Biometric switch

Harmony® XB5S

Catalog

April 2017

Schneider Electric

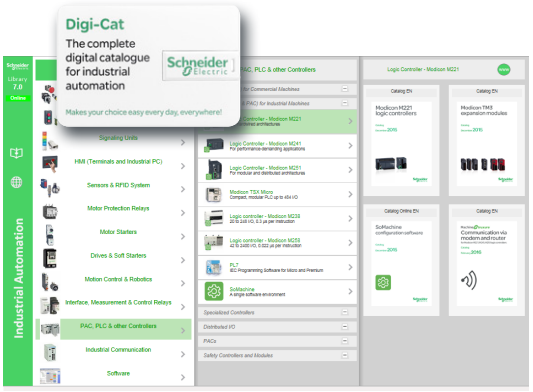
Quick access to Product information

Select your Catalogue, your Training

With just 3 clicks, you can reach the 7,000 pages of the Automation & Industrial Control catalogue, in both English and French.

- Digi-Cat is available on a USB key (for PC). To get your Digi-Cat, please contact your local center
- Download Digi-Cat from this address:

http://digi-cat.schneider-electric.com/download.html

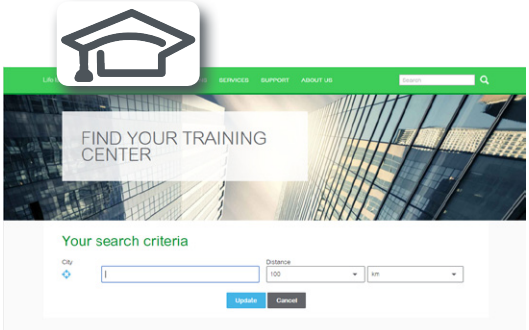


Find your training

- Find the right training for your needs
- Locate the training center with the selector tool, using this address:

http://www.schneider-electric.com/b2b/en/services/training/technical-training.jsp

then click on Find your training center



Life Is On Schneider Electric

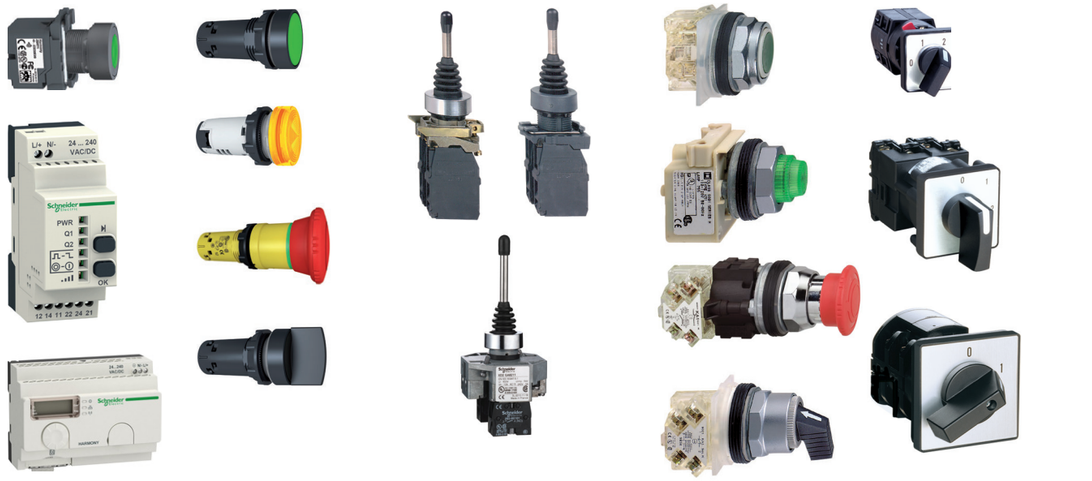
General contents

Harmony® XB5S Biometric switch

Control and signaling units

Type of products		Pilot lights	Pushbuttons, selector switches and pilot lights			Biometric switches
						
Description of range		■ LED pilot lights	■ Pushbuttons ■ Multiple-headed pushbuttons ■ Emergency Stop pushbuttons ■ Selector switches and key switches ■ Illuminated pushbuttons ■ Pilot lights			Fingerprint readers 24V ⎓ ■ Stand-alone biometric switches ■ Stand-alone USB biometric switches ■ USB biometric switches dedicated to Schneider HMI *(1)*
Features	Products	Monolithic, compact, low consumption	Complete units or sub-assemblies (body + head)			Monolithic
	Bezel	Double insulated	Double insulated *(3)*	Metal, chromium plated or black	Double insulated	Double insulated, dark grey
	Shape of head	Circular	Circular, square or rectangular	Circular	Circular or square	–
Drilling or cut-out for fixing		Ø 8 mm and Ø 12 mm/*0.315 in. and 0.472 in.*	Ø 16 mm/*0.630 in.*	Ø 22 mm/*0.866 in.*		
Degree of protection	Conforming to IEC 60529	IP 40 IP 65 with seal	IP 65	IP 66, IP 67, IP 69, and IP 69K		IP 65 (control button)
	Conforming to UL 508 and CSA C22-2 N° 14	–	Enclosure type 4, 4X and 13			Enclosure type 12
Cabling		Tags for 2.8 x 0.5 mm/*0.110 x 0.020 in.* connectors or threaded connector	Faston connectors Solder pins for printed circuit boards *(3)* Fast connector socket *(4)*	Spring clamp terminal connections Screw clamp terminal connections Faston connectors Connector with adapter for printed circuit board		Cable or connectors
Mounting	Panel thickness	1…8 mm/*0.039…0.315 in.*	1…6 mm/*0.039…0.236 in.*			
Type references		**XVLA**	**XB6, XB6E**	**XB4**	**XB5**	**XB5S**

(1) Compatible with Magelis iPC, STU, OT, GXO, GT (except GT1000 series), GK, GH, and GTO models.
(2) Wireless and batteryless pushbutton and receiver ready-paired at the factory.

Wireless and batteryless pushbuttons	Pushbuttons, selector switches and pilot lights	Joystick controllers	Pushbuttons, selector switches and pilot lights	Cam switches
				
■ Wireless and batteryless pushbuttons and rope pull switch ■ Configurable receivers ■ Access point ■ Relay-antenna ■ Mobile handy box or plastic boxes for wall mounting	■ Pushbuttons ■ Emergency Stop and Emergency switching off pushbuttons ■ Selector switches and key switches ■ Illuminated pushbuttons ■ Pilot lights	■ 2 or 4 direction ■ Stay put or spring return	■ Pushbuttons ■ Emergency Stop buttons ■ Selector switches and key switches ■ Illuminated pushbuttons ■ Pilot lights	■ Switches ■ Stepping switches ■ Reversing and changeover switches ■ Ammeter switches ■ Voltmeter switches ■ Reversing switches ■ Star-delta and reversing star-delta switches ■ Pole change switches
Ready-to-use packs *(2)* and "components" range	Monolithic	Complete units or sub-assemblies (body + head with lever)	Complete units or sub-assemblies (body + head)	Complete units or sub-assemblies (body + front panel+ head)
Metal, chromium plated or double insulated, black	Double insulated, dark grey (or white for pilot lights)	Metal, chromium plated / Double insulated, black	Metal, chromium plated or double insulated, black	
Transmitter with circular head	Circular	Circular	Hexagonal	Square
Ø 22 mm/*0.866 in.*			Ø 30 mm/*1.181 in.*	Ø 16 or Ø 22 mm/*0.630 or 0.866 in.*: series K10 Ø 22 mm/*0.866 in.* and multifixing: series K1/K2 4 holes, 48 or 68 centres: series K30…K150
IP 65	IP 65 (control buttons and pilot lights) IP 54 (Emergency switching off pushbuttons)	IP 65 / IP 66 / IP 65	IP 66	IP 65: series K10 IP 40, IP 65 with seal: series K1/K2 IP 40: series K30…K150
Enclosure type 12	Enclosure type 3 (pushbuttons and Emergency stop) and 4 (pilot lights)	Enclosure type 4, 4X and 13	Enclosure type 4 and 13 (9001K) Enclosure type 4, 4X, 13 (9001SK)	–
Wireless (transmitter) Through cable (receiver)	Screw and captive clamp terminal connections Faston clip connections (pilot lights)	Screw and captive clamp terminal connections		
1…6 mm/*0.039…0.236 in.*				0.5…6 mm/*0.020…0.236 in.* (depending on model)
XB5R, XB4R	**XB7**	**XD4PA** / **XD2GA** / **XD5PA**	**9001K, 9001SK**	**K10, K1, K2, K30, K50, K63, K115, K150**

(3) For Harmony XB6 only.
(4) For Harmony XB6E only.

Control and signaling units Ø 22
Harmony XB5S, plastic
Biometric switches for fingerprint recognition

Applications	Simple access control for indoor industrial restricted areas	■ Secure the control of automated lines and tool machines ■ Protect the start function of special vehicles	■ Identify and authorize the user for HMI operations ■ Trace the HMI operations of each user
Type of products	Stand-alone biometric switch	Stand-alone USB biometric switch	USB biometric switch dedicated to Schneider HMI *(1)*
			
Functions	■ 1 level of authorization ■ Authorizes user through fingerprint recognition	■ 1 level of authorization ■ Authorizes user through fingerprint recognition	■ Provides access to HMI pages based on the user profile ■ Several levels of authorization associated with HMI ■ Traceability of users and operations by HMI
Static Output	■ Bistable output, machine operation at 2 fixed states ■ Monostable output, machine operation at pulse control	■ Bistable output, machine operation at 2 fixed states ■ Monostable output, machine operation at pulse control	None
Power	24 V ≂	24 V ≂	24 V ≂
Connection	■ Pre-wired 3 wire cable (2 m/*6.56 ft* long) or ■ M12 connector	■ Pre-wired 3 wire cable (2 m/*6.56 ft* long) or ■ M12 connector	Pre-wired 2 wire cable (2 m/*6.56 ft* long)
Memory capacity	■ 200 records of fingerprints ■ 100 authorized users with each registering 2 fingerprints or 200 authorized users with each registering 1 fingerprint	■ 400 records of fingerprints ■ 200 authorized users with each registering 1 or 2 fingerprints	■ 400 records of fingerprints ■ 200 authorized users with each registering 2 fingerprints
Communication	No communication	Connects with a PC via the USB port for database management when required	Connects with a HMI via the USB port permanently
Database management software tools	None	With Harmony XB5S Soft *(2)* on a PC	With Vijeo Designer *(3)* and Harmony XB5S Soft *(2)*
User database update	Stand-alone as updates are done directly on the biometric switch	■ Should be connected to a PC ■ Download the new user database to the biometric switch from Harmony XB5S Soft application *(4)*	■ With Vijeo Designer in Run time on HMI *(4)* ■ With Vijeo Designer in Build time on PC *(4)*
Associated accessories	■ Translucent protective cover ■ Fixing nut ■ Legend plate	■ Translucent protective cover ■ Fixing nut ■ Legend plate ■ Female/Female USB extension cable with a female USB port of Ø 22 mm/0.*866 in.* on one end for panel mount	■ Translucent protective cover ■ Fixing nut ■ Legend plate
Type references	**XB5S1, XB5S2**	**XB5S3, XB5S4**	**XB5S5**

(1) Compatible with Magelis iPC, STU, OT, GXO, GT (except GT1000 series), GK, GH and GTO models .
(2) Compatible with all versions of Harmony XB5S Soft application. The XB5S Soft is a freeware application and can be downloaded from our website www.schneider-electric.com.
(3) Compatible with Vijeo Designer HMI editor software V6.1, Service pack 2.
(4) The user database cannot be uploaded from biometric switch to the PC.

Control and signaling units Ø 22
Harmony XB5S, plastic
Biometric switches

Stand-alone biometric switch (XB5S1/XB5S2)

Stand-alone USB biometric switch (XB5S3/XB5S4)

USB biometric switch dedicated to Schneider HMI (XB5S5)

Presentation

The biometric switches of the Harmony® XB5S range are designed to control and secure access to systems and machines by checking users' authorization through fingerprint recognition.

The following types of biometric switches are available:
- ■ Stand-alone biometric switches
- □ type XB5S1, with 2 fixed states (bistable)
- □ type XB5S2, with pulse control (monostable)
- ■ Stand-alone USB biometric switches
- □ type XB5S3, with 2 fixed states (bistable)
- □ type XB5S4, with pulse control (monostable)
- ■ USB biometric switches dedicated to Schneider HMI
- □ type XB5S5, connected permanently with HMI

The biometric switches are aimed at 2 categories:
- ■ Administrators, who decide and manage the list of users
- □ the only people who can record the fingerprints in the device memory
- ■ Users, who are authorized to use the biometric switch as a control unit
- □ at least 1 of their fingerprints should be recorded in the device memory
- □ access is granted when the finger is placed on the sensing screen

The USB switches communicate with the PC/HMI via the USB port to manage the user database. This database can be visualized, saved, and duplicated by PC/HMI with XB5S Soft application *(1) (2)*. The fingerprint records can also be erased in the absence of users.

The Schneider HMI *(3)* with Vijeo Designer software *(4)* enables the switches to authorize different access levels and trace HMI operations of each user.

The switch operates on 24 V ⎓ and provides protection against:
- □ Reverse polarity
- □ Overload and short-circuit (switching capacity ⩽ 200 mA)

Mounting

The product is of monolithic design (a single plastic housing) and is fixed by means of a nut (hand-tightened without need for tools) in a standard 22.5 mm/*0.886 in.* diameter hole. It can be installed on a flat, horizontal, or vertical surface.

A protective cover is available as an accessory to protect the active face of the sensing screen. This cover is fixed using a self-adhesive hinge.

A Female/Female USB extension cable makes it possible for the USB biometric switch to have the female USB port within a 22 mm/*0.866 in.* diameter hole on the control panel front.

Environment

- ■ Conformity to standards: UL, CSA, GOST, and CE.

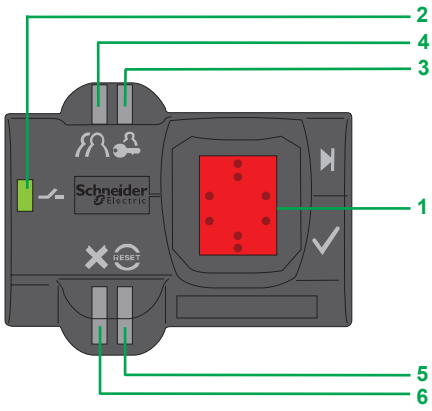
- ■ Product certifications:
- □ CSA C22-2 n° 14
- □ UL 508
- □ IEC 61000-6-2 and IEC 61000-6-4

- ■ Degree of protection conforming to standard IEC 60529:
- □ IP 65
- □ NEMA 12

- ■ Ambient air temperature:
- □ For storage: - 25 to + 70 °C/*-13 to + 158 °F*
- □ For operation: - 5 to + 50 °C/*23 to + 122 °F*

(1) Compatible with all versions of Harmony XB5S Soft application. The XB5S Soft is a freeware application and can be downloaded from our website www.schneider-electric.com.
(2) The user database cannot be uploaded from USB biometric switch to the PC.
(3) Compatible with Magelis iPC, STU, OT, GXO, GT (except GT1000 series), GK, GH, and GTO models .
(4) Compatible with VijeoDesigner HMI editor software V6.1, Service pack 2.

Control and signaling units Ø 22
Harmony XB5S, plastic
Biometric switches



Description

■ The stand-alone biometric switch (XB5S1/XB5S2) consists of a dark gray housing, with the following on its front face:
□ A sensing screen **1** that allows the registration and subsequent recognition of the registered fingerprints,
□ A green LED output state indicator **2** that illuminates when the output is activated (solid-state NO contact),
□ An orange LED **3**, indicating an administrator's "Registration" mode,
□ An orange LED **4**, indicating an operator's "Registration" mode,
□ A red "RESET" LED **5** which indicates, in "Delete" mode, that the administrator is deleting all or part of the memory,
□ A red LED **6** which flashes when the reader is presented with an "unrecognized" fingerprint or in the event of incorrect operation.
■ The stand-alone USB biometric switch (XB5S3/XB5S4) consists of a dark gray housing with a sensing screen **1** for fingerprints, a green LED **2** for indicating the output state, and a red LED **6** for the unrecognized fingerprint on its front face.
■ The USB biometric switch dedicated to Schneider HMI (XB5S5) consists of a dark gray housing with a sensing screen **1** for fingerprints on its front face.

PF121408B

XB5S1B2L2

PF121406B

XB5S3B2L2

PF121307A

XB5SFFUSBEXT

569117

ZB5SZ70

References

Complete units

Description	Connection	Reference	Weight kg/*lb*
Bistable biometric switch 24 V ≂ PNP output	By 2 m/*6.56 ft* cable	**XB5S1B2L2**	0.170/*0.375*
	By M12 connector	**XB5S1B2M12**	0.183/*0.403*
Monostable biometric switch 24 V ≂ PNP output	By 2 m/*6.56 ft* cable	**XB5S2B2L2**	0.170/*0.375*
	By M12 connector	**XB5S2B2M12**	0.183/*0.403*
Bistable USB biometric switch 24 V ≂ PNP output	By 2 m/*6.56 ft* cable	**XB5S3B2L2**	0.202/*0.445*
	By M12 connector	**XB5S3B2M12**	0.215/*0.474*
Monostable USB biometric switch 24 V ≂ PNP output	By 2 m/*6.56 ft* cable	**XB5S4B2L2**	0.202/*0.445*
	By M12 connector	**XB5S4B2M12**	0.215/*0.474*
USB biometric switch dedicated to Schneider HMI 24 V ≂	By 2 m/*6.56 ft* cable	**XB5S5B2L2**	0.202/*0.445*

Accessories

Description	Function	Reference	Weight kg/*lb*
Female/Female USB extension cable with Ø 22 mm/*0.866 in.* female USB port on one end	For connecting biometric switch to the PC via the Ø 22 mm/*0.866 in.* hole on the control panel front	**XB5SFFUSBEXT**	0.108/*0.238*
Protective cover, translucent and self-adhesive	Protection of sensing screen	**ZB5SZ70**	0.020/*0.044*
Fixing nut Ø 22 mm/*0.866 in.*	Spare part	**ZB5SZ71**	0.030/*0.066*
Legend plate, 27 x 8 mm/ *1.06 x 0.32 in.*, self-adhesive, blank, black background, for engraving	–	**ZBY0101T**	0.005/*0.011*

Product reference index

Schneider Electric Industries SAS

Head Office
35, rue Joseph Monier
F-92500 Rueil-Malmaison
France

www.schneider-electric.com/control

The information provided in this documentation contains general descriptions and/or technical characteristics of the performance of the products contained herein. This documentation is not intended as a substitute for and is not to be used for determining suitability or reliability of these products for specific user applications. It is the duty of any such user or integrator to perform the appropriate and complete risk analysis, evaluation and testing of the products with respect to the relevant specific application or use thereof. Neither Schneider Electric nor any of its affiliates or subsidiaries shall be responsible or liable for misuse of the information contained herein.

Design: Schneider Electric
Photos: Schneider Electric

April 2017- V2.0

DIA5ED2121215EN