OPTO-TOUCH™

Optical Touch 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.
- VTB models are momentary-action touch buttons with solid-state outputs and an illuminating base for sequential part-picking operations.
- STB models are momentary-action touch buttons with solid-state or electromechanical relay outputs and redundant optical channels for inputs to safety controls.

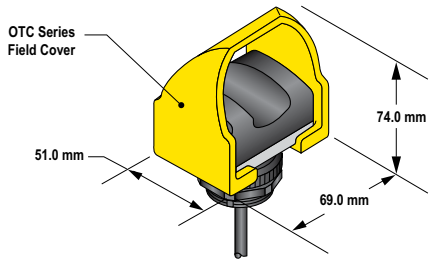
OTB Models	**page 234**
LTB Models	**237**
VTB Models	**238**
STB Models	**239**

BRACKETS
PAGE 377
QD CABLES
4- & 5-Pin Euro +
4- & 5-Pin Mini
PAGE 412, 414 & 420

Optical Buttons

- *2 m or 9 m, integral cable or quick-disconnect fitting*
- *Ergonomically designed touch buttons to eliminate hand, wrist and arm stress*
- *Dual indicator LEDs*
- *Additional field cover color options available*

MORE INFO ONLINE Detailed Dimensions



OTB, LTB, VTB and STB Models with cover

OTB, LTB, VTB and STB Models

STB Self-Checking, 10-30V dc

Models	Cable*	Upper Housing	Output Type	Data Sheet
STBVP6	2 m	Polysulfone	Complementary PNP Solid-state	64136
STBVP6Q	4-Pin Mini QD			
STBVP6Q5	4-Pin Euro QD			
STBVP6L	2 m	Polycarbonate		
STBVP6LQ	4-Pin Mini QD			
STBVP6LQ5	4-Pin Euro QD			

STB Self-Checking, 20-30V ac/dc

Models	Cable*	Upper Housing	Output Type	Data Sheet
STBVR81	2 m	Polysulfone	Two Independent and Complementary e/m Relays	64136
STBVR81Q	5-Pin Mini QD			
STBVR81Q6	5-Pin Euro QD			
STBVR81L	2 m	Polycarbonate		
STBVR81LQ	5-Pin Mini QD			
STBVR81LQ6	5-Pin Euro QD			

* For 9 m cable, add suffix **W/30** to the 2 m model number (example, **STBVP6 W/30**). A model with a QD requires a mating cable (see pages 412 and 420).

STB Specifications

Supply Voltage and Current	**STBVP6 Models:** 10 to 30V dc **STBVR81 Models:** 20 to 30V ac/dc
Supply Protection Circuitry	Protected against transient voltages and reverse polarity
Output Configuration	**STBVP6 Models:** Complementary PNP (sourcing) open collector transistors **STBVR81 Models:** Complementary electromechanical relay
Output Rating	**STBVP6 Models (solid-state outputs):** **Max. load:** 150 mA **ON-state saturation voltage:** ≤ 15V @ full load **OFF-state leakage current:** less than 1 µA **STBVR81 Models (electromechanical relay):** **Max. voltage:** 125V dc, 150V ac **Max. switching current:** 1A **Max. resistive load power:** 60 VA ac or 30 W dc **Mechanical life of relay:** 10^9 cycles **Electrical life of relay:** 1.5 x 10^5 cycles at 1 amp, 24 resistive
Output Protection	All models protected against false pulse on power-up. Models with solid-state outputs have overload and short-circuit protection.
Response Time	20 milliseconds ON/OFF
Indicators	**2 Green LED indicators:** **Power:** ON – power applied OFF – power off **Output/fault:** ON – button is activated OFF – button is deactivated Flashing – internal fault or blocked button on power-up detected
Construction	Totally encapsulated, non-metallic enclosure. Black polysulfone or red polycarbonate upper housing (see Application Notes, page 240); fiber-reinforced PBT polyester base. Electronics fully epoxy-encapsulated. Supplied with polypropylene (TP) field cover.
Environmental Rating	Meets NEMA standards 1, 3, 4, 4X, 12 and 13; IEC IP66

More on next page

STB Specifications (cont'd)	
Connections	PVC-jacketed 2 m cables standard on integral-cable kits; QD fitting, depending on model. Accessory QD mating cables required for QD models. QD cables are ordered separately. See pages 412 and 420. **STBVP6 models:** 4-wire (4-pin Mini-style QD, add suffix **Q** or 4-pin Euro-style QD, add suffix **Q5**) **STBVR81 models:** 5-wire (5-pin Mini-style QD, add suffix **Q** or 5-pin Euro-style QD, add suffix **Q6**) Integral 9 m cables are also available by adding suffix **W/30** to the 2 m model number.
Ambient Light Immunity	Up to 100,000 lux
EMI/RFI Immunity	Immune to EMI and RFI noise sources per IEC 947-5-2
Operating Conditions	**Temperature:** 0° to +50° C **Relative humidity:** 90% @ +50° C (non-condensing)
Application Notes	**Environmental considerations for models with polysulfone upper housings:** The polysulfone upper housing will become brittle with prolonged exposure to outdoor sunlight. Window glass effectively filters ultraviolet light and provides excellent protection from sunlight. Avoid contact with strong alkalis. Clean periodically using mild soap solution and a soft cloth. **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.
Certifications	
Hookup Diagrams	**STB Relay Models:** UN01 (p. 528) **STB Solid-state Models:** DC03 (p. 520)

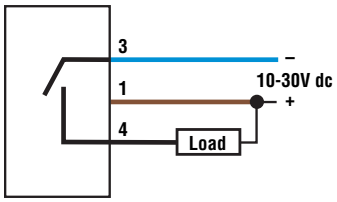
Optical Buttons Field Covers

Models	Description		Data Sheet
OTC-1-BK	Black cover		28436
OTC-1-GN	Green cover		
OTC-1-RD	Red cover		
OTC-1-YW	Yellow cover		

Field covers are designed to prevent inadvertent activation of optical touch buttons due to objects (loose clothing, debris, etc.) which might accidentally block their sensing beams. Field covers are constructed of rugged polypropylene and are highly resistant to abrasion and to damage by most chemicals. OTBs are shipped with a black cover, STBs with a yellow cover and VTBs without a cover.

DC Hookups

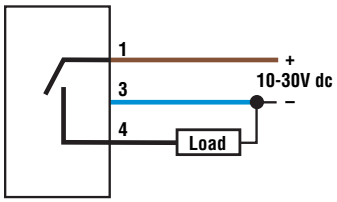
DC01 Current Sinking (NPN)



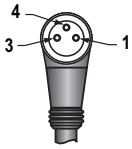
Key

1 = Brown
3 = Blue
4 = Black

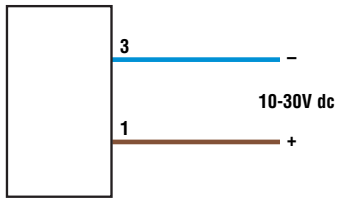
Current Sourcing (PNP)



3-Pin Pico



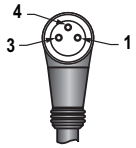
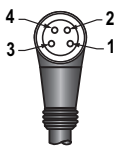
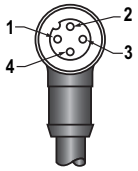
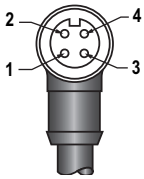
DC02 Emitter



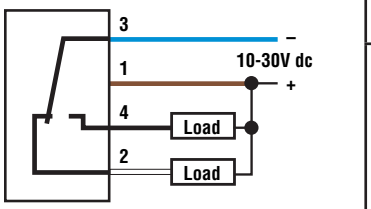
Key

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

† Not Used

3-Pin Pico	4-Pin Pico	4-Pin Euro	4-Pin Mini
			

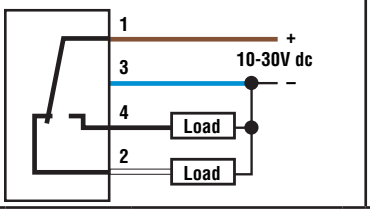
DC03 Complementary Current Sinking (NPN)

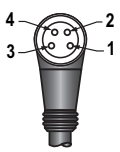
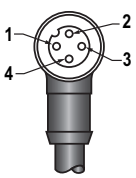
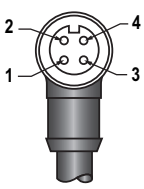


Key

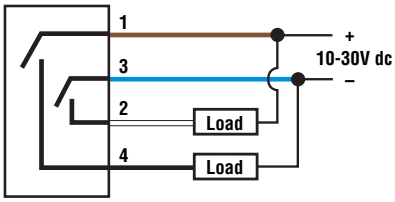
1 = Brown
2 = White
3 = Blue
4 = Black

Complementary Current Sourcing (PNP)



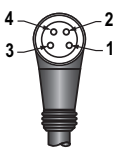
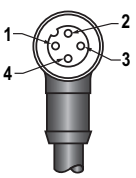
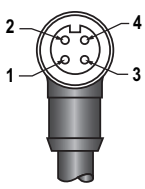
4-Pin Pico	4-Pin Euro	4-Pin Mini
		

DC04 Bipolar (NPN + PNP)



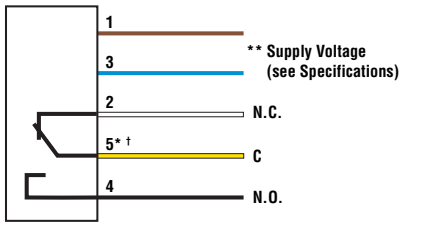
Key

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

4-Pin Pico	4-Pin Euro	4-Pin Mini
		

Universal AC/DC Hookups

UN01 SPDT Electromechanical Relay Output

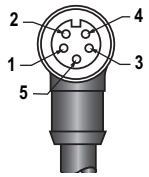


** NOTE: Connection of dc power is without regard to polarity.

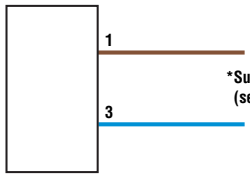
Key

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

5-Pin Mini



UN02 Emitters



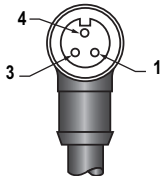
* NOTE: Connection of dc power is without regard to polarity.

Key

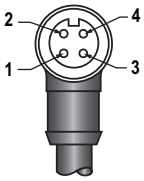
1 = Brown
2 = Blue
3 = Black†

† Not Used

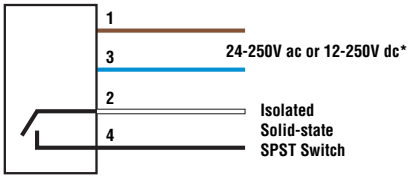
3-Pin Mini



4-Pin Mini



UN03 SPST Solid-State Relay Output

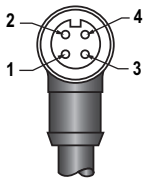


*NOTE: Connection of dc power is without regard to polarity.

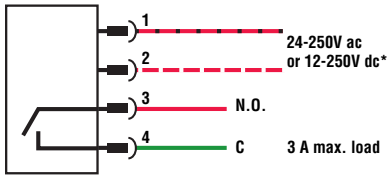
Key

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

4-Pin Mini



UN04 SPST Electromechanical Relay Output



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

Key

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

4-Pin Micro