

AFSX Speed Responsive Switch

0.1–1000 RPM.

NEC/CEC — Rated for:

Class I, Division 1 and 2, Groups C, D

Class II, Division 1 and 2, Groups F, G

Class III

NEMA 7CD, 9FG

Applications

- For use in bulk material handling/processing systems to monitor speeds of:
 - Belt conveyors
 - Screw conveyors
 - Bucket elevators
 - Rotating machinery
- Used where alarm or computer interface capabilities are needed.
- For installation in:
 - Steel mills
 - Mining (ore and coal) operations
 - Grain handling
 - Chemical and plastic industries to protect elevators, feeders, and conveyors from speed related damage resulting from broken belts, overloads or belt slippage.
- For installation in mining and industrial areas where rugged control enclosures are needed for protection from falling ores, other heavy aggregates and from dripping water or hoses downs.
- Used in Class I and II areas where flammable vapors or highly combustible dusts are present.
- Designed to monitor material flow by sequencing the operation of multiple conveyors feeding a common bin or conveyor.
- Used as overspeed switches to detect motor overrun conditions. Pickup speed should be set above normal operating speeds. The output relay will energize if operating speed exceeds the set point.
- Used as underspeed switches to detect slipping belts, jammed conveyors or equipment and stalled motors: Pickup speed setting should be below normal operating speeds. The output relay will de-energize if operating speed falls below the set point.
- Used as zero speed switch: When speed approaches zero (0.1 RPM), the output relay will de-energize.

Features

- Signal range: three settings available (0.1-10 RPM; 1-100 RPM; 10-1000 RPM).
- Adjustable time delay (up to 45 seconds).
- Input power is applied to the speed responsive switch at all times. The switch then senses input shaft speed in either direction.
- When input shaft speed exceeds the pickup set point, the output relay is energized.
- If shaft speed falls below 80-85% of the pickup speed the relay will de-energize.
- Clockwise or counterclockwise rotation.
- Senses speed changes as slight as 1%.
- Operating temperatures are -45 °C to +65 °C (-49 °F to +149 °F).
- 3/4" NPT standard, two conduit openings.
- Radial load is 57 kilogram (125 pound) maximum at center of the key.
- Axial thrust load is 45 kilogram (100 pound) maximum.
- Driving torque required is one inch-pound maximum.
- Flexible coupling accessory allows up to 7.5° misalignment, high shock resistance and eliminates transmission of thrust loads.



Front

Back

Electrical Specifications

- Input voltage is 105-135 Vac, 50-60 Hz
- Output is a double pole, double throw relay rated 5 Amp resistive at 120 Vac, 5 Amp at 240 Vac, 5 Amp at 30 Vdc.
- Repeatability is +/-2% maximum at constant voltage and temperature.
- Power consumption is 3 watts maximum.
- Pulse sensor (solid state opto-electric infrared device) operating life is 25 years if constant operation is at maximum speed.
- Pickup speed is adjustable by set point potentiometer.
- Drop-out RPM will be 10-15% lower than pickup speed to account for normal fluctuations in actual operating RPM.
- If a signal is required within 1-15% of the normal operating speed, contact your local representative for presetting.

Standard Materials

- Housing: cast copperfree (4/10 of 1% max.) aluminum
- Shaft: stainless steel, 5/8" diameter
- #11 Woodruff key and hardware: stainless steel
- Flexible coupling: cast zinc
- Sleeve: neoprene with textile reinforcement

Standard Finishes

- Standard enclosure: shot peened

Optional Materials

- Housing: corrosion resistant epoxy powder coat

Options

- Epoxy powder coated switches, add suffix -G1.
- Mounting Bracket: **AFSA1**, **AFSB1**, **AFSB2**, **AFSB3**.
- Coupling guard: **AFSG1**.

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CONTROLS: NEC/CEC EXPLOSIONPROOF CONVEYOR SWITCHES



Catalog Number

AFSX300

Optional Accessories

	Description	Catalog Number
	<p>Flexible Coupling</p> <p>This coupling will operate at up to a 7-1/2° axial misalignment with no significant life reduction. This unit features high shock resistance and eliminates transmission of lateral thrust from one shaft to the other (no end thrust).</p> <p>Sleeve: With axially molded internal teeth. Made of neoprene with textile reinforcement. Two end fittings grooved to mate with sleeve teeth. One fitting attached to each shaft.</p>	AFSC1
	<p>Stub Shaft</p> <p>76.2 mm (3") threaded one end, keyed other end. With jam nut and 3/16" key.</p>	AFSS1