 24VDC
- **2TLA050202R1332** LineStrong2, 2NC/2NO, NPT ESTOP/LED 24VDC
- **2TLA050202R0333** LineStrong2, 2NC/2NO, M20 ESTOP/LED 110VAC
- **2TLA050202R1333** LineStrong2, 2NC/2NO, NPT ESTOP/LED 110VAC
- **2TLA050202R0334** LineStrong2, 2NC/2NO, M20 ESTOP/LED 230VAC
- **2TLA050202R1334** LineStrong2, 2NC/2NO, NPT ESTOP/LED 230VAC

For all ABB Jokab Safety Rope Switches, the normally closed (NC) circuits are closed when the system is tensioned correctly and the switch has been reset.
Line Strong 2Z Standard duty switches

Protection up to 100 meters

The Line Strong 2Z is a General Duty Safety Rope Pull switch designed to protect long conveyor lengths up to 100m. The Stainless Steel 316 housings are designed specifically to withstand the tough environments found in the Food and Pharmaceutical Industries. The fixing holes are under the cover of the switch to prevent food trap areas. They are all purpose switches and will survive chemical and detergent washdown by providing all stainless steel parts and robust IP67 and IP69K sealing by using integral bellows and gaskets.

An easily seen bi-color LED is available to show switch status from a distance and they have 4 pole contact blocks to ensure flexibility with all modern control applications. Shorter rope spans up to 80m can be achieved by using just one switch therefore making a cost effective solution and also reducing electrical wiring runs.

<table>
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<th>Model Number</th>
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<td>2TLA050202R1324</td>
<td>LineStrong2Z, 2NC/2NO, M20 ESTOP/LED, SS 230VAC</td>
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</tbody>
</table>

For all ABB Jokab Safety Rope Switches, the normally closed (NC) circuits are closed when the system is tensioned correctly and the switch has been reset.

Standards:
- IEC 947-5-1
- EN 60947-5-1
- EN 60898

Safety Classification and Reliability Data:
- Mechanical Reliability: 99.999%
- Safety Data - Annual Usage:
  - PHB: 1000 hours
  - Proof Test Interval (Life):
    - 1 year
  - MTTF:
    - 21 years
- Enclosure / Cover:
  - Stainless Steel 316
- External Parts:
  - Stainless Steel
- IP Rating:
  - P69 (Nema PW12)
  - P66 (Nema 6)
- Rope Spans:
  - 100m
- Rope Tensor device:
  - Tensioner / Gripper - Quick Fixing
- Rope Type:
  - 4.0 mm Inside Dia.
  - Steel inner - PVC sheath
- 4 x M5

Mounting:
- Any
- Conduct entries:
  - 3 x M20 or 3 x 1/4" NPT
- Torque settings:
  - Mounting M5 4.0 Nm
- Lifting:
  - MT 120 Torx M4 1.5 Nm
- Terminal:
  - 1.0 Nm
- Temperature: -20°C to +60°C (100°C, Cleaning)
- Vibration resistance: 10-50Hz, 0.35mm
- Shock resistance: 15g, 1/10s
- Tension Force (typical setting):
  - 130N.
  - < 125N. < 300mm deflection
- Typical Operating Force (Rope pulled):
  - 1750 g
- Contact type:
  - IEC 947-5-1 Double break Type Zb
  - Snap Action up to 4NC (positive break)
  - 2NO (Auxiliary)

Contact Material:
- Silver

Termination:
- Clamp up to 2.5 sq. mm conductors

Utilization Category:
- AC15, A30

Operational Rating:
- 240V, 3A

Thermal Current (Ith):
- 10A

Rated Insulation Voltage (Ui):
- 500V

Withstand Voltage (Uj):
- 2500V

Short Circuit Overload Protection:
- Fuse Externally 10A, (FF)
The Line Strong 3L/R is a robust die-cast Heavy Duty Safety Rope Pull switch designed to protect long conveyor lengths where protection is required up to 125m using two switches or up to 100m using a single switch. The die-cast housings are robust to survive indoor or outdoor use. A bi-color LED ensures switch status can be seen easily from a distance. They have 4NC 2NO contacts to ensure flexibility with all modern control applications. They can be used to compliment the Line Strong 3D versions at each end of the rope span.

The Line Strong 3L/R is a robust die-cast Heavy Duty Safety Rope Pull switch designed to protect long conveyor lengths where protection is required up to 125m using two switches or up to 100m using a single switch. The die-cast housings are robust to survive indoor or outdoor use. A bi-color LED ensures switch status can be seen easily from a distance. They have 4NC 2NO contacts to ensure flexibility with all modern control applications. They can be used to compliment the Line Strong 3D versions at each end of the rope span.

**Protection up to 125 meters**

The Line Strong 3L/R is a robust die-cast Heavy Duty Safety Rope Pull switch designed to protect long conveyor lengths where protection is required up to 125m using two switches or up to 100m using a single switch. The die-cast housings are robust to survive indoor or outdoor use. A bi-color LED ensures switch status can be seen easily from a distance. They have 4NC 2NO contacts to ensure flexibility with all modern control applications. They can be used to compliment the Line Strong 3D versions at each end of the rope span.

**Line Strong 3L and 3R Heavy duty switches**

- **Line Strong 3L**
  - 2TLA050208R0332 LineStrong3L, 4NC/2NO, M20 LED 24VDC
  - 2TLA050208R1332 LineStrong3L, 4NC/2NO, NPT LED 24VDC
  - 2TLA050208R0333 LineStrong3L, 4NC/2NO, M20 LED 110VAC
  - 2TLA050208R1333 LineStrong3L, 4NC/2NO, NPT LED 110VAC
  - 2TLA050208R0334 LineStrong3L, 4NC/2NO, M20 LED 230VAC
  - 2TLA050208R1334 LineStrong3L, 4NC/2NO, NPT LED 230VAC
  - 2TLA050208R0330 LineStrong3L, 4NC/2NO, M20, ESTOP
  - 2TLA050208R1330 LineStrong3L, 4NC/2NO, NPT ESTOP
- **Line Strong 3R**
  - 2TLA050208R0332 LineStrong3R, 4NC/2NO, M20 ESTOP/LED 24VDC
  - 2TLA050208R1332 LineStrong3R, 4NC/2NO, NPT ESTOP/LED 24VDC
  - 2TLA050208R0333 LineStrong3R, 4NC/2NO, M20 ESTOP/LED 110VAC
  - 2TLA050208R1333 LineStrong3R, 4NC/2NO, NPT ESTOP/LED 110VAC
  - 2TLA050208R0334 LineStrong3R, 4NC/2NO, M20 ESTOP/LED 230VAC
  - 2TLA050208R1334 LineStrong3R, 4NC/2NO, NPT ESTOP/LED 230VAC

**Wiremark**

All Dimensions in mm

| Line Strong 3L and 3R | 2TLA050208R0332 LineStrong3L, 4NC/2NO, M20 LED 24VDC | 2TLA050208R1332 LineStrong3L, 4NC/2NO, NPT LED 24VDC | 2TLA050208R0333 LineStrong3L, 4NC/2NO, M20 LED 110VAC | 2TLA050208R1333 LineStrong3L, 4NC/2NO, NPT LED 110VAC | 2TLA050208R0334 LineStrong3L, 4NC/2NO, M20 LED 230VAC | 2TLA050208R1334 LineStrong3L, 4NC/2NO, NPT LED 230VAC | 2TLA050208R0330 LineStrong3L, 4NC/2NO, M20, ESTOP | 2TLA050208R1330 LineStrong3L, 4NC/2NO, NPT ESTOP
|----------------------|----------------------------------------------------|----------------------------------------------------|----------------------------------------------------|----------------------------------------------------|----------------------------------------------------|----------------------------------------------------|----------------------------------------------------|----------------------------------------------------|
| 2TLA050208R0332 LineStrong3L, 4NC/2NO, M20 ESTOP/LED 24VDC | 2TLA050208R1332 LineStrong3L, 4NC/2NO, NPT ESTOP/LED 24VDC | 2TLA050208R0333 LineStrong3L, 4NC/2NO, M20 ESTOP/LED 110VAC | 2TLA050208R1333 LineStrong3L, 4NC/2NO, NPT ESTOP/LED 110VAC | 2TLA050208R0334 LineStrong3L, 4NC/2NO, M20 ESTOP/LED 230VAC | 2TLA050208R1334 LineStrong3L, 4NC/2NO, NPT ESTOP/LED 230VAC | 2TLA050208R0330 LineStrong3L, 4NC/2NO, M20, ESTOP | 2TLA050208R1330 LineStrong3L, 4NC/2NO, NPT ESTOP

**Mechanical Reliability**

- 1.5 x 10^6 operations at 100mA load
- up to Category 4 with Safety Relay
- up to 5% of a depending upon system architecture

**Safety Data - Annual Usage**

- 5 cycles per hour / 24 hours per day / 365 days
- 15 x 10^6

**Proof Test Interval (Life)**

- 21 years
- 24 years

**Enclosure / Cover**

- Die-Cast - Painted Yellow
- Stainless Steel

**IP Rating**

- IP67

**Rope Span**

- 125m

**Rope Tension device**

- Tensioner / Gripper - Quick Fixing
- 4.0 mm Outside Dia. Steel inner - PVC sheath

**Mounting**

- 4 x M5

**Mounting position**

- Any

**Contact entries**

- 4 x M20 or 4 x ¼” NPT by part number

**Torque settings**

- Mounting M5 4.0 Nm
- Lot T20 Torx M4 1.5 Nm
- Terminal 1.0 Nm

**Ambient Temperature**

- -25°C to +80°C

**Vibration resistance**

- 10-500 Hz
- 0.25mm

**Shock resistance**

- 5g
- 11ms

**Tension Force**

- 130N
- Typical Operating Force (Rope pulled)
- 120g
- Weight

**Contact type**

- EC 94/7/EC Double break Type Zb
- Snap-Axton to 4NC (positive break)

**Contact Material**

- Silver

**Termination**

- Clamp up to 2.5 sq. mm conductors

**Rating**

- Utilisation Category: AC15 A300

**Operational Rating**

- 240V, 3A

**Thermal Current (In)**

- 10A

**Rated Insulation Voltage (UI)**

- 500V

**Withstand Voltage (UW)**

- 2500V

**Short Circuit Overload Protection**

- Fuse (Temperature 10A., (FF)

For all ABB Jokab Safety Rope Switches, the normally closed (NC) circuits are closed when the system is tensioned correctly and the switch has been reset.
Line Strong 3LZ and 3RZ Heavy duty switches

Protection up to 125 meters

The Line Strong 3LZ / 3RZ is a robust Heavy Duty Safety Rope Pull switch designed to protect long conveyor lengths where protection is required up to 125m using two switches or up to 100m using a single switch.

The Stainless Steel 316 housings are designed specifically to withstand the tough environments found in the Food and Pharmaceutical industries. They will survive chemical and detergent washdown by providing all stainless steel parts and robust IP67 and IP69K sealing by using integral bellows and gaskets.

They can be used to compliment the Line Strong 3DZ versions at each end of the rope span.

Line Strong 3LZ

500 mm (20 in)

up to 125 meter (410 ft)

500 mm (20 in)

every 3 meter (10 ft)

500 mm (20 in)

every 3 meter (10 ft)

up to 100 meter (328 ft)

500 mm (20 in)

every 3 meter (10 ft)

Safety Spring

For all ABB Jokab Safety Rope Switches, the normally closed (NC) circuits are closed when the system is tensioned correctly and the switch has been reset.

2TLA050206R0322 LineStrong3LZ, 4NC/2NO, M20 ESTOP/LED SS 24VDC
2TLA050206R1322 LineStrong3LZ, 4NC/2NO, NPT ESTOP/LED SS 24VDC
2TLA050206R0323 LineStrong3LZ, 4NC/2NO, M20 ESTOP/LED SS 110VAC
2TLA050206R1323 LineStrong3LZ, 4NC/2NO, NPT ESTOP/LED SS 110VAC
2TLA050206R0324 LineStrong3LZ, 4NC/2NO, M20 LED, SS 24VDC
2TLA050206R1324 LineStrong3LZ, 4NC/2NO, NPT LED, SS 24VDC
2TLA050206R0222 LineStrong3LZ, 4NC/2NO, M20 LED, SS 230VAC
2TLA050206R1222 LineStrong3LZ, 4NC/2NO, NPT LED, SS 230VAC
2TLA050206R1223 LineStrong3LZ, 4NC/2NO, M20 ESTOP, SS
2TLA050206R1224 LineStrong3LZ, 4NC/2NO, NPT ESTOP, SS
2TLA050208R0322 LineStrong3RZ, 4NC/2NO, M20 ESTOP/LED SS 24VDC
2TLA050208R1322 LineStrong3RZ, 4NC/2NO, NPT ESTOP/LED SS 24VDC
2TLA050208R0323 LineStrong3RZ, 4NC/2NO, M20 ESTOP/LED SS 110VAC
2TLA050208R1323 LineStrong3RZ, 4NC/2NO, NPT ESTOP/LED SS 110VAC
2TLA050208R0324 LineStrong3RZ, 4NC/2NO, M20 LED, SS 24VDC
2TLA050208R1324 LineStrong3RZ, 4NC/2NO, NPT LED, SS 24VDC
2TLA050208R0222 LineStrong3RZ, 4NC/2NO, M20 LED, SS 230VAC
2TLA050208R1222 LineStrong3RZ, 4NC/2NO, NPT LED, SS 230VAC
2TLA050208R1223 LineStrong3RZ, 4NC/2NO, M20 ESTOR, SS
2TLA050208R1224 LineStrong3RZ, 4NC/2NO, NPT ESTOR, SS
2TLA050208R0120 LineStrong3RZ, 4NC/2NO, M20, ESTOP, SS
2TLA050208R1120 LineStrong3RZ, 4NC/2NO, NPT ESTOP, SS
2TLA050208R0020 LineStrong3RZ, 4NC/2NO, M20, SS
2TLA050208R1020 LineStrong3RZ, 4NC/2NO, NPT, SS

2TLA050206R0322 LineStrong3LZ, 4NC/2NO, M20 ESTOP/LED SS 24VDC
2TLA050206R1322 LineStrong3LZ, 4NC/2NO, NPT ESTOP/LED SS 24VDC
2TLA050206R0323 LineStrong3LZ, 4NC/2NO, M20 ESTOP/LED SS 110VAC
2TLA050206R1323 LineStrong3LZ, 4NC/2NO, NPT ESTOP/LED SS 110VAC
2TLA050206R0324 LineStrong3LZ, 4NC/2NO, M20 LED, SS 24VDC
2TLA050206R1324 LineStrong3LZ, 4NC/2NO, NPT LED, SS 24VDC
2TLA050206R0222 LineStrong3LZ, 4NC/2NO, M20 LED, SS 230VAC
2TLA050206R1222 LineStrong3LZ, 4NC/2NO, NPT LED, SS 230VAC
2TLA050206R1223 LineStrong3LZ, 4NC/2NO, M20 ESTOR, SS
2TLA050206R1224 LineStrong3LZ, 4NC/2NO, NPT ESTOR, SS
2TLA050206R0120 LineStrong3LZ, 4NC/2NO, M20, ESTOP, SS
2TLA050206R1120 LineStrong3LZ, 4NC/2NO, NPT ESTOP, SS
2TLA050206R0020 LineStrong3LZ, 4NC/2NO, M20, SS
2TLA050206R1020 LineStrong3LZ, 4NC/2NO, NPT, SS

2TLA050208R0322 LineStrong3RZ, 4NC/2NO, M20 ESTOP/LED SS 24VDC
2TLA050208R1322 LineStrong3RZ, 4NC/2NO, NPT ESTOP/LED SS 24VDC
2TLA050208R0323 LineStrong3RZ, 4NC/2NO, M20 ESTOP/LED SS 110VAC
2TLA050208R1323 LineStrong3RZ, 4NC/2NO, NPT ESTOP/LED SS 110VAC
2TLA050208R0324 LineStrong3RZ, 4NC/2NO, M20 LED, SS 24VDC
2TLA050208R1324 LineStrong3RZ, 4NC/2NO, NPT LED, SS 24VDC
2TLA050208R0222 LineStrong3RZ, 4NC/2NO, M20 LED, SS 230VAC
2TLA050208R1222 LineStrong3RZ, 4NC/2NO, NPT LED, SS 230VAC
2TLA050208R1223 LineStrong3RZ, 4NC/2NO, M20 ESTOR, SS
2TLA050208R1224 LineStrong3RZ, 4NC/2NO, NPT ESTOR, SS
2TLA050208R0120 LineStrong3RZ, 4NC/2NO, M20, ESTOP, SS
2TLA050208R1120 LineStrong3RZ, 4NC/2NO, NPT ESTOP, SS
2TLA050208R0020 LineStrong3RZ, 4NC/2NO, M20, SS
2TLA050208R1020 LineStrong3RZ, 4NC/2NO, NPT, SS
The Line Strong 3D is a Heavy Duty Safety Rope Pull switch designed to protect long conveyor lengths. The die-cast housings are robust to survive indoor or outdoor use including washdown (IP67 rating).

Lengths over 2 Km can be achieved with less than 20 switches. A bi-color LED ensures switch status can be seen easily from a distance. They have 4NC 2NO contacts to ensure flexibility with all modern control applications.

Shorter rope spans up to 200m can be achieved by using just one switch, therefore making a cost effective solution and also reducing electrical wiring runs.

For all ABB Jokab Safety Rope Switches, the normally closed (NC) circuits are closed when the system is tensioned correctly and the switch has been reset.

It is recommended when using a Safety Spring that a maximum of one corner pulley is used.

For all ABB Jokab Safety Rope Switches, the normally closed (NC) circuits are closed when the system is tensioned correctly and the switch has been reset.
Line Strong 3DZ Heavy duty switches

Protection up to 250 meters

The Line Strong 3DZ is a robust Heavy Duty Safety Rope Pull switch designed to protect long conveyor lengths up to 250m. The Stainless Steel 316 housings are designed specifically to withstand the tough environments found in the Food and Pharmaceutical industries. They will survive chemical and detergent washdown by providing all stainless steel parts and robust IP67 and IP69K sealing by using integral bellows and gaskets.

A bi-color LED ensures switch status can be seen easily from a distance. They have 4NC 2NO contacts to ensure flexibility with all modern control applications.

Shorter rope spans up to 200m can be achieved by using just one switch, therefore making a cost effective solution and also reducing electrical wiring runs.

![Diagram of Line Strong 3DZ](image1)

It is recommended when using a Safety Spring that a maximum of one corner pulley is used.

For all ABB Jokab Safety Rope Switches, the normally closed (NC) circuits are closed when the system is tensioned correctly and the switch has been reset.

---

**Line Strong 3DZ**

<table>
<thead>
<tr>
<th>Model</th>
<th>Description</th>
<th>Voltage</th>
<th>IP Rating</th>
<th>Material</th>
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<tbody>
<tr>
<td>2TLA050204R0222</td>
<td>LineStrong3DZ, 4NC/4NO</td>
<td>24VDC</td>
<td>SS</td>
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<tr>
<td>2TLA050204R1222</td>
<td>LineStrong3DZ, 4NC/4NO</td>
<td>24VDC</td>
<td>SS</td>
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<tr>
<td>2TLA050204R0323</td>
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<td>110VAC</td>
<td>SS</td>
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<td>2TLA050204R1323</td>
<td>LineStrong3DZ, 4NC/4NO</td>
<td>110VAC</td>
<td>SS</td>
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Line Strong Rope switch accessories

<table>
<thead>
<tr>
<th>Line Strong Accessories</th>
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</thead>
<tbody>
<tr>
<td>2TLA050210R0030 5M Rope Kit, Galv. w/Allen Key</td>
</tr>
<tr>
<td>2TLA050210R0130 10M Rope Kit, Galv. w/Allen Key</td>
</tr>
<tr>
<td>2TLA050210R0230 15M Rope Kit, Galv. w/Allen Key</td>
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<tr>
<td>2TLA050210R0330 20M Rope Kit, Galv. w/Allen Key</td>
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<tr>
<td>2TLA050210R0430 30M Rope Kit, Galv. w/Allen Key</td>
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<tr>
<td>2TLA050210R0530 50M Rope Kit, Galv. w/Allen Key</td>
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<tr>
<td>2TLA050210R0630 80M Rope Kit, Galv. w/Allen Key</td>
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<tr>
<td>2TLA050210R0730 100M Rope Kit, Galv. w/Allen Key</td>
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<tr>
<td>2TLA050210R0830 125M Rope Kit, Galv. w/Allen Key</td>
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<tr>
<td>2TLA050210R0020 LineStrong Acces. 5M Rope Kit SS w/ Key</td>
</tr>
<tr>
<td>2TLA050210R0120 LineStrong Acces. 10M Rope Kit SS w/ Key</td>
</tr>
<tr>
<td>2TLA050210R0220 LineStrong Acces. 15M Rope Kit SS w/ Key</td>
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<tr>
<td>2TLA050210R0320 LineStrong Acces. 20M Rope Kit SS w/ Key</td>
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<td>2TLA050210R0420 LineStrong Acces. 30M Rope Kit SS w/ Key</td>
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<tr>
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<td>2TLA050210R0620 LineStrong Acces. 80M Rope Kit SS w/ Key</td>
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<td>2TLA050210R0720 LineStrong Acces. 100M Rope Kit SS w Key</td>
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<td>2TLA050210R0820 LineStrong Acces. 125M Rope Kit SS w Key</td>
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<tr>
<td>2TLA050210R2020 LineStrong Acces. 5m Rope Only</td>
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<tr>
<td>2TLA050210R2120 LineStrong Acces. 20m Rope Only</td>
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<tr>
<td>2TLA050210R2220 LineStrong Acces. 30m Rope Only</td>
</tr>
<tr>
<td>2TLA050210R2320 LineStrong Acces. 50m Rope Only</td>
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<td>2TLA050210R2420 LineStrong Acces. 100m Rope Only</td>
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<td>2TLA050210R2520 LineStrong Acces. 150m Rope Only</td>
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<tr>
<td>2TLA050210R2620 LineStrong Acces. 200m Rope Only</td>
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<td>2TLA050210R2720 LineStrong Acces. 250m Rope Only</td>
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<tr>
<td>2TLA050210R2820 LineStrong Acces. 300m Rope Only</td>
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<tr>
<td>2TLA050210R4030 LineStrong Acces. Rope Tensioner, SS</td>
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<tr>
<td>2TLA050210R4040 LineStrong Acces. Rope Tensioner, Galv.</td>
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<tr>
<td>2TLA050210R8020 LineStrong Acces. Eyebolt M8x1.25, SS</td>
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<tr>
<td>2TLA050210R8030 LineStrong Acces. Eyebolt M8x1.25, Galv.</td>
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<tr>
<td>2TLA050210R8040 LineStrong Acces. Pully, SS</td>
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<tr>
<td>2TLA050210R8050 LineStrong Acces. Pully, Galv.</td>
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<tr>
<td>2TLA050211R0001 LineStrong Acces. LED Green/Red 24 VDC</td>
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<tr>
<td>2TLA050211R0002 LineStrong Acces. LED Green/Red 110 VDC</td>
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<tr>
<td>2TLA050211R0003 LineStrong Acces. LED Green/Red 230VDC</td>
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<tr>
<td>2TLA050211R0004 LineStrong Acces. Spring, 220mm, SS</td>
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<tr>
<td>2TLA050211R0005 LineStrong Acces. E-Stop Button</td>
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<tr>
<td>2TLA050211R0006 LineStrong Acces. Anti-Tamper, Torx T20</td>
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Accessories - Contact Blocks and fittings

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<tr>
<th>Line Strong Contact Blocks</th>
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<tbody>
<tr>
<td>2TLA050240R0101 LineStrong Acces. Contact Block 2NC/1NO</td>
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<tr>
<td>2TLA050240R0102 LineStrong Acces. Contact Block 3NC</td>
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<td>2TLA050240R0103 LineStrong Acces. Contact Block 2NC/2NO</td>
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<td>2TLA050240R0104 LineStrong Acces. Contact Block 3NC/1NO</td>
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<tr>
<td>2TLA050240R0105 LineStrong Acces. Contact Block 4NC</td>
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<tr>
<td>2TLA050240R0106 LineStrong Acces. Contact Block 2NC/1NO</td>
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<tr>
<td>2TLA050240R0107 LineStrong Acces. Contact Block 3NC</td>
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<tr>
<td>2TLA050240R0108 LineStrong Acces. Contact Block 2NC/2NO</td>
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<tr>
<td>2TLA050240R0109 LineStrong Acces. Contact Block 3NC/1NO</td>
</tr>
<tr>
<td>2TLA050240R0110 LineStrong Acces. Contact Block 4NC</td>
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<table>
<thead>
<tr>
<th>Line Strong Glands and Plugs</th>
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<tbody>
<tr>
<td>2TLA050240R0101 LineStrong Acces. Contact Block 2NC/1NO</td>
</tr>
<tr>
<td>2TLA050240R0102 LineStrong Acces. Contact Block 3NC</td>
</tr>
<tr>
<td>2TLA050240R0103 LineStrong Acces. Contact Block 2NC/2NO</td>
</tr>
<tr>
<td>2TLA050240R0104 LineStrong Acces. Contact Block 3NC/1NO</td>
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<tr>
<td>2TLA050240R0105 LineStrong Acces. Contact Block 4NC</td>
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</tbody>
</table>

Tensioner / Gripper Assembly
Allen Key 4mm
Quick Link (QL)
For up to 50m, spans, one rope end is terminated with a thimble and permanent clamp.
For over 50m, spans, 2 Tensioner / Gripper assemblies are supplied (no Quick Link).