



CONVEYOR COMPONENTS COMPANY

Division of Material Control, Inc.

130 Seltzer Road, PO Box 167 • Croswell, MI 48422 USA

PHONE: (810) 679-4211 • TOLL FREE (800) 233-3233 • FAX: (810) 679-4510

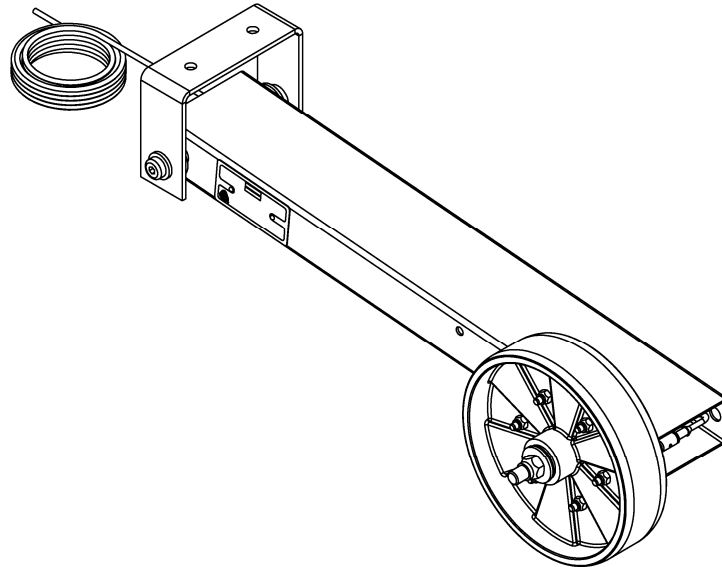
Email: info@conveyorcomponents.com • <http://www.conveyorcomponents.com>

MODEL BSD: BELT SPEED DETECTOR



WARNING:

Failure to strictly follow all instructions may result in **DEATH** or **SERIOUS INJURY**. Before servicing, shut down and physically lock-out the conveyor system. Disconnect power before servicing.



SPECIFICATIONS

Construction:	Powder coated steel frame and reinforced nylon wheel			
Sensor:	BSD-2S	2-wire inductive proximity sensor 10-55 VDC, 400mA output, PNP/NPN		
	BSD-3S	3-wire inductive proximity sensor 10-36 VDC, <200mA output, NPN		
	BSD-0S	User supplied 12mm [½ inch] inductive sensor		
Controller:	BSD-2S	Uses RMS series controller or other user supplied controller (PLC, DCS, direct output, etc.).		
	BSD-3S	Uses MSD-800 series controller with readout or other user supplied controller (PLC, DCS, direct output, etc.).		
	BSD-0S	User supplied controller such as a PLC, DCS or other.		
Max Belt Speed:	20 mph, 1760 fpm [32.2 km/hr, 8.94m/s]			
Safety Restraint	Safety Cable (included/standard)	Two 2' [0.6 m] lengths of vinyl coated aircraft cable (part# 21310015)		
	Safety Chain Kit (optional)	Two 4' [1.2 m] lengths of safety chain, with attachment hardware (part# 21310016)		
Scaling Factor:	1 Hz =	0.3490 fps	1 fps =	2.865 Hz
	1 Hz =	20.944 fpm	1 fpm =	0.0477 Hz
	1 Hz =	0.2380 mph	1 mph =	4.202 Hz
	1 Hz =	0.1064 m/s	1 m/s =	9.399 Hz
	1 Hz =	0.3830 km/h	1 km/h =	2.611 Hz

OPERATION:

The BSD rides along the return side of the conveyor belt. The rotation of the wheel is used to encode the travel speed of the belt. This can be used independently to monitor the belt speed. When monitored by a PLC, the BSD can be used comparatively, in conjunction with a drive pulley mounted speed monitor, to indicate when belt slippage begins to occur.

INSTALLATION:

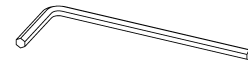
Tools needed:



9/16" [15 mm] × 2



1/2" [13mm] × 1
(× 2 required to attach optional safety chain kit)



3/16" × 1

Mount the BSD within the conveyor frame so that the wheel rides along the return side of the belt. The mounting bracket should be attached to a cross member, such as an idler frame. If no such member is available, a length of angle stock can be bolted or welded to the conveyor frame to create one. The mounting bracket can be bolted using the included mounting hardware, or welded to the cross member.

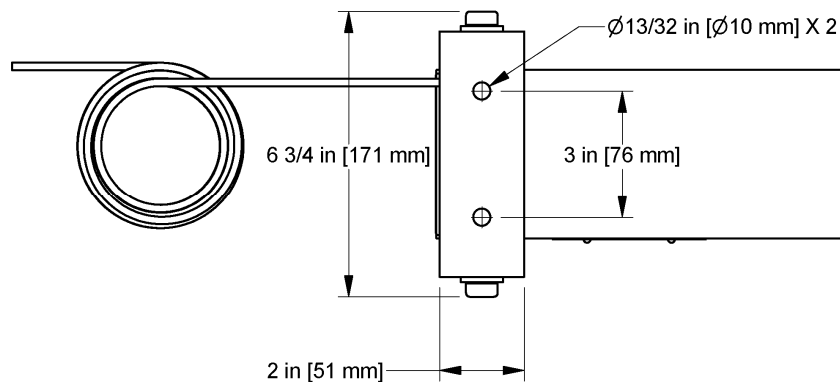


Figure 1: Mounting Dimensions

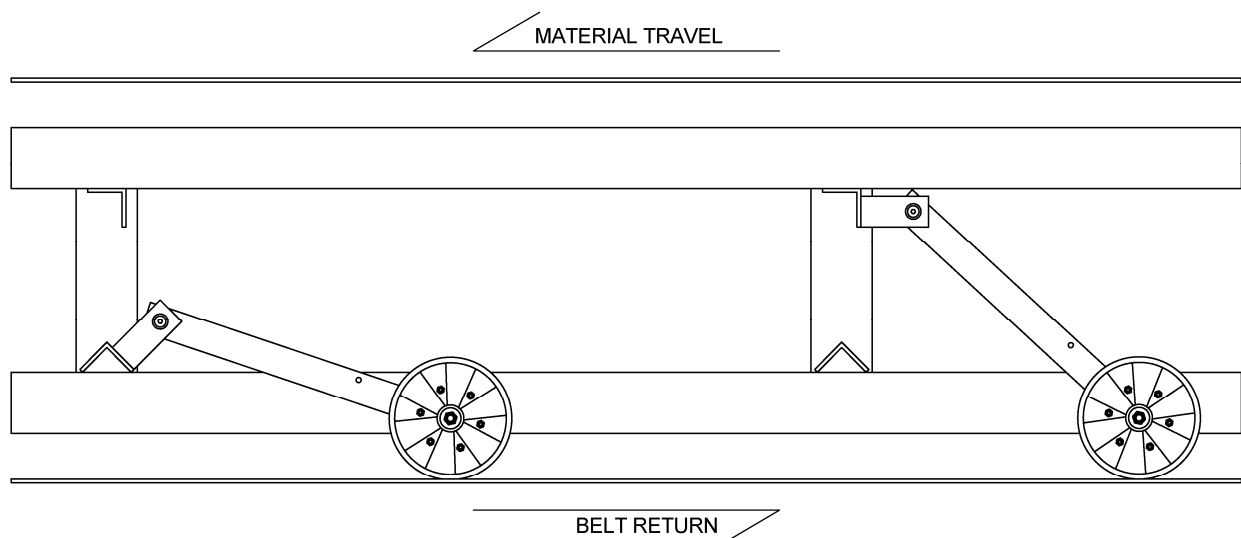


Figure 2: Installation Configurations

SAFETY CABLE:

Remove bolt and washers from the ends of the safety cables. Rejoin the cable ends so that they each form a loop around the pivot axle, mounting bracket, and the attached cross member.

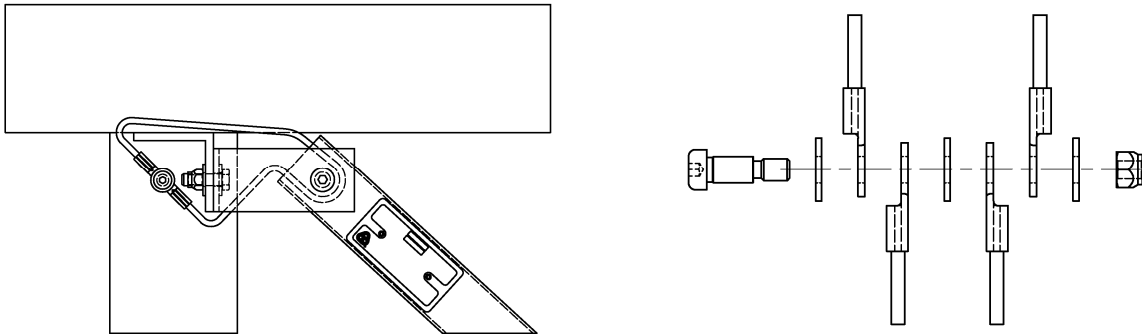


Figure 3: Safety Cable Installation

SAFETY CHAIN KIT (OPTIONAL):

If using safety chain kit (Part# 21310016) ensure that it is securely fastened through the pre-drilled bolt hole in BSD (see figures below). Attach the free ends of the chain to the conveyor frame.

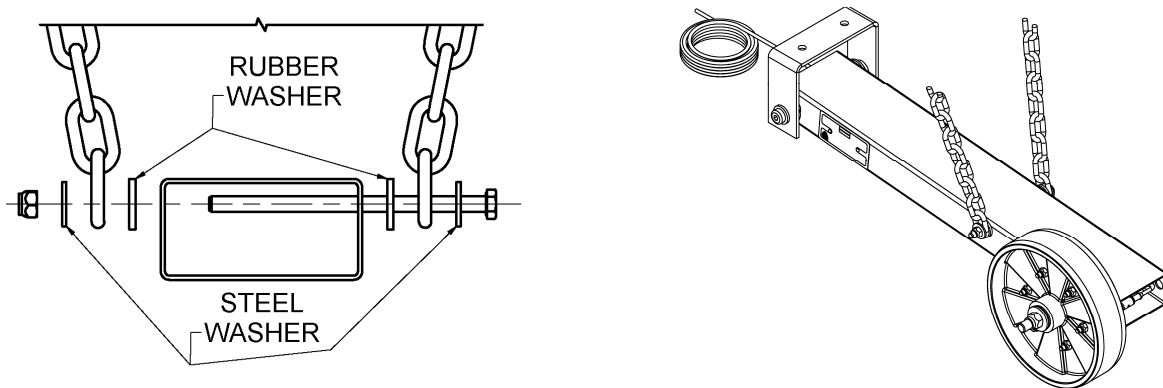


Figure 4: Safety Chain Kit Installation

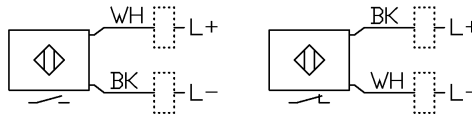
WIRING:

Reference the table below when wiring the BSD to a CCC manufactured controller.

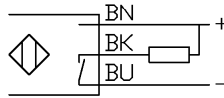
Model	Controller	Sensor Conductor Color	Controller Terminal	Settings/programming
BSD-2S	RMS series Controller	White	P	Refer to controller instructions
		Black	N	
BSD-3S	MSD-800 series	Brown	6	Refer to controller instructions PSCALE= '1 Hz =_' conversion factor
		Black	12	
		Blue	11	
BSD-0S	User supplied 12mm [1/2 in] inductive sensor and controller. Mount the sensor with the cable routed through the inside of the frame arm for protection.			

Reference the electrical drawing (Figure: 5) for use with other controllers.

BSD-2S
 2-WIRE SENSOR
 10-55 VDC INPUT
 400mA OUTPUT



BSD-3S
 3-WIRE SENSOR
 10-36 VDC INPUT
 <200mA OUTPUT, NPN



BSD-0S
 USER SUPPLIED INDUCTIVE SENSOR

Figure 5: Electrical Characteristics

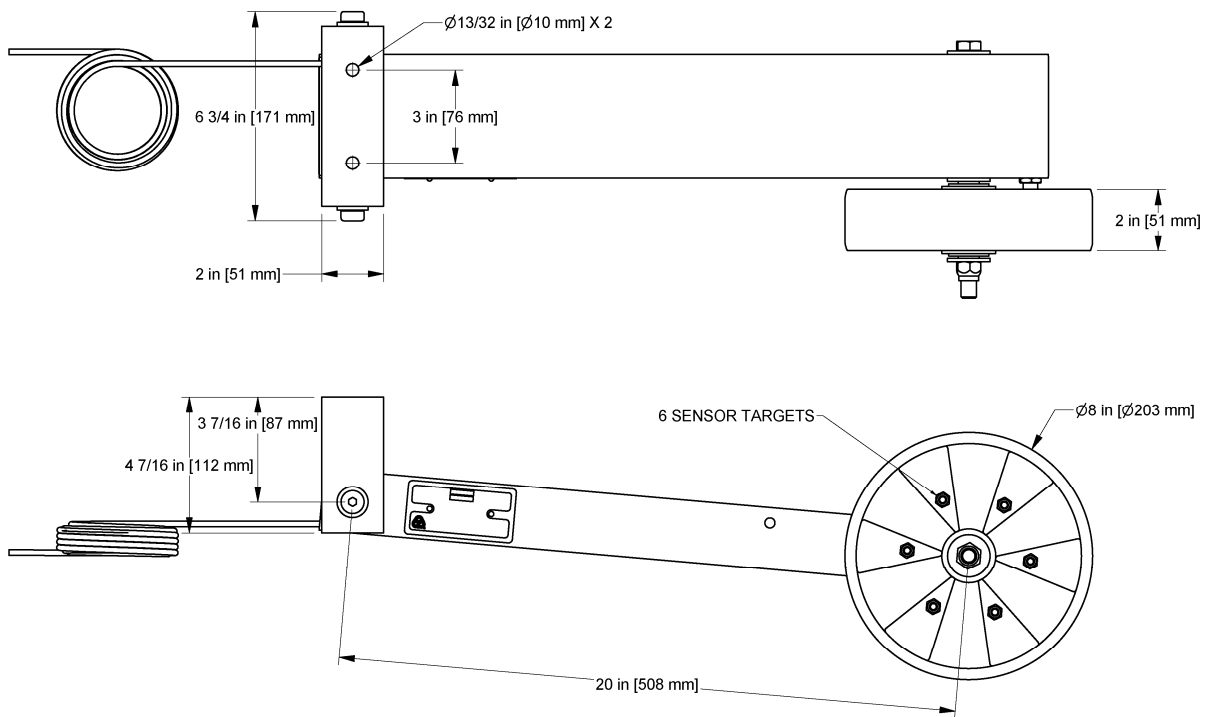


Figure 6: General Dimensions