

Data Sheet Python Line Series



Using Conveyor Belt Alignment Switches

Application:

Conveyor Belt Alignment switches are mounted on sections of plant conveyors to protect against excessive belt drift due to an unintentional movement. They can be fitted at appropriate points along the conveyor length to ensure that should the belt position drift, the roller arm of the switch will move to a pre-determined position and cause activation of a control circuit.

All switches conform to European Standard IEC 60947-5-1 and provide positively operated contacts at the point of tripping. They can be used to satisfy the requirements of EN 620 with regard to conveyor control hazards caused by shifting of the belt position during running.

They are available in different roller diameters to provide heavy duty performance and long life.

Operation:

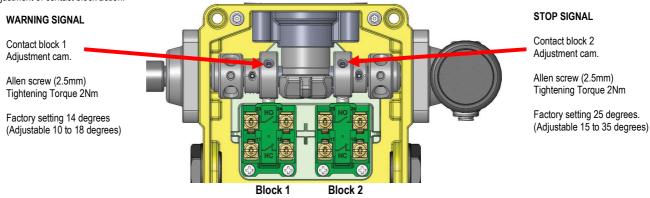
The steel roller of the switch is placed near to the running edge of the conveyor belt such that deflection of the roller and arm will cause activation "tripping" of the internal contacts of the switch. Adjustment of the tripping angles and necessary activation torque is provided by the switch.

Installation Guide:

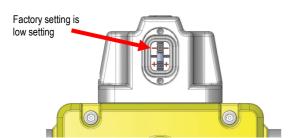
- Installation of all switch systems must be in accordance with a risk assessment for the individual application.
 Installation must only be carried out by competent personnel and in accordance with these instructions.
- 2. M5 mounting bolts must be used to fix the switches. Tightening torque for mounting bolts to ensure reliable fixing is 4 Nm.

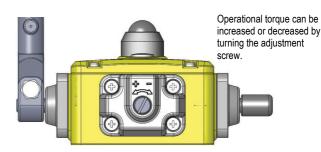
 Tightening torque for the lid screws, conduit entry plugs and cable glands must be 1.5 Nm to ensure IP seal. Only use the correct size gland for the conduit entry and cable outside diameter.
- 3. The position of the roller must be chosen to ensure that in normal use the belt does not touch the roller, but that should the belt move beyond its normal guides it will make contact with the roller. After selecting the correct mounting position, the switching points of the internal contact blocks can be finely adjusted via internal cams. There are 2 internal contact blocks one to provide a "STOP" signal the other to provide a "WARNING" signal. The blocks offer NC and NO circuits.

Final Adjustment of contact block action:



4. The operational torque can be adjusted to cope with belt sensitivity or mounting angle.





Maintenance:

Every month: Check correct operation at all switch locations along all coverage length. Check for nominal warning and trip angle, re-set if necessary.

Every 6 months: Isolate power and remove cover. Check screw terminal tightness and check for signs of moisture ingress. Never attempt to repair any switch.

Contact operation/Deflection of roller. (Factory settings shown.)

		0 De	egrees	14 Degrees WARNING	egrees FOP	65 Degree	S			
		1NC						Contact open		
		1NO						Contact closed		
WARNING SIGNAL	NC	11/12					·			
Contact Block 1	NO	23/24						\longrightarrow	Direction of roller	
STOP SIGNAL	NC	11/12							Direction of Tollor	
Contact Block 2	NO	23/24								

Wiring examples (standard version)

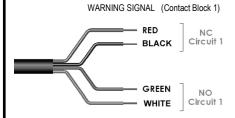
LED Flashing Red or Steady Green (Bi-colour)

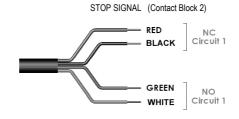


When power is applied to the Red wire, the lamp will illuminate Red and Flash. When power is applied to the Green Wire, the Lamp will illuminate Green. Black is 0V.dc or Neutral for 110Vac and 230Vac versions.

External supply required - (N) BLACK (2) BLACK (2) BLACK (2) STOP CIRCUIT Contact Block 2 WARNING CIRCUIT Contact Block 1

Wiring Colours for EX versions





IMPORTANTSPECIFIC CONDITIONS OF USE FOR EX VERSIONS:
THE INTEGRAL CABLE SHALL BE SUITABLY PROTECTED FROM PHYSICAL DAMAGE AND ABRASION. THE INTEGRAL CABLE IS TO BE TERMINATED IN A SUITABLE TERMINAL FACILITY.

Standards: IEC 60947-5-1 EN 620

Mechanical Features:

Enclosure / Cover
External Parts
IP Rating
Mounting position
Conduit entries
Torque settings

Die-Cast (Painted Yellow) or Stainless Steel
Stainless Steel
IP67
4 x M5
Any
4 x M5
Any
4 x M20 or 4 x ½ " NPT by part number
Mounting M5 4.0 Nm

Lid T20 Torx M4 1.5 Nm
Terminals 1.0 Nm
signt Temperature -25C 80 C

Ambient Temperature -25C. 80 C.
Vibration resistance 10-500Hz 0.35mm
Shock resistance 15g 11ms

Mechanical Reliability 150,000 operations at 100mA load

Switching range WARNING signal 10 to 18 degrees STOP signal 15 to 35 degrees

Operating Torque range (adjustable) Medium Duty 1.8Nm to 2.8Nm Heavy Duty 3.0Nm to 5.0Nm

Maximum tilt angle (mounting angle) 30 degrees
Maximum Deflection 65 degrees

Electrical:

Safety Contact type
Contact Material
Termination
Rating
Operational Rating
Operational Rating
Thermal Current (Ith)

IEC 60947-5-1
Double break Type Zb
Silver
Clamp up to 2.5 sq. mm conductors
Utilisation Category: AC15
AC15 A300 240V. 3A. / 120V. 6A. ac
24V. 2.5A dc

Rated Insulation Voltage (Ui)
Withstand Voltage (Uimp)
Short Circuit Overload Protection

Optional EX internal switch Type LS-EX

Information with regard to UL 508:

Type 1 Enclosures.

Use 16 - 14AWG copper conductors, rated 75°C only. Intended for same polarity use.

Electrical Rating: A300 240V.ac 3A. (6,000 cycles) 120V.ac 60A. Making 6A. Breaking PF >0.38 (100,000 cycles)

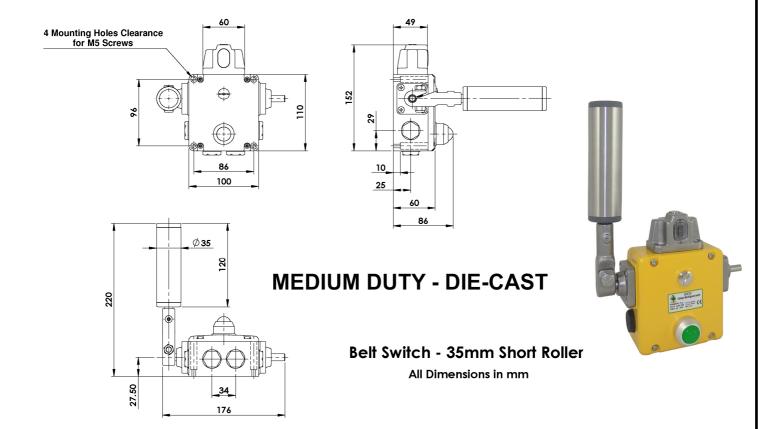
240V.ac 10A. carry only. Torque 7lb/in (0.8Nm)

LED powered by LVLC or Class 2 only.

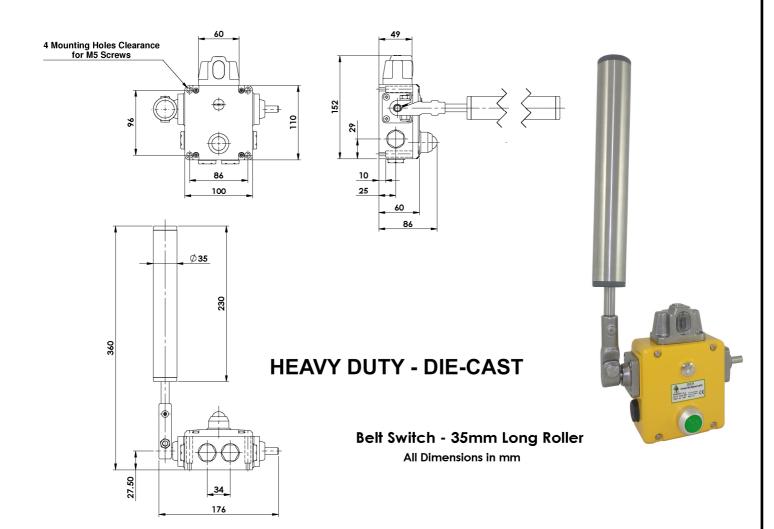
Earth bonding terminal inside enclosure if required.

The device is permitted to control more than one load provided the total load connected to the line at one time does not exceed 1440 volt-amperes, or have a current rating greater than 30 amperes at 51-150 volts or 20 amperes at 151 to 300 volts.

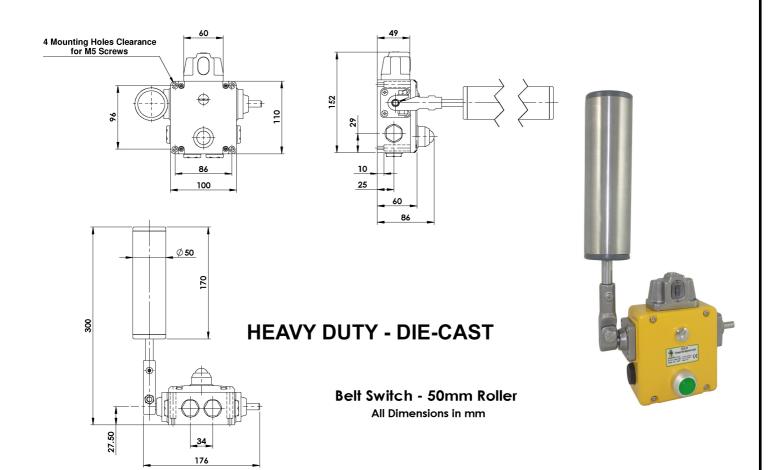
MODELS:



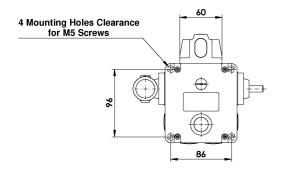
Description		Medium Duty			
		Operating Torque	WARNING	STOP	
Belt Switch 35mm Roller Short M20 2NC 2NO	500001				
Belt Switch 35mm Roller Short ½" 2NC 2NO	500002				
Belt Switch 35mm Roller Short M20 2NC 2NO 24v LED	500003A				
Belt Switch 35mm Roller Short M20 2NC 2NO 110v LED	500003B	1.8Nm to 2.8Nm	10-18 degrees	15-35 degrees	
Belt Switch 35mm Roller Short M20 2NC 2NO 230v LED	500003C				
Belt Switch 35mm Roller Short ½" 2NC 2NO 24v LED	500004A	(Factory set : 1.8Nm)	(Factory set: 14 degrees)	(Factory set: 25 degrees)	
Belt Switch 35mm Roller Short ½" 2NC 2NO 110v LED	500004B	1.ONIII)	14 degrees)	25 degrees)	
Belt Switch 35mm Roller Short ½" 2NC 2NO 230v LED	500004C				
Belt Switch 35mm Roller Short M20 2NC 2NO EX 3m PRE-WIRED	500021				

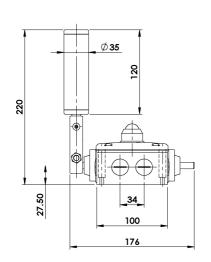


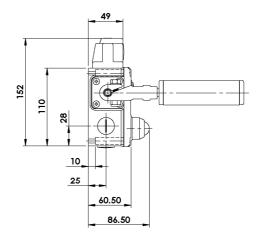
Description		Heavy Duty		
		Operating Torque	WARNING	STOP
Belt Switch 35mm Roller Long M20 2NC 2NO	500005			
Belt Switch 35mm Roller Long ½" 2NC 2NO	500006			
Belt Switch 35mm Roller Long M20 2NC 2NO 24v LED	500007A			
Belt Switch 35mm Roller Long M20 2NC 2NO 110v LED	500007B	3.0Nm to 5.0Nm	10-18 degrees	15-35 degrees
Belt Switch 35mm Roller Long M20 2NC 2NO 230v LED	500007C			
Belt Switch 35mm Roller Long ½" 2NC 2NO 24v LED	500008A	(Factory set : 3.0Nm)	(Factory set: 14 degrees)	(Factory set: 25 degrees)
Belt Switch 35mm Roller Long ½" 2NC 2NO 110v LED	500008B	3.0(4)(1)	14 degrees)	25 degrees)
Belt Switch 35mm Roller Long ½" 2NC 2NO 230v LED	500008C			
Belt Switch 35mm Roller Long M20 2NC 2NO EX 3m PRE-WIRED	500051			



Description	Sales Part No.	Heavy Duty			
		Operating Torque	WARNING	STOP	
Belt Switch 50mm Roller M20 2NC 2NO	500009				
Belt Switch 50mm Roller ½" 2NC 2NO	500010				
Belt Switch 50mm Roller M20 2NC 2NO 24v LED	500011A				
Belt Switch 50mm Roller M20 2NC 2NO 110v LED	500011B	3.0Nm to 5.0Nm	10-18 degrees	15-35 degrees	
Belt Switch 50mm Roller M20 2NC 2NO 230v LED	500011C				
Belt Switch 50mm Roller ½" 2NC 2NO 24v LED	500012A	(Factory set : 3.0Nm)	(Factory set: 14 degrees)	(Factory set: 25 degrees)	
Belt Switch 50mm Roller ½" 2NC 2NO 110v LED	500012B	3.0(4(1))	14 degrees)	25 degrees)	
Belt Switch 50mm Roller ½" 2NC 2NO 230v LED	500012C				
Belt Switch 50mm Roller M20 2NC 2NO EX 3m PRE-WIRED	500091				





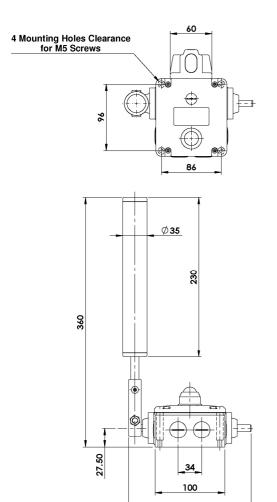


MEDIUM DUTY STAINLESS STEEL

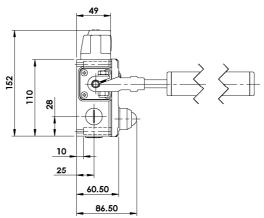
Belt Switch SS- 35mm Short Roller (Stainless Steel) All Dimensions in mm



Description		Medium Duty		
		Operating Torque	WARNING	STOP
Belt Switch SS 35mm Roller Short M20 2NC 2NO	501001			
Belt Switch SS 35mm Roller Short ½" 2NC 2NO	501002			
Belt Switch SS 35mm Roller Short M20 2NC 2NO 24v LED	501003A			
Belt Switch SS 35mm Roller Short M20 2NC 2NO 110v LED	501003B	1.8Nm to 2.8Nm	10-18 degrees	15-35 degrees
Belt Switch SS 35mm Roller Short M20 2NC 2NO 230v LED	501003C			
Belt Switch SS 35mm Roller Short ½" 2NC 2NO 24v LED	501004A	(Factory set : 1.8Nm)	(Factory set: 14 degrees)	(Factory set: 25 degrees)
Belt Switch SS 35mm Roller Short ½" 2NC 2NO 110v LED	501004B	1.014111)	14 degrees)	25 degrees)
Belt Switch SS 35mm Roller Short ½" 2NC 2NO 230v LED	501004C			
Belt Switch SS 35mm Roller Short M20 2NC 2NO EX 3m PRE-WIRED	501021			



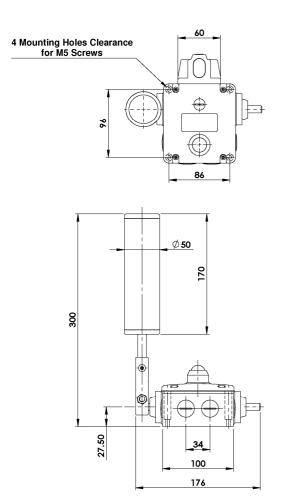
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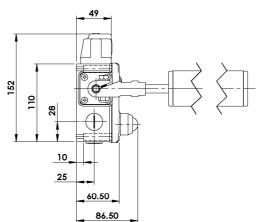


HEAVY DUTY STAINLESS STEEL



Description	Sales Part No.	Heavy Duty			
		Operating Torque	WARNING	STOP	
Belt Switch SS 35mm Roller Long M20 2NC 2NO	501005				
Belt Switch SS 35mm Roller Long ½" 2NC 2NO	501006				
Belt Switch SS 35mm Roller Long M20 2NC 2NO 24v LED	501007A				
Belt Switch SS 35mm Roller Long M20 2NC 2NO 110v LED	501007B	3.0Nm to 5.0Nm	10-18	15-35 degrees	
Belt Switch SS 35mm Roller Long M20 2NC 2NO 230v LED	501007C		degrees		
Belt Switch SS 35mm Roller Long ½" 2NC 2NO 24v LED	501008A	(Factory set : 3.0Nm)	(Factory set: 14 degrees)	(Factory set: 25 degrees)	
Belt Switch SS 35mm Roller Long ½" 2NC 2NO 110v LED	501008B	3.0MIII)	14 degrees)	25 degrees)	
Belt Switch SS 35mm Roller Long ½" 2NC 2NO 230v LED	501008C				
Belt Switch SS 35mm Roller Long M20 2NC 2NO EX 3m PRE-WIRED	501051				





HEAVY DUTY STAINLESS STEEL

Belt Switch SS- 50mm Roller (Stainless Steel) All Dimensions in mm



Description	Sales Part Heavy Duty No.			
		Operating Torque	WARNING	STOP
Belt Switch SS 50mm Roller M20 2NC 2NO	501009			
Belt Switch SS 50mm Roller ½" 2NC 2NO	501010			
Belt Switch SS 50mm Roller M20 2NC 2NO 24v LED	501011A			
Belt Switch SS 50mm Roller M20 2NC 2NO 110v LED	501011B	3.0Nm to 5.0Nm	10-18	15-35 degrees
Belt Switch SS 50mm Roller M20 2NC 2NO 230v LED	501011C		degrees	
Belt Switch SS 50mm Roller ½" 2NC 2NO 24v LED	501012A	(Factory set : 3.0Nm)	(Factory set: 14 degrees)	(Factory set: 25 degrees)
Belt Switch SS 50mm Roller ½" 2NC 2NO 110v LED	501012B	3.0Mii)	14 degrees)	25 degrees)
Belt Switch SS 50mm Roller ½" 2NC 2NO 230v LED	501012C			
Belt Switch SS 50mm Roller M20 2NC 2NO EX 3m PRE-WIRED	501091			