Catalog | February 2021



Harmony XB5R plastic and XB4R metal

Wireless and batteryless pushbuttons







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- Harmony HMI Operator Terminals, IPC and EdgeBox
- Harmony Signaling Devices
- Harmony Electrical Relays
- Harmony Safety



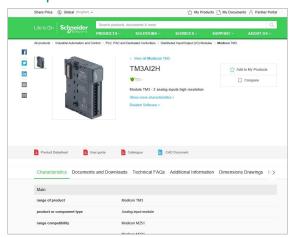


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 Connections and schemas, Performance curves
- Product image, Instruction sheet, User guide, Product certifications, End of life manual



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ZBRN1 and ZBRN2 Harmony hub
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Harmony XB5R plastic and XB4R metal

Wireless and batteryless pushbuttons Wireless and batteryless ecosystem devices

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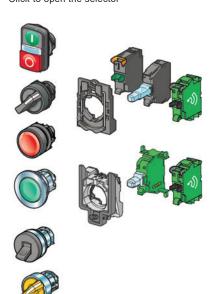
Harmony XB5R plastic and XB4R metal Wireless and batteryless pushbuttons

Installation made easy with Harmony® XB5R plastic and XB4R metal wireless and batteryless pushbuttons



Product Selector

Web digital selector Click to open the selector



Full compatibility except pilot lights and joysticks Stay put functions may create discrepancy between transmitter and receiver Not suitable for safety applications

The Harmony XB4R-XB5R offer of wireless and battery-less interfaces are used for various building utilities (automatic doors, lighting, etc.) and industrial applications (conveying systems, automotive, MMM, logistics, food and beverage). They are based on two types of device - transmitter and receiver - which communicate via 2.4 GHz radio transmission (free worldwide band) Zigbee Greenpower certified using an accessory.

Simplified installation

- Lower installation costs and time
- No setup needed due to ready-to-use Plug-and-Play package
- Freedom of mobility around the machine or process
- Ideal solution when you need to add or move a control function
- Compatible with all XB5 & XB4 actuators (not suitable for safety applications)







Enables end users to considerably reduce installation and maintenance

Easy maintenance

- Requires no battery maintenance and helps to ensure permanent availability
- Maximum availability of control functions
- Visual feedback option to easily check functioning
- Possibility to change frequency
- Highest cybersecurity levels using ZBRZ1 tool
- Eco-friendly Green technology
- Minimizes post-installation maintenance





Energy efficient due to non-current consuming transmitter

Designed for industrial environment with proven robustness

- > High resistance to contamination from dust (no cable entry)
- > No risk of cable damage or loose screws on the transmitter
- Zigbee Green Power using ZBRZ1 tool
- Ø 22 mm/0.866 in. operating head available in plastic (ZB5) and metal (ZB4) and Ø 40 mm/1.575 in. black spring return mushroom head allowing operation with gloves
- For automatic doors, the rope pull switch command can be set anywhere
- Suitable for the most demanding environments, depending on the model, up to IP 69, for external use from -40 to 70 °C





Robust performance





Easy integration into automation products

General presentation (continued)

Control and signaling units Ø 22

Harmony XB5R plastic and XB4R metal Wireless and batteryless pushbuttons

How to choose the transmitter?



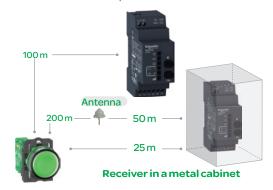
ZBRT1: 1 radio frame sent when pushed for pulse actuators: pushbuttons, multiple heads, mushrooms



ZBRT2: 1 radio frame sent when pushed, 1 radio frame sent when released For positions actuators: selector switches, toggle switches, etc.

Assured performance according to distance

- > 25 m/82 ft with the receiver installed in a metal electrical cabinet
- Boosted to more than 250 m/820 ft with the use of an external relay antenna with the receiver installed in a metal electrical cabinet
- > 100 m/328 ft in free space



> Peace of mind thanks to an optional visual feedback (illuminated actuators only)



A worldwide range

> From individual products to ready-to-use packs



Wide range of XB5R/XB4R individual products

- Transmitters ZBRT are now fully compatible with any XB4 or XB5 products (not suitable for safety applications
- > Designed to meet the requirements of the most common applications
- > Simple to order with only one reference number
- > Easy to install with factory pre-programmed transmitter and receiver



- (1) Only one transmitter per receiver
- (2) Up to 32 transmitters per receiver



General presentation (continued)

Control and signaling units Ø 22

Harmony XB5R plastic and XB4R metal Wireless and batteryless ecosystem devices Harmony Hub ZBRN1 and ZBRN2

Non-intrusive installation made easy with Harmony Hub ZBRN1 and ZBRN2 wireless ecosystem devices

The Harmony Hub range of wireless and batteryless ecosystem devices are used for various building utilities (automatic doors, lighting, etc.) and industrial applications (conveying systems, automotive, MMM, logistics, food and beverage, monitoring industrial equipment). These devices communicate via 2.4 GHz radio transmission (free worldwide band).

Ranalytics & Services Open to third party Harmony Hub A box to connect wireless devices to exchange data to upper levels Non-intrusive wireless system Set of operator interfaces and secondary sensors

Non-intrusive installation

- > Lower installation costs and time
- > Freedom of mobility around the machine or process
- > Ideal solution when you need to add or move a monitoring function



Enables end users to considerably reduce installation and maintenance costs



Easy maintenance

- > Requires no battery maintenance and helps to ensure permanent availability
- > Maximum availability of control functions
- > Possibility to change frequency
- Highest cybersecurity levels using ZBRZ1 tool
- Minimizes post-installation maintenance





Product Selector

Web digital selector
Click to open the selector

Harmony Hub schematic diagram



Web digital selector
Click to open the selector





Highest cybersecurity levels using ZBRZ1 commissioning tool

Assured performance according to distance

The possible distance (1) between a transmitter and the Harmony Hub is approximately:

- > 100 m/328 ft when there are no obstacles
- 250 m/984 ft if a relay antenna is located between the transmitter and the Harmony Hub (installed in a metal housing or in a closed metal enclosure)
- > 60 m/197 ft if an external antenna is connected to the Harmony Hub
- 25 m/82 ft with the Harmony Hub installed in a metal housing or in a closed metal enclosure



Harmony Hub inside box (2)

- (1) Typical values, which can be affected by the application environment
- (2) Reduction in distance when the Harmony Hub is placed in a metal housing or in a closed metal enclosure



General presentation (continued)

Control and signaling units Ø 22

Harmony XB5R plastic and XB4R metal Wireless and batteryless ecosystem devices Harmony Hub ZBRN1 and ZBRN2

Smooth integration

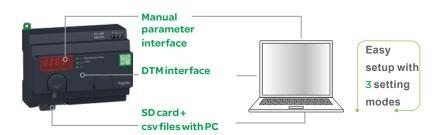
Integration into an industrial PC (IT/OT box) via Ethernet link with 2 RJ45.



Magelis iPC and Edge Box runs Node-RED to wire devices on the Industrial Internet of Things. Node-RED is a simple, open source graphical programming tool for designing the communication data flow from OT to IT. To enable connectivity to the EcoStruxure platform, you need to have an industrial PC (IT/OT box) to push your collected physical signals and ensure immediate access to relevant data. This data-driven approach helps to improve a company's productivity and efficiency. Compatible Schneider Electric commercial references: HMIBMO* For more information, go to: www.schneider-electric.com/hmi



Simple and economic with up to 60 transmitters connected on the same bus

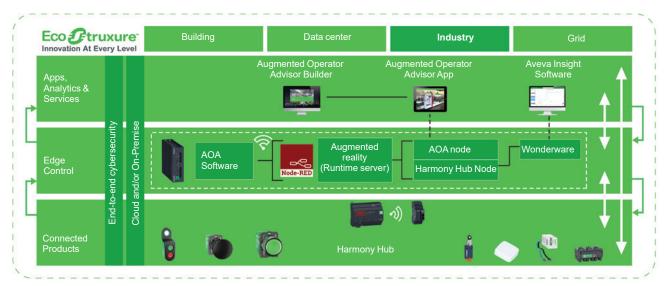


Control and signaling units Ø 22 Harmony XB5R plastic and XB4R metal

Harmony XB5R plastic and XB4R metal Wireless and batteryless ecosystem devices Harmony Hub ZBRN1 and ZBRN2

Architecture solutions

> Call to maintenance EcoStruxure architecture



With Harmony Hub ecosystem devices, there are multiple use cases:

- Pushbutton to call for maintenance, call for material, call for finished goods, and call for final products inspection
- Easily open internal automatic doors
- Identify which Emergency stop has been activated
- Help operators to react quickly in case of an anomaly
- Identify anomalies with the predefined threshold

General presentation (continued)

Control and signaling units Ø 22 Harmony XB5R plastic and XB4R metal

Wireless and batteryless ecosystem devices Harmony Hub ZBRN1 and ZBRN2

Wide range of product compatibility

Wide range of individual products compatible with the Harmony Hub (1)



ZBRN1





ZBRA1 **ZBRCETH**



ZBRA3

Pushbuttons



ZB5RTA•



ZBRP1





ZBRT

ZB5RTC•

Limit switches







A9XST114



A9MEM●



LV4340•





(1) Please refer to the reference tables on pages 3/3, 3/4, and 3/5.

Product type	Pilot lights	Pushbuttons, select	or switches, and pilot ligh	ts	Biometric switches
					X S
					D

Description (of range	■ LED pilot lights	 Pushbuttons Multiple-headed pushbuttons Emergency Stop pushbuttons Selector switches and key switches Illuminated pushbuttons Pilot lights Flush mounted pushbuttons, selector switches, and pilot lights (1) 			Fingerprint readers 24V Stand-alone biometric switches Stand-alone USB biometric switches USB biometric switches dedicated to Schneider HMI (2)
Features	Products	Monolithic, compact, low consumption	Complete units or sub-	-assemblies (body + h	ead)	Monolithic
	Bezel	Double insulated	Double insulated (4)	Metal, chromium plated, or black	Double insulated	Double insulated, dark gray
	Shape of head	Circular	Circular, square, or rectangular	Circular	Circular or square	-
mm/0.315 in. and 0.472 in. Ø 30 mm/1		Ø 22 mm/0.866 in. Ø 30 mm/1.181 in. (for flush mounted co	ontrol and signaling units)	Ø 22 mm/0.866 in.		
Degree of protection	Conforming to IEC 60529	IP40 IP65 with seal	IP65	IP66, IP67, IP69, and IP69K		IP65 (control button)
	Conforming to UL 508 and CSA C22-2 No. 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			Cable or connectors	
Mounting	Panel thickness	18 mm/ 0.0390.315 in.	16 mm/0.0390.236 in.			
Type references		XVLA	XB6, XB6E	XB4	XB5	XB5S

- (1) Flush mounted control and signaling units are available for Harmony XB4 and XB5 ranges only.
 (2) Compatible with Magelis iPC, STU, OT, GXO, GT (except GT1000 series), GK, GH, and GTO models.
 (3) Wireless and batteryless pushbutton and receiver ready-paired at the factory.

Wireless and batteryless pushbuttons	Pushbuttons, selector switches, and pilot lights	Joystick co	ntrollers		Pushbuttons, selector switches, and pilot lights	Cam switches
				1		
75 22 E						
0 m						
 Wireless and batteryless pushbuttons and rope pull switch Wireless receivers Harmony Hub 	 Pushbuttons Emergency Stop and Emergency switching off pushbuttons Selector switches and key switches Illuminated pushbuttons Pilot lights 	■ 2- or 4-dir ■ Stay put o	rection or spring retui	m	 Pushbuttons Emergency Stop pushbuttons 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 (3) and "components" range	Monolithic	Complete ur (body + head	nits or sub-ass d with lever)	semblies	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 gray (or white for pilot lights)	Metal, chron	nium plated	Double insulated, black	Metal, chromium plated, or do	ouble insulated, black
ransmitter with circular nead	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 centers: serie K30K150
IP66, IP67, IP69, and IP69K	IP65 (control buttons and pilot lights) IP54 (Emergency switching off pushbuttons)	IP65	IP66	IP65	IP66	IP65: series K10 IP40, IP65 with seal: series K1/K2 IP40: series K30K150
Enclosure type 4, 4X, and 13	Enclosure type 3 (pushbuttons and Emergency stop) and 4 (pilot lights)	Enclosure ty	pe 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 c	aptive clamp	terminal cor	nnections	
16 mm/0.0390.236 in.						0.56 mm/0.0200.236 in. (depending on model)

XB7

XB5R, XB4R

(4) For Harmony XB6 only. (5) For Harmony XB6E only.

XD4PA | XD2GA | XD5PA | 9001K, 9001SK

K10, K1, K2, K30, K50,

K63, K115, K150

2

Control and signaling units Ø 22 Harmony XB5R plastic and XB4R metal

Wireless and batteryless pushbuttons

Harmony XB5R and XB4R wireless and batteryles	SS
nushbuttons	

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Transmitter components for wireless and batteryless rope pull switch	page 2/7
Configurable receivers	page 2/7
Accessories	page 2/8

Harmony XB5R plastic and XB4R metal Wireless and batteryless pushbuttons

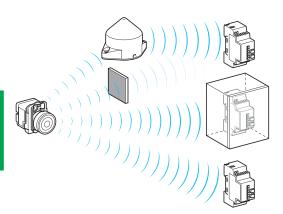


Figure A: Radio transmission between 1 transmitter and

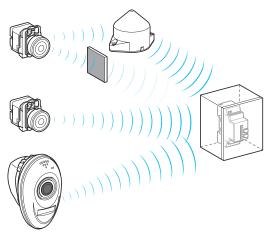


Figure B: Radio transmission between 3 transmitters and

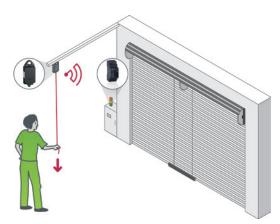


Figure C: Rope pull switch for automatic doors

Presentation

The Harmony wireless and batteryless pushbuttons range enables remote control of a relay (receiver) by means of a pushbutton (transmitter). The control is by radio transmission where the transmitter is equipped with an electric generator that converts mechanical energy, produced when the pushbutton is pressed, to electrical energy. A radio-encoded message with a unique ID code is sent as a single pulse to one or more receivers located several dozen feet away (see Figure A). A single receiver can also be actuated by up to 32 different transmitters (see Figure B).

In order to avoid any conflict of multiple transmission from different transmitters, a minimum time frame of 10 ms is required between each radio transmission. Depending on the application, a relay-antenna can be used to get round an obstacle that impedes transmission or to increase the range (see Figure A and Figure B).

The possible distance (1) between a transmitter and a receiver is approximately:

- 100 m/328 ft where there are no obstacles
- 25 m/82 ft if the receiver is installed in a metal housing or in a closed metal enclosure
- 300 m/984 ft if a relay-antenna is located between the transmitter and the receiver (receiver installed in a metal housing or in a closed metal enclosure)

These distances could be drastically reduced in industrial environments where factors such as radio interference, obstacles, or electromagnetic interference may impede the signal. As a consequence, some radio frames may not be received by the receiver.

The wireless and batteryless pushbutton reduces installation time and cost since no wiring and associated equipment is required between the transmitters and the

This technology also allows an operator to be mobile or to have a control mounted on board a vehicle (trolley, truck, etc.). The pushbutton is always available and requires no maintenance (no battery needed).

The mobile box ZBRM21 or ZBRM22 associated with its support function is adapted for static and mobile applications mounted on vehicles.

The range also includes a new wireless and batteryless rope pull switch designed for easy operation of automatic doors. This switch can be either mounted directly on the panel or between two ropes close to the automatic door. This enables the forklift driver or pedestrian to open or close the door by pulling the rope, where the mechanical energy produced is transmitted as a radio message to the receiver in the control panel (see Figure C).

This technology (radio-encoded message sent as a single pulse) cannot be used for hoisting applications ("up/down", "right-left" movements, etc.) or safety applications (Emergency Stop pushbuttons, etc.). For these applications, it is recommended that Harmony XB4 and XB5 wired pushbuttons or the XAC range of pendant control stations be used

Environment

The performance features of the XB5R range conform to the following specifications:

- International standards and approvals:
- Wireless and batteryless pushbuttons: EN/IEC 60947-1, EN/IEC 60947-5-1, and UL 508, and CSA C22-2 No. 14
- Transmitter/Receiver system: BT 2006/95/EC, CE: R&TTE 1999/5/EC, and EMC 2004/108/EC
- International certifications: UL, CSA, C-Tick, GOST, and CCC
- Radio agreements: ANATEL (Brazil), SRRC (China), FCC (USA), RSS (Canada), ICASA (South Africa), and ARIB T66 (Japan)

For more technical information, please refer to our website www.schneider-electric.com.

(1) Typical values, which can be affected by the application environment.

Harmony XB5R plastic and XB4R metal Wireless and batteryless pushbuttons

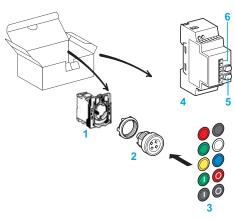


Figure D: Pack with transmitter and configurable receiver

Description of the "Ready-to-use pack" ranges (1)

Pack with configurable receiver (see Figure D)

This pack comprises:

- 1 A transmitter with a fixing collar for assembly with a pushbutton head and mounting in a Ø 22 mm/0.87 in. hole
- 2 A flush, spring return, plastic or metal pushbutton head
- 3 A set of different colored caps that can be clipped onto the pushbutton head
- 4 A 24...240 V ≂ configurable receiver, 2 relay outputs, with 2 buttons (teach and parameter setting) 5 and 6 indicating LEDs 6

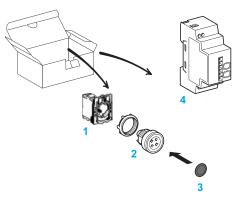


Figure E: Pack with transmitter and non-configurable receiver

Pack with non-configurable receiver (see Figure E) (1)

This pack comprises:

- 1 A transmitter with a fixing collar for assembly with a pushbutton head and mounting in a Ø 22 mm/0.87 in. hole
- 2 A flush, spring return, plastic or metal pushbutton head
- 3 A set of different colored caps that can be clipped onto the pushbutton head
- 4 A 24 V --- non-configurable receiver, 1 relay output, without indicating LED or button

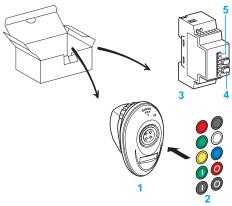


Figure F: Pack with transmitter in handy box and configurable receiver

Pack with handy box and configurable receiver (see Figure F)

This pack comprises:

- 1 A handy box containing a wireless and batteryless pushbutton with plastic head
- 2 A set of 10 different colored caps that can be clipped onto the pushbutton head
- 3 A 24...240 V \sim configurable receiver, 2 relay outputs, with 2 buttons (teach and parameter setting) 4 and 6 indicating LEDs 5

⁽¹⁾ The wireless and batteryless pushbutton and the receiver are factory-paired.

Harmony XB5R plastic and XB4R metal Wireless and batteryless pushbuttons

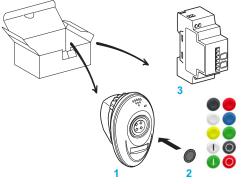


Figure G: Pack with transmitter in handy box and non-configurable receiver

Description of the "Ready-to-use pack" ranges (1) (continued) Pack with handy box and non-configurable receiver (see Figure G)

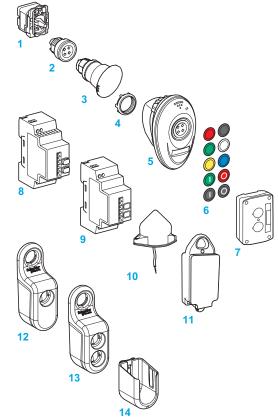
This pack comprises:

- 1 A handy box containing a wireless and batteryless pushbutton with plastic head
- 2 A black cap that can be clipped onto the pushbutton head
- 3 A 24 V ... non-configurable receiver, 1 relay output, without indicating LED or button

Description of the "Components" range

Components are sold separately to allow completion of existing applications or creation of specific applications:

- 1 A transmitter for assembly with pushbutton head and mounting in a Ø 22 mm/ 0.87 in. hole
- 2 A flush, spring return, plastic or metal pushbutton head
- 3 A plastic mushroom head
- 4 A plastic or metal fixing collar
- 5 An empty handy box
- 6 A set of different colored caps that can be clipped onto the pushbutton head
- 7 Empty plastic boxes (1 or 2 cut-outs) for wall mounting or on-board applications
- 9 A 24 V == configurable receiver, 4 PNP outputs, with 2 buttons (teach and parameter setting) and 6 indicating LEDs
- 10 A relay-antenna
- 11 A rope pull switch
- 12 ZBRM21 mobile box for 1 pushbutton
- 13 ZBRM22 mobile box for 2 pushbuttons
- 14 ZBRACS support for mobile box
- (1) The wireless and batteryless pushbutton and the receiver are factory-paired.



Non-configurable

receiver equipped

- 1 relay output type

with monostable

output function:

RT 3A - without button - without indicating

LED

XB5RFB01

XB4RFB01

0.230/0.507

0.245/0.540

Control and signaling units Ø 22 Harmony XB5R plastic and XB4R metal Wireless and batteryless pushbuttons





Description	Transmitter type	Voltage receiver V	Receiver type	Reference	Weight kg/lb
Packs comprising: - 1 wireless and batteryless pushbutton assembled on fixing collar - 1 receiver Pushbutton and receiver are factory-paired.	Wireless and batteryless pushbutton + Ø 22 mm/0.87 in. plastic head +1 set of 10 caps	atteryless 24240 ~ Configu ZBRRA 7 in. plastic with: - choice s function (monos stop/sta	- choice of 3 output functions (monostable, bistable, stop/start) - 2 relay outputs		0.230/0.507
	Wireless and batteryless pushbutton + Ø 22 mm/0.87 in. metal head + 1 set of 10 caps	_	type RT 3A (2) - 2 buttons (teach, parameter setting) - 6 indicating LEDs (power ON, function modes, output status, signal strength)	XB4RFA02	0.245/0.540

Wireless and batteryless

Wireless and batteryless

+ Ø 22 mm/0.87 in. **metal**

+ Ø 22 mm/0.87 in. plastic

pushbutton

+ 1 set of 6 caps

head

head + 1 set of 6 caps





Packs comprising: -1 wireless and batteryless pushbutton assembled on fixing collar, in handy box (3) -1 receiver Pushbutton and receiver are factory-paired.	Wireless and batteryless pushbutton + Ø 22 mm/0.87 in. plastic head mounted in a handy box + 1 set of 6 caps		Configurable receiver ZBRRA equipped with: - choice of 3 output functions (monostable, bistable stop/start) - 2 relay outputs type RT 3A (2) - 2 buttons (teach, parameter setting) - 6 indicating LEDs (power ON, function modes, output status, signal strength)	XB5RMA04	0.250/0.551
	Wireless and batteryless pushbutton + Ø 22 mm/0.87 in. plastic head mounted in a handy box + 1 set of 6 caps	24	Non-configurable receiver equipped with monostable output function: - with 1 relay output type RT 3A - without button - without indicating LED	XB5RMB03	0.250/0.551

- (1) Wireless and batteryless pushbutton and the receiver are factory-paired.
- (2) Receivers are supplied set to monostable output function. The user can configure it to bistable and stop/start functions.
- (3) Supplied with a magnet to be stuck on by the customer.

Control and signaling units Ø 22 Harmony XB5R plastic and XB4R metal

Wireless and batteryless pushbuttons







ZB5RTA3



ZB5RTC2

Description	ents for wireless and b Type of push	Color	Reference	Weight
2000 Iption	Type of puell	00.01	11010101100	kg/lb
ransmitter for wireless and atteryless pushbutton (1)	1 radio frame sent when button is pushed	-	ZBRT1 (5) (6)	0.025/0.055
	1 radio frame sent when button is pushed 1 radio frame sent when button is released		ZBRT2 (3) (5) (6)	0.025/0.05
Vireless and batteryless ushbutton including: a transmitter equipped with xing collar a spring return mushroom ead	Mushroom 40 mm/1.58 in. (plastic)	Black	ZB5RTC2	0.055/0.121
/isual feedback			ZBRV1 (4)	
Vireless and batteryless	Flush (plastic)	White	ZB5RTA1	0.045/0.099
oushbuttons including: a transmitter equipped with fixing collar a spring return pushbutton nead with cap attached (2)		Black	ZB5RTA2	0.045/0.099
		Green	ZB5RTA3	0.045/0.099
		White I on green background	ZB5RTA331	0.045/0.099
		Red	ZB5RTA4	0.045/0.099
		White O on red background	ZB5RTA432	0.045/0.099
		Yellow	ZB5RTA5	0.045/0.099
		Blue	ZB5RTA6	0.045/0.099
	Flush (metal)	White	ZB4RTA1	0.085/0.187
		Black	ZB4RTA2	0.085/0.187
		Green	ZB4RTA3	0.085/0.187
		White I on green background	ZB4RTA331	0.085/0.187
		Red	ZB4RTA4	0.085/0.187
		Yellow	ZB4RTA5	0.085/0.187
		Blue	ZB4RTA6	0.085/0.187

⁽¹⁾ Fixing collar ZB5AZ009 (plastic) or ZB4BZ009 (metal) to be ordered separately.

⁽²⁾ This cap is factory-assembled and cannot be removed (risk of damage).

⁽³⁾ This transmitter is only compatible with receiver ZBRR● version ≥ 2.0, relay antenna ZBRA1 version ≥ 2.0, and access point ZBRN● version > 1.2.

⁽⁴⁾ This product is only compatible with receiver ZBRR● version ≥ 2.2, relay antenna ZBRA1 version ≥ 3.3, and access point ZBRN● version ≥ 3.32.

⁽⁵⁾ Actuators from Harmony XB4 and XB5 catalog.

⁽⁶⁾ Not suitable for safety applications.

Control and signaling units Ø 22 Harmony XB5R plastic and XB4R metal Wireless and batteryless pushbuttons









ZBRRA

Transmitter componer	nts for wireless and batteryless rope pull	switch	
Description	Application	Reference	Weight kg/ <i>lb</i>
Rope pull switch with wireless and batteryless transmitter	For automatic doors: The rope pull switch sends a radio message to the receiver in the control panel to open and close the door.	ZBRP1	0.150/0.331
	For automatic doors: The rope pull switch sends a radio message to the receiver in the control panel to open and close the door.	XB5RP1US2	0.259/0.571

Configurable receive	ers				
Description	Output function	Output type	Receiver voltage V	Reference	Weight kg/ <i>lb</i>
Configurable receivers (6) equipped with: - 2 buttons (teach and parameter setting) - 6 indicating LEDs (power ON, function modes, output status, signal strength)	Monostable	4 PNP outputs, 200 mA/24 V	24	ZBRRC	0.130/0.287
	Monostable, bistable	2 relay outputs type RT 3A (7)	24240 ≂	ZBRRD	0.130/0.287
	Monostable, bistable, stop/start	2 relay outputs type RT 3A (7)	24240 ≂	ZBRRA	0.130/0.287

- (1) Fixing collar ZB5AZ009 (plastic) or ZB4BZ009 (metal) to be ordered separately.
- (2) Cap to be ordered separately. Refer to the "Accessories" table on page 2/8.
- (3) This cap is factory-assembled and cannot be removed (risk of damage).
- (4) This transmitter is only compatible with receiver ZBRR● version ≥ 2.0, relay antenna ZBRA1 version ≥ 2.0, and access point ZBRNe version > 1.2.
- (5) Each receiver can be actuated by up to 32 transmitters.
- (6) Receivers are supplied set to monostable output function. The user can configure it to bistable and stop/start functions.

Control and signaling units Ø 22
Harmony XB5R plastic and XB4R metal
Wireless and batteryless pushbuttons







PF132104A		*	
	0		

ZBRM22A0



XALD02

Accessories (continue Boxes for wireless and batter	<u>'</u>				
Product	Application	Description	Sold in lots of	Unit reference	Weight kg/lb
Plastic empty mobile box (1) (3)	For mobile and static applications with wireless and batteryless pushbuttons	1 cut-out	1	ZBRM21	0.109/0.240
		2 cut-outs	1	ZBRM22	0.110/0.243
Plastic mobile box equipped with button(s) and transmitter(s), 1 set of caps	For mobile and static applications with wireless and batteryles pushbuttons	1 button with ZBRT1 transmitter	1	ZBRM21A0	0.150/0.331
		1 button with ZBRT2 transmitter	1	ZBRM21B0	0.151/0.333
		2 buttons with ZBRT1 transmitters	1	ZBRM22A0	0.194/0.428
		2 buttons with ZBRT2 transmitters	1	ZBRM22B0	0.195/0.430
		1 button with ZBRT1 and 1 button with ZBRT2	1	ZBRM22AB0	0.195/0.430
		1 button with ZBRT2 and 1 button with ZBRT1	1	ZBRM22BA0	0.195/0.430
	Special support for tube or wall specific for ZBRM21 and ZBRM22	- 2	1	ZBRACS	0.064/0.141
Empty plastic boxes for wireless and batteryless pushbuttons (2)	For static or on-board wireless and batteryless pushbuttons	1 cut-out	1	XALD01	0.136/0.300
		2 cut-outs	1	XALD02	0.193/0.426

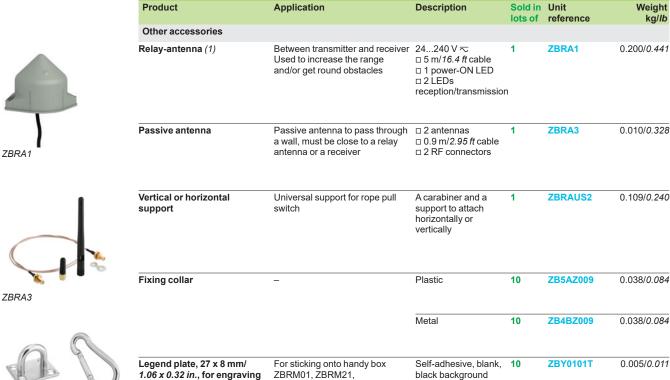
⁽¹⁾ Cannot be used for wired contacts (no cable gland outlet).

⁽²⁾ Box equipped with cable gland outlets, compatible with Harmony ZB5 pushbutton heads.

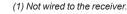
⁽³⁾ Compatible with ZBRT1 and ZBRT2.

black background

Harmony XB5R plastic and XB4R metal Wireless and batteryless pushbuttons



and ZBRM22



1.06 x 0.32 in., for engraving

Accessories (continued)



ZBRAUS2

3

Control and signaling units Ø 22

Harmony XB5R plastic and XB4R metal

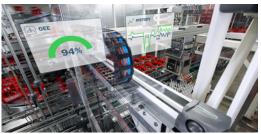
Wireless and batteryless ecosystem devices

Н	armony Hub ZBRN1 and ZBRN2	
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	Compatibility	
п	Harmony Hub ecosystem devices	nage 3/4

Presentation, description

Control and signaling units Ø 22

Harmony XB5R plastic and XB4R metal Wireless and batteryless ecosystem device Harmony Hub ZBRN1 and ZBRN2



OEE monitoring production equipment



ZBRN1 front view



ZBRN1 underside view

Presentation

Harmony Hub provides network connectivity openness by operating as an intermediate device between the wireless devices and PLCs (programmable logic controllers) or industrial PCs (IT/OT box) that support the Modbus/TCP protocol. Harmony Hub can be used with transmitters such as XB4R and XB5R wireless and batteryless pushbuttons, rope pull switches, mushroom head pushbuttons, Emergency stop monitoring, wireless and batteryless limit switches, and temperature and energy sensors.

Harmony Hub provides an easy way to digitize your production line to improve overall equipment efficiency (OEE) by using a non-intrusive wireless system that is easy to connect to the IT system.

It collects physical signals from an operator interface or secondary sensing device to generate computed data information for CMMS tools and operation management tools

Data can be analyzed through our dedicated EcoStruxure platform using "AVEVA Insight" software, "Maintenance Advisor" software, or our "Augmented Operator Advisor" on-premise application.

Depending on the application, an external or relay antenna can be used to improve signal reception. Harmony Hub can support up to 60 radio transmitters.

It can be configured using the jog dial and 7-segment display (configuration and diagnostic modes), SoMachine, Unity Pro software, a third-party FDT container using DTM (Device Type Manager) files (1)(2), or an SD card.

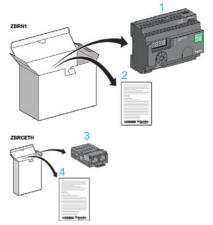


Figure A: ZBRN1: Standard Harmony Hub with communication module

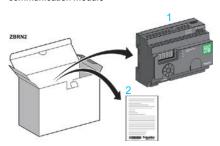


Figure B: ZBRN2: Harmony Hub for Modbus Serial Line communication

Description

Standard Harmony Hub with communication module (see figure A)

Harmony Hub ZBRN1 has an empty slot for the ZBRCETH communication module to support the Modbus/TCP protocol. This communication module has 2 standard Ethernet RJ45 connectors that provide connectivity for daisy chain operation and daisy chain loop operation (when used with Schneider Electric ConneXium Ethernet switches) and thus avoids the use of an external switch or hub.

- 1 ZBRN1 standard Harmony Hub (3)
- 2 ZBRN1 instruction sheet
- 3 ZBRCETH Modbus/TCP network communication module
- 4 ZBRCETH instruction sheet

Standard Harmony Hub (see figure B)

Harmony Hub ZBRN2 has 2 embedded RS485 connectors, which avoids the use of an external hub for RS485 serial line connection. The supported data rates are 1,200 bps, 2,400 bps, 4,800 bps, 9,200 bps, 9,600 bps, 38,400 bps, and 115,200 bps.

- 1 ZBRN2 Harmony Hub
- 2 ZBRN2 instruction sheet
- (1) For more information on SoMachine and Unity Pro software, please visit our website www.schneider-electric.com.
- (2) DTM is a software component file that enables the SoMachine or Unity Pro software to communicate with the connected system.
- (3) ZBRN1 must be plugged with a communication module, reference ZBRCETH for Modbus/ TCP protocol.

Control and signaling units Ø 22
Harmony XB5R plastic and XB4R metal
Wireless and batteryless ecosystem device
Harmony Hub ZBRN1 and ZBRN2



ZBRN1



ZBRN2



ZBRCETH



Configurable	Harmony H	lub			
Description	Data function	Output type	Receiver voltage V	Reference	Weight kg/ <i>lb</i>
Configurable Harmony Hub equipped with: -7-segment display -jog dial -8 LED indicators (Power On, functions mode, communication status, signal strength)	1 s)	1 slot for ZBRCETH communication module (to be ordered separately)	24240 ≂	ZBRN1	0.270/0.595
- external antenna connector and protective plug	Monostable (adjustable from 100 ms to 1 s)	2 RS485 connectors providing connectivity for Modbus RS485 Serial Line	24240 ≂	ZBRN2	0.263/0.580

Communication module							
Description	Characteristics	Communication port	Reference	Weight kg/ <i>lb</i>			
Modbus/TCP network communication module	Modbus/TCP protocol with embedded Web pages in 5 languages for configuration, monitoring, and diagnostics	2 RJ45 connectors providing connectivity for daisy chain and daisy chain loop operation	ZBRCETH	0.044/0.097			

Accessories				
Product	Application	Description	Reference	Weight kg/ <i>lb</i>
External antenna	Connected to the Harmony Hub (ZBRN1 or ZBRN2) Used to increase the distance of transmission	2 m/6.56 ft cable 1 RF connector	ZBRA2	0.040/0.088

Note: The ZBRN2 has an embedded communication port for Modbus Serial Line, whereas the ZBRN1 must be plugged with a communication module to support different protocols.

Control and signaling units Ø 22 Harmony XB5R plastic and XB4R metal

Harmony XB5R plastic and XB4R metal Wireless and batteryless ecosystem device Harmony Hub ZBRN1 and ZBRN2



ZBRT1



ZBRV1



ZBRZ1



ZB5RTA3



ZB5RTC2

Harmony Hub ecosys	vireless and batteryless pushbu	ittons		
Description	Type of push	Color	Reference	Weight kg/lb
Transmitter for wireless and batteryless pushbutton (1)	1 radio frame sent when button is pushed	1 –	ZBRT1	0.025/0.055
	1 radio frame sent when button is pushed 1 radio frame sent when button is released		ZBRT2 (2)	0.025/0.055
Wireless and batteryless pushbuttons including: - a transmitter equipped with	Flush (plastic)	Visual feedback	ZBRV1 (3)	0.017/0.037
fixing collar - a spring return pushbutton head with cap attached		Commissioning module	ZBRZ1 (3)	0.050/0.110
·		White	ZB5RTA1	0.045/0.099
		Black	ZB5RTA2	0.045/0.099
		Green	ZB5RTA3	0.045/0.099
		White I on green background	ZB5RTA331	0.045/0.099
		Red	ZB5RTA4	0.045/0.099
		White O on red background	ZB5RTA432	0.045/0.099
		Yellow	ZB5RTA5	0.045/0.099
		Blue	ZB5RTA6	0.045/0.099
	Flush (metal)	White	ZB4RTA1	0.085/0.187
		Black	ZB4RTA2	0.085/0.187
		Green	ZB4RTA3	0.085/0.187
		White I on green background	ZB4RTA331	0.085/0.187
		Red	ZB4RTA4	0.085/0.187
		Yellow	ZB4RTA5	0.085/0.187
		Blue	ZB4RTA6	0.085/0.187

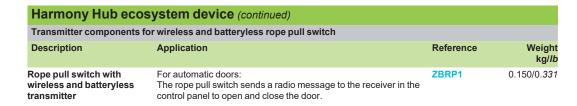
⁽¹⁾ Fixing collar ZB5AZ009 (plastic) or ZB4BZ009 (metal) to be ordered separately.

⁽²⁾ This transmitter is only compatible with receiver ZBRR • version ≥ 2.0, relay antenna ZBRA1 version ≥ 2.0, and Harmony Hub ZBRN • version > 1.2.

⁽³⁾ This products are only compatible with receiver ZBRRp version ≥ 2.2, relay antenna ZBRA1 version ≥ 3.3, and access point ZBRNp version ≥ 3.32.

Harmony XB5R plastic and XB4R metal Wireless and batteryless ecosystem device Harmony Hub ZBRN1 and ZBRN2





Rope pull switch with wireless and batteryless transmitter and a universal support accessory ZBRAUS2 For automatic doors: XB5RP1US2 0.259/0.571 The rope pull switch sends a radio message to the receiver in the

control panel to open and close the door.

XB4-5R_60642_Cf

XB5RP1US2



Configurable receiver for H	larmony Hub				
Description	Output function	Output type	Receiver voltage V	Reference	Weight kg/ <i>lb</i>
Wireless Receiver for Harmony Hub, 2 pusbuttons and 6 LEDs	Bistable	4 PNP outputs	24	ZBRRH	0.130/0.287

Control and signaling units Ø 22
Harmony XB5R plastic and XB4R metal
Wireless and batteryless ecosystem device
Harmony Hub ZBRN1 and ZBRN2



	ystem device (continued) oxes for wireless and batteryless	pushbuttons			
Product	Application	Description	Sold in lots of	Unit reference	Weight kg/lb
Plastic empty mobile box (1) (3)	For mobile and static applications with wireless and batteryless pushbuttons	1 cut-out	1	ZBRM21	0.109/0.240
		2 cut-outs	1	ZBRM22	0.110/0.243



ZBRM22A0



XALD02

		2 cut-outs	1	ZBRWI22	0.110/0.243
Plastic mobile box equipped with button(s) and transmitter(s), 1 set of caps	For mobile and static applications with wireless and batteryless pushbuttons	1 button with ZBRT1 transmitter	1	ZBRM21A0	0.150/0.331
		1 button with ZBRT2 transmitter	1	ZBRM21B0	0.151/0.333
		2 buttons with 2x ZBRT1 transmitters	1	ZBRM22A0	0.194/0.428
		2 buttons with 2x ZBRT2 transmitters	1	ZBRM22B0	0.195/0.430
		1 button with ZBRT1 and 1 button with ZBRT2	1	ZBRM22AB0	0.195/0.430
		1 button with ZBRT2 and 1 button with ZBRT1	1	ZBRM22BA0	0.195/0.430
	Special support for tube or wall for ZBRM21 and ZBRM22	·-	1	ZBRACS	0.064/0.141
Empty plastic boxes for wireless and batteryless pushbuttons (2)	For static or on-board wireless and batteryless pushbuttons	1 cut-out	1	XALD01	0.136/0.300
		2 cut-outs	1	XALD02	0.193/0.426

⁽¹⁾ Cannot be used for wired contacts (no cable gland outlet).

⁽²⁾ Box equipped with cable gland outlets, compatible with Harmony ZB5 pushbutton heads.

⁽³⁾ Compatible with ZBRT1 and ZBRT2.

Control and signaling units Ø 22
Harmony XB5R plastic and XB4R metal
Wireless and batteryless ecosystem device
Harmony Hub ZBRN1 and ZBRN2

Product	Application	Description	Sold in lots of	Unit reference	Weight kg/ <i>lb</i>
Other accessories					
Relay antenna <i>(1)</i>	Between transmitter and receiver Used to increase the range and/or get round obstacles	24240 V ≂ □ 5 m/16.4 ft cable □ 1 power-ON LED □ 2 LEDs (reception/transmission)	1	ZBRA1	0.200/0.441
Passive antenna	Passive antenna to pass through a wall, must be close to a relay antenna or a receiver	□ 2 antennas □ 0.9 m/2.95 ft cable □ 2 RF connectors	1	ZBRA3	0.010/0.328
Vertical or horizontal support	Universal support for rope pull switch	A carabiner and a support to attach horizontally or vertically	1	ZBRAUS2	0.109/0.240
Fixing collar	-	Plastic	10	ZB5AZ009	0.038/0.084
		Metal	10	ZB4BZ009	0.038/0.084
Legend plate, 27 x 8 mm/	For sticking onto handy box ZBRM01, ZBRM21,	Self-adhesive, blank, black background	10	ZBY0101T	0.005/0.011



ZBRAUS2

ZBRA1

ZBRA3

XB4-5R_60642_CPFJR17001A

(1) Not wired to the receiver.

Control and signaling units Ø 22 Harmony XB5R plastic and XB4R metal

Wireless and batteryless ecosystem device Harmony Hub ZBRN1 and ZBRN2







XCMW115

























1/434023

Harmony Hub ecosystem device (continued) Transmitter components for wireless and batteryless imit switches					
Reference	Description	Benefits			
Reference	Description	Delients			
XCMW110	Metal end plunger	Miniature format products designed to fit in extremely compact areas. Reduced installation time and cost, both for new machinery and renovating existing installations. No battery replacement and no recyclin costs.			
XCMW102	Metal roller plunger	zl inear type heads: With head for linear movement (plunger)			
XCMW115	Plastic roller lever	Miniature format products designed to fit in extremely compact areas. Reduced installation time and cost, both for new machinery and renovating existing installations. No battery replacement and no recyclin costs.			
XCMW116	Metal roller lever	3 rotary type heads: With head for rotary lever			
XCMW145	Adjustable length plastic roller lever	_			
Transmitter co	mponents for wireless	temperature sensors			
ZBRTT1	Temperature and humidity sensor	Wireless smart sensor for continuous environmental condition monitoring, used to measure the:			
		- Temperature of the surface in contact - Relative humidity			
A9XST114	Temperature sensor	For measuring the temperature of food storage and processing equipment and rooms in order to maintain the cold chain.			
Transmitter co	mponents for wireless	and batteryless current sensors			
ZBRTC1	Current sensor	Self-powered current monitoring wireless clamp sensor 0.5A to 35A.			
ZBRTC2	Current sensor	Self-powered current monitoring wireless clamp sensor 2.5A to 180A.			
ZBRTC3	Current sensor	Self-powered current monitoring wireless clamp sensor 7 A to 500 A.			
Wireless transi	mitters for Harmony Hu	ıb			
XZBWE112A24	Wireless transmitter for sensors and switches	Connecting one digital input to the Harmony Hub gateway.			

Transmitter co	mponents for wireless	and energy sensors
A9MEM1560	Energy monitoring sensor	Cut down on installation time with the efficient and simple PowerTag® power sensor units. Designed to reduce downtime and save on costs, they provide the ultimate in convenience and flexibility.
A9MEM1570	Energy monitoring sensor	_
LV434020	Energy sensor component	Energy Sensor PowerTag NSX for monitoring a machine's voltage, current, and energy.
LV434021	Energy sensor component	_
LV434022	Energy sensor component	_
LV434023	Energy sensor component	_

4

Control and signaling units Ø 22

Harmony XB5R plastic and XB4R metal

Wireless and batteryless pushbuttons Wireless and batteryless ecosystem devices

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