

TouchStart

Installation and Operating Instructions for TouchStart Capacitive Palm Button



Features

- UL Listed to US and Canadian safety standards.
- Requires only a simple touch to activate.
- Reduces the likelihood of wrist injury caused by repetitive motion (Carpal tunnel syndrome).
- Design prevents false triggering caused by RFI.
- Force guided relay contact outputs.

General Description

The TouchStart capacitive palm button is an ergonomic alternative to mechanical push-buttons. Unlike its mechanical counterpart, OMRON STI's palm button requires only a simple touch to activate. It can even sense the operator's hands through gloves! This sensitivity greatly reduces an operator's risk of contracting repetitive motion injuries, such as Carpal tunnel syndrome. Designed for standard two-hand machine control, the TouchStart's unique construction also permits its use in wet environments where contact with conductive fluids is common. Additionally, this patented design eliminates the possibility of false actuation caused by RFI (radio frequency interference).

OMRON STI'S TouchStart buttons are UL listed in accordance with the applicable requirements contained in UL 991 for press control. These requirements include:

- NFPA79 Standard for Metalworking Tools
- NFPA70 National Electrical Code
- ANSI B11.1 Standard for the Construction, Care and Use of Mechanical Power Presses
- OSHA Section 1910.218

Important Installation Instructions

This sensor has been tested to meet requirements regarding safety devices. Before installing, refer to ANSI B11.1, B11.19, and OSHA 1910.217.

ANSI Standard B11.19-1990 gives the following definitions:

–2.59 Two-Hand Control Device. A device that requires the concurrent use of both of the operator's hands to both initiate and continue the machine cycle during the hazardous portion of the machine cycle.

–2.60 Two-Hand Trip. A device that requires concurrent operation of the trip controls or levers by the operator's hands to initiate the machine cycle.

Should the switch be used in a two-hand control application, each hand control shall be protected against unintended operation and arranged by design, construction, and/or separation so that the concurrent use of both hands is required to initiate the machine. The control system shall be designed to permit an adjustment which will require concurrent pressure from both hands during the die closing portion of the stroke. The control system shall incorporate an anti-repeat feature. The control system shall be designed to require release of all operator's hand controls before an interrupted stroke can be resumed.

Should the switch be used in a two-hand trip application, a two-hand trip shall have the individual operator's hand controls protected against unintentional operation and have the individual operator's hand

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controls, arranged by design and construction and/or separation, to use of both hands to trip the press. Two-hand trip systems on full revolution clutch machines shall incorporate an anti-repeat feature.

Rings or shrouds are commonly used to protect palm-actuated buttons from unintentional actuation. Precautions in design or installation are needed to prevent actuation of two buttons by the use of one hand and the elbow of the same arm and to inhibit other circumvention of the two-hand requirement.

The device shall be located at a distance from the nearest hazard such that the operator cannot reach the hazard with a hand or other body part before cessation of motion of the hazardous portion of the machine cycle. Descriptions of formulas for distances, between the switches and from nearest hazard, can be found in American National Standards Institute (ANSI) B11.1 and B11.19.

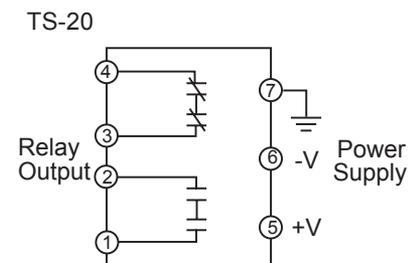
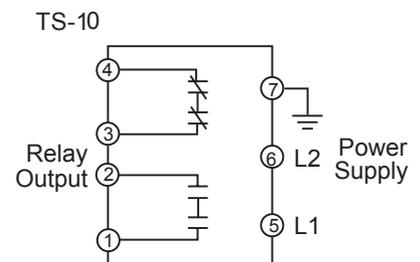
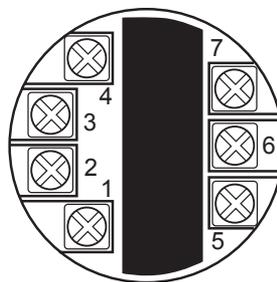


Since each two-hand control or trip application is different the user needs to make sure that all Occupational Safety and Health Administration (OSHA) and American National Standards Institute (ANSI) requirements are followed. This device shall be installed such that the distance between the terminal connections of the palm button switch with leads installed and a dead metal part (including the enclosure) is a minimum of 1/4 inch.



TouchStart palm button assembly with Round Ring Guard, model TS-R.

Connection Diagram



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Operating Voltage:

Model TS-10: 120 VAC $\pm 10\%$ 45 to 60 Hz

Model TS-20: 24 VDC $\pm 10\%$

Power Consumption: < 1W

Indicator LED: Red LED illuminates when relays are energized

Output Relay

Construction: Two force guided relays

Contact Rating: 1 A at 250 VAC or 90 VDC

Mechanical Life: > 5 x 10⁷

Electrical Life: > 5 x 10⁶ at loads > 50 VA

Shock: 45 g for 2 ms

Vibration: 4 g maximum at f < 60 Hz and amplitude < 1 mm

Fast Transients: withstands 1 kV

Impulse Voltage: withstands 500 V

Electrostatic Discharge: withstands 8 kV

Weld Field Immunity: 50 kA AC/DC resistive.

Radio Frequency Immunity: 8 V/m. If this value is exceeded the TouchStart will default to a safe state (output relays de-energized). The TouchStart automatically resets when conditions fall below this limit.

Protection: IP64

Working Temperature: 0°F to 122°F (-17.8°C to 50°C)

Response Time:

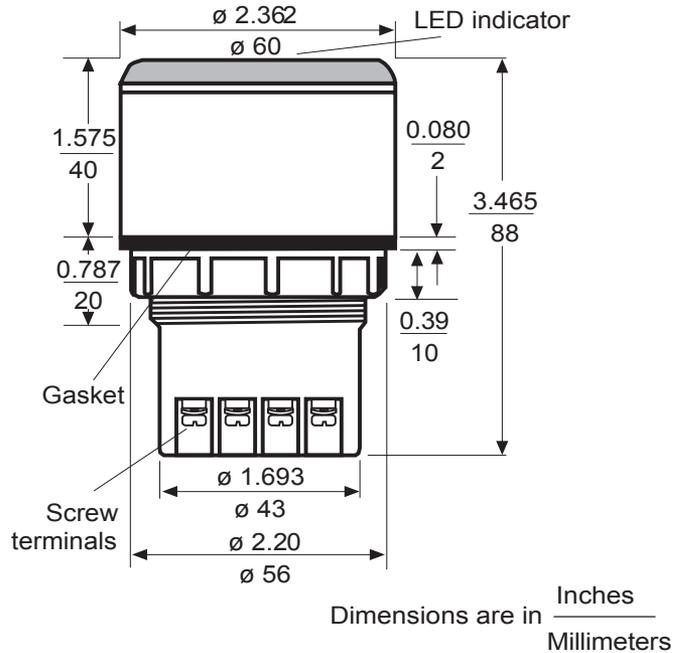
Turn-on: < 60 ms

Turn-off: < 80 ms

Maximum Wire Size: One 14 AWG per terminal

Housing Material: Noryl N190

Weight (approximate): 11 oz. (313 g)

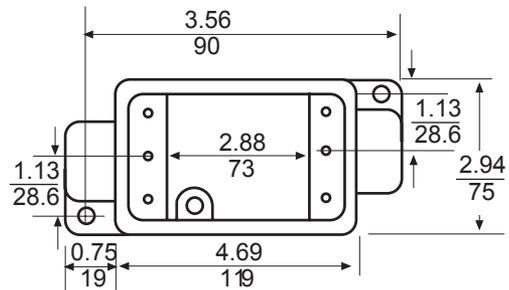


Dimensions

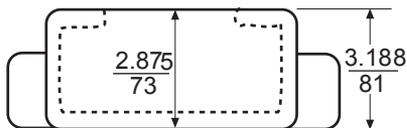
Note: When used with a shroud or ring, the top of the shroud or ring must be at least 1/2 inch higher than the top surface of the TouchStart.

To mount the TouchStart, cut a mounting hole of 1-7/8 inches diameter (48 mm).

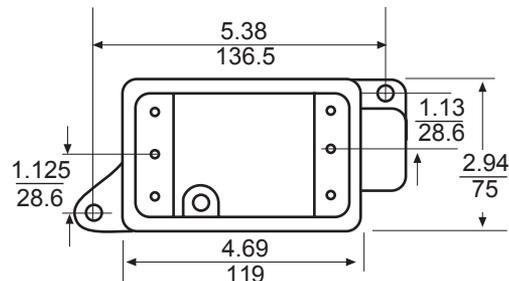
TS-B1 Top View



TS-B1 & TS-B2 Side View



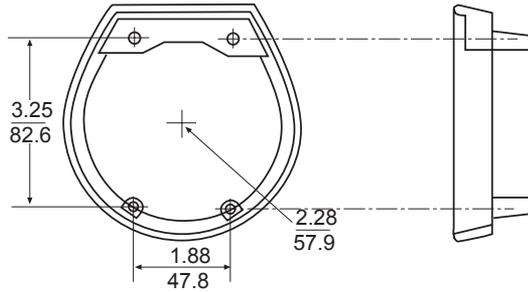
TS-B2 Top View



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Ring Guard TS-R



⚠ Warning

This product may cause substantial personal injury or property damage if it is not installed and used in accordance with the manufacturer's instructions and in accordance with regulations of the Occupational Safety and Health Administration Part 1910.217, the procedures prescribed by the American National Standards Institute B11.1 and B11.19, and all other applicable regulations, procedures, and codes. The manufacturer shall not be responsible nor liable for any injury or damage resulting from use of the product in any such applications or the failure to comply with any such regulation, procedure, or code.

TouchStart Ordering Information

Model Description

TS-10	TouchStart Palm Button, includes mounting jam nut and gasket, 120 VAC
TS-20	TouchStart Palm Button, includes mounting jam nut and gasket, 24 VDC
TS-R	Round ring guard, mounting screws, spacers
TS-B1	Electrical box, with one conduit hub (3/4 inch), cover plate for box, gasket for box
TS-B2	Electrical box, with two conduit hubs (3/4 inch), cover plate for box, gasket for box

To order a complete TouchStart Palm button, order one each of the following:

- **TS-10 or TS-20** TouchStart Palm Button (2 required for two hand control/trip.)
- **TS-R** Ring Guard. We strongly encourage the use of ring guards (2 required for two hand control/trip.)
- **TS-B1 or TS-B2** Electrical Box. (2 required for two hand control/trip.)
- **SR104P or G9SA-TH301** Use if anti-tie-down functions are not incorporated in your control system (1 required for two hand control/trip.)

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OMRON SCIENTIFIC TECHNOLOGIES, INC.
6550 Dumbarton Circle, Fremont CA 94555-3605 USA

U.S.A: 800.556.6766
Canada: 866.986.6766
Mexico and South America: 847.843.7900
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