

HMA

INSTRUMENTATION



BELT TEAR DETECTOR



Longitudinal tears occurred on conveyor belts can be detected in their earliest stages.

Belt Tear Detector



Transducer

74% of longitudinal belt tear incidents occur at the transfer chutes. It is crucial to detect these tears as early as possible since even the smallest of tears will easily become a costly damage when left undetected. Our Matsushima Belt Tear Detector provides not only an instant detection of longitudinal tears, but it also produces an instant emergency stop signal thus providing a total protection to your conveyor system.

INSTANT DETECTION OF CONVEYOR BELT LONGITUDINAL TEARS:

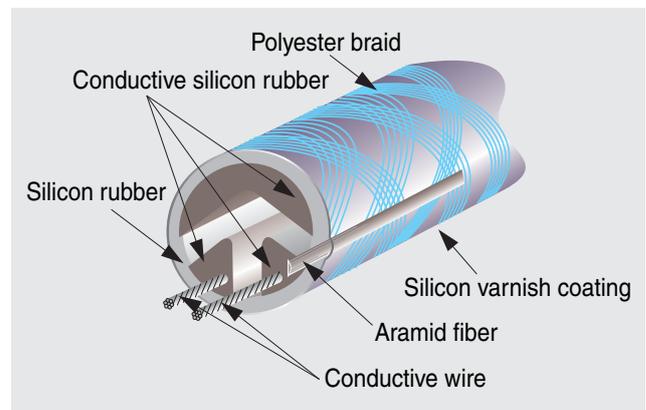
At the heart of the technology is the highly sensitive cable switch which is integrated into the sensing part of the system. Due to its sensitivity, any contact with the sensor results in an instant detection of belt punctures or tears.

HIGH SENSOR RELIABILITY :

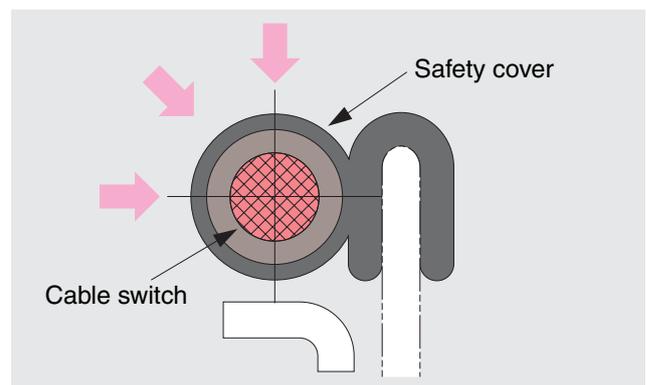
Our sensor is constructed with multiple elements that protect and ensure long lasting operation of the internals. Inside the sensor construction you will find aramid fibres and polyester braiding that provide mechanical strength to the unit, conductive silicon inserts that protects the conductive sensor wires and finally the varnished coated silicon cover itself that is impervious to most foreign elements on site. All these combined, the sensor will perform reliably for an extended lifetime regardless of harsh environment, weather, UV rays, moisture, salt water or other aggressive media.

EASY INSTALLATION:

Our detector can be installed without any modifications of belt conveyor. Moreover, it can be installed while the conveyor is operating.



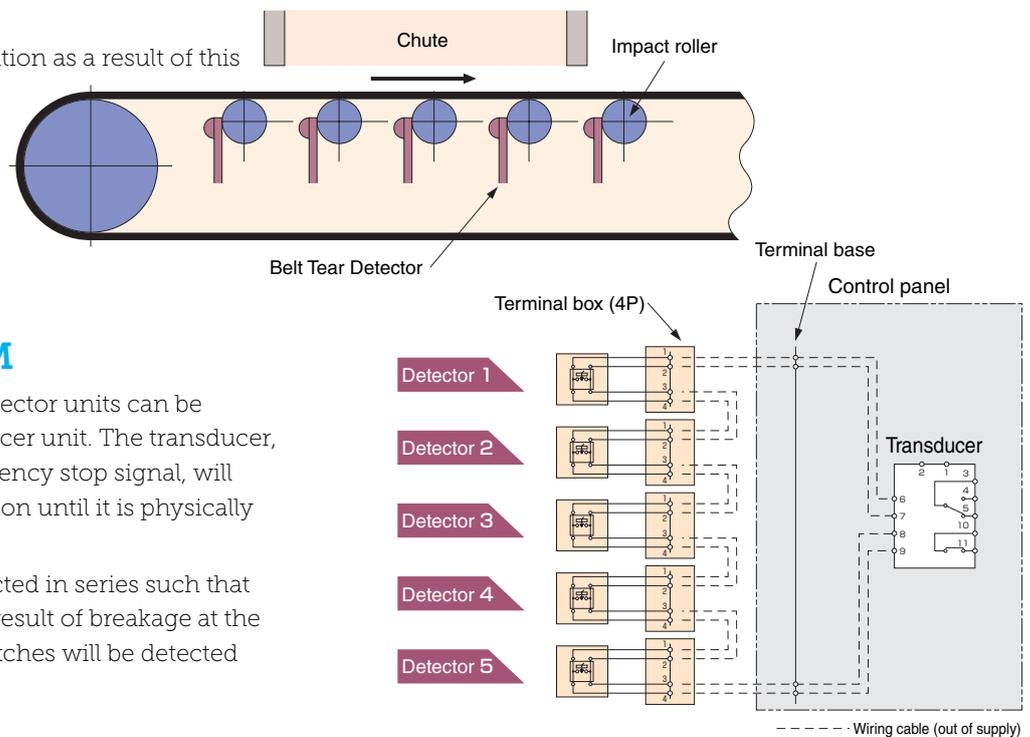
Section of Cable Switch



Section of Touch Switch

OPERATING PRINCIPLE OF DETECTOR

1. Sharp objects that are present in the material being transported charges through the transfer chute and due to their mass and speed they then result in a pierce or a tear to the conveyor belt at the point of impact.
2. The object then gets stuck at the tear point, and then get dragged along the conveyor belt where the portion that protrudes below the belt touches the Matsuhima Belt Tear Detector sensor.
3. Electric current is produced as a result of the contact which constitutes as the detection signal and the transducer unit outputs an emergency stop signal.
4. Conveyor belt stops operation as a result of this signal.



WIRING DIAGRAM

- Maximum of 5 sensor/detector units can be connected to one transducer unit. The transducer, once produces the emergency stop signal, will continue in the "off" position until it is physically reset via the pushbutton.
- All the sensors are connected in series such that any fault that occurs as a result of breakage at the connection, cables or switches will be detected immediately.

Specifications of detector

Item	Specifications
Type	SCPT- a: Belt width b: Trough angle
Protection	IP55
Allowable temperature	-10 to +50°C
Belt width*	750 to 1,800mm
Trough angle*	20°, 30°, 35°, 45°
Sensor type	CB807
Finish color	MUNSELL 7.5 GY 6/10

* Other belt width and trough angle should be option.

Specification of transducer

Item	Specifications
Type	AEDC-12LC2
Protection	IP40
Allowable temperature	-10 to +50°C
Function	<ul style="list-style-type: none"> • Output self-holding type • Wire-breakage alarm
Delay timer	0.5 to 9 sec.
Casing material	Polycarbonate
Power	90 to 245V, 50-60Hz
Output	Detection 1c, Alarm 1a
Contact capacity	AC 250V 2A
Indicating lamp	POWER, DETECT, ALARM
Wiring distance from sensors	1km max.
Weight	0.4kg

Belt Tear Detector

● Dimension diagram of Belt Tear Detector (mm)

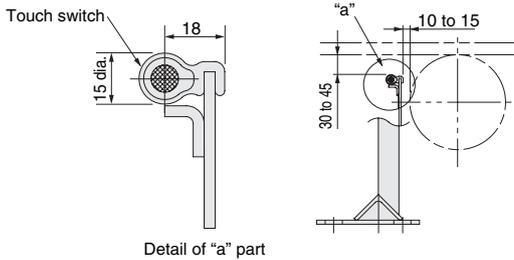
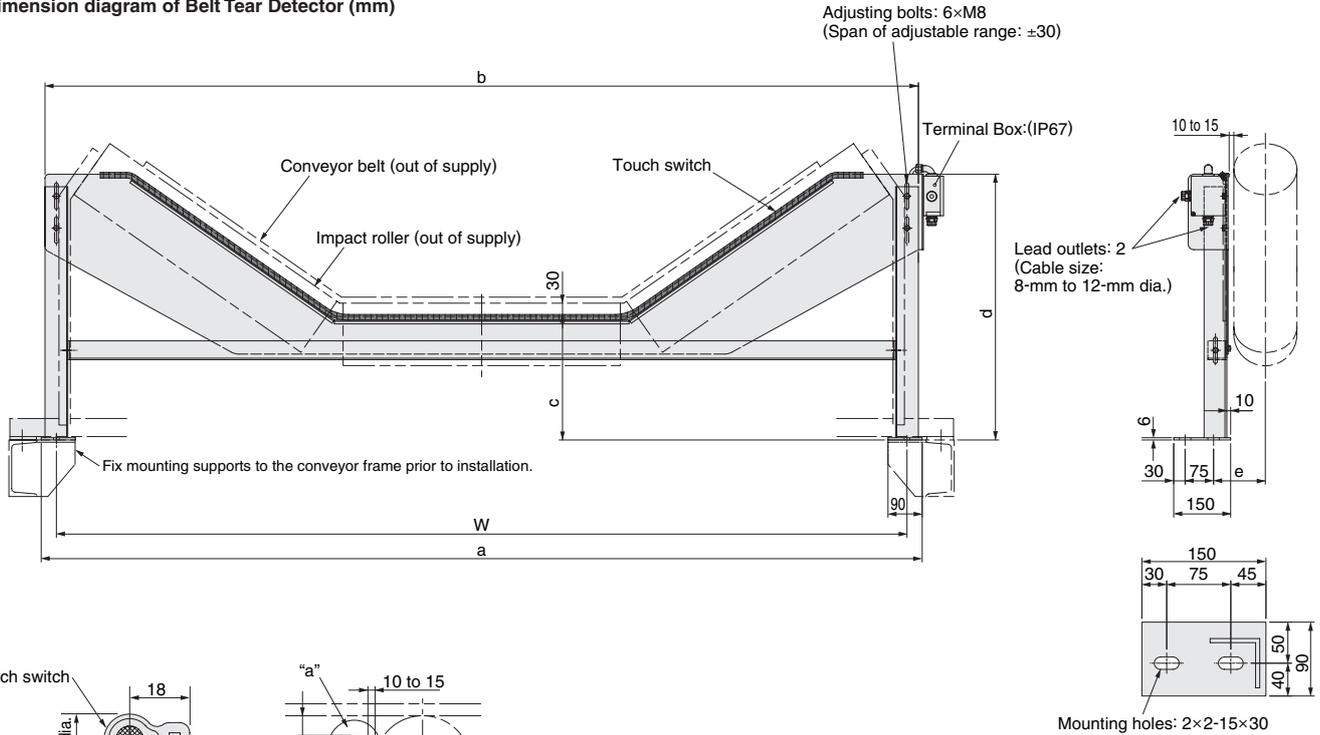
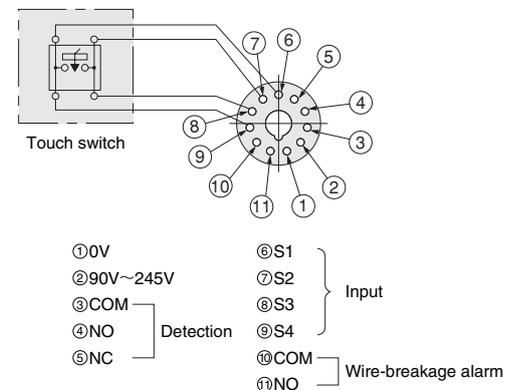
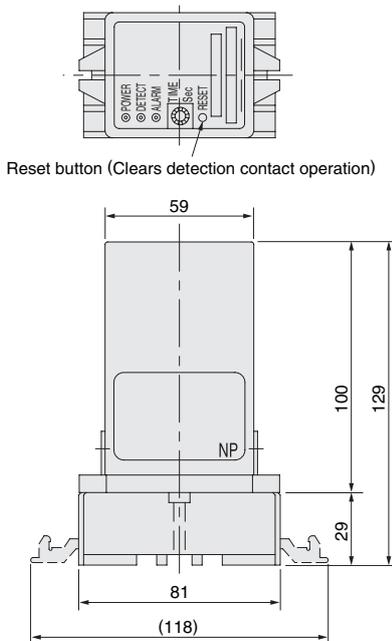


Table below shows dimensions for the 30-degree trough angle type.

Belt width	Type	W	a	b	c	d	e
600mm	SCPT-060-30	720	750	770	155	280	90-95
750mm	SCPT-075-30	930	960	880	177	300	103-108
900mm	SCPT-090-30	1,030	1,100	1,050	177	330	
1,000mm	SCPT-100-30	1,180	1,210	1,130	220	380	116-121
1,050mm	SCPT-105-30	1,230	1,260	1,180	220	390	
1,200mm	SCPT-120-30	1,380	1,410	1,330	220	415	129-134
1,400mm	SCPT-140-30	1,620	1,650	1,570	303	530	
1,600mm	SCPT-160-30	1,820	1,850	1,770	303	560	
1,800mm	SCPT-180-30	2,020	2,050	1,970	333	630	
2,000mm	SCPT-200-30	2,220	2,250	2,170	333	670	

* Dimensions are subject to change by conveyor.

● Dimension diagram of Transducer (mm)



Specifications are subject to change without notice.
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Caution

- Read the instructions to ensure correct and suitable application of products.
- Contact our nearest sales office when using our products for any systems used in situations which may be life threatening.