

Monitoring Devices For Convey  em

.com



# CONVEYOR BELT MISALIGNMENT SWITCH FOR PROTECTION OF BELT CONVEYORS AND PERSONNEL

## SRT

This device monitors the operation of potentially hazardous conditions and issues an alarm when it is occurred misalignment, the SRT series conveyor belt misalignment switch protects the conveyor belt from damage due to belt misalignment or run off.

For normal condition, the belt misalignment switches are generally mounted on both sides of the edge of the conveyor belt.

A small clearance between the contact and a little swaying for the belt edges are allowable. When the swaying exceeds the normal limit (on/ about 20 mm), the belt edge pushes the contact roller, which drives the switch contacts, the misalignment switch automatically when the belt resumes normal operation. These control devices are used in pairs on both side of conveyor belt detected place, can be equipped with two micro-switches to produce signals indicating the belt misalignment at two deviation points.

The first signal point could indicate small belt deviation by output an alarm, the second point could guard against extreme belt deviation by shutting down the conveyor.

The roller is adjustable to 20 in both directions and is positioned approximately 20mm from conveyor belt, the switch actuation angle is adjustable from 0 to 35 by a simple change of the actuating cams.

## CHARACTERS

- Easy installation, operation sensitive
- Roller arm can move up to 75 degrees in any direction
- Dust tight, IP 67 weatherproof, Die cast aluminum housing
- Roller lever actuating angle 20 for alarm and 35° for shutting down system
- To save Process downtime, product loss and replacing cost of damaged conveyor belt

## APPLICATIONS

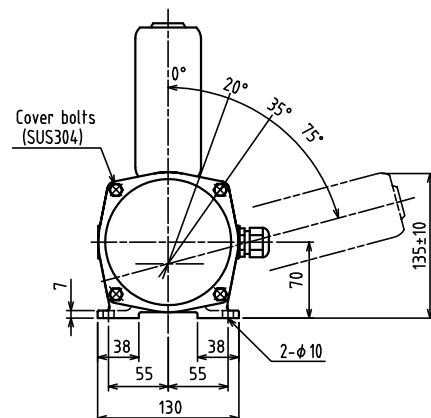
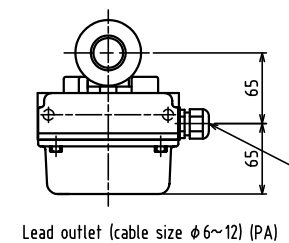
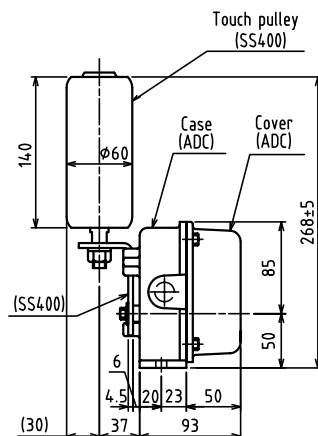
- Conventional Belt Conveyors
- Underground, Cable Supported Belt Conveyors
- Stacker / Reclaimer Conveyors
- Ship Loading / Unloading Systems
- Tipples and Shuttle Conveyors
- Crane / Shovel Boom Position Limit Detector
- Air Port Feeders & Conveyors
- Heavy Duty Limit Switch

## SPECIFICATION

|                            |                                  |
|----------------------------|----------------------------------|
| Switching Capacity         | 15A,125/250 Vac 1/2A 125 Vdc SPD |
| Action Force               | 3.4~5.4N.m (0.35~0.55kgf.m)      |
| Reset                      | Man off Auto                     |
| Ambient Temp.              | -20~60                           |
| Enclosure Protection Grade | IP67                             |
| Enclosure Material         | Die cast ADC                     |
| Weight                     | Approx. 2.9kg                    |

## DIMENSION

### SRT



# SAFETY CABLE PULL SWITCH

## FOR EMERGENCY OR NORMAL SHUT-OFF

### SRS

Belt conveyor safety cable pull switches are designed for providing a switching system to isolate the power to conveyor system and other equivalent process equipment in the emergency condition. The cable pull switches are actuated by a plastic pull cable run coated steel wire, which are placed along the conveyor. When you pull on the cable at any point, it will trip and automatically lock off the switch, deenergizing the conveyor starter contactor. Each switch is bi-directional in operation and has two cable fitted to it from opposite sides, terminated with a spring at the anchor points, please see drawing 4 the springs will lock the switch on cable breakage. After tripping the mechanical latch can be released only on the switch itself by the reset lever.

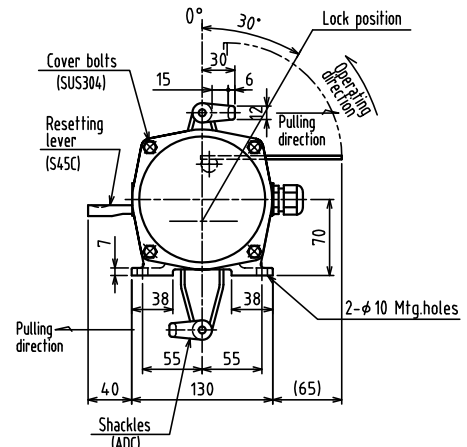
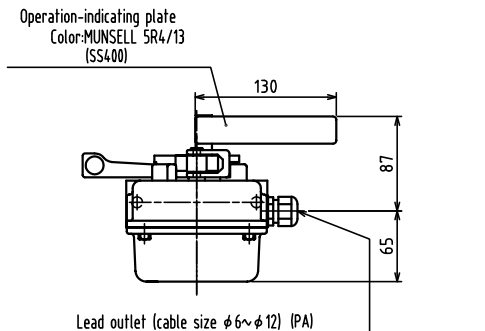
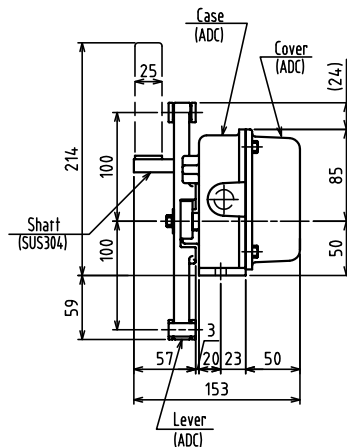
### APPLICATIONS

emergency or normal stop for below facilities

- Conventional Belt Conveyors
- Shuttle Conveyors
- Bucket Elevators
- Packaging Lines
- Stockpile/Reclaim systems, Cranes, Shovels, Draglines
- Ship Loading / Unloading System
- Horizontal Feed Systems

### DIMENSION

#### SRS



### CHARACTERS

Universal design for bi-direction active  
Compact design for tight-fit areas, IP65  
Die cast aluminum housing  
Manual reset lever  
Easily orientated at either end or internally  
Plastic pull cable run  
Coated steel wire, which are placed along the conveyor  
Highly visible black arm easily shows the switch, indicating alarm or normal

### SPECIFICATION

|                            |                                   |
|----------------------------|-----------------------------------|
| Switching Capacity         | 15A, 125/250 Vac 1/2A 125 Vdc SPD |
| Action Force               | 49.9.8n±(5kgf.m)                  |
| Reset Way                  | Manual                            |
| Ambient Temp.              | -20 ~ 60                          |
| Enclosure Protection Grade | IP67                              |
| Enclosure Material         | Die cast ADC                      |
| Weight                     | Approx. 2.9kg                     |

# SPEED MONITOR

## ED4000

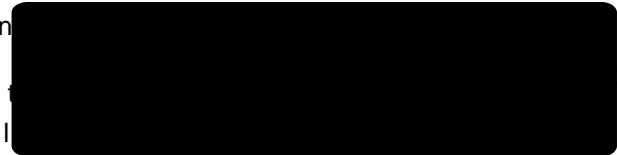
ED4000(SM4) Speed Monitor is a total rotational speed monitoring equipment. It uses the principle of photo detector and microprocessor to accurately calculate a wide range of rotational speed. It detects rang 1~999rpm and speed display on 7-seg led. There is a contact relay that could be used either for alarm or control purposes during the monitoring process. The alarm set point could be directly set by numerical knobs which is more convenient and more accurate than conventional means. It is equipped with analog signal output which can be utilized for various display indications and precise control. It is ideal for applications monitoring low speed, stop and over

## FEATURES

Maximum monitoring range 1~999rpm. 7-seg led display 0~999 rpm. Alarm monitoring: low speed, stop, reverse rotation, blackout and overload. Start up delay function allow motor to run gradually. Alarm delay function can avoid fault alarm many caused by temporary slow down or stop. Selectable rotate direction for both CCW and CW makes installation more versatile. Light pulse are not affected by environmental conditions. Complementarily to FineTek PB/PM series Panel meter to indicate speed.

## APPLICATION

Low speed and overload protection of various conveyer systems  
 Networked circuits to form sequent  
 Frequently used in Grain and coal storage bucket elevators and belt conveyer machines

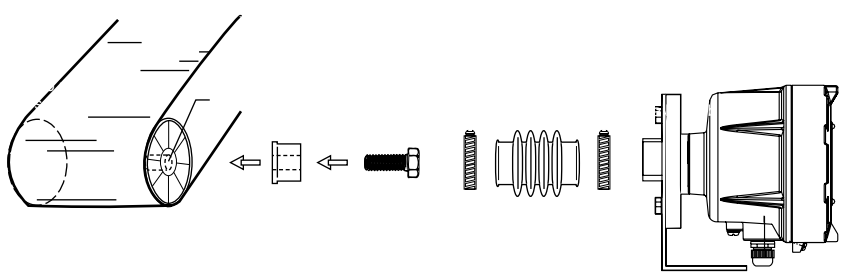
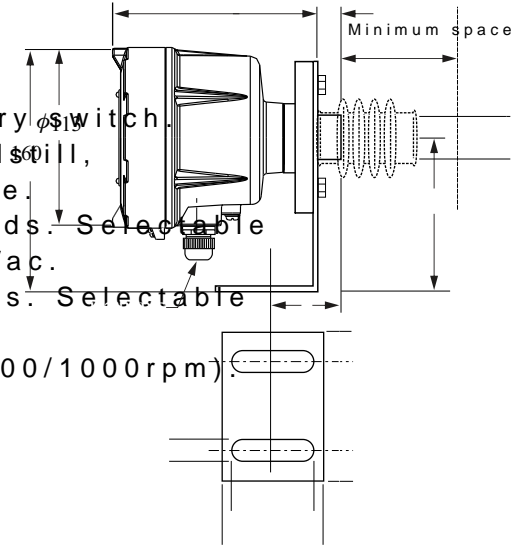


selectable  
 rpm, 500rpm

## DIMENSIONS:

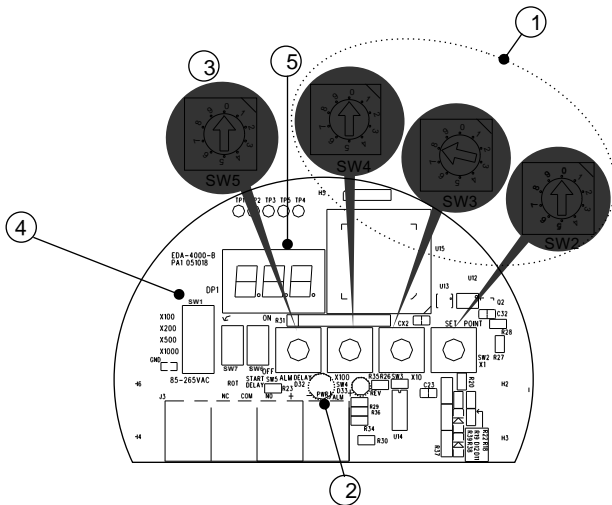
## SPECIFICATION

Measuring Range: 0~999 rpm.  
 7-seg led display 0~999  
 Alarm Set point: 1~1999 rpm by rotary switch.  
 Alarm Conditions: Underspeed, standstill, power failure.  
 Startup Delay: 0 second or 15 Seconds. Selectable  
 Alarm Contact Rating: SPDT 5A/250Vac.  
 Alarm Delay: 0, 3, 6, 9, ..., 27 seconds. Selectable  
 Speed Analog Output: 4~20mA  
 (Signal Range Selectable: 100/200/500/1000rpm).  
 Power Supply: 85~265Vac, 50/60Hz  
 Power Consumption: 6VA.  
 Operating Temperature: -20~70°C.  
 Housing: Cast Aluminum.  
 Protection: IP65  
 Cable Entry: 1/2"NPT X 2 hole.

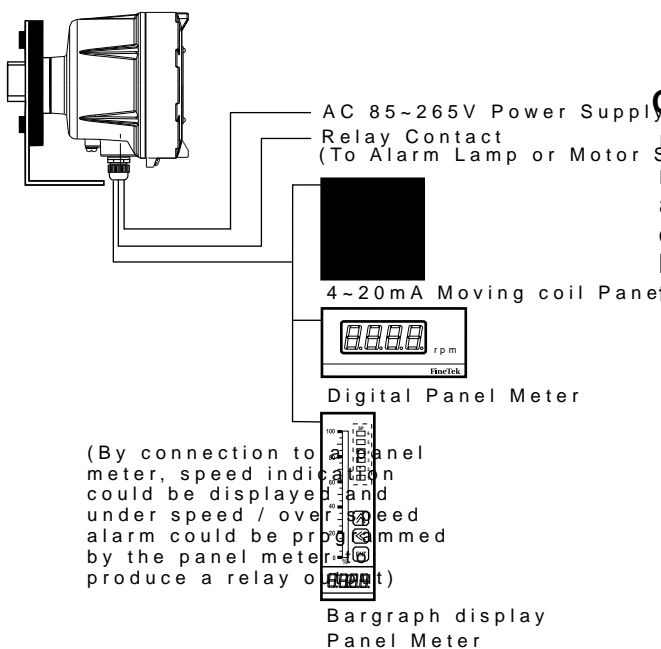


## DESCRIPTION OF PANEL

- ① Set point rotary switch
- ② Power & Alarm indicator (Green/Red)
- ③ Start Up Delay Selection Switch
- ④ 4-20mA output range Selection Switch
- ⑤ 7 Segment display



## ED TYPICAL APPLICATION



## DESCRIPTION OF OPERATION

### 1. Set point rotary switch

The function of this switch is for setting a speed. The rotary switch consists of 3 buttons, in position 1, 2 and 3. If the setting is at 321rpm, then rotate the SW1 to position 3, rotate the SW2 to position 1, rotate the SW3 to position 1.

### 2. Alarm indicator (Red)/Power indicator (Green)

1. When the monitor detects the speed low setting point and reach to the alarm delay time, the motor reversed, the alarm relay is actuated and red light is on spontaneously; vice versa, the red light is off when the speed is rotated back to normal.

2. The function of the green light is to indicate the start up situation. After switching on the start up button and blinking for 15 seconds, the power indicator is on.

### 3. Knob time-delay switch

This allows motor speed up slowly without alarm. 0~9 stands for 3~30 seconds. Adjust the knob is at 3 seconds.

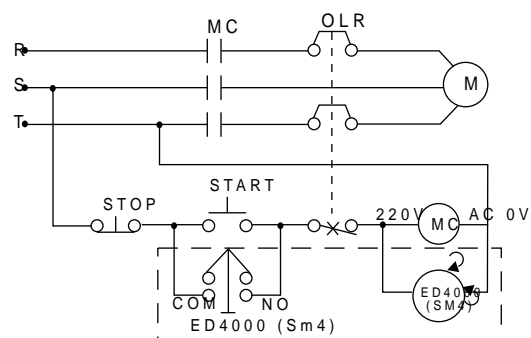
| Knob point | 0     | 1     | 2     | 3      | 4      | 5      | 6      | 7      | 8      | 9      |
|------------|-------|-------|-------|--------|--------|--------|--------|--------|--------|--------|
| Delay time | 3 sec | 6 sec | 9 sec | 12 sec | 15 sec | 18 sec | 21 sec | 24 sec | 27 sec | 30 sec |

### 4. 4-20mA output range Selection Switch

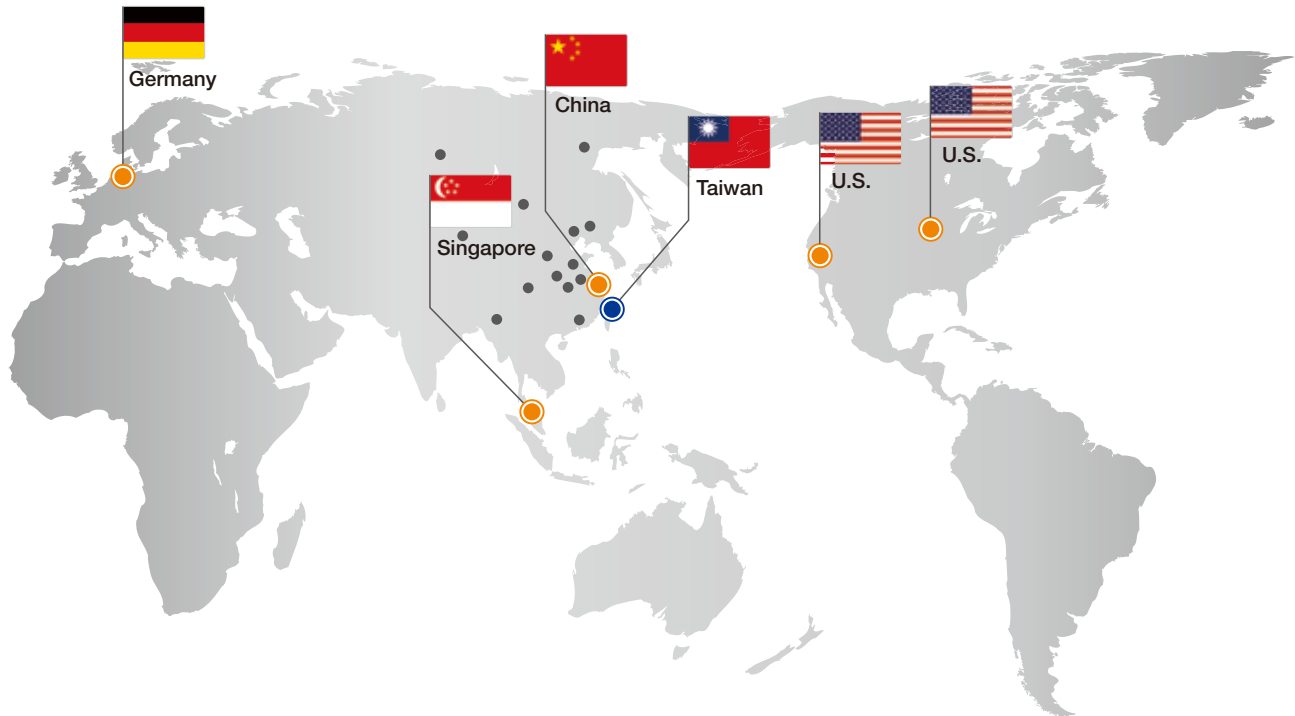
This switch is to convert the detected speed to a proportional current output. There are four positions, which are 100rpm, 200rpm, 500rpm, 1000rpm. For example, at 500rpm, then the input speed of 0~500 rpm is converted to 4-20mA output. For example, if the detected speed is at 250rpm, then the current output is 12mA.

## CONTROL CIRCUIT DIAGRAM

Below is the diagram of control circuit. Motor is monitored by ED4000 (SM4). Motor starts to run after activation. ED4000 (SM4) starts to monitor the delay time being activated. It monitors if motor is running at low speed. When speed is too low, alarm will be produced to stop motor running.



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