

# Product data sheet

Specifications



Harmony XB5, Key switch selector head, plastic, black, Ø22, key 455, 3 positions, stay put

ZB5AG3

## Main

|                               |                              |
|-------------------------------|------------------------------|
| Range of product              | Harmony XB5                  |
| Product or component type     | Head for key selector switch |
| Device short name             | ZB5                          |
| Bezel material                | Dark grey plastic            |
| Mounting diameter             | 22 mm                        |
| Head type                     | Standard                     |
| Sale per indivisible quantity | 1                            |
| Shape of signaling unit head  | Round                        |
| Type of operator              | stay put                     |
| Operator profile              | Black key switch             |
| Operator position information | 3 positions +/- 45°          |
| Type of keylock               | Key 455                      |
| Key withdrawal position       | Center                       |

## Complementary

|                       |                                            |
|-----------------------|--------------------------------------------|
| CAD overall width     | 29 mm                                      |
| CAD overall height    | 29 mm                                      |
| CAD overall depth     | 72 mm                                      |
| Net weight            | 0.057 kg                                   |
| Mechanical durability | 1000000 cycles                             |
| Station name          | XALD 1...5 cut-outs<br>XALK 2...5 cut-outs |

|                             |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             |
|-----------------------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Electrical composition code | C4 for <6 contacts using single and double blocks in front mounting<br>C5 for <5 contacts using single blocks in front mounting<br>C6 for <5 contacts using single and double blocks in front mounting<br>C7 for <4 contacts using single blocks in front mounting<br>C8 for <4 contacts using single and double blocks in front mounting<br>C11 for <3 contacts using single blocks in front mounting<br>C3 for <6 contacts using single blocks in front mounting<br>SF1 for <3 contacts using single blocks in front mounting<br>SR1 for <3 contacts using single blocks in rear mounting |
|-----------------------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|

|                     |               |
|---------------------|---------------|
| Device presentation | Basic element |
|---------------------|---------------|

Environment

|                                       |                                                                                                                                                                                |
|---------------------------------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Protective treatment                  | TH                                                                                                                                                                             |
| Ambient air temperature for storage   | -40...70 °C                                                                                                                                                                    |
| Ambient air temperature for operation | -40...70 °C                                                                                                                                                                    |
| Overvoltage category                  | Class II conforming to IEC 60536                                                                                                                                               |
| IP degree of protection               | IP66 conforming to IEC 60529<br>IP67<br>IP69<br>IP69K                                                                                                                          |
| NEMA degree of protection             | NEMA 13<br>NEMA 4X                                                                                                                                                             |
| Resistance to high pressure washer    | 7000000 Pa at 55 °C, distance : 0.1 m                                                                                                                                          |
| IK degree of protection               | IK06 conforming to IEC 50102                                                                                                                                                   |
| Standards                             | EN/IEC 60947-1<br>EN/IEC 60947-5-1<br>JIS C8201-5-1<br>CSA C22.2 No 14<br>EN/IEC 60947-5-4<br>UL 508<br>JIS C8201-1                                                            |
| Product certifications                | DNV<br>UL listed<br>GL<br>BV<br>CSA<br>LROS (Lloyds register of shipping)                                                                                                      |
| Vibration resistance                  | 5 gn (f= 2...500 Hz) conforming to IEC 60068-2-6                                                                                                                               |
| Shock resistance                      | 30 gn (duration = 18 ms) for half sine wave acceleration conforming to IEC 60068-2-27<br>50 gn (duration = 11 ms) for half sine wave acceleration conforming to IEC 60068-2-27 |

Packing Units

|                              |           |
|------------------------------|-----------|
| Unit Type of Package 1       | Db        |
| Number of Units in Package 1 | 1         |
| Package 1 Height             | 3.6 cm    |
| Package 1 Width              | 5.5 cm    |
| Package 1 Length             | 9 cm      |
| Package 1 Weight             | 68 g      |
| Unit Type of Package 2       | Doboz     |
| Number of Units in Package 2 | 150       |
| Package 2 Height             | 30 cm     |
| Package 2 Width              | 30 cm     |
| Package 2 Length             | 40 cm     |
| Package 2 Weight             | 10.582 kg |

Offer Sustainability

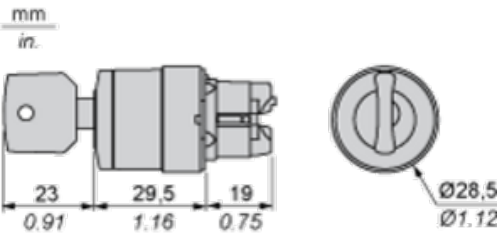
|                          |                                                                                                   |
|--------------------------|---------------------------------------------------------------------------------------------------|
| Sustainable offer status | Green Premium product                                                                             |
| REACH Regulation         | <a href="#">REACH Declaration</a>                                                                 |
| EU RoHS Directive        | Pro-active compliance (Product out of EU RoHS legal scope)<br><a href="#">EU RoHS Declaration</a> |
| Mercury free             | Yes                                                                                               |

|                            |                                                                                                                                                                                                                                                                                             |
|----------------------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| China RoHS Regulation      | <a href="#">China RoHS declaration</a>                                                                                                                                                                                                                                                      |
| RoHS exemption information | <a href="#">Yes</a>                                                                                                                                                                                                                                                                         |
| Environmental Disclosure   | <a href="#">Product Environmental Profile</a>                                                                                                                                                                                                                                               |
| Circularity Profile        | <a href="#">End of Life Information</a>                                                                                                                                                                                                                                                     |
| California proposition 65  | WARNING: This product can expose you to chemicals including: Lead and lead compounds, which is known to the State of California to cause cancer and birth defects or other reproductive harm. For more information go to <a href="http://www.P65Warnings.ca.gov">www.P65Warnings.ca.gov</a> |

## Contractual warranty

|          |           |
|----------|-----------|
| Warranty | 18 months |
|----------|-----------|

Dimensions



Product data sheet

ZB5AG3

Mounting and Clearance

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



- (1) Diameter on finished panel or support
- (2) For selector switches and Emergency stop buttons, use of an anti-rotation plate type ZB5AZ902 is recommended.
- (3)  $\varnothing 22.5$  mm recommended ( $\varnothing 22.3 \text{ }_0^{+0.4}$ ) /  $\varnothing 0.89$  in. recommended ( $\varnothing 0.88 \text{ in. }_0^{+0.016}$ )

| Connections                                   | a in mm | a in in. | b in mm | b in in. |
|-----------------------------------------------|---------|----------|---------|----------|
| By screw clamp terminals or plug-in connector | 40      | 1.57     | 30      | 1.18     |
| By Faston connectors                          | 45      | 1.77     | 32      | 1.26     |
| On printed circuit board                      | 30      | 1.18     | 30      | 1.18     |

Detail of Lug Recess



- (1) Diameter on finished panel or support
- (2) For selector switches and Emergency stop buttons, use of an anti-rotation plate type ZB5AZ902 is recommended.
- (3)  $\varnothing 22.5$  mm recommended ( $\varnothing 22.3 \text{ }_0^{+0.4}$ ) /  $\varnothing 0.89$  in. recommended ( $\varnothing 0.88 \text{ in. }_0^{+0.016}$ )

Pushbuttons, Switches and Pilot Lights for Printed Circuit Board Connection

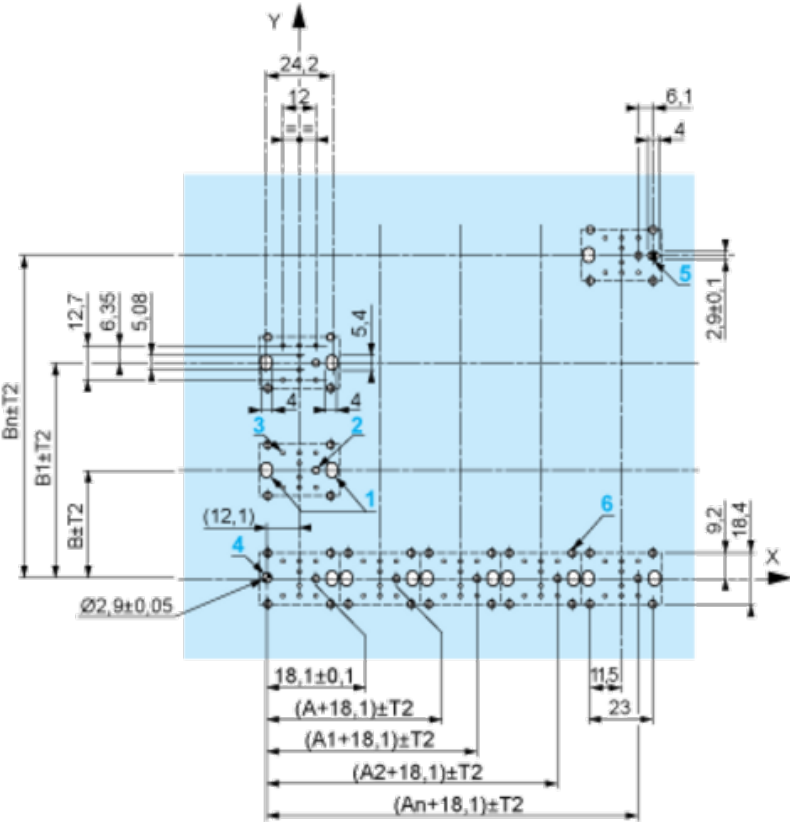
Panel Cut-outs (Viewed from Installer’s Side)



- 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.

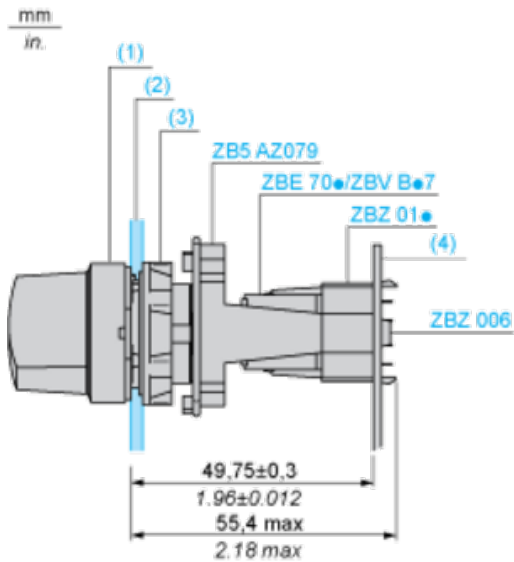
### General Tolerances of the Panel and Printed Circuit Board

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 ZB5AZ009:  $\pm 2^\circ 30'$  (excluding cut-outs marked **a** and **b**).
- Tightening torque of screws ZBZ006: 0.6 N.m (5.3 lbf.in) max.
- Allow for one ZB5AZ079 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 (ZB5AD•, ZB5AJ•, ZB5AG•).

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



- (1) Head ZB5AD•
- (2) Panel
- (2) Nut
- (4) Printed circuit board

**Mounting of Adapter (Socket) ZBZ01•**

- 1 2 elongated holes for ZBZ006 screw access
- 2 1 hole Ø 2.4 mm ± 0.05 / 0.09 in. ± 0.002 for centring adapter ZBZ01•
- 3 8 × Ø 1.2 mm / 0.05 in. holes
- 4 1 hole Ø 2.9 mm ± 0.05 / 0.11 in. ± 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 Ø 2.4 mm / 0.09 in. for clipping in adapter ZBZ01•

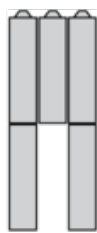
Dimensions An + 18.1 relate to the Ø 2.4 mm ± 0.05 / 0.09 in. ± 0.002 holes for centring adapter ZBZ01•.

Electrical Composition Corresponding to Code C4



Electrical Composition Corresponding to Code C5

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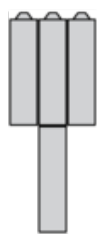
Electrical Composition Corresponding to Code C6

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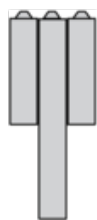
Electrical Composition Corresponding to Code C7

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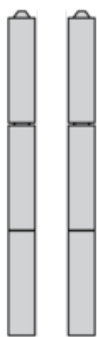
Electrical Composition Corresponding to Code C8

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Electrical Composition Corresponding to Code C3

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Electrical Composition Corresponding to Codes C9, C11, SF1 and SR1

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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   | Centre | Right  |
|          | State    |        | 1      | 1      | 0      |
| Contacts | N/O      |        | closed | closed | open   |
|          | N/C      |        | open   | open   | closed |

Position 0°



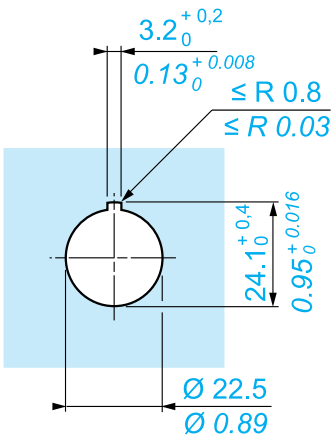
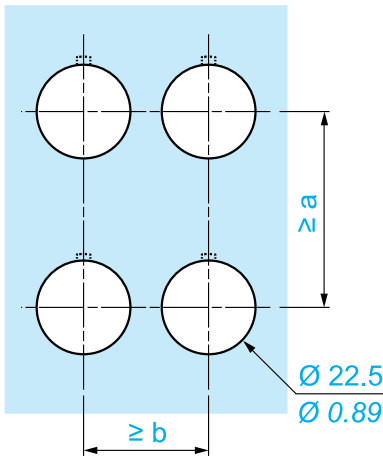
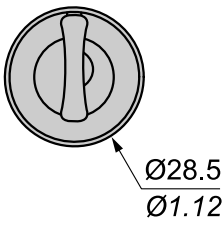
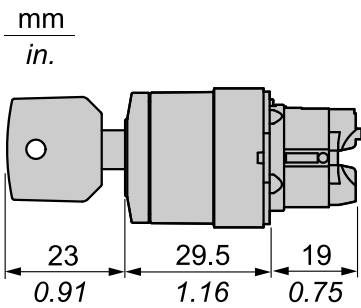
|          |          |        |        |        |        |
|----------|----------|--------|--------|--------|--------|
| Push     | Position | Top    |        |        |        |
|          |          | Bottom |        |        |        |
|          | Location |        | Left   | Centre | Right  |
|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

Position 45°



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

Dimensions



|           |           | a (mm) | a (in.) | b (mm) | b (in.) |
|-----------|-----------|--------|---------|--------|---------|
|           |           | 40     | 1.57    | 30     | 1.18    |
| ZBE.....  | ZBV.....  |        |         |        |         |
|           |           | 45     | 1.77    | 32     | 1.26    |
| ZBE.....3 | ZBV.....3 |        |         |        |         |
|           |           | 40     | 1.57    | 30     | 1.18    |
| ZBE.....4 | ZBV.....4 |        |         |        |         |
|           |           | 50     | 1.97    | 30     | 1.18    |
| ZBE.....5 | ZBV.....5 |        |         |        |         |
|           |           | 40     | 1.57    | 30     | 1.18    |
| ZBE.....9 | ZBV.....9 |        |         |        |         |
|           |           | 40     | 1.57    | 30     | 1.18    |
| ZBRT●     | ZBRV1     |        |         |        |         |

Recommended replacement(s)