

# 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

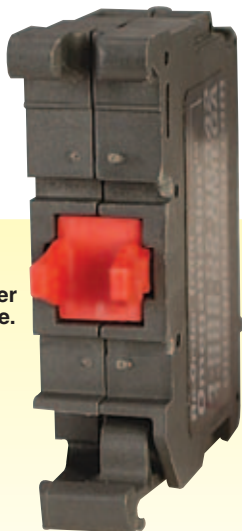
Most OMPBD7 operators have a mechanical of ten million operations... five million contact blocks. Electrical life ranges from 500,000 cycles at 3 A to ten million at 0.1 A. The OMPBD7 line is also electronics compatible with self cleaning contacts.

#### 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,



Red = normally closed.

OMPBD7-X10,

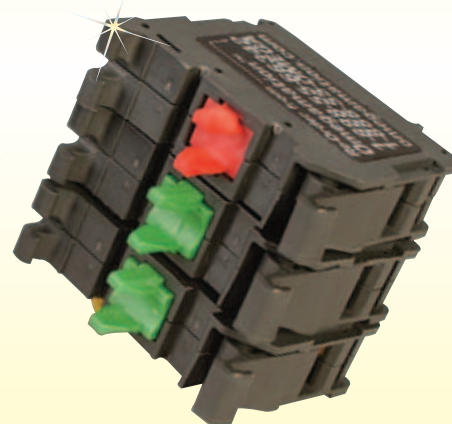


Green = normally open.



Rear view.

All shown larger than actual size.



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—

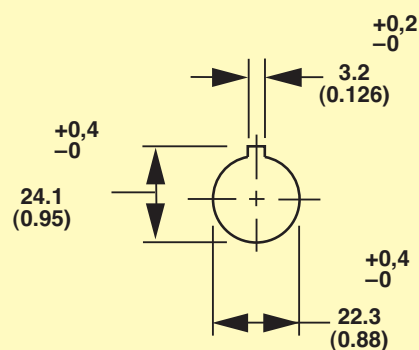
By doubling the available paths for current to pass through the contacts, the standard H-bridge design provides a cleaner current flow. Gold plated contacts quadruple the current paths for increased contact reliability in low voltage applications.

**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 PUSHBUTTONS

## NON-ILLUMINATED PUSHBUTTONS AND E-STOPS

**OMPBD7-NL  
Series  
Start at**



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

All models shown  
larger than actual size.



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



OMPBD7M-MM43PX01,  
metal pushbutton, 40 mm  
mushroom, green, momentary  
operation with one NC contact.



OMPBD7P-MT64PX10,  
plastic pushbutton, 60 mm  
mushroom, red, maintained  
operation with one NO contact.

### To Order *(Specify Model Number)*

### MOST POPULAR MODELS HIGHLIGHTED!

NON-ILLUMINATED PUSHBUTTONS—COMPLETE WITH LATCH AND ONE CONTACT BLOCK					
METAL OPERATOR MODEL NO.	PLASTIC OPERATOR MODEL NO.		BUTTON STYLE	OPERATION	CONTACT
OMPBD7M-E(*)PX01	OMPBD7P-E(*)PX01		Extended	Momentary	1 NC
OMPBD7M-E(*)PX10	OMPBD7P-E(*)PX10		Extended	Momentary	1 NO
OMPBD7M-F(*)PX01	OMPBD7P-F(*)PX01		Flush	Momentary	1 NC
OMPBD7M-F(*)PX10	OMPBD7P-F(*)PX10		Flush	Momentary	1 NO
OMPBD7M-FA(*)PX01	OMPBD7P-FA(*)PX01		Flush	Maintained	1 NC
OMPBD7M-FA(*)PX10E	OMPBD7P-FA(*)PX10E		Flush	Maintained	1 NOEM
OMPBD7M-MM4(*)PX01	OMPBD7P-MM4(*)PX01		40 mm mushroom	Momentary	1 NC
OMPBD7M-MM4(*)PX10	OMPBD7P-MM4(*)PX10		40 mm mushroom	Momentary	1 NO
OMPBD7M-MM6(*)PX01	OMPBD7P-MM6(*)PX01		60 mm mushroom	Momentary	1 NC
OMPBD7M-MM6(*)PX10	OMPBD7P-MM6(*)PX10		60 mm mushroom	Momentary	1 NO
OMPBD7M-MP4(*)PX01	OMPBD7P-MP4(*)PX01		40 mm push-pull	Maintained	1 NC
OMPBD7M-MP4(*)PX10	OMPBD7P-MP4(*)PX10		40 mm push-pull	Maintained	1 NO

\* Insert number for color selection, 2 = black, 3 = green, 4 = red, 5 = yellow, 6 = blue, 9 = no caps for inscription caps on flush models only.

## To Order *(Specify Model Number)*

## MOST POPULAR MODELS HIGHLIGHTED!

TWIST-TO-RELEASE E-STOP PUSHBUTTONS—COMPLETE WITH LATCH AND ONE CONTACT BLOCK					
METAL OPERATOR MODEL NO.	PLASTIC OPERATOR MODEL NO.	BUTTON STYLE	OPERATION	CONTACT	
OMPBD7M-MT34PX01	OMPBD7P-MT34PX01	30 mm mushroom	Maintained	1 NC	
OMPBD7M-MT34PX10	OMPBD7P-MT34PX10	30 mm mushroom	Maintained	1 NO	
OMPBD7M-MT34PX01S	OMPBD7P-MT34PX01S	30 mm mushroom	Maintained	1 GCB	
OMPBD7M-MT44PX01	OMPBD7P-MT44PX01	40 mm mushroom	Maintained	1 NC	
OMPBD7M-MT44PX10	OMPBD7P-MT44PX10	40 mm mushroom	Maintained	1 NO	
OMPBD7M-MT44PX01S	OMPBD7P-MT44PX01S	40 mm mushroom	Maintained	1 GCB	
OMPBD7M-MT64PX01	OMPBD7P-MT64PX01	60 mm mushroom	Maintained	1 NC	
OMPBD7M-MT64PX10	OMPBD7P-MT64PX10	60 mm mushroom	Maintained	1 NO	
OMPBD7M-MT64PX01S	OMPBD7P-MT64PX01S	60 mm mushroom	Maintained	1 GCB	
OMPBD7M-MK44PX01	OMPBD7P-MK44PX01	Keyed 40 mm	Maintained	1 NC	
OMPBD7M-MK44PX10	OMPBD7P-MK44PX10	Keyed 40 mm	Maintained	1 NO	
OMPBD7M-MK44PX01S	OMPBD7P-MK44PX01S	Keyed 40 mm	Maintained	1 GCB	

Come complete with one operator, one tool-less latch and one contact block.  
Up to 6 contact blocks can be used per operator.

## ACCESSORIES

MODEL NO.		DESCRIPTION		
OMPBD7-N2		22.5 mm (0.89") hole plug		
OMPBD7-AW2		Mounting ring wrench for plastic or metal operators.		
OMPBD7-AKR3825		Additional set of keys		
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-X01S		GCB—Guardian Contact Block for E-stops		
INSCRIPTION CAPS FOR NO CAP PUSHBUTTONS				
MODEL NO.		DESCRIPTION		
OMPBD7-AF301		Green “START” cap for flush momentary pushbuttons		
OMPBD7-AF306		Green “I” cap for flush momentary pushbuttons		
OMPBD7-AF402		Red “O” cap for flush momentary pushbuttons		
OMPBD7-AF405		Red “STOP” cap for flush momentary pushbuttons		
OMPBD7-AF3CE166		Green “ON” cap for flush momentary pushbuttons		
OMPBD7-AE402		Red “O” cap for flush momentary pushbuttons		
OMPBD7-AE405		Red “STOP” cap for flush momentary pushbuttons		
LEGENDS—BLACK WITH WHITE LETTERS				
MODEL NO.		LEGEND	MODEL NO.	LEGEND
OMPBD7-34BE101		AUTO	OMPBD7-34BE163	OFF
OMPBD7-34BE107		CLOSE	OMPBD7-34BE166	ON
OMPBD7-34BE110		DOWN	OMPBD7-34BE170	OPEN
OMPBD7-34BE113		FAULT	OMPBD7-34BE188	REVERSE
OMPBD7-34BE114		FAST	OMPBD7-34BE193	RUN
OMPBD7-34BE120		FORWARD	OMPBD7-34BE201	SLOW
OMPBD7-34BE126		HAND	OMPBD7-34BE208	START
OMPBD7-34BE129		HIGH	OMPBD7-34BE212	STOP
OMPBD7-34BE148		LOW	OMPBD7-34BE223	UP





# SPECIFICATIONS FOR SERIES OMPBD7— HEAVY DUTY/OIL TIGHT



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

**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 <sup>1</sup>				
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, 5mA min			
Low Voltage Contact Block Ratings <sup>4</sup>	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...29 Vac	31 mA	50/60 Hz
	24 Vdc	10...30 Vdc	24 mA	DC
	120 Vac	70...132 Vac	25 mA	50/60 Hz
	240 Vac	180...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 <sup>5</sup>	[AWG]	#18...12 AWG (0.75...2.5 mm²) Max (2) #14 AWG or (1) #12 AWG		
Spring-clamp terminal	[AWG]	#18...14 AWG (0.75...1.5 mm²)		
Recommended Tightening Torque on Screw Terminals	[N]	0.7...0.9 N • m (6...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...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 OZ peration	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...6.5 N: each dual circuit contact block		

**Notes:**

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<sup>4</sup> Low voltage contacts are recommended for applications below 17 V, 5 mA.

<sup>5</sup> Wires less than #18 (0.75 mm<sup>2</sup>) may not hold in terminal securely.



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