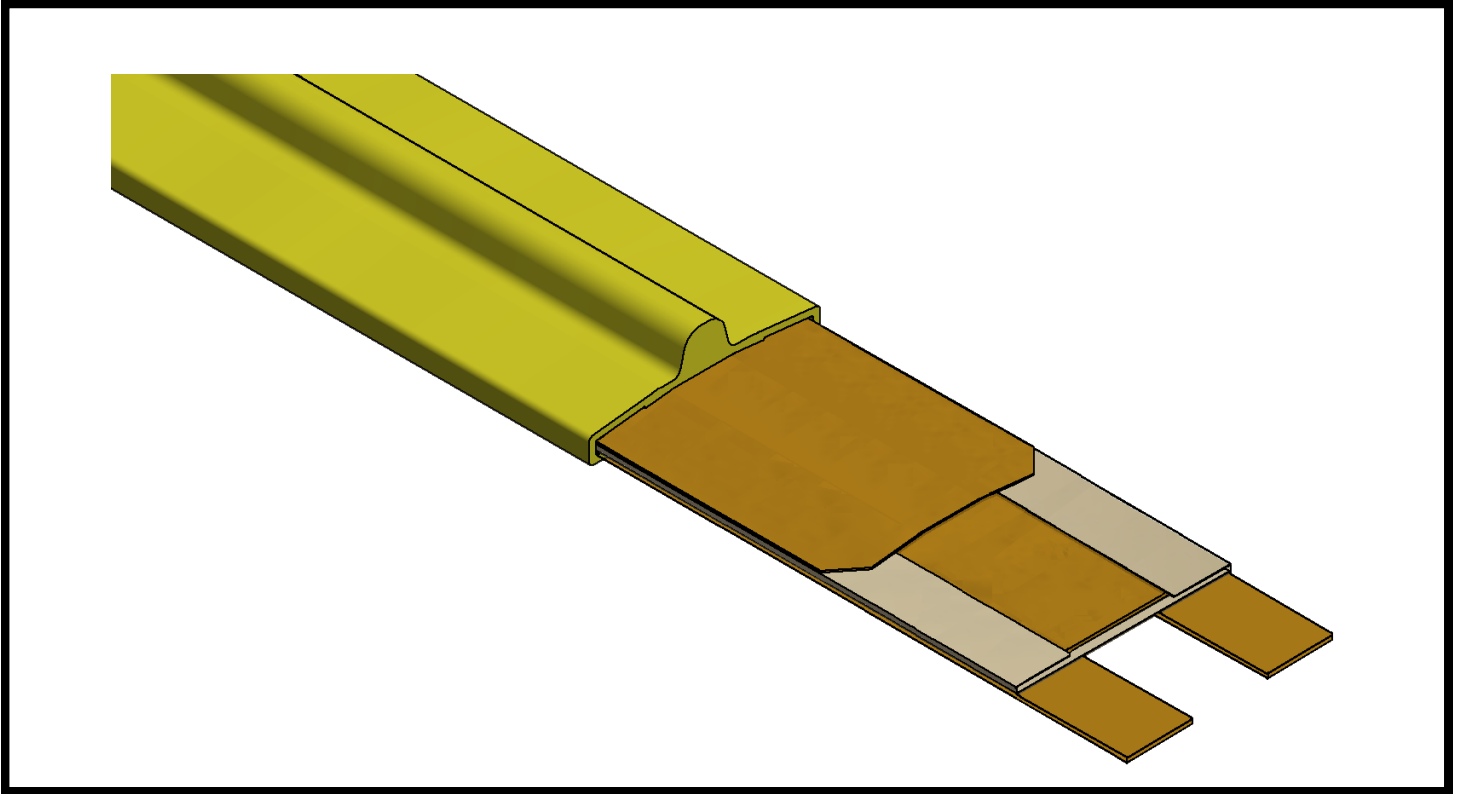


## S-33



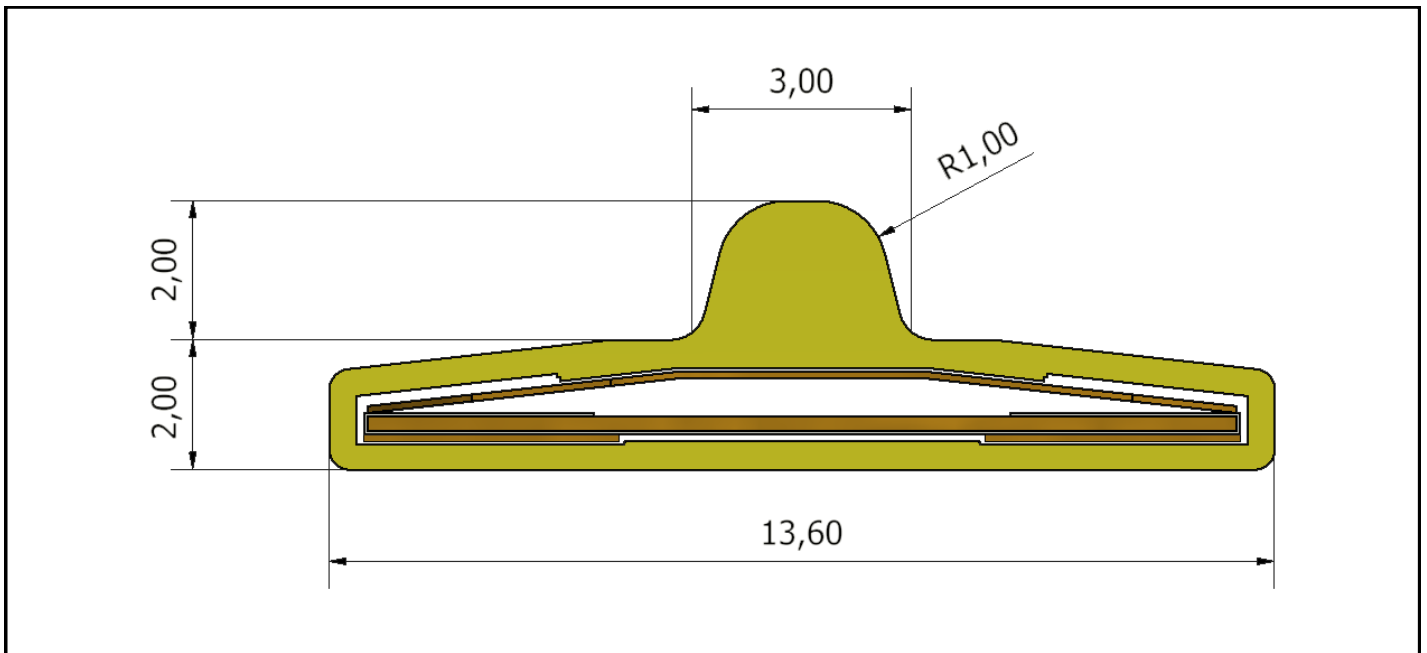
**S-33** type pressure sensitive ribbon switch is a safety device designed according to the European and Italian safety norms. It may have different length and it is housed inside the **Proswitch™** sensing edges.

**S-33** type ribbon switch has the same features of the S-30 type, except for the conductors that are inside the external PVC cover, in order to avoid the presence of external return cable. They can be used both for safety based or control based applications. They can be supplied packed with the related wires or autonomously in coils up to 250 meters. In this case, the client shall prepare the wire connection. The ribbon switch can be provided with an aluminium edge channel and specific terminals.

### General characteristics

External cover material:	PVC
External colour:	Yellow RAL 1018 (other colours on demand)
External cover hardness:	80 shore
Dimensional tolerances:	according to DIN ISO 3302-1 class E2
Contacts material:	Phosphorous bronze (stainless steel in some cases)
Protection rate:	IP56 (IP65 on demand)
Total weight:	0,35 Kg/m
Actuations number:	$<3 \times 10^6$
Sensor contact type:	N.O.
Actuation angle:	120°
Max. length:	250 m
Return conductors' section:	4x0,1 mm (0,4 mm <sup>2</sup> )

## Dimensions



## Characteristics

Resistance:	0,5 Ohm/m
Max. current:	1 A
Max tension:	32 Vcc
Max wires length:	100 m (copper, section 0,50 mm <sup>2</sup> )
Actuation number:	<math>3 \times 10^6</math>
Actuation force:	5 N (test piece $\varnothing 80$ mm)

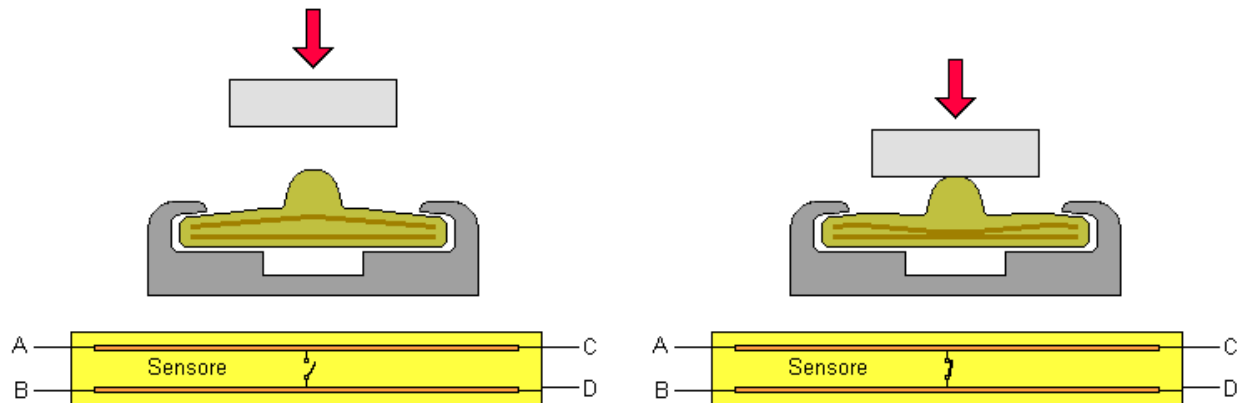
## Chemical characteristics

The external cover is made of **PVC**, that has excellent chemical resistance together with good mechanical properties. In order to have a proper duration of the external cover, it is important to check the chemical charts indicating the specific chemical substances that may enter in contact with it, considering the exposure time and the temperature.

## Functioning principle

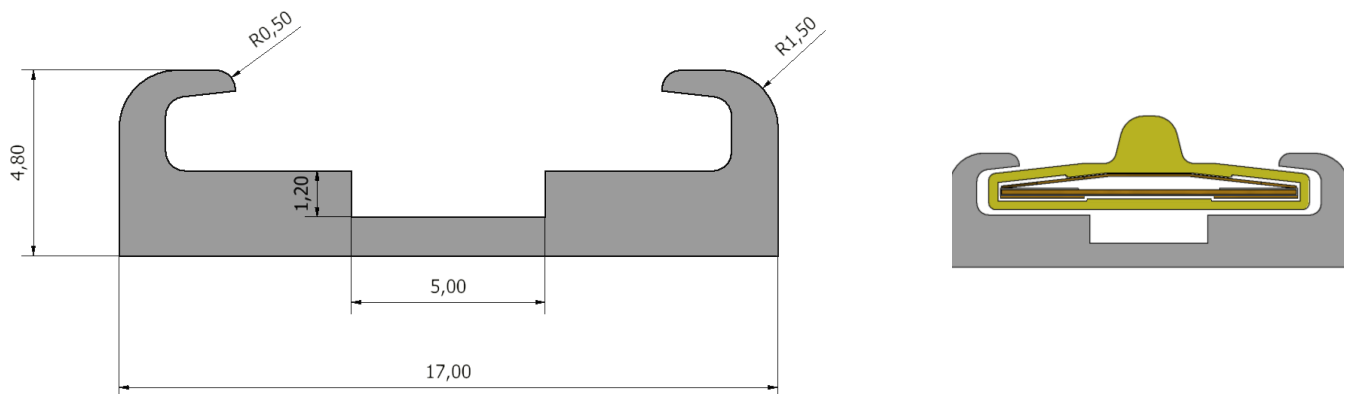
**Proswitch™** ribbon switch type **S-33** is designed in order to meet the EN 13856-2 requirements.

In order to reach protection level CAT 3-PLe ISO 13849-1, the **Proswitch™** ribbon switch must be used with the control unit type **SP-2S** and **SP-4S**. The presence of the return conductors inside the **S-33** type ribbon switch is not relevant for the functioning principle description.



## Optional products

### Aluminium channel GA-S30

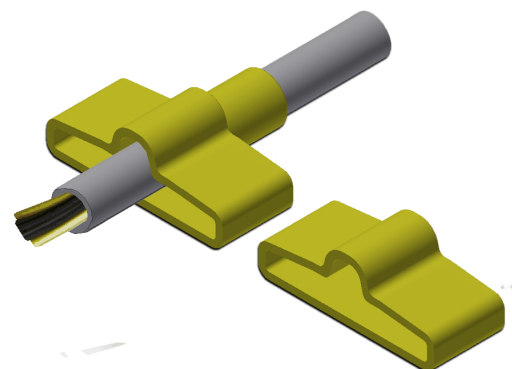


## Terminals

Terminal type **TS-30** is a device that allow the ribbon switches to be connected with each other without welding them, in order to have different lengths.

A copper is weld to the external wire and inserted between the wire contacts.

It is highly recommended to stick the terminal type **TS-30** to the ribbon switch, sealing it in order to prevent strips and any kind of infiltration inside the ribbon switch.

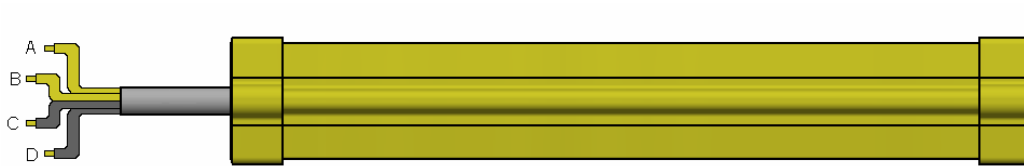


## Ribbon switch type S-33

**S-33** type ribbon switch have the return conductors inside the external PVC cover, in order to avoid the presence of external return cable.

Depending on the wire exit, ribbon switches type **S-33** vary in the following types

### S-33, using terminals TS-30 and with cables to weld



### S-33, 4 wires welded on one single side and with external seal



## Installation and commissioning manual

Before installing each **Proswitch™** device, it is mandatory to read carefully any document provided with the product. In order to have a proper installation, it is important consider the documentation related to the machine where the **Proswitch™** product is installed. In such case, it is mandatory to do the risk assessment related to the machine functioning, according to the current national and European safety set of rules.

Once the product is installed, qualified personnel shall do the required tests to guarantee the proper machine safety system functioning.

If the installation implies structural changes to the **Proswitch™** product, such changes must be previously agreed between the client and the **Proswitch™** qualified personnel.

### Periodical check

According to the current national and European safety set of rules, it is mandatory to check periodically the overall system, in order to detect eventual damaged or worn components.

The test frequency depends on the characteristic of the system and on the specification of the machine manufacturer, according to the current safety set of rules.

In order to ensure the proper functioning of the safety system, it is important to do daily checks at the beginning of the shift or of the machine start.

### Connection check

**S-33** type ribbon switch can be used autonomously or can be housed in 4 wire sensing edges.

The terminals A, B, C, and D must be detected, and electrical continuity must not exist between the terminal A-B and the terminal C-D. The pressure on the sensing edge must generate a short circuit between the two pairs of terminals.

Electrical continuity must always exist between the terminals A-C e B-D.

4 wires ribbon switch terminals

