OPTO-TOUCH™ LTB Series

Alternate Action Optical Touch Buttons

BANNER
the photoelectric specialist

Banner **LTB Series** 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 output changes state, alternating between "on" and "off", whenever a finger, introduced into the "touch area" (yoke) of the switch, interrupts the LTB's infrared sensing beam.

Banner LTBs 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".

LTBs are highly resistant to EMI, RFI, and ambient light interference, and are constructed from black polysulfone (or red Lexan®) and VALOX® for reliability in industrial environments. The 30-mm threaded base provides easy mounting, and LTBs are easily retrofitted to existing machines. See the listings on pages 2 and 3 for available models.

LTB Series Alternate Action Optical Touch Button (QD model shown)



E71083

LR41887-24

ISO9002 DOCUMENTED QUALITY

Specifications

Supply Voltage: 105 to 130V ac or 210 to 250V ac, depending upon model. See listings of available models, pages 2 and 3.

Output Configuration: All models have SPDT electromechanical relay (one N.O. contact, one N.C. contact).

Output Rating: *Maximum voltage* is 250V ac or 30V dc.
Maximum current 7 amps (resistive load), 1 HP max.
Minimum load .05 watts (dc), .05VA (ac).
Mechanical life of relay 50,000,000 operations (min.).
Electrical life of relay 100,000 operations (min.) at full resistive load.
Transient suppression is recommended when switching inductive loads.

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 when power is "on"; the other lights when the infrared sensing beam is interrupted.

Construction:
Black polysulfone or red Lexan® upper housing and fiber-reinforced VALOX® base. Electronics fully epoxy-encapsulated. Totally sealed, non-metallic enclosure. The LTB's threaded base has M30 x 1,5 external threads and 1/2" NPSM internal threads. The base requires a 1-3/16" diameter mounting hole (fits most standard automotive-size "jumbo" legend plates and oiltight pushbutton holes). OPTO-TOUCH LTBs are rated NEMA 1, 3, 4, 4X, 12, and 13.

Cable: *Quick-disconnect (QD) models* require model MBCC-512 5-conductor mini-type cable (p/n 25496), purchased separately. QD cables are 12 feet long. *Models with attached cable* (non-QD models) are supplied with 6 feet of PVC-jacketed, 22 AWG 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. *Clean periodically* using a mild soap solution and a soft cloth. *Avoid the following substances,* as they will attack polysulfone to varying degrees: esters, ketones, aromatic hydrocarbons, chlorinated hydrocarbons, and strong alkaline materials.

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.

Read all WARNINGs carefully.

WARNING. Banner OPTO-TOUCH™ LTB Series Optical Touch Buttons are intended as general-purpose initiators, and are *not* safety devices. Like most solid-state devices, they are as equally likely to fail in the conducting ("on") state as in the non-conducting ("off") state. If OPTO-TOUCH Optical Touch Buttons are used to initiate machines or operations in which false operation of an Optical Touch Button could be dangerous, *point-of-operation guarding devices* or related safety controls must be installed and maintained to meet all appropriate OSHA regulations and ANSI B11 machine safety standards.

NOTE: In addition to the standards and regulations mentioned above, there are numerous regulations and machine safety standards that apply to specific industries. For assistance in obtaining copies of any of these standards, contact Banner at the address and or numbers listed at the bottom of page 4.

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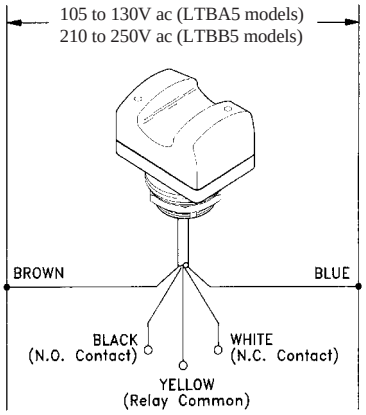
LTB Series *Alternate Action* OPTO-TOUCH

Model Listing and Hookup Information

(all models have SPDT electromechanical relay output)

Models*	Operating voltage, cabling
LTBA5(L)	120V ac, 6-foot attached cable
LTBA5(L)QD	120V ac, 5-pin quick-disconnect base
LTBB5(L)	240V ac, 6-foot attached cable
LTBB5(L)QD	240V ac, 5-pin quick-disconnect base

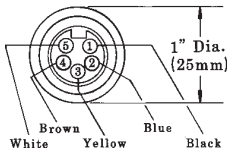


*"L" in model suffix indicates Lexan® upper housing. See listing, page 3.

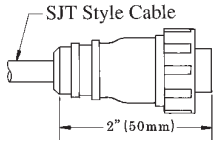
Quick Disconnect (QD) Option

(order model MBCC-512 mini-type cable, 12-foot length, p/n 25496)

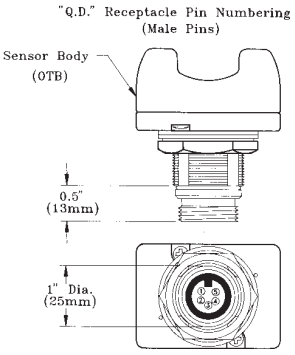
Cable connector, end view (MBCC-512 cable):



Cable connector, side view (MBCC-512 cable):



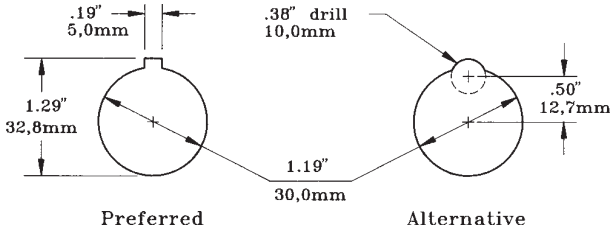
LTB base, quick-disconnect models, side and end views:



OPTO-TOUCH LTB Mounting Hole Information

The OPTO-TOUCH has a 30 millimeter threaded base which fits directly into a standard mounting hole for an oiltight push button. A lock ring, supplied with each OPTO-TOUCH, may be used to prevent switch rotation.

The mounting hole details shown at the right are used for the OPTO-TOUCH and also for standard oiltight push buttons and their legend plates. The drawing at the far right shows how to approximate the keyway using a drill hole.



Model SMB30S Swivel Mount Bracket

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 at the right shows a model SMB30S bracket with an OPTO-TOUCH attached.



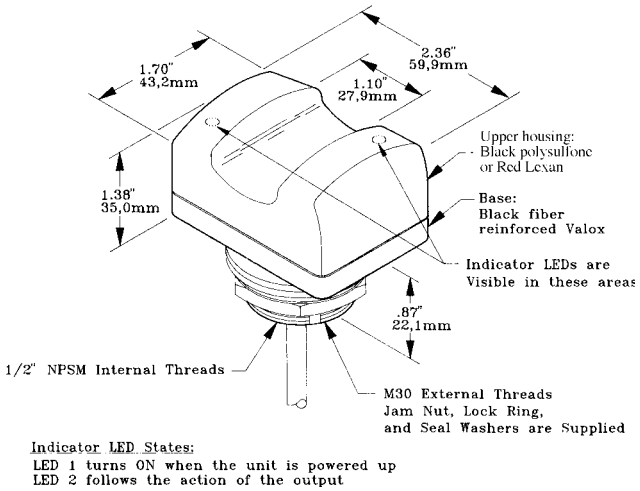
SMB30S

WARNING!

Never use an OPTO-TOUCH Optical Touch Button as an actuator in an emergency stop (E-Stop) circuit. E-Stop actuators must be purely mechanical devices that require no power to operate. OPTO-TOUCH Optical Touch Buttons require power to operate and **must not be used as E-Stop actuators under any circumstances.**

LTB Series *Alternate Action* OPTO-TOUCH

Dimensions



Model shown has built-in, attached cable.
See page 2 for QD-style base.

Lexan® and VALOX® are registered trademarks of General Electric Company.

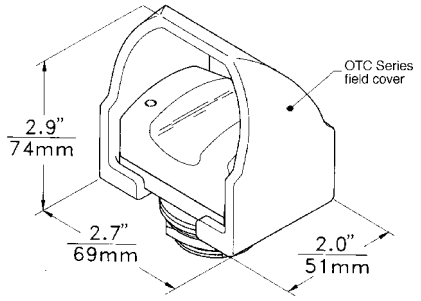
OPTO-TOUCH Field Covers

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



Safety Instruction

A field cover has been supplied with this OTB. It should be installed, as shown in the drawing above, to minimize the possibility of unintended switch operation. If this cover is missing or has become lost or damaged, contact Banner immediately at (612) 544-3164 for a no-charge replacement.

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 (above).

OPTO-TOUCH Optical Touch Buttons
Part Numbers - Alternate Action Models

120V ac	220/240V ac	Attached 6-foot cable	Quick disconnect	Polysulfone upper housing	Lexan® upper housing	Model	Black Cover	Red Cover	Yellow Cover	Green Cover
●		●		●		**LTBA5**	28455	35119	35127	35135
●			●	●		**LTBA5QD**	28456	35120	35128	35136
●		●			●	**LTBA5L**	34950	35121	35129	35137
●			●		●	**LTBA5LQD**	35010	35122	35130	35138
	●	●		●		**LTBB5**	28457	35123	35131	35139
	●		●	●		**LTBB5QD**	28458	35124	35132	35140
	●	●			●	**LTBB5L**	34951	35125	35133	35141
	●		●		●	**LTBB5LQD**	35118	35126	35134	35142

NOTE: Banner Optical Touch Buttons are manufactured and sold under license for U. S Patent #4,939,358.



WARRANTY: Banner Engineering Corporation warrants its products to be free from defects for one year. Banner Engineering Corporation will repair or replace, free of charge, any product of its manufacture found to be defective at the time it is returned to the factory during the warranty period. This warranty does not cover damage or liability for the improper application of Banner products. This warranty is in lieu of any other warranty either expressed or implied.

Banner Engineering Corp. 9714 10th Avenue No., Minneapolis, MN 55441 Telephone: (612) 544-3164 FAX (applications): (612) 544-3573