

22 mm PILOT DEVICES

OMPBD7 SERIES

PUSHBUTTONS AND SELECTOR SWITCHES

- Heavy-Duty/Oil Tight Pushbuttons
- Quick Installation with Tool-Less Mounting Latch
- Plastic Operators: NEMA 4/4X/13 and IP65/66 Rated
- Metal Operators: NEMA 4/13 and IP65/66 Rated
- Touch-Safe Contact Blocks—with IP20 Recessed Screw Terminals
- Heavy-Duty Current Rating (10A Continuous)



Omegas rugged OMPBD7 pilot devices offer maximum flexibility and a wide choice for all applications. This 22 mm line is aesthetically appealing and modularly designed to make assembly and interchangeability easy. The OMPBD7 operators are available in two different body styles to meet every application need. Both operators exhibit a new lower profile stylish appearance while maintaining the rugged performance necessary for demanding environments.

Two Operator Types

OMPBD7P is a plastic operator with a captive black plastic front bezel. Constructed of high-grade thermoplastics, the OMPBD7P is the corrosion resistant solution for harsh environments. For super tough applications, the OMPBD7M has a die-cast zinc housing and mounting ring for a rugged durability. Both are finished with corrosion resistant chrome plating. The OMPBD7M also features a captive shiny metal bezel for a polished appearance.

Quick, Easy Installation

A standard anti-rotation tab keeps front elements from turning or falling off the control panel, making it possible for one person to install all OMPBD7 components even if the front and rear panel are not accessible at the same time. A central mounting ring allows for quick installation and removal of all OMPBD7 operators. All back-of-panel components including contact blocks



All models shown larger than actual size.

OMPBD7P-E4PX10, plastic pushbutton, extended button, red, momentary operation with 1 NO contact.



OMPBD7M-F3PX10, metal pushbutton, flush button, green, momentary operation with 1 NO contact.



OMPBD7P-MT34PX01, plastic pushbutton, 30 mm mushroom, red, maintained operation with 1 NC contact.

Each pushbutton includes one contact block. Units shown with two additional blocks (pushbuttons may be used with up to 6 contacts) see page I-26.

and power module elements snap-on and are readily accessible and interchangeable without removing the pilot device from the panel.

Tool-Less Mounting Latch

The OMPBD7 “tool-less” mounting latch mates the front element with the contact blocks and other back-of-panel components. The mounting latch is available in a plastic and metal design. The latches are easily installed with a “click” and removed by pushing a rotating collar to the right. Quick, reliable and strong, it’s the best pilot device mounting latch available in the industry.

Long Electrical and Mechanical Life

Most OMPBD7 operators have a mechanical of ten million operations... five million contact blocks. Electrical life ranges from 500,000 cycles at 3 A to ten million at 0.1 A. The OMPBD7 line is also electronics compatible with self cleaning contacts.

Environmental Ratings

Front elements, including pushbuttons, mushroom operators and selector switches, are IP66 rated against submersion, oil and dirt, making them reliable in the toughest industrial environments. Metal operators are NEMA 4/13 rated and plastic operators are rated NEMA 4/4X/13.

CONTACT BLOCKS

OMPBD7-X01

OMPBD7-X10

All shown larger than actual size.



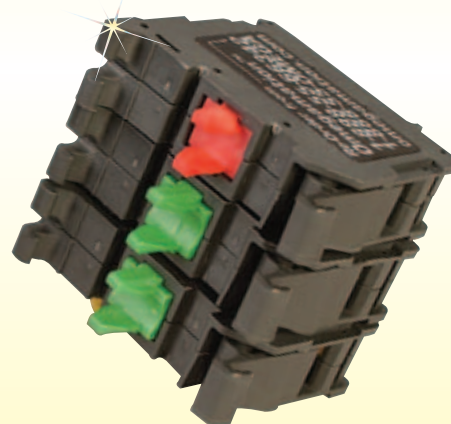
Red = normally closed.



Green = normally open.



Rear view.



OMPBD7M-HM22PX01, two way metal selector switch with long knob. Each unit includes tool-less mounting latch and one normally closed contact block. Shown with two additional (up to 6 total per operator possible) normally open contact blocks, model OMPBD7-X10.

Additional Features and Options

Heavy-Duty Ratings—The OMPBD7 line is UL 46E, NEMA A600 and Q600 listed. All components carry a 10 Amp continuous current rating, covering all industrial control needs.

All Major Approvals—OMPBD7 front elements are UL Recognized, while all OMPBD7 assemblies are UL Approved. The line is also approved by every major international agency making them ideal for export requirements.

H-Bridge & Gold Plated Contacts—

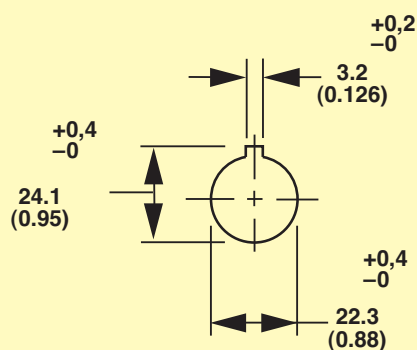
By doubling the available paths for current to pass through the contacts, the standard H-bridge design provides a cleaner current flow. Gold plated contacts quadruple the current paths for increased contact reliability in low voltage applications.

Touch-Safe—Back of panel components are finger safe, with IP20 protection.

Long Lasting Integral LED Assemblies—

Our new LED lamps last up to 11 years! They are conveniently offered as a complete unit for all illuminated operators which include the one piece Integral LED Module. They come in five different colors: amber, blue, green, red and white.

Panel Hole Dimensions: mm (in)

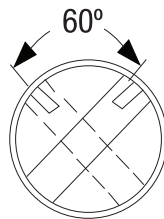


22 mm SELECTOR SWITCHES

2-WAY, 3-WAY AND 4-WAY HEAVY-DUTY/OIL TIGHT LIGHTS

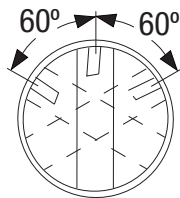


OMPBD7M-SM22PX10,
ON/OFF, 2-way
metal standard knob,
NO contact block,
shown larger
than actual size.



Switching Angle

Each operator includes
tool-less mounting latch and
one contact block. Shown
with two additional (up to 6
total per operator possible)
contact blocks.



Switching Angle

2-Way Switch Contact Development Table (Order chart below)

Contact Development Table			
X = closed O = open	Mounting Position on Latch		
Contact Type			
NO	All slots	O	X
NC	All slots	X	O

Note: Up to 6 contact blocks can be attached (3 across/2 high).
Contact actuation is reversed for spring return left switches.

3-Way Switch Contact Development Table (Order chart next page)

Contact Development Table					
X = closed O = open	Mounting Position on Latch				
Contact Type					
NO	Left (slot 1)	X	O	O	
NO	Center (slot 3)	X	O	X	
NO	Right (slot 2)	O	O	X	
NC	Left (slot 1)	O	X	X	
NC	Center (slot 3)	O	X	O	
NC	Right (slot 2)	X	X	O	

Note: Up to 6 contact blocks can be attached (3 across/2 high).

To Order (Specify Model Number)

2-WAY SELECTOR SWITCHES

MODEL NO.	DESCRIPTION
OMPBD7M-HL22P(*)	2-way metal selector switch with long knob, spring return from left
OMPBD7M-HM22P(*)	2-way metal selector switch with long knob
OMPBD7M-HR22P(*)	2-way metal selector switch with long knob, spring return from right
OMPBD7M-SL22P(*)	2-way metal selector switch with standard knob, spring return from left
OMPBD7M-SM22P(*)	2-way metal selector switch with standard knob
OMPBD7M-SR22P(*)	2-way metal selector switch with standard knob, spring return from right
OMPBD7M-KM23P(*)	2-way metal selector keyed switch with standard knob
OMPBD7P-HL22P(*)	2-way plastic selector switch with long knob, spring return from left
OMPBD7P-HM22P(*)	2-way plastic selector switch with long knob
OMPBD7P-HR22P(*)	2-way plastic selector switch with long knob, spring return from right
OMPBD7P-SL22P(*)	2-way plastic selector switch with standard knob, spring return from left
OMPBD7P-SM22P(*)	2-way plastic selector switch with standard knob
OMPBD7P-SR22P(*)	2-way plastic selector switch with standard knob, spring return from right
OMPBD7P-KM23P(*)	2-way plastic selector keyed switch with standard knob

All models come complete with one operator, one tool-less latch and one contact block, up to 6 contact blocks can be used per operator.

* Add suffix "X10" for 1 NO contact block, or "X01" for 1 NC contact block.

MOST POPULAR MODELS HIGHLIGHTED!

To Order *(Specify Model Number)*

MOST POPULAR MODELS HIGHLIGHTED!

3-WAY SELECTOR SWITCHES

MODEL NO.	DESCRIPTION
OMPBD7M-HB32P(*)	3-way metal selector switch with long knob, spring return from left and right
OMPBD7M-HL32P(*)	3-way metal selector switch with long knob, spring return from left
OMPBD7M-HM32P(*)	3-way metal selector switch with long knob
OMPBD7M-HR32P(*)	3-way metal selector switch with long knob, spring return from right
OMPBD7M-KM33P(*)	3-way metal selector keyed switch with Standard knob
OMPBD7M-SB32P(*)	3-way metal selector switch with standard knob, spring return from left and right
OMPBD7M-SL32P(*)	3-way metal selector switch with standard knob, spring return from left
OMPBD7M-SM32P(*)	3-way metal selector switch with standard knob
OMPBD7M-SR32P(*)	3-way metal selector switch with standard knob, spring return from right
OMPBD7P-HB32P(*)	3-way plastic selector switch with long knob, spring return from left and right
OMPBD7P-HL32P(*)	3-way plastic selector switch with long knob, spring return from left
OMPBD7P-HM32P(*)	3-way plastic selector switch with long knob
OMPBD7P-HR32P(*)	3-way plastic selector switch with long knob, spring return from right
OMPBD7P-KM33P(*)	3-way plastic selector keyed switch with standard knob
OMPBD7P-SB32P(*)	3-way plastic selector switch with standard knob, spring return from left and right
OMPBD7P-SL32P(*)	3-way plastic selector switch with standard knob, spring return from left
OMPBD7P-SM32P(*)	3-way plastic selector switch with standard knob
OMPBD7P-SR32P(*)	3-way plastic selector switch with standard knob, spring return from right

4-WAY SELECTOR SWITCHES

OMPBD7M-HM42PX01B	4-way metal selector switch with long knob, 1 NCEB contact block
OMPBD7M-HM42PX10	4-way metal selector switch with long knob, 1 NO contact block
OMPBD7M-SM42PX01B	4-way metal selector switch with standard knob, 1 NCEB contact block
OMPBD7M-SM42PX10	4-way metal selector switch with standard knob, 1 NO contact block
OMPBD7P-HM42PX01B	4-way plastic selector switch with long knob, 1 NCEB contact block
OMPBD7P-HM42PX10	4-way plastic selector switch with long knob, 1 NO contact block
OMPBD7P-SM42PX01B	4-way plastic selector switch with standard knob, 1 NCEB contact block
OMPBD7P-SM42PX10	4-way plastic selector switch with standard knob, 1 NO contact block

* Add suffix "X10" for 1 NO contact block, or "X01" for 1 NC contact block.

ACCESSORIES

MODEL NO.	DESCRIPTION
OMPBD7-N2	22.5 mm hole plug
OMPBD7-AW2	Mounting ring wrench for plastic or metal operators.

CONTACT BLOCKS, UP TO 6 PER OPERATOR

MODEL NO.	DESCRIPTION
OMPBD7-X01	One NC contact block
OMPBD7-X10	One NO contact block
OMPBD7-X01L	One NCLB, late break contact block
OMPBD7-X10E	One NOEM, early make contact block
OMPBD7-X01V	One NC low voltage contact block
OMPBD7-X10V	One NO low voltage contact block
OMPBD7-X01B	One NCEB early break contact block, used only with 4-way switch

LEGENDS—BLACK WITH WHITE LETTERS

MODEL NO.	LEGEND	MODEL NO.	LEGEND
OMPBD7-34BE165	OFF-ON	OMPBD7-34BE142	JOG-RUN
OMPBD7-34BE260	REV-FOR	OMPBD7-34BE171	OPEN-CLOSE
OMPBD7-34BE211	START-STOP	OMPBD7-34BE224	UP-DOWN
OMPBD7-34BE258	MAN-AUTO	OMPBD7-34BE100	FOR-O-REV
OMPBD7-34BE127	HAND-AUTO	OMPBD7-34BE283	HAND-O-AUTO

All models come complete with one operator, one tool-less latch and one contact block, up to 6 contact blocks can be used per operator.

22 mm PILOT DEVICES

HEAVY-DUTY/OIL TIGHT PUSHBUTTONS AND SELECTOR SWITCHES OMPBD7 SERIES



Front-of-Panel (Operators) ¹		
DESCRIPTION	PLASTIC (OMPBD7P)	METAL (OMPBD7M)
MECHANICAL RATINGS		
Vibration (assembled to panel)	[G] Tested at 10 ...2000 Hz, 1.52 mm displacement (peak-to-peak) max/10 G max for 3 hr duration, no damage	
Shock	[G] Tested at 1/2 cycle sine wave for 11 ms; no damage at 100 G	
Degree of Protection ²	UL Type 3/3R/4/4X/12/13 (IP65/66)	UL Type 3/3R/4/12/13 (IP65/66)
Mechanical Durability per EN 60947-5-1 (Annex C)	10,000,000 Cycles Momentary push buttons, momentary mushroom 1,000,000 Cycles Multi-function, Selector Switch, Key Selector Switch, 500,000 Cycles Selector Jog Non-illuminated Push-Pull E-Stop 300,000 Cycles Twist-to-Release E-Stop, Illuminated Push-Pull E-Stop, Maintained Push Buttons, selector switches 100,000 Cycles Potentiometer, Toggle Switch	
Operating Forces (typical with one contact block)	[N] Flush/extended = 5N; E-stop = 36N; Mushroom = 9N	
Operating Torque (typical application with one contact block)	[N·m] Selector switch = 0.25 N·m (2.2 lb-in.)	
Mounting Torque	[N·m] 1.7 N·m (15 lb-in)	4.4 N·m (40 lb-in)
MECHANICAL RATINGS		
Temperature Range (operating) ³	[°C] -25 to 70°C (-13 to 158°F)	
Temperature range (short-term storage)	[°C] -40 to 85°C (-40 to 185°F)	
Humidity	[%] 50 to 95% RH from 25 to 60°C (77 to 140°F) per: Procedure IV of MIL-STD-810C, Method 507.1 cycling test	

Notes:

1 Performance data given in this publication is provided only as a guide for the user in determining suitability and do not constitute a performance warranty of any kind. Such data may represent the results of accelerated testing at elevated stress levels, and the user is responsible for correlating the data to actual application requirements. ALL WARRANTIES AS TO ACTUAL PERFORMANCE, WHETHER EXPRESS OR IMPLIED, ARE EXPRESSLY DISCLAIMED.

2 Momentary mushroom operators are IP65, multi-function operators are not Type 13 rated. Plastic operators with keys are not Type 4X rated.

3 Operating temperatures below 0°C (32°F) are based on the absence of freezing moisture and liquids, UL recognized to 55°C (131°F) incandescent module, max 40°C (104°F).

Back-of-Panel Components ¹				
DESCRIPTION	PLASTIC (OMPBD7P)		METAL (OMPBD7M)	
ELECTRICAL RATINGS				
Standard Contact Block Ratings	A600, Q600, 600 Vac, AC15, DC 13 to EN 60947-5-1 and UL 508, 17V, 5 mA min			
Low Voltage Contact Block Ratings ⁴	5V, 1mA DC min. C300, R150, AC 15, DC 13 to EN 60947-5-1 and UL 508			
LED Module Ratings	Nominal Voltage	Range	Current Draw	Frequency
	24 Vac	0 to 29 Vac	31 mA	50/60 Hz
	24 Vac	10 to 30 Vac	24 mA	DC
	120 Vac	70 to 132 Vac	25 mA	50/60 Hz
	240 Vac	180 to 264 Vac	22 mA	50/60 Hz
Thermal Current	[A] 10 A max enclosed (40°C ambient) to UL 508, EN 60947-5-1			
Wire Capacity				
Screw terminal ⁵	[AWG]	#18 to 12 AWG (0.75 to 2.5 mm²) Max (2) #14 AWG or (1) #12 AWG		
Spring-clamp terminal	[AWG]	#18 to 14 AWG (0.75 to 1.5 mm²)		
Recommended Tightening Torque on Screw Terminals	[N]	0.7 to 0.9 N • m (6 to 8 lb-in)		
Insulation Voltage	[Ui]	Ui = 690 V (screw terminal) Ui = 300 V (screwless terminal)		
Dielectric Strength (Min)	[V]	2500 V for one minute		
External Short Circuit Protection				
Standard blocks	10 A type gL/gG cartridge fuse to EN 60269-2-1 or gN (Class J to UL 248-8 or Class C to UL 248-4)			
Low voltage Contact blocks	6 A type gL/gG cartridge fuse to EN 60269-2-1 or gN (Class J to UL 248-8 or Class C to UL 248-4)			
Electrical Shock Protection	Finger-safe conforming to IP2X			
MECHANICAL RATINGS				
Vibration (Assembled to Panel)	[G]	10 to 2000 Hz, 1.52 mm displacement (peak-to-peak) max/10 G max 6 hr		
Shock	[G]	Tested at 1/2 cycle sine wave for 11 ms and no damage at 100 G max		
Contact durability per EN 60947-5-1 (Annex C)	10,000,000 cycles			
Contact Operation	NO	Slow double make and break		
	NC	Slow double make and break - positive opening		
	NOEM	Double break/double make/early make		
	NCLB	Double break/double make, late break - positive opening		
	NCEB	Double break/double make, early break - positive opening		
Push Button Travel to Change Electrical State	NC and NOEM	1.5 mm (0.060 in)		
	NO and NCLB	2.5 mm (0.1 in)		
Operating Forces (Typical)	[N]	3.4 N: each single circuit contact block 5 to 6.5 N: each dual circuit contact block		

Notes:

¹ Performance data given in this publication is provided only as a guide for the user in determining suitability and do not constitute a performance warranty of any kind. Such data may represent the results of accelerated testing at elevated stress levels, and the user is responsible for correlating the data to actual application requirements. ALL WARRANTIES AS TO ACTUAL PERFORMANCE, WHETHER EXPRESS OR IMPLIED, ARE EXPRESSLY DISCLAIMED.

⁴ Low voltage contacts are recommended for applications below 17 V, 5 mA.

⁵ Wires less than #18 (0.75 mm²) may not hold in terminal securely.



UNITED STATES

www.omega.com

1-800-TC-OMEGA
Stamford, CT.

CANADA

www.omega.ca

Laval(Quebec)
1-800-TC-OMEGA

GERMANY

www.omega.de

Deckenpfronn, Germany
0800-8266342

UNITED KINGDOM

www.omega.co.uk

Manchester, England
0800-488-488

FRANCE

www.omega.fr

Guyancourt, France
088-466-342

CZECH REPUBLIC

www.omegaeng.cz

Karviná, Czech Republic
596-311-899

BENELUX

www.omega.nl

Amstelveen, NL
0800-099-33-44



More than 100,000 Products Available!

• Temperature

Calibrators, Connectors, General Test and Measurement Instruments, Glass Bulb Thermometers, Handheld Instruments for Temperature Measurement, Ice Point References, Indicating Labels, Crayons, Cements and Lacquers, Infrared Temperature Measurement Instruments, Recorders Relative Humidity Measurement Instruments, RTD Probes, Elements and Assemblies, Temperature & Process Meters, Timers and Counters, Temperature and Process Controllers and Power Switching Devices, Thermistor Elements, Probes and Assemblies, Thermocouples Thermowells and Head and Well Assemblies, Transmitters, Wire

• Flow and Level

Air Velocity Indicators, Doppler Flowmeters, Level Measurement, Magnetic Flowmeters, Mass Flowmeters, Pitot Tubes, Pumps, Rotameters, Turbine and Paddle Wheel Flowmeters, Ultrasonic Flowmeters, Valves, Variable Area Flowmeters, Vortex Shedding Flowmeters

• pH and Conductivity

Conductivity Instrumentation, Dissolved Oxygen Instrumentation, Environmental Instrumentation, pH Electrodes and Instruments, Water and Soil Analysis Instrumentation

• Data Acquisition

Auto-Dialers and Alarm Monitoring Systems, Communication Products and Converters, Data Acquisition and Analysis Software, Data Loggers Plug-in Cards, Signal Conditioners, USB, RS232, RS485 and Parallel Port Data Acquisition Systems, Wireless Transmitters and Receivers

• Pressure, Strain and Force

Displacement Transducers, Dynamic Measurement Force Sensors, Instrumentation for Pressure and Strain Measurements, Load Cells, Pressure Gauges, Pressure Reference Section, Pressure Switches, Pressure Transducers, Proximity Transducers, Regulators, Strain Gages, Torque Transducers, Valves

• Heaters

Band Heaters, Cartridge Heaters, Circulation Heaters, Comfort Heaters, Controllers, Meters and Switching Devices, Flexible Heaters, General Test and Measurement Instruments, Heater Hook-up Wire, Heating Cable Systems, Immersion Heaters, Process Air and Duct, Heaters, Radiant Heaters, Strip Heaters, Tubular Heaters