

# Harmony products

## Main

|                               |                                      |
|-------------------------------|--------------------------------------|
| Commercial Status             | Commercialised                       |
| Range of product              | Harmony XB4                          |
| Product or component type     | Head for illuminated selector switch |
| Product compatibility         | Integral LED                         |
| Device short name             | ZB4                                  |
| Bezel material                | Chromium plated metal                |
| Mounting diameter             | 22 mm                                |
| Sale per indivisible quantity | 1                                    |
| Shape of signaling unit head  | Round                                |
| Type of operator              | Spring return to centre              |
| Operator profile              | White standard handle                |
| Operator position information | 3 positions +/- 45°                  |

## Complementary

|                                    |  |
|------------------------------------|--|
| CAD overall width                  | 29 mm  |
| CAD overall height                 | 29 mm  |
| CAD overall depth                  | 43 mm  |
| Product weight                     | 0.036 kg   |
| Resistance to high pressure washer | 7000000 Pa at 55 °C, distance: 0.1 m   |
| Mechanical durability              | 500000 cycles  |
| Electrical composition code        | M4 for <= 4 contacts using single and double blocks in front mounting with integral LED<br>M10 for <= 2 contacts using single blocks in front mounting with integral LED<br>M6 for <= 2 contacts using single blocks in front mounting with integral LED and transformer<br>M3 for <= 4 contacts using single blocks in front mounting with integral LED |

## Environment

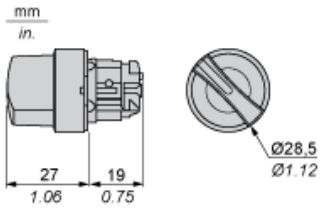
|  |   |
|--|---|
| Protective treatment                       | TH  |
| Ambient air temperature for storage        | -40...70 °C   |
| Ambient air temperature for operation      | -25...70 °C   |
| Class of protection against electric shock | Class I conforming to IEC 60536   |
| IP degree of protection                    | IP69K conforming to IEC 60529   |
| NEMA degree of protection                  | NEMA 4X<br>NEMA 13  |
| IK degree of protection                    | IK06 conforming to IEC 50102  |
| Standards                                  | EN/IEC 60947-1<br>EN/IEC 60947-5-1<br>EN/IEC 60947-5-4<br>EN/IEC 60947-5-5<br>JIS C 4520<br>UL 508<br>CSA C22.2 No 14 |
| Product certifications                     | BV<br>CSA<br>DNV<br>GL<br>LROS (Lloyds register of shipping)<br>RINA<br>UL listed                                     |

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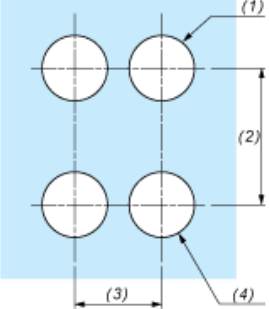
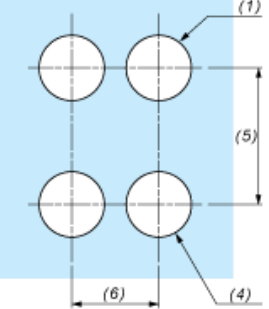
|                      |  |
|----------------------|--|
| Vibration resistance | 5 gn (f = 2...500 Hz) conforming to IEC 60068-2-6  |
| Shock resistance     | 50 gn for 11 ms half sine wave acceleration conforming to IEC 60068-2-27<br>30 gn for 18 ms half sine wave acceleration conforming to IEC 60068-2-27 |

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Dimensions



Panel Cut-out for Pushbuttons, Switches and Pilot Lights (Finished Holes, Ready for Installation)

| Connection by Screw Clamp Terminals or Plug-in Connectors or on Printed Circuit Board   | Connection by Faston Connectors  |
|---|--|
|    |  |
| <p>(1) Diameter on finished panel or support<br/>                 (2) 40 mm min. / 1.57 in. min.<br/>                 (3) 30 mm min. / 1.18 in. min.<br/>                 (4) <math>\varnothing 22.5 \text{ mm} / 0.89 \text{ in.}</math> recommended (<math>\varnothing 22.3 \text{ mm}_0^{+0.4} / 0.88 \text{ in.}_0^{+0.016}</math>)<br/>                 (5) 45 mm min. / 1.78 in. min.<br/>                 (6) 32 mm min. / 1.26 in. min.</p> |  |

Pushbuttons, Switches and Pilot Lights for Printed Circuit Board Connection

Panel Cut-outs (Viewed from Installer's Side)



- A: 30 mm min. / 1.18 in. min.  
 B: 40 mm min. / 1.57 in. min.

## Printed Circuit Board Cut-outs (Viewed from Electrical Block Side)

Dimensions in mm



A: 30 mm min.

B: 40 mm min.

Dimensions in in.



A: 1.18 in. min.

B: 1.57 in. min.

## General Tolerances of the Panel and Printed Circuit Board

The cumulative tolerance must not exceed 0.3 mm / 0.012 in:  $T1 + T2 = 0.3 \text{ mm max.}$

## Installation Precautions

- Minimum thickness of circuit board: 1.6 mm / 0.06 in.
- Cut-out diameter: 22.4 mm  $\pm$  0.1 / 0.88 in.  $\pm$  0.004
- Orientation of body/fixing collar ZB4 BZ009:  $\pm 2^\circ 30'$  (excluding cut-outs marked a and b).
- Tightening torque of screws ZBZ 006: 0.6 N.m (5.3 lbf.in) max.
- Allow for one ZB4 BZ079 fixing collar/pillar and its fixing screws:
  - every 90 mm / 3.54 in. horizontally (X), and 120 mm / 4.72 in. vertically (Y).
  - with each selector switch head (ZB4 BD•, ZB4 BJ•, ZB4 BG•).

The fixing centers marked a and b are diagonally opposed and must align with those marked 4 and 5.



- (1) Panel  
(2) Printed circuit board

### Mounting of Adapter (Socket) ZBZ 01•

- 1 2 elongated holes for ZBZ 006 screw access
- 2 1 hole  $\varnothing$  2.4 mm  $\pm$  0.05 / 0.09 in.  $\pm$  0.002 for centring adapter ZBZ 01•
- 3 8  $\times$   $\varnothing$  1.2 mm / 0.05 in. holes
- 4 1 hole  $\varnothing$  2.9 mm  $\pm$  0.05 / 0.11 in.  $\pm$  0.002, for aligning the printed circuit board (with cut-out marked a)
- 5 1 elongated hole for aligning the printed circuit board (with cut-out marked b)
- 6 4 holes  $\varnothing$  2.4 mm / 0.09 in. for clipping in adapter ZBZ 01•

Dimensions An + 18.1 relate to the  $\varnothing$  2.4 mm  $\pm$  0.05 / 0.09 in.  $\pm$  0.002 holes for centring adapter ZBZ 01•.

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Electrical Composition Corresponding to Code M3

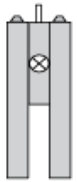
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Electrical Composition Corresponding to Code M4

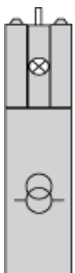
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Electrical Composition Corresponding to Codes M6 and P2

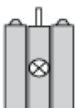
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Electrical Composition Corresponding to Codes M5, M10, MF1, MR1 and MF2

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Legend

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Single contact



Double contact



Light block







Possible location



Sequence of Contacts Fitted to 3-position Selector Switch Body






Position 315°



|          |   |   |        |  |   |
|----------|---|---|--------|--|---|
| Push     | Position  | Top   |        |  |  |
| Bottom   |  |  |        |  |   |
| Location |   | Left  | Right  |  |   |
| State    |   | 1   | 0      |  |   |
| Contacts | N/O   |   | closed | open   |   |
| N/C      |   | open  | closed |  |   |

Position 0°







|          |   |   |   |   |   |
|----------|---|---|---|---|---|
| Push     | Position  | Top   |  |  |  |
| Bottom   |  |  |   |   |   |
| Location |   | Left  | Right   |   |   |
| State    |   | 0   | 0   |   |   |



|          |     |        |        |
|----------|-----|--------|--------|
| Contacts | N/O | open   | open   |
| N/C      |     | closed | closed |

Position 45°



|          |   |   |   |   |  |
|----------|---|---|---|---|--|
| Push     | Position  | Top   |  |  |  |
| Bottom   |  |  |   |   |  |
| Location |   | Left  | Right   |   |  |
| State    |   | 0   | 1   |   |  |
| Contacts | N/O   | open  | closed  |   |  |
| N/C      |   | closed  | open  |   |  |