

OPTO-TOUCH™ OTB Series

Momentary Action Optical Touch Buttons



Banner Optical Touch Buttons are **touch-activated photoelectric switches designed to replace capacitive touch switches and mechanical push buttons.** The OPTO-TOUCH's SPDT electromechanical relay or solid-state output (depending upon model) is activated for as long as a finger, introduced into the "touch area" (yoke) of the switch, interrupts the OPTO-TOUCH's infrared sensing beam.

Banner Optical Touch Buttons are ergonomically designed to eliminate the hand, wrist, and arm stresses associated with mechanical push buttons. They require absolutely no physical pressure to operate. LED indicators light for "power on" and "output activated".

All models are highly resistant to EMI, RFI, and ambient light interference. OTBs have either a black polysulfone (or red Lexan®) upper housing and VALOX® base. Lexan® models have the letter "L" in their model number suffix. Environmental considerations for use of the two types differ; see specifications below. The 30-mm threaded base on all models provides easy mounting, and Banner Optical Touch Buttons are easily retrofitted to existing machines. See pages 2 and 5 for model listings.

Specifications

Supply Voltage: Models for 105 to 130V ac, 210 to 250V ac (50/60 Hz), 10 to 30V dc, or 20 to 30V ac/dc (at 25 mA, exclusive of load).

Output Configuration:

AC and ac/dc models: All models have SPDT electromechanical relay (one N.O. contact, one N.C. contact).

DC-only models:

OTBVN6 models have complementary NPN sinking outputs; OTBVP6 models have complementary PNP sourcing outputs.

Output Rating:

AC and ac/dc models: Maximum voltage is 250V ac or 30V dc.

Maximum current is 7 amps (resistive load), 1 HP max.

Minimum load is .05 watts (dc), .05VA (ac).

Mechanical life of relay is 50,000,000 operations (minimum).

Electrical life of relay is 100,000 operations (min.) at full resistive load.

Transient suppression recommended when switching inductive loads.

DC models: 150 mA maximum load (each output).

Ambient Light Immunity: 120,000 lux (direct sunlight).

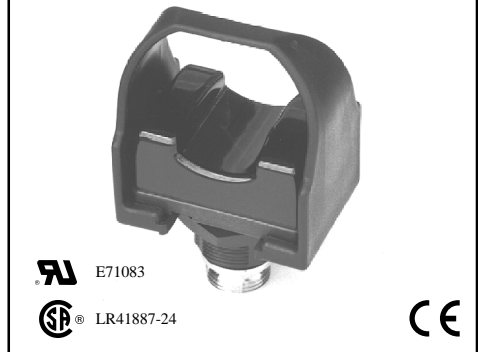
EMI/RFI Immunity: The OPTO-TOUCH is highly resistant to both single and mixed EMI and RFI noise sources.

Operating Temperature Range: -20 to +50°C (-4 to +122°F).

Indicator LEDs: Two indicator LEDs. One lights whenever power is "on"; the other lights whenever the output relay is activated.

Construction: Black polysulfone (or red Lexan®) upper housing and fiber-reinforced VALOX® base. Electronics fully epoxy-encapsulated. Totally sealed, non-metallic enclosure. Threaded base has

*OTB Series Momentary Action
Optical Touch Button (QD model shown)*



ISO9002
DOCUMENTED QUALITY

M30 x 1,5 external threads and 1/2" NPSM internal threads. Base requires a 1-3/16" diameter mounting hole (fits most standard automotive-size "jumbo" legend plates and oiltight pushbutton holes). Supplied with a field cover of polycarbonate-PET polyester. OPTO-TOUCH OTBs are rated NEMA 1, 3, 4, 4X, 12, and 13.

Cable: DC-only Quick-disconnect (QD) models require model MBCC-412 4-conductor mini-type cable (p/n 25226); AC and ac/dc Quick-disconnect (QD) models require MBCC-512 5-conductor cable (p/n 25496; cables are purchased separately). Mini-type QD cables are 12 feet long. Models with attached cable (non-QD models) are supplied with 6 feet of PVC-jacketed, 22 AWG 4- or 5-conductor cable.

Environmental Considerations (models with polysulfone housing): Prolonged exposure of the OPTO-TOUCH to direct outdoor sunlight will cause embrittlement of the polysulfone housing. Window glass effectively filters longer wavelength ultraviolet and provides excellent protection from sunlight. Contact the factory Application Engineering Department regarding outdoor applications.

Environmental Considerations (models with Lexan® housing): Prolonged exposure of the OPTO-TOUCH to hot water and moist high-temperature environments above 150°F (66°C) should be avoided. Aromatic hydrocarbons (such as xylene and toluene), halogenated hydrocarbons, and strong alkalis should be avoided. Clean periodically using mild soap solution and a soft cloth. Avoid strong alkaline materials.

OTB Series *Momentary Action* OPTO-TOUCH

Hookup Information and Model Listing

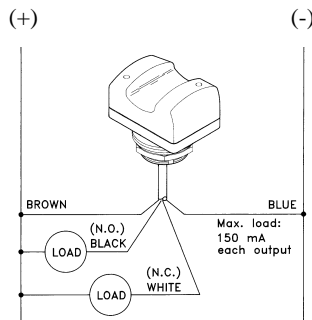
10-30V DC models (see page 5 for ordering information)

Add "L" to specify Lexan® upper housing (others are polysulfone); "QD" in model suffix indicates Quick Disconnect base.

OTBVN6(L) and OTBVN6(L)QD

complementary sinking outputs

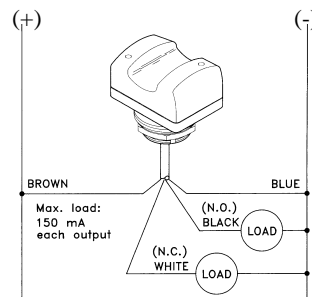
Model OTBVN6(L)QD requires MBCC-412 cable (p/n 25226, purchase separately).



OTBVP6(L) and OTBVP6(L)QD

complementary sourcing outputs

Model OTBVP6(L)QD requires MBCC-412 cable (p/n 25226, purchase separately).



Hookup Information and Model Listing

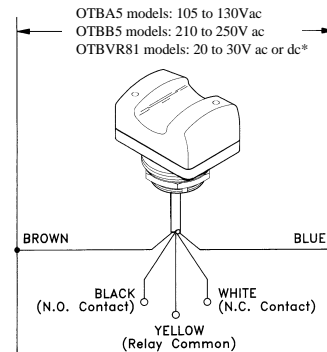
AC and AC/DC models (see page 5 for ordering information)

Add "L" to specify Lexan® upper housing (others are polysulfone); "QD" in model suffix indicates Quick Disconnect base.

Models

- OTBA5(L)** 120V ac, SPDT electromechanical relay output, 6-foot attached cable
- OTBA5(L)QD** 120V ac, SPDT electromechanical relay output, QD base (use MBCC-512 cable)
- OTBB5(L)** 220/240V ac, SPDT electromechanical relay output, 6-foot attached cable
- OTBB5(L)QD** 220/240V ac, SPDT electromechanical relay output, QD base (use MBCC-512 cable)
- OTBVR81(L)** 20-30V ac or dc*, SPDT electromechanical relay output, 6-foot attached cable
- OTBVR81(L)QD** 20-30V ac or dc*, SPDT electromechanical relay output, QD base (use MBCC-512 cable)

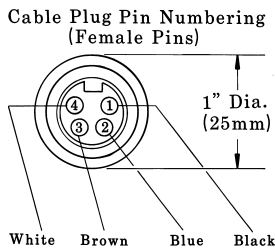
QD models require model MBCC-512 cable (p/n 25496, purchase separately).



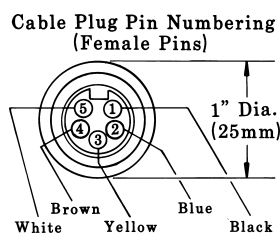
*20-30V dc power may be applied without regard to polarity

Quick Disconnect (QD) Option (order model MBCC-412 or MBCC-512 mini-type cable)

Cable connector end view, MBCC-412 cable (p/n 25226), for dc-only models

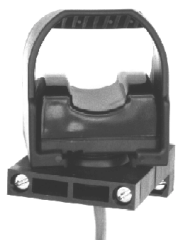
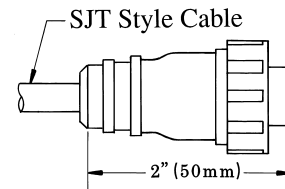


Cable connector end view, MBCC-512 cable (p/n 25496), for ac and ac/dc models



SJT-type cable, 12 foot lengths

Cable connector, side view (MBCC-412 and MBCC-512 cable)



The model SMB30S swivel-mount bracket (p/n 33204) is a versatile means for mounting a Banner OPTO-TOUCH Optical Touch Button. The SMB30S lets you *ergonomically position* the OPTO-TOUCH on most machinery for maximum operator comfort and convenience.

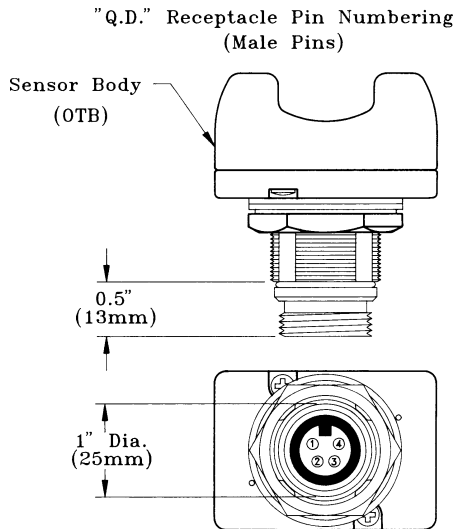
The SMB30S mounts by its base. Its swivel ball locks snugly in place when its two clamping bolts are tightened. Bracket material is black VALOX®. Hardware is stainless steel, and mounting bolts are included.

The photo shows a model SMB30S bracket with an OPTO-TOUCH attached.

OTB Series *Momentary Action* OPTO-TOUCH

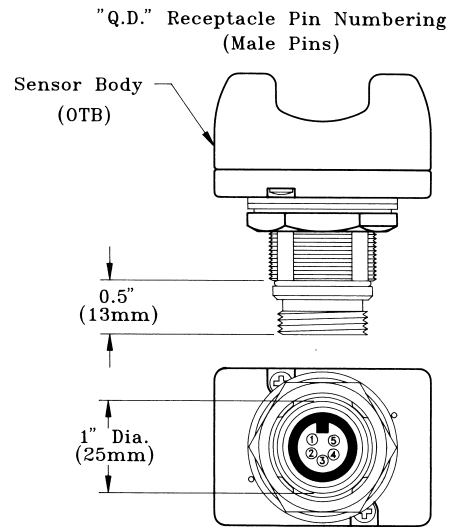
OPTO-TOUCH base

4-pin QD base (dc models)

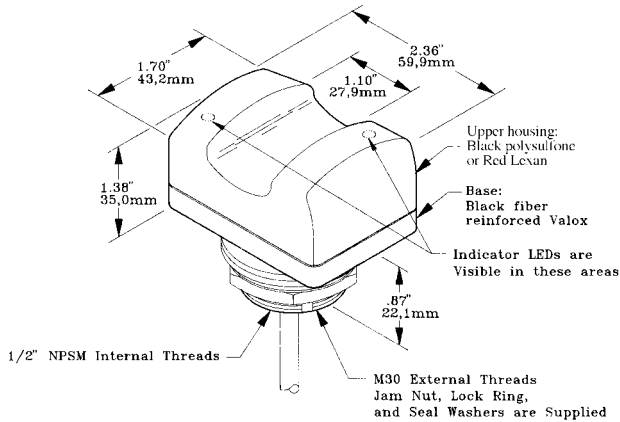


OPTO-TOUCH base

5-pin QD base (ac and ac/dc models)



Dimensions (see also QD base, shown above)



Indicator LED States:

LED 1 turns ON when the unit is powered up
LED 2 follows the action of the output

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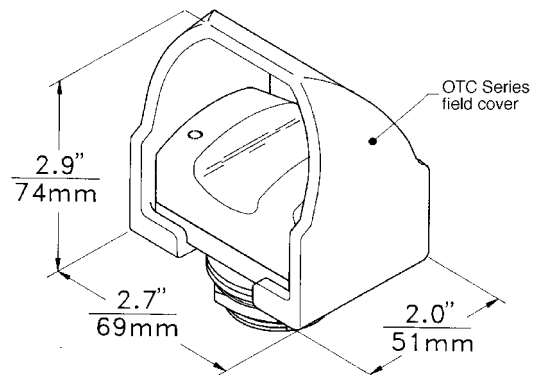
OPTO-TOUCH Field Covers

OPTO-TOUCH Field Covers (see drawing, below) are designed to prevent inadvertent activation of OPTO-TOUCHs due to objects (loose clothing, debris, etc.) which might accidentally block their sensing beam.

Field covers are constructed of rugged polycarbonate-PET polyester blend, which is capable of absorbing high impacts (even at low temperatures). This material is highly resistant to abrasion and to damage by most chemicals.

Every OPTO-TOUCH is supplied with a black field cover, as standard. Field covers are available separately in four colors, which can be used to differentiate touch button functions when several touch buttons are in use:

- Black** model OTC-1-BK, p/n 30221
- Red** model OTC-1-RD, p/n 30977
- Yellow** model OTC-1-YW, p/n 30978
- Green** model OTC-1-GN, p/n 30979



Important Application Information

Prevention of False Actuation

Any anti-tiedown control must be designed to prevent accidental actuation. Anti-tiedown circuitry must be designed to ignore false input signals. False signals include (but are not limited to) voltage transients, contact "bounce", and EMI or RFI "noise". If a PLC or any other solid-state controller is used to provide anti-tiedown, the design must assure that short duration signals (typically any signals less than a few milliseconds) are ignored. There are several manufacturers of anti-tiedown logic modules which include circuitry to minimize the possibility of false actuation.

Definitions:

Two-hand Trip (Control): A control that requires the operation of two separate control actuating devices by a machine operator's hands for initiation of a machine cycle.

Anti-tiedown (Control): A two-hand trip control configured so that both of the operator's hands must be removed and then reapplied to the control actuating devices to start another machine cycle. (Also called "anti-defeat" control.)

Ordering Information: OPTO-TOUCH Optical Touch Buttons are shipped with a black field cover, as standard. A black field cover will be received if the OPTO-TOUCH is ordered by its model number (only). Red, yellow, or green field cover may be specified instead by ordering the OPTO-TOUCH using the appropriate 5-digit part number from the table, below. Field covers may also be ordered separately (page 3).

										OPTO-TOUCH Optical Touch Buttons Part Numbers - Momentary Action Models					
120V ac	220/240V ac	20-30V ac or dc	10-30V dc	SPDT relay	NPN (sinking)	PNP (sourcing)	Attached 6-foot cable	Quick disconnect	Polysulfone upper housing	Lexan® upper housing	Model	Black Cover	Red Cover	Yellow Cover	Green Cover
●					●			●			OTBA5	27986	35058	35078	35098
	●				●			●			OTBB5	27987	35062	35082	35102
		●			●			●			OTBVR81	33080	35066	35086	35106
			●			●		●			OTBVN6	28591	35070	35090	35110
			●				●	●			OTBVP6	28589	35074	35094	35114
●					●			●	●		OTBA5QD	28149	35059	35079	35099
	●				●			●	●		OTBB5QD	28150	35063	35083	35103
		●			●			●	●		OTBVR81QD	34078	35067	35087	35107
			●			●		●	●		OTBVN6QD	28585	35071	35091	35111
			●				●	●	●		OTBVP6QD	28590	35075	35095	35115
●					●			●		●	OTBA5L	32167	35060	35080	35100
	●				●			●		●	OTBB5L	32254	35064	35084	35104
		●			●			●		●	OTBVR81L	34040	35068	35088	35108
			●			●		●		●	OTBVN6L	33706	35072	35092	35112
			●				●	●		●	OTBVP6L	34110	35076	35096	35116
●					●			●		●	OTBA5LQD	32255	35061	35081	35101
	●				●			●		●	OTBB5LQD	32256	35065	35085	35105
		●			●			●		●	OTBVR81LQD	34041	35069	35089	35109
			●			●		●		●	OTBVN6LQD	35057	35073	35093	35113
			●				●	●		●	OTBVP6LQD	34997	35077	35097	35117