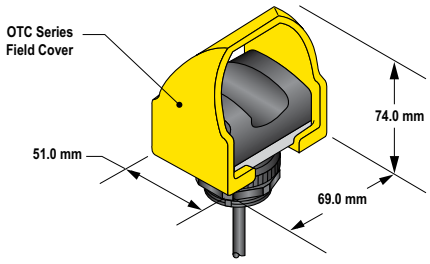
OTB/LTB OPTO-TOUCH™
Optical Touch Buttons

- Ergonomically designed touch buttons eliminate hand, wrist and arm stress.
- Zero-force touch buttons provide an alternative to capacitive touch switches and mechanical push buttons.
- OTB models are momentary-action touch buttons with electromechanical relay or solid-state outputs.
- LTB models are alternate-action touch buttons with electromechanical relay outputs.

OTB and LTB Models

ONLINE
AUTOCAD, STEP, IGES & PDF



OTB and LTB Models with cover

OTB Momentary Action, 10-30V dc

Upper Housing	Connection	Models NPN	Models PNP
Polysulfone	2 m	OTBVN6	OTBVP6
	4-Pin Mini QD	OTBVN6QD	OTBVP6QD
Polycarbonate	2 m	OTBVN6L	OTBVP6L
	4-Pin Mini QD	OTBVN6LQD	OTBVP6LQD

Connection options: A model with a QD requires a mating cordset (see page 458)

For 9 m cable, add suffix **W/30** to the 2 m model number (example, **OTBVN6 W/30**).

OTB Momentary Action, 20-30V ac or dc

Upper Housing	Connection	Output Type	Models
Polysulfone	2 m	SPDT e/m Relay	**OTBVR81**
	5-Pin Mini QD		**OTBVR81QD**
Polycarbonate	2 m	SPDT e/m Relay	**OTBVR81L**
	5-Pin Mini QD		**OTBVR81LQD**

OTB Momentary Action, 120V ac

Upper Housing	Connection	Output Type	Models
Polysulfone	2 m	SPDT e/m Relay	**OTBA5**
	5-Pin Mini QD		**OTBA5QD**
Polycarbonate	2 m	SPDT e/m Relay	**OTBA5L**
	5-Pin Mini QD		**OTBA5LQD**

ACCESSORIES page 458

OTB Momentary Action, 220/240V ac

Connection	Upper Housing	Output Type	Models
Polysulfone	2 m	SPDT e/m Relay	**OTBB5**
	5-Pin Mini QD		**OTBB5QD**
Polycarbonate	2 m	SPDT e/m Relay	**OTBB5L**
	5-Pin Mini QD		**OTBB5LQD**

Connection options: A model with a QD requires a mating cordset (see page 458)

For 9 m cable, add suffix **W/30** to the 2 m model number (example, **OTBVR81 W/30**).

OTB Specifications

Supply Voltage and Current	**OTBVR81 models:** 20 to 30V ac/dc **OTBA5 models:** 105 to 130V ac, 50-60 Hz **OTBB5 models:** 210 to 250V ac, 50-60 Hz **OTBVN6/VP6 models:** 10 to 30V dc All models require less than 25 mA (exclusive of load)
Supply Protection Circuitry	Protected against reverse polarity and transient voltages
Output Configuration	**OTBVR81, OTBA5, and OTBB5 models:** SPDT electromechanical relay **OTBVN6 models:** Complementary NPN (sinking) open-collector transistor; 1 normally open (NO) and 1 normally closed (NC) **OTBVP6 models:** Complementary PNP (sourcing) open-collector transistors; 1 normally open (NO) and 1 normally closed (NC)
Output Rating	**Electromechanical relay models:** **Max. switching current:** 7 amps (resistive load), 1 HP max. **Min. load:** 0.05 watts (dc), 0.05 VA (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 **Solid-state output models:** 150 mA max. load (each output) **ON-state saturation voltage:** less than 1 volt at signal levels; less than 1.5 volts at full load **OFF-state leakage current:** less than 1 µA

More on next page

OTB Specifications (cont'd)	
Response Time	100 milliseconds ON/OFF
Output Protection	All models protected against false pulse on power-up Models with solid-state outputs have overload and short circuit protection
Indicators	**Two Red indicator LEDs:** one lights whenever power is applied; the other lights whenever the switch is activated making the normally-open (NO) output conduct
Construction	Totally encapsulated, non-metallic enclosure. Black polysulfone or red polycarbonate upper housing (see Application Notes below); fiber-reinforced thermoplastic polyester base. Electronics fully epoxy-encapsulated. Supplied with a field cover of polypropylene (TP).
Environmental Rating	Meets NEMA standards 1, 3, 4, 4X, 12 and 13; IEC IP66
Connections	PVC-jacketed 2 m or 9 m cables, or Mini-style quick-disconnect (QD) fitting. QD cordsets are ordered separately. See page 458.
Ambient Light Immunity	120,000 lux (direct sunlight)
EMI/RFI Immunity	Immune to both single and mixed EMI and RFI noise sources
Operating Conditions	**Temperature:** -20° to +50° C **Relative humidity:** 90% at 50° C (non-condensing)
Application Notes	**Environmental considerations for models with polysulfone upper housings:** The polysulfone upper housing will become embrittled with prolonged exposure to outdoor sunlight. Window glass effectively filters longer wavelength ultraviolet light and provides excellent protection from sunlight. **Environmental considerations for models with polycarbonate upper housings:** Avoid prolonged exposure to hot water and moist high-temperature environments above 66° C. Avoid contact with aromatic hydrocarbons (such as xylene and toluene), halogenated hydrocarbons and strong alkalis. Clean periodically using mild soap solution and a soft cloth. Avoid strong alkaline materials.
Certifications	CE, CSA, UL LISTED
Hookup Diagrams	**DC Models:** DC03 (p. 744) **AC/DC Models:** **OTBVR81 Models:** UN01 (p. 753) **AC Models:** **OTBA5 Models:** AC08 (p. 751) **OTBB5 Models:** AC08 (p. 751)

LTB Alternate Action, 220/240V ac

Upper Housing	Connection	Output Type	Models
Polysulfone	2 m	SPDT e/m Relay	**LTBB5**
	5-Pin Mini QD		**LTBB5QD**
Polycarbonate	2 m		**LTBB5L**
	5-Pin Mini QD		**LTBB5LQD**

LTB Alternate Action, 120V ac

Upper Housing	Connection	Output Type	Models
Polysulfone	2 m	SPDT e/m Relay	**LTBA5**
	5-Pin Mini QD		**LTBA5QD**
Polycarbonate	2 m		**LTBA5L**
	5-Pin Mini QD		**LTBA5LQD**

Connection options: A model with a QD requires a mating cordset (see page 458)

For 9 m cable, add suffix **W/30** to the 2 m model number (example, **LTBA5 W/30**).

LTB Specifications

Supply Voltage and Current	**LTBA5 models:** 105 to 130V ac, 50-60 Hz **LTBB5 models:** 210 to 250V ac, 50-60 Hz
Supply Protection Circuitry	Protected against reverse polarity and transient voltages
Output Configuration	All models have SPDT electromechanical relay - complementary outputs: one normally open (NO) contact and one normally closed (NC) contact which "toggle" from open to closed when the button is activated
Output Rating	Max. voltage is 250V ac or 30V dc **Max. current:** 7 amps (resistive load), 1 HP max. **Min. load:** .05 watts (dc), 0.5VA (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.
Output Protection	All models protected against false pulse on power-up
Indicators	**Two Red indicator LEDs:** one lights whenever power is applied; the other lights when the infrared sensing beam is interrupted
Construction	Totally encapsulated, non-metallic enclosure. Black polysulfone or red polycarbonate upper housing; fiber-reinforced thermoplastic polyester base. Electronics fully epoxy-encapsulated. Supplied with a field cover of polypropylene (TP).
Environmental Rating	Meets NEMA standards 1, 3, 4, 4X, 12 and 13; IEC IP66
Connections	PVC-jacketed 2 m or 9 m cables, or Mini-style quick-disconnect (QD) fitting. QD cordsets are ordered separately. See page 458.
Ambient Light Immunity	120,000 lux (direct sunlight)
EMI/RFI Immunity	Immune to both single and mixed EMI and RFI noise sources
Operating Conditions	**Temperature:** -20° to +50° C **Relative humidity:** 90% at 50° C (non-condensing)
Application Notes	**Environmental considerations for models with polysulfone upper housings:** The polysulfone upper housing will become embrittled with prolonged exposure to outdoor sunlight. Window glass effectively filters longer wavelength ultraviolet light and provides excellent protection from sunlight. **Environmental considerations for models with polycarbonate upper housings:** Avoid prolonged exposure to hot water and moist high-temperature environments above 66° C. Avoid contact with aromatic hydrocarbons (such as xylene and toluene), halogenated hydrocarbons and strong alkalis. Clean periodically using mild soap solution and a soft cloth. Avoid strong alkaline materials.
Certifications	
Hookup Diagrams	AC08 (p. 751)

Cordsets

Mini QD		
See page 700		
	Threaded 4-Pin	Threaded 5-Pin
Length	Straight	
1.83 m	MBCC-406	MBCC-506
3.66 m	MBCC-412	MBCC-512
9.14 m	MBCC-430	MBCC-530

Additional cordset information available. See page 679.

Field Covers

OTB/LTB		
Models		
Black	OTC-1-BK	
Green	OTC-1-GN	
Red	OTC-1-RD	
Yellow	OTC-1-YW	

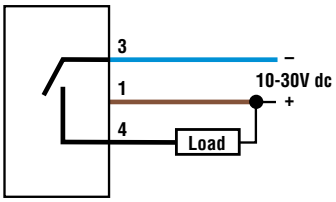
Brackets

OTB/LTB Optical Touch Buttons		
 pg. 639	 pg. 640	 pg. 641
SMB30A	SMB30MM	SMB30SC

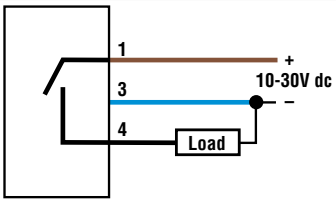
Additional brackets and information available. See page 620.

DC Hookups

DC01 Current Sinking (NPN)



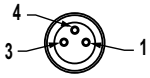
Current Sourcing (PNP)



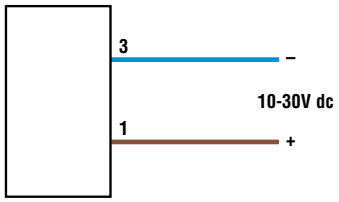
Key

1 = Brown
3 = Blue
4 = Black

3-Pin Pico



DC02 Emitter

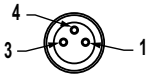


Key

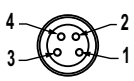
1 = Brown
2 = White†
3 = Blue
4 = Black†

† Not Used

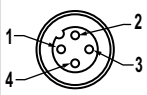
3-Pin Pico



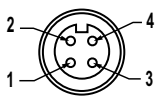
4-Pin Pico



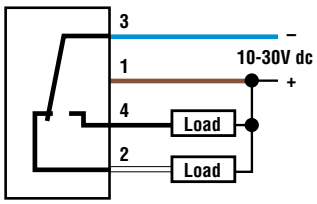
4-Pin Euro



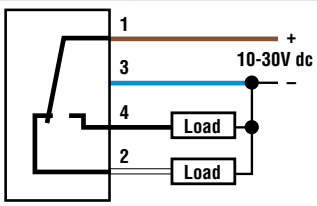
4-Pin Mini



DC03 Complementary Current Sinking (NPN)



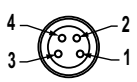
Complementary Current Sourcing (PNP)



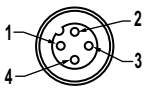
Key

1 = Brown
2 = White
3 = Blue
4 = Black

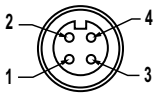
4-Pin Pico



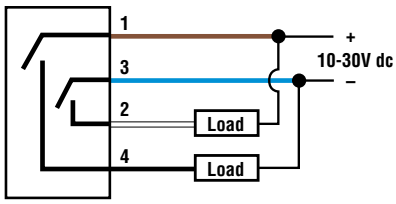
4-Pin Euro



4-Pin Mini



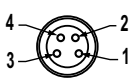
DC04 Bipolar (NPN + PNP)



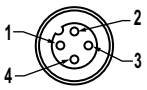
Key

1 = Brown
2 = White
3 = Blue
4 = Black

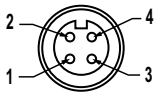
4-Pin Pico



4-Pin Euro



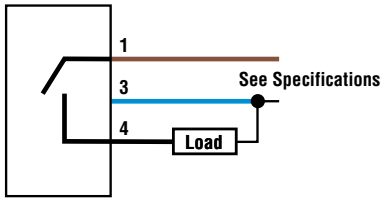
4-Pin Mini



More on next page

AC Hookups

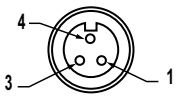
AC05 3-wire AC



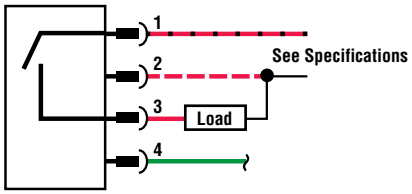
Key

1 = Brown
3 = Blue
4 = Black

3-Pin Mini



AC06 3-wire AC with Quick-Disconnect Cable

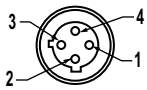


Key

1 = Red/Black
2 = Red/White
3 = Red
4 = Green†

† Not Used

4-Pin Micro



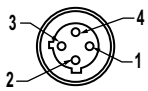
AC07 Emitters with Quick-Disconnect Cable

Key

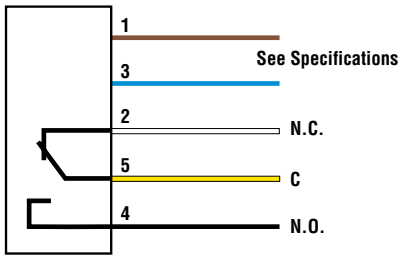
1 = Red/Black
2 = Red/White
3 = Red†
4 = Green†

† Not Used

4-Pin Micro



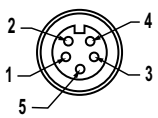
AC08 SPDT Electromechanical Relay Output



Key

1 = Brown
2 = White
3 = Blue
4 = Black
5 = Yellow

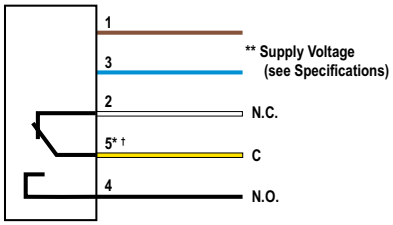
5-Pin Mini



More on next page

Universal AC/DC Hookups

UN01 SPDT Electromechanical Relay Output



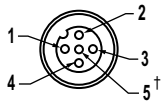
** NOTE: Connection of dc power is without regard to polarity.

Key

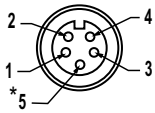
5-Pin Euro
1 = Brown
2 = White
3 = Blue
4 = Black
5 = Gray†

5-Pin Mini
1 = Brown
2 = White
3 = Blue
4 = Black
5 = Yellow*

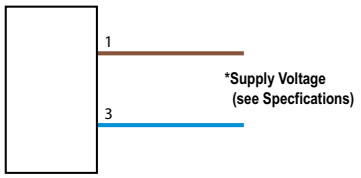
5-Pin Euro



5-Pin Mini



UN02 Emitters



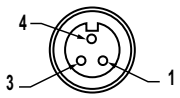
* NOTE: Connection of dc power is without regard to polarity.

Key

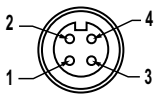
1 = Brown
2 = Blue
3 = Black†

† Not Used

3-Pin Mini



4-Pin Mini



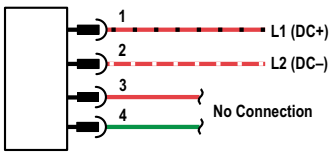
UN03 Emitters with Attached Cable

Key

1 = Brown
3 = Blue
4 = Black†

† No Connection

UN04 Emitters with Quick-Disconnect Cable

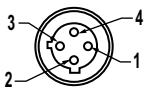


Key

1 = Red/Black
2 = Red/White
3 = Red†
4 = Green †

† No Connection

4-Pin Micro



More on next page