

TouchSwitch™

US Patent # 6,731,219

Other Patents Pending

Installation and Set-Up





TouchSwitch™ Installation and Set-Up

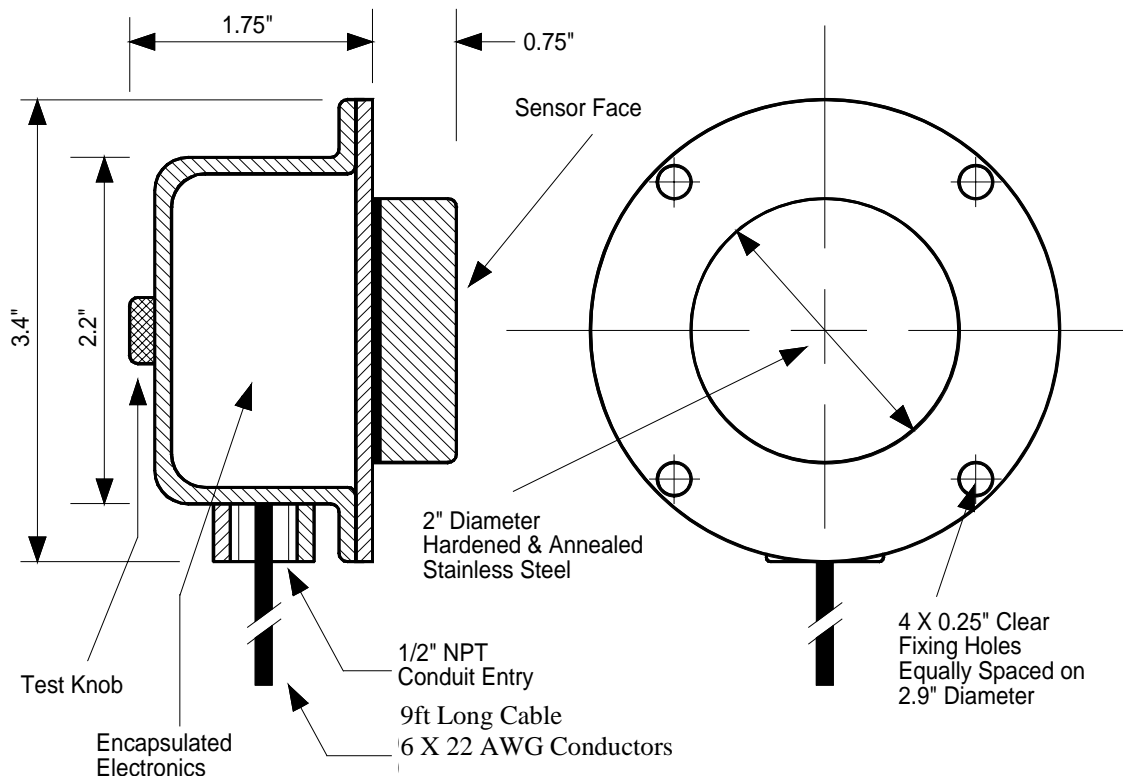
Introduction:

The **TouchSwitch™** from 4B Components is an electronic limit switch with no moving parts. When a belt misaligns or a pulley moves over and contacts the sensor, the built in solid-state electronic circuitry detects the lateral force of the belt or pulley and activates a voltage free relay contact. This relay contact is used to immediately alarm and shutdown the machine. The face of the sensor is made from hardened and annealed stainless steel, so that there is no wear when a belt contacts it. The sensor is not affected by dust or material build up and will still work when completely covered by material. Sensors are normally installed in pairs on opposite sides of the machine. Usually a pair of sensors at each pulley is used, but additional pairs can be installed as required. An external test knob allows for quick and simple sensor / system testing.

Installation:

Warning: Always lock-out and tag-out the machine prior to installation and set-up.

Mark a location on the outside of the machines casing where the misaligned belt or pulley would contact the center of the stainless steel sensing face. At this location drill a 2-1/4" diameter hole through the machines casing. With the sensor centered on this hole and the conduit entry pointing down, mark the four fixing holes (equally spaced on 2-15/16" diameter). Ensure that the rubber gasket is in place and mount the sensor using screws, bolts or studs. (If required, use the additional rubber gaskets provided to reduce the distance that the sensor face protrudes into the casing). If the casing material allows, mounting holes can be drilled and tapped for 3/16" screws, allowing sensor installation and removal from the outside. However, make sure that the mounting screws do not protrude through the machine casing where they could come in contact with the belt.



US Pat.6,731,219

Technology ♦ Innovation ♦ Quality ♦ Value

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Specification:

Supply Voltage:	12 vdc (TS2V3CA)	24 vdc (TS2V4CA)
Power Consumption:	60mA	50mA
Indication:	Red LED indicates when powered up and relay is energized.	
Adjustment:	Force Sensitivity is factory set to 8 lb (3.6 Kg) approx.	
Output:	Voltage free changeover relay contact rated at 5A 250vac Non-inductive.	
Body Construction:	Pressed seamless steel with epoxy paint.	
Face Construction:	Hardened and annealed stainless steel.	
Conduit Entry:	½" NPT	
Cable Length:	9ft (3M)	
Conductors:	6 at 22awg (see "wiring" below)	
Weight:	3 lb (1.36 Kg)	
Approvals /	Class 2 Div. 1 groups e, f, g approved (US and Canada)	
Protection:	ATEX and CE approved (Europe) NEMA 4X, IP 65	
Dimensions:	3.5" Diameter x 1.75" Deep (see diagram above)	

Wiring:

All Wiring Must Be In Accordance With Local And National Electrical Codes And Should Be Undertaken By An Experienced And Professional, Qualified Electrician.

Mount a suitable junction box within 9ft of the sensor, and using a suitable conduit to protect the cables, make the necessary wiring connections inside this junction box. A 9ft long PVC coated cable connected to the sensor contains the following 22 AWG wires:

Red	+12 vdc (TS2V3CA)	+24 vdc (TS2V4CA)
Black	0 vdc	
Green	Ground	
White	Relay Common Connection	
Blue	Relay Contact, N.O.	
Orange	Relay Contact, N.C.	

Note: The TouchSwitch contains a non repairable 160mA fuse and thermal fuses set at 73°C. Should the body of the sensor reach 73°C or higher then the thermal fuses may fail.

Note: The relay contact is energized when power is supplied to the sensor and de-energizes when the sensor detects the belt or pulley. Relay contact closed between White and Blue when unit is powered and Led is on "Red" LED on: indicates power and relay energized.

"Red" LED off: indicates relay de-energized and/or no power.

WARNINGS

TouchSwitch Wiring is Low Voltage DC

Use shielded cable and keep separate from high voltage cables

Never run TouchSwitch cables in the same conduit as 3-phase motor cables

Never weld near or around the TouchSwitch

Track belts and commission plant prior to installing Touchswitches.

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Set-up and Test:

Observe that the red LED on the sensor housing is on and the belt or pulley is not touching the sensor. Slowly turn the test knob clockwise by hand, until the LED goes out. Check that alarms and shutdowns work as expected. Turn the test knob back to its original position. Observe that the LED is now on.

Periodically test the sensor and system, and visually inspect the contact surface of the sensor.

Liability and Indemnity:

- 1) In respect of installation or applications of the goods as parts or components of other goods or machinery the buyer shall be solely responsible for the compliance and the installation with safety regulations issued by competent authorities and in force at the place of operation and/or for its compliance with any terms of insurance notified by the Buyer's insurance for personal injury or damage to property or loss of profit though fire, explosion, gas, or otherwise.
- 2) Neither the company nor its suppliers shall in any circumstances whatsoever be liable for any loss or damage suffered by the Buyer or by any third party howsoever caused involving any person, property, or interest, suffered by the Buyer or any third party directly or indirectly in connection with the use, functioning or state of the goods, unless the same shall arise out of the Company's negligence.
- 3) The buyer shall indemnify the Company against all actions, claims, or demands by third parties, whether in tort or otherwise, howsoever arising, directly or indirectly, in connection with the use, functioning or state of the goods or in connection with the performance of service.

Limitation of Liability

Without prejudice to the foregoing, the Company shall in no circumstances be liable:

- 1) For any incidental or consequential loss or damage suffer by the buyer, including without limitation, delay, detention, loss of production, loss of profit, or liability to third parties except liability for personal injury or death arising out of negligence by the Company.
- 2) For any loss or damage covered by the insurance or which would ordinarily be covered by the insurance.

Warranty

The equipment is covered by 12 months warranty from the date of dispatch. Any faults arising due to faulty materials or workmanship in the original equipment within the warranty period will be corrected free of charge providing the equipment is returned to us freight paid.

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