

Control & Signalling Units ϕ 22.5mm Metal

Product Characteristics

General Characteristics

Products	Push Buttons, Selector Switches, Key Selector Switches, Latching Mushroom Head Push Buttons, Pilot Lights & illuminated Push Buttons
Reference Standard	IEC 60947-5-1, EN 60947-5-1, IEC 337-1, UL 508, CSA C-22-2 n° 14
Approval	UL, cUL, CSA, CE
Protection Degree	IP 65 / IP 66 according to IEC 60947-1;
Pollution Degree	3
Temperature	-40°C ~ + 70°C (Storage) -25°C ~ + 70°C (Working)
Vibration Resistance	→60mm Mushroom Head Push Buttons: 8g, Other Push Buttons & Pilot Lights: 15g (40Hz<frequency<500 Hz) conforming to IEC 68-2-6
Shock Resistance	Push Buttons : 70g, Mushroom Head Push Buttons: 15g, Selector Switches : 200g conforming to IEC 68-2-27
Working Position	All working positions are allowed
Mechanical Life	Push Buttons & Selector Switches 1 million operations, Latching Emergency Mushroom Push Buttons 300,000 operations

Contact Elements Characteristics

Rated Thermal Current I_{th}	10A
Rated Insulation Voltage U_i	500V conforming to IEC 60947-1, UL 508 & CSA 22-2 n° 14
Insulation Category	Group C conforming to NF C 20-040, VDE 0110
Operating Force	Push Buttons – 1 'NO' = 10N, 1 'NC' = 8N Additional contacts – 'NO' = +5N, 'NC' = +3N
Dielectric Strength	2.5KV for 1 minute
Insulation Resistance	2M Ohm min (500 VDC)
Initial Contact Resistance	≤ 25 milli Ohm
Short Circuits Protection	10A 500V, Cartridge Fuse g1 or N conforming to IEC 337-1
Cabling/Terminal Capacity	1x0.5mm ²2x1.5mm ²
Contact Operation	Slow action, Positive Opening
Rated Power	Conforming to IEC 60947-5-1; utilization categories AC 15 & DC 13

DC Supply

Power broken in W

For 1 million operations

Voltage	24V	48V	120V
Inductive Load	65W	48W	40W

AC Ratings, Inductive – NEMA A600

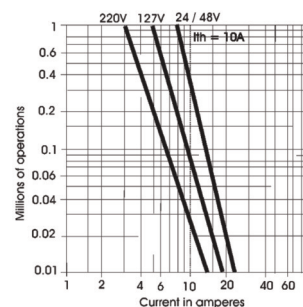
35% Power Factor

Volts	Make Amperes	VA	Break Amperes	VA	Continuous carrying Amperes	Resistive 75% Power factor Make, Break & continuous Amperes
120	60	7200	6	720	10	10
240	30	7200	3	720	10	10
480	15	7200	1.5	720	10	10
600	12	7200	1.2	720	10	10

Standard Contact Blocks

AC Supply (50/60Hz)

Inductive



DC Ratings, NEMA Type Q600

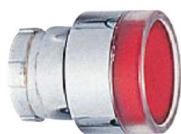
Inductive and resistive

Volts	Make & Break (Amp.)	Continuous (Amp.)
125	0.55	2.5
250	0.27	2.5
600	0.10	2.5



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Illuminated Push Buttons & Selector Switches
(Signalling Units with Chromium plated metal bezel)



PB-BW34



PB-BW14



PB-BW54



PB-BK124 /
PB-BK134



PB-BW44 /
PB-BW64

Operating Heads for Illuminated Push Buttons – IP65

Description	Application	Colour	Reference
Flush Push Button Spring Return	For Incandescent Bulbs	○ White	PB-BW31
		● Green	PB-BW33
		● Red	PB-BW34
		● Amber	PB-BW35
		● Blue	PB-BW36
		○ Clear	PB-BW37
Projecting Push Button Spring Return	For Incandescent Bulbs	○ White	PB-BW11
		● Green	PB-BW13
		● Red	PB-BW14
		● Amber	PB-BW15
		● Blue	PB-BW16
		○ Clear	PB-BW17
Flush Push Button Spring Return	For LED	○ White	PB-BWL31
		● Green	PB-BWL33
		● Red	PB-BWL34
		● Amber	PB-BWL35
		● Blue	PB-BWL36
		○ Clear	PB-BWL37
Projecting Push Button Spring Return	For LED	● Yellow	PB-BWL38
		○ White	PB-BWL11
		● Green	PB-BWL13
		● Red	PB-BWL14
		● Amber	PB-BWL15
		● Blue	PB-BWL16
Booted Type Flush Push Button Illuminated Type	For Incandescent Bulbs	○ Clear	PB-BWL17
		● Yellow	PB-BWL18
		○ White	PB-BW51
		● Green	PB-BW53
		● Red	PB-BW54
		● Amber	PB-BW55
		● Blue	PB-BW56
		○ Clear	PB-BW57

Operating Heads for Illuminated Selector Switches – IP65

Description	Type	Colour	Reference
2 Position	Stay Put	● Green	PB-BK123
		● Red	PB-BK124
		● Amber	PB-BK125
3 Position	Stay Put	● Green	PB-BK133
		● Red	PB-BK134
		● Amber	PB-BK135

Operating Heads for Illuminated ϕ 40mm Mushroom Head Operator

Description	Type	Colour	Reference
2 Position Momentary		● Red	PB-BW44
		● Green	PB-BW43
2 Position Maintained		● Red	PB-BW64
		● Green	PB-BW63

Operating Heads with Black metal bezel (non-stock items)

To Order Add Suffix '7' to above e.g. PB-BW31 Becomes PB-BW317

- For legend plates refer page C-10 - For accessories refer page C-9 & C-10

- For contact assemblies refer page C-6

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Assemblies for Illuminated, Non-Illuminated type
Push Buttons & Selector Switches



PB-BZ101



PB-BE101



PB-BW06



PB-BWL7

Body assemblies with fixing collar & contact blocks (screw clamp terminal connections)

Description	Contact	Type	Reference
For Push Buttons, Selector and Key Switches	NO	Standard	PB-BZ101
	NC	Standard	PB-BZ102
	NO+NO	Standard	PB-BZ103
	NC+NC	Standard	PB-BZ104
	NO+NC	Standard	PB-BZ105

Additional / Replacement Contact Blocks

Description	Contact	Type	Reference
For making up Body Assemblies with 3, 4, 5 or Maximum of 6 Contact Blocks or Replacing 1 st OR 2 nd Contact	NO	Standard	PB-BE101
	NC	Standard	PB-BE102

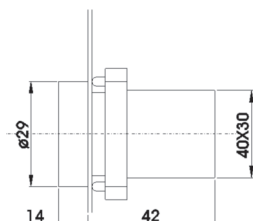
Body assemblies for illuminated Push Buttons & Selectors with or w/o Contacts

Description	Supply Voltage	Contact	Colour	Reference
Direct BA 9s Filament Bulb* Supplied	12V / 24V / 48V / 110V / 130V (AC)(DC)○	NO + NC		PB-BW065■
		W/O Contact Blocks		PB-BW06■
Through Resistor BA 9s, 130V Filament Bulb Supplied	220V (AC)(DC)	NO + NC		PB-BW075
		W/O Contact Blocks		PB-BW07
Through Resistor & Diode BA 9s 130V Bulb Supplied	240V (AC)	NO + NC		PB-BWD075
		W/O Contact Blocks		PB-BWD07
Direct BA 9s Neon Bulb Supplied	220V / 380V / 415V (AC)(DC)	NO + NC	● Green	PB-BWN0635■
			■ Natural	PB-BWN0655■
		W/O Contact Blocks	● Green	PB-BWN063■
			■ Natural	PB-BWN065■
With Integral Circuit & Cluster LED	12V, 24V, 48V (AC)(DC) 110VAC, 110VDC 240V (AC) 220V (DC)	NO + NC	○ White	PB-BWL715■
			● Green	PB-BWL735■
			● Red	PB-BWL745■
			● Amber	PB-BWL755■
			● Blue	PB-BWL765■
			Clear	PB-BWL775■
			● Yellow	PB-BWL785■
		W/O Contact Blocks	○ White	PB-BWL71■
			● Green	PB-BWL73■
			● Red	PB-BWL74■
			● Amber	PB-BWL75■
			● Blue	PB-BWL76■
			Clear	PB-BWL77■
			● Yellow	PB-BWL78■

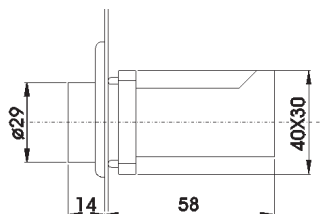
- ○ Body assemblies (suitable for bulb 2.6W max.) upto 230V max. available without bulb
- * Bulb rating 12V to 130V, 2.6W (max.);
- For accessories refer page C-9 & C-10
- ■ Please mention voltage while ordering

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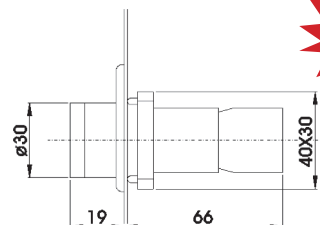
Dimensions / Complete Units' Reference



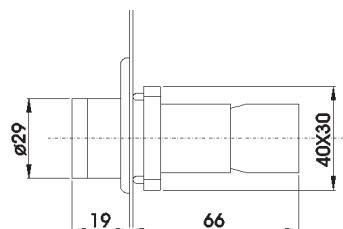
PB-BV0●+PB-BV6
PB-BV0●+PB-BVN6
PB-BV0●+PB-BV7
PB-BV0●+PB-BVD7
PB-BVL0●+PB-BVL7●



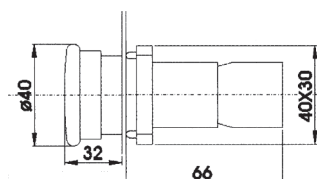
PB-BV0●+PB-BV3
PB-BV0●+PB-BV4



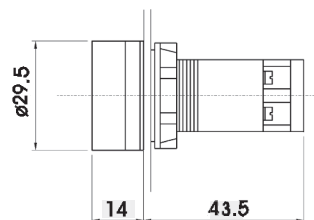
PB-BW5●+PB-BW06+PB-BE10❖
PB-BW5●+PB-BW07+PB-BE10❖
PB-BW5●+PB-BWD07+PB-BE10❖
PB-BW5●+PB-BW06+PB-BE10❖



PB-BW3●+PB-BW06+PB-BE10❖
PB-BW3●+PB-BW07+PB-BE10❖
PB-BW3●+PB-BWD07+PB-BE10❖
PB-BWL3●+PB-BWN06●+PB-BE10❖
PB-BWL3●+PB-BWL7●+PB-BE10❖



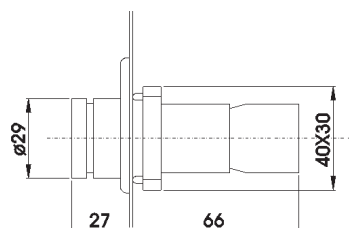
PB-BW4●+PB-BW06+PB-BE10❖
PB-BW4●+PB-BW07+PB-BE10❖
PB-BW4●+PB-BWD07+PB-BE10❖
PB-BW4●+PB-BWN06●+PB-BE10❖
PB-BW4●+PB-BWL7●+PB-BE10❖



PB-B7-IVL-7●

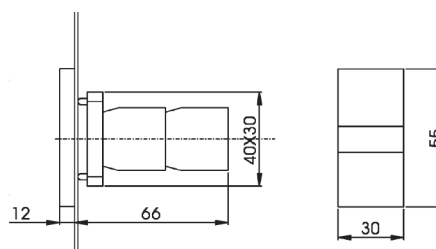
PB-BW1●+PB-BW06+PB-BE10❖
PB-BW1●+PB-BW07+PB-BE10❖
PB-BW1●+PB-BWD07+PB-BE10❖
PB-BWL1●+PB-BWN06●+PB-BE10❖
PB-BWL1●+PB-BWL7●+PB-BE10❖

PB-BW6●+PB-BW06+PB-BE10❖
PB-BW6●+PB-BW07+PB-BE10❖
PB-BW6●+PB-BWD07+PB-BE10❖
PB-BW6●+PB-BWN06●+PB-BE10❖
PB-BW6●+PB-BWL7●+PB-BE10❖



PB-BK12●+PB-BW06+PB-BE10❖
PB-BK12●+PB-BW07+PB-BE10❖
PB-BK12●+PB-BWD07+PB-BE10❖

PB-BK13●+PB-BW06+PB-BE10❖
PB-BK13●+PB-BW07+PB-BE10❖
PB-BK13●+PB-BWD07+PB-BE10❖



PB-BW9+PB-BW06+PB-BE10❖
PB-BW9+PB-BW07+PB-BE10❖
PB-BW9+PB-BWD07+PB-BE10❖
PB-BW9+PB-BWN065+PB-BE10❖
PB-BW9+PB-BWL75+PB-BE10❖

- Replace '❖' with codes for type of contacts (See page C-XX) & '●' with colour codes (see page C-4 & C-5)
- For illuminated push button heads, illuminated selector switches, refer page C-5
- For pilot lamp head, refer page C-8 & for double headed push button with pilot lamp, refer page C-6