

Harmony XB5R plastic and XB4R metal

Wireless and batteryless pushbuttons



Harmony

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Advanced operator interface and industrial relays

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Harmony XB5R plastic and XB4R metal

Wireless and batteryless pushbuttons

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Control and signaling units Ø 22

Harmony XB5R plastic and XB4R metal

Wireless and batteryless pushbuttons

1

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



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

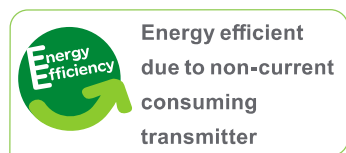
- > Lower installation costs and time
- > No setup needed due to ready-to-use Plug-and-Play package
- > Freedom of mobility around the machine or process
- > Ideal solution when you need to add or move a control function
- > Compatible with all XB5 & XB4 actuators (not suitable for safety applications)



Enables end users to considerably reduce installation and maintenance costs

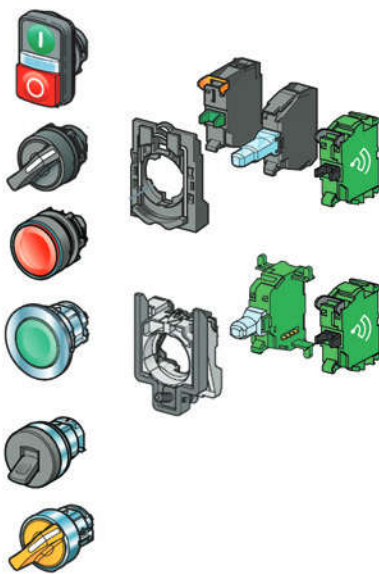
Easy maintenance

- > 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



Product Selector

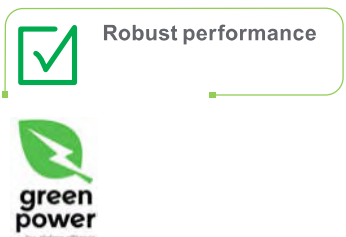
Web digital selector
Click to open the selector



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

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 (XB5) and metal (XB4) 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



Easy integration into automation products

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

<p>(1)</p> <p>Plastic head XB5RFB01</p> <p>Metal head XB4RFB01</p> <p>Mobile box XB5RMB03</p> <ul style="list-style-type: none"> • Transmitter with plastic, metal pushbutton or mobile box • Non-configurable receiver, 1 CO relay output 	<p>(2)</p> <p>Metal head XB4RFA02</p> <p>Plastic head XB5RFA02</p> <p>Mobile box XB5RMA04</p> <ul style="list-style-type: none"> • Transmitter with plastic, metal pushbutton or mobile box + Set of caps • Non-configurable receiver, 1 CO relay output
---	---

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



Simple to order with ready-to-use packs

1

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



Harmony Hub schematic diagram

Product Selector

Web digital selector
Click to open the selector



Web digital selector
Click to open the selector



Highest cybersecurity levels using ZBRZ1 commissioning tool

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).

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



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

Easy installation

Smooth integration

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

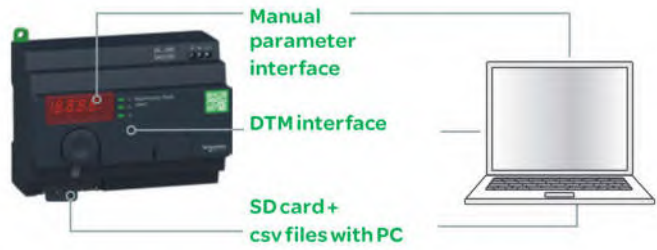


Magelis iPC and Edge Box runs Node-RED to wire devices on the Industrial Internet of Things. Node-RED is a simple, open source graphical programming tool for designing the communication data flow from OT to IT. To enable connectivity to the EcoStruxure platform, you need to have an industrial PC (IT/OT 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

Double RJ45 enables network continuity without using hubs or switches



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



Easy setup with 3 setting modes

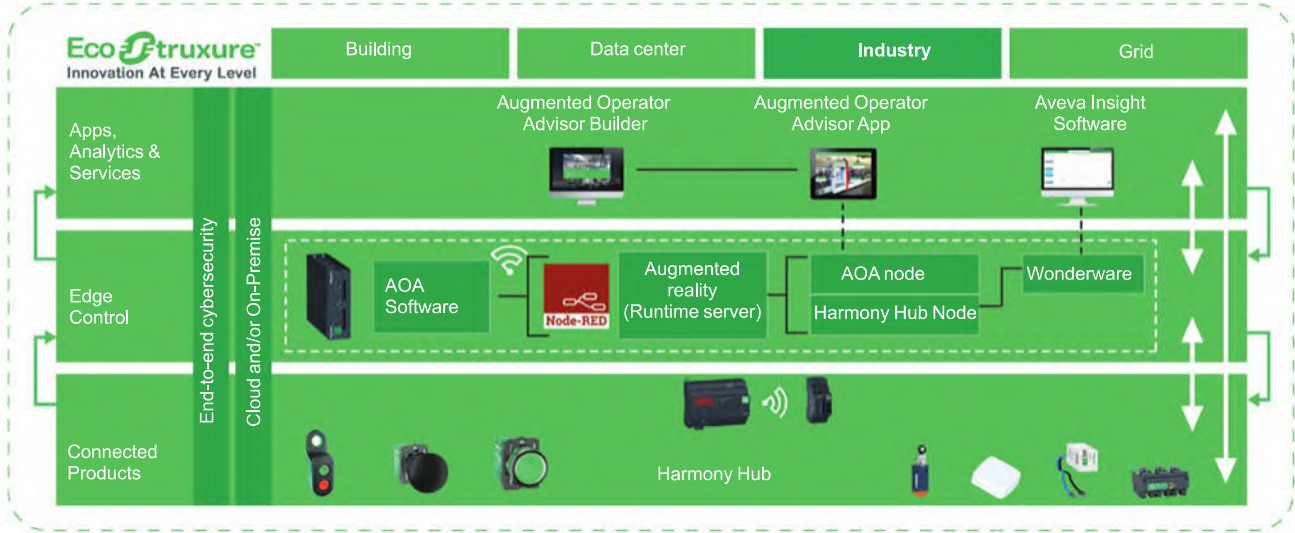


20% lower installation costs compared to a hard-wired solution

1

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

Wide range of product compatibility

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



ZBRN1



ZBRN2



ZBRCETH



ZBRA1



ZBRA2



ZBRA3

Pushbuttons



ZB5RTA●



ZBRM●



ZBRP1



ZB5RTC●



ZBRT●

Limit switches



XCMW●

Sensors



A9XST114



A9MEM●



LV4340●


Wireless receiver



ZBRRH

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



Product type	Pilot lights	Pushbuttons, selector switches, and pilot lights	Biometric switches
			
Description of range	<ul style="list-style-type: none"> LED pilot lights 	<ul style="list-style-type: none"> 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) 	<ul style="list-style-type: none"> Fingerprint readers 24V ... Stand-alone biometric switches Stand-alone USB biometric switches USB biometric switches dedicated to Schneider HM(2)
Features	<ul style="list-style-type: none"> Monolithic, compact, low consumption 	<ul style="list-style-type: none"> Complete units or sub-assemblies (body + head) 	<ul style="list-style-type: none"> Monolithic
Drilling or cut-out for fixing	<ul style="list-style-type: none"> Double insulated 	<ul style="list-style-type: none"> Double insulated (4) 	<ul style="list-style-type: none"> Double insulated, dark grey
Degree of protection	<ul style="list-style-type: none"> IP40 IP65 with seal 	<ul style="list-style-type: none"> IP66, IP67, IP69, and IP69K 	<ul style="list-style-type: none"> IP65 (control button)
Cabling	<ul style="list-style-type: none"> Tags for 2,6 x 0,5 mm/0,110 x 0,196 in. connectors (4) Front boards (4) Flush connector socket (3) 	<ul style="list-style-type: none"> Fashion connectors Solder pins for printed circuit boards (4) Flush connector socket (3) 	<ul style="list-style-type: none"> Cable or connectors
Mounting	<ul style="list-style-type: none"> Panel thickness 1...8 mm/0,039...0,315 in. 	<ul style="list-style-type: none"> Spring clamp terminal connections Screw clamp terminal connections Fashion connectors Connector with adapter for printed circuit board 	<ul style="list-style-type: none"> 1...6 mm/0,039...0,236 in.
Type references	<ul style="list-style-type: none"> XVLA 	<ul style="list-style-type: none"> XB6, XB6E XB4 XB5 XB5S 	<ul style="list-style-type: none"> 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	Joystick controllers	Pushbuttons, selector switches, and pilot lights	Cam switches
			
<ul style="list-style-type: none"> Wireless and batteryless pushbuttons and rope pull switch Wireless receivers Harmony Hub 	<ul style="list-style-type: none"> 2- or 4-direction Stay put or spring return 	<ul style="list-style-type: none"> Pushbuttons Emergency Stop pushbuttons Selector switches and key switches Illuminated pushbuttons Pilot lights 	<ul style="list-style-type: none"> Switches Stepping switches Reversing and changeover switches Anmeter switches Voltmeter switches Reversing switches Star-delta and reversing Pole change switches
<ul style="list-style-type: none"> Ready-to-use packs (3) and "components" range 	<ul style="list-style-type: none"> Complete units or sub-assemblies (body + head with lever) 	<ul style="list-style-type: none"> Complete units or sub-assemblies (body + head) 	<ul style="list-style-type: none"> Complete units or sub-assemblies (body + front panel+ head)
<ul style="list-style-type: none"> Metal, chromium plated, or double insulated, black 	<ul style="list-style-type: none"> Metal, chromium plated Double insulated, black 	<ul style="list-style-type: none"> Metal, chromium plated, or double insulated, black 	<ul style="list-style-type: none"> Square
<ul style="list-style-type: none"> Transmitter with circular head 	<ul style="list-style-type: none"> Circular 	<ul style="list-style-type: none"> Hexagonal 	<ul style="list-style-type: none"> 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: series K30...K150
<ul style="list-style-type: none"> IP66, IP67, IP69, and IP69K 	<ul style="list-style-type: none"> IP65 IP66 	<ul style="list-style-type: none"> IP65 IP66 	<ul style="list-style-type: none"> IP65: series K10 IP40, IP65 with seal: series K1/K2 IP40: series K30...K150
<ul style="list-style-type: none"> Enclosure type 4, 4X, and 13 	<ul style="list-style-type: none"> Enclosure type 3 (pushbuttons and Emergency stop) and 4 (pilot lights) 	<ul style="list-style-type: none"> Enclosure type 4 and 13 (9001K) Enclosure type 4, 4X, 13 (9001SK) 	<ul style="list-style-type: none"> –
<ul style="list-style-type: none"> Wireless (transmitter) Through cable (receiver) Terminal connections Fashion clip connections (pilot lights) 	<ul style="list-style-type: none"> Screw and captive clamp terminal connections Fashion clip connections (pilot lights) 	<ul style="list-style-type: none"> Screw and captive clamp terminal connections Fashion clip connections (pilot lights) 	<ul style="list-style-type: none"> 0,5...6 mm/0,020...0,236 in. (depending on model)
<ul style="list-style-type: none"> 1...6 mm/0,039...0,236 in. 	<ul style="list-style-type: none"> 1...6 mm/0,039...0,236 in. 	<ul style="list-style-type: none"> 1...6 mm/0,039...0,236 in. 	<ul style="list-style-type: none"> 1...6 mm/0,039...0,236 in.
<ul style="list-style-type: none"> XB5R, XB4R 	<ul style="list-style-type: none"> XB7 	<ul style="list-style-type: none"> XD4PA XD2GA XD5PA 9001K, 9001SK 	<ul style="list-style-type: none"> K10, K1, K2, K30, K50, K63, K115, K150

(4) For Harmony XB6 only.

(5) For Harmony XB6E only.

Control and signaling units Ø 22

Harmony XB5R plastic and XB4R metal

Wireless and batteryless pushbuttons

Harmony XB5R and XB4R wireless and batteryless pushbuttons

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2

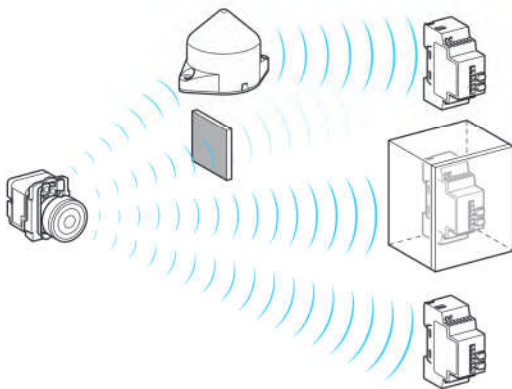


Figure A: Radio transmission between 1 transmitter and 3 receivers

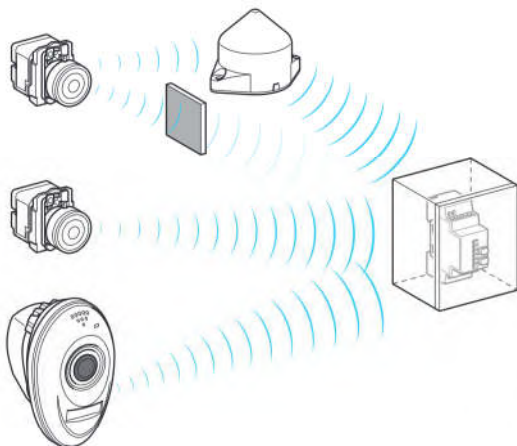


Figure B: Radio transmission between 3 transmitters and 1 receiver

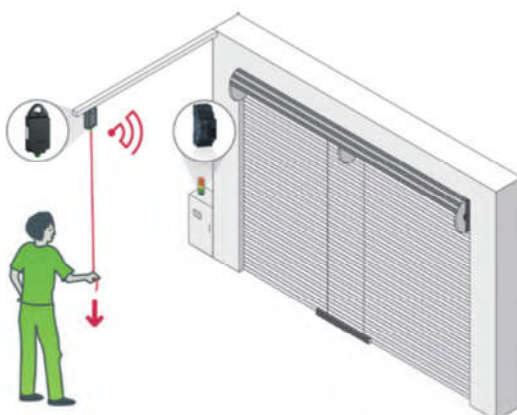


Figure C: Rope pull switch for automatic doors

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 control panel.

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.

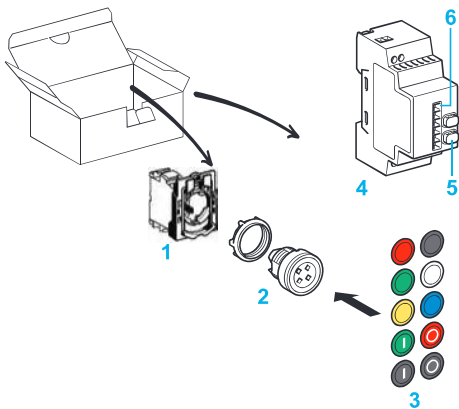


Figure D: Pack with transmitter and configurable receiver

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 \approx configurable receiver, 2 relay outputs, with 2 buttons (teach and parameter setting) 5 and 6 indicating LEDs 6

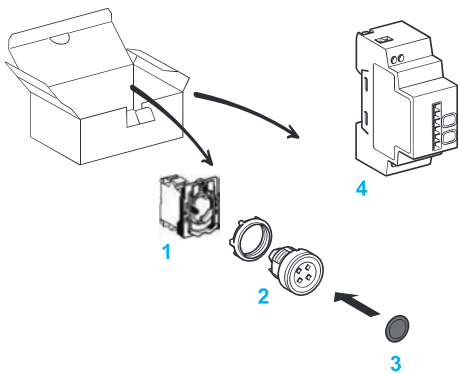


Figure E: Pack with transmitter and non-configurable receiver

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 \approx non-configurable receiver, 1 relay output, without indicating LED or button

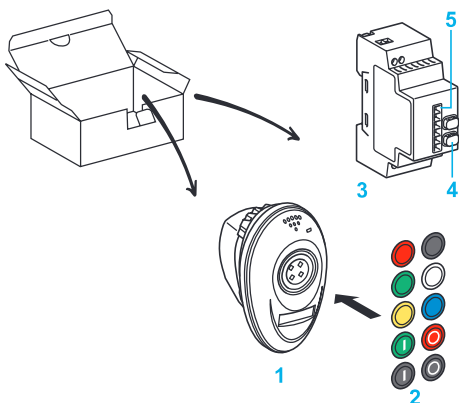


Figure F: Pack with transmitter in handy box and configurable receiver

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 \approx 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.

2

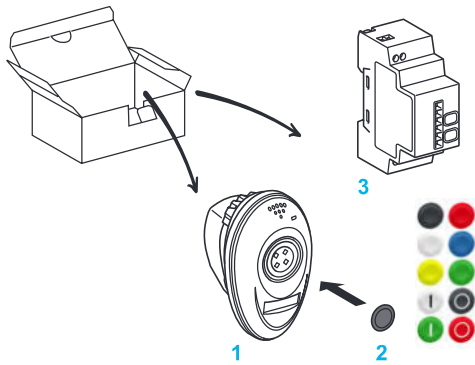


Figure G: Pack with transmitter in handy box and non-configurable receiver

Description of the “Ready-to-use pack” ranges (1) (continued)

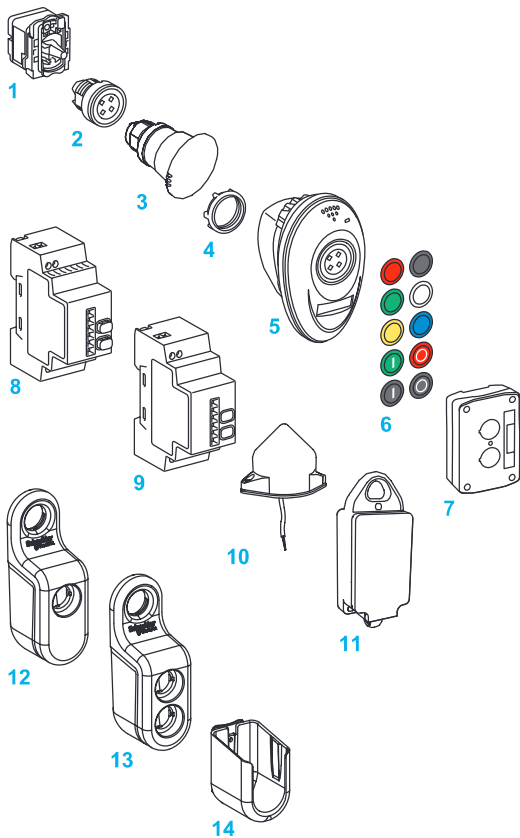
Pack with handy box and non-configurable receiver (see Figure G)

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 $\overline{\text{---}}$ 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
- 8 A 24...240 V \sim configurable receiver, 2 relay outputs, with 2 buttons (teach and parameter setting) and 6 indicating LEDs
- 9 A 24 V $\overline{\text{---}}$ 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.

Control and signaling units Ø 22

Harmony XB5R plastic and XB4R metal

Wireless and batteryless pushbuttons

XB4-R_CP207/44



XB4-R_CP207/47



Ready-to-use packs (1)

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	24...240 ~	Configurable receiver ZBRRA equipped with: - choice of 3 output functions (monostable, bistable, stop/start) - 2 relay outputs type RT 3A (2)	XB5RFA02	0.230/0.507
	Wireless and batteryless pushbutton + Ø 22 mm/0.87 in. metal head + 1 set of 10 caps			- 2 buttons (teach, parameter setting) - 6 indicating LEDs (power ON, function modes, output status, signal strength)	XB4RFA02
	Wireless and batteryless pushbutton + Ø 22 mm/0.87 in. plastic head + 1 set of 6 caps	24 ~	Non-configurable receiver equipped with monostable output function: - 1 relay output type RT 3A - without button - without indicating LED	XB5RFB01	0.230/0.507
	Wireless and batteryless pushbutton + Ø 22 mm/0.87 in. metal head + 1 set of 6 caps				XB4RFB01
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	24...240 ~	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			Non-configurable receiver equipped with monostable output function: - with 1 relay output type RT 3A - without button - without indicating LED	XB5RMB03

(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

2



ZBRT1



ZBRV1



ZB5RTA3



ZB5RTC2

Transmitter components for wireless and batteryless pushbuttons				
Description	Type of push	Color	Reference	Weight kg/lb
Transmitter for wireless and batteryless 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)	0.025/0.055
Wireless and batteryless pushbutton including: - a transmitter equipped with fixing collar - a spring return mushroom head	Mushroom 40 mm/1.58 in. (plastic)	Black	ZB5RTC2	0.055/0.121
Visual feedback			ZBRV1 (4)	
Wireless and batteryless pushbuttons including: - a transmitter equipped with fixing collar - a spring return pushbutton head with cap attached (2)	Flush (plastic)	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
	Flush (metal)	Yellow	ZB5RTA5	0.045/0.099
		Blue	ZB5RTA6	0.045/0.099
		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.

PF00765A



ZBRP1

XB4-5R_00642_DFFR17003A



XB5RP1US2

XB5R_00642_CPSVA19021



ZBRRA

Transmitter components for wireless and batteryless rope pull switch

Description	Application	Reference	Weight kg/lb
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
Rope pull switch with wireless and batteryless transmitter, and a universal support accessory ZBRAUS2	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 receivers

Description	Output function	Output type	Receiver voltage V	Reference	Weight kg/lb
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 $\overline{\text{---}}$	ZBRRC	0.130/0.287
	Monostable, bistable	2 relay outputs type RT 3A (7)	24...240 \sphericalangle	ZBRRD	0.130/0.287
	Monostable, bistable, stop/start	2 relay outputs type RT 3A (7)	24...240 \sphericalangle	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 ZBR● version ≥ 2.0 , relay antenna ZBRA1 version ≥ 2.0 , and access point ZBRN● 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.



Accessories (continued)

Boxes 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
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 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	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.

Accessories (continued)

Product	Application	Description	Sold in lots of	Unit reference	Weight kg/lb
Other accessories					
Relay-antenna (1)	Between transmitter and receiver Used to increase the range and/or get round obstacles	24...240 V \sphericalangle <input type="checkbox"/> 5 m/16.4 ft cable <input type="checkbox"/> 1 power-ON LED <input type="checkbox"/> 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	<input type="checkbox"/> 2 antennas <input type="checkbox"/> 0.9 m/2.95 ft cable <input type="checkbox"/> 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/ 1.06 x 0.32 in., for engraving	For sticking onto handy box ZBRM01, ZBRM21, and ZBRM22	Self-adhesive, blank, black background	10	ZBY0101T	0.005/0.011

(1) Not wired to the receiver.

PF100707



ZBRA1

XB4-5R_60642_CPF/IR17001A



ZBRA3

XB4-5R_60642_CPF/IR17002A



ZBRAUS2

Control and signaling units Ø 22

Harmony XB5R plastic and XB4R metal

Wireless and batteryless ecosystem devices

Harmony Hub ZBRN1 and ZBRN2

- **Presentation**..... [page 3/2](#)
- **Description**..... [page 3/2](#)
- **References**
 - Configurable Harmony Hub [page 3/3](#)
 - Communication module [page 3/3](#)
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- **Compatibility**
 - Harmony Hub ecosystem devices [page 3/4](#)

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

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.

3



ZBRN1 front view



ZBRN1 underside view

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

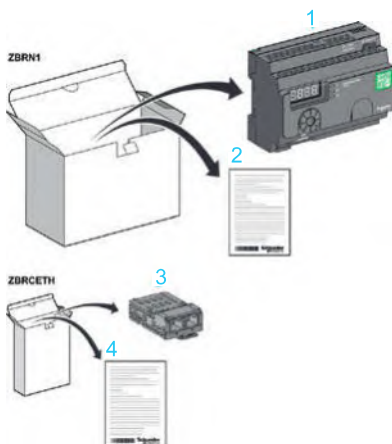


Figure A: ZBRN1: Standard Harmony Hub with communication module

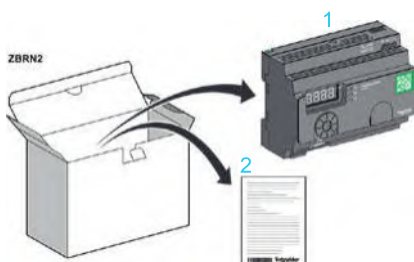


Figure B: ZBRN2: Harmony Hub for Modbus Serial Line communication

(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



ZBRA2

Configurable Harmony Hub

Description	Data function	Output type	Receiver voltage V	Reference	Weight kg/lb
Configurable Harmony Hub equipped with: - 7-segment display - jog dial - 8 LED indicators (Power On, functions mode, communication status, signal strength) - external antenna connector and protective plug	Monostable (adjustable from 100 ms to 1 s)	1 slot for ZBRCETH communication module (to be ordered separately)	24...240 V	ZBRN1	0.270/0.595
	Monostable (adjustable from 100 ms to 1 s)	2 RS485 connectors providing connectivity for Modbus RS485 Serial Line	24...240 V	ZBRN2	0.263/0.580

Communication module

Description	Characteristics	Communication port	Reference	Weight kg/lb
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/lb
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
Wireless and batteryless ecosystem device
Harmony Hub ZBRN1 and ZBRN2

Harmony Hub ecosystem device

Transmitter components for wireless and batteryless pushbuttons

Description	Type of push	Color	Reference	Weight kg/lb
Transmitter for wireless and batteryless pushbutton (1)	1 radio frame sent when button – is pushed		ZBRT1	0.025/0.055
			ZBRT2 (2)	0.025/0.055
				1 radio frame sent when button is released
Wireless and batteryless pushbuttons including: - a transmitter equipped with fixing collar - a spring return pushbutton head with cap attached	Flush (plastic)	Visual feedback	ZBRV1 (3)	0.017/0.037
		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	



ZBRT1



ZBRV1



ZBRZ1



ZB5RTA3



ZB5RTC2

(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.

Control and signaling units Ø 22

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

PF100755A



ZBRP1

Harmony Hub ecosystem device (continued)

Transmitter components for wireless and batteryless rope pull switch

Description	Application	Reference	Weight kg/lb
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

XB4-5R_00642_DPFIR17003A



XB5RP1US2

Rope pull switch with wireless and batteryless transmitter and a universal support accessory ZBRAUS2	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
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Configurable receiver for Harmony Hub

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

XB4-5R_CP19284C



ZBRRH

3

Control and signaling units Ø 22

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



ZBRM22

ZBRACS

Harmony Hub ecosystem device (continued)

Accessories (continued) - Boxes 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
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



ZBRM22A0



XALD02

(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.

Harmony Hub ecosystem device (continued)					
Product	Application	Description	Sold in lots of	Unit reference	Weight kg/lb
Other accessories					
Relay antenna (1)	Between transmitter and receiver Used to increase the range and/or get round obstacles	24...240 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/ 1.06 x 0.32 in., for engraving	For sticking onto handy box ZBRM01, ZBRM21, and ZBRM22	Self-adhesive, blank, black background	10	ZBY0101T	0.005/0.011

PF100707



ZBRA1

XB4-5R_00642_CPF:IR17001A



ZBRA3

XB4-5R_00642_CPF:IR17002A



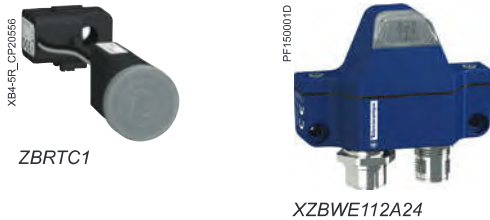
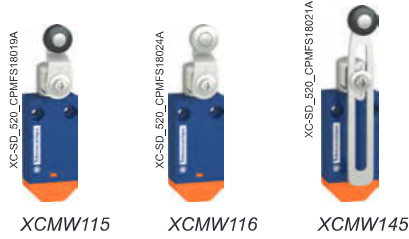
ZBRAUS2

(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

3



Harmony Hub ecosystem device (continued)

Transmitter components for wireless and batteryless limit switches

Reference	Description	Benefits
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 recycling costs.
XCMW102	Metal roller plunger	2 linear 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 recycling costs.
XCMW116	Metal roller lever	3 rotary type heads: With head for rotary lever
XCMW145	Adjustable length plastic roller lever	

Transmitter components for wireless temperature sensors

ZBRTT1	Temperature and humidity sensor	Wireless smart sensor for continuous environmental condition monitoring, used to measure the: <ul style="list-style-type: none"> - 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 components 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 transmitters for Harmony Hub

XZBWE112A24	Wireless transmitter for sensors and switches	Connecting one digital input to the Harmony Hub gateway.
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Transmitter components 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	

Control and signaling units Ø 22

Harmony XB5R plastic and XB4R metal

Wireless and batteryless pushbuttons

Wireless and batteryless ecosystem devices

Product reference index

- Product reference index..... [page 4/2](#)

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A9MEM1560	3/8	ZBRA2	1/7 3/3
A9MEM1570	3/8	ZBRA3	1/7 2/9 3/7
A9XST114	1/7 3/8	ZBRACS	2/8 3/6
L		ZBRAUS2	2/7 2/9 3/5 3/7
LV434020	3/8	ZBRCETH	1/7 3/3
LV434021	3/8	ZBRM21	2/8 3/6
LV434022	3/8	ZBRM21A0	2/8 3/6
LV434023	3/8	ZBRM21B0	2/8 3/6
X		ZBRM22	2/8 3/6
XALD01	2/8 3/6	ZBRM22A0	2/8 3/6
XALD02	2/8 3/6	ZBRM22AB0	2/8 3/6
XB4RFA02	2/5	ZBRM22B0	2/8 3/6
XB4RFB01	2/5	ZBRM22BA0	2/8 3/6
XB5RFA02	2/5	ZBRN1	1/7 3/3
XB5RFB01	2/5	ZBRN2	1/7 3/3
XB5RMA04	2/5	ZBRP1	1/7 2/7 3/5
XB5RMB03	2/5	ZBRRRA	2/7
XB5RP1US2	2/7 3/5	ZBRRRC	2/7
XCMW102	3/8	ZBRRD	2/7
XCMW110	3/8	ZBRRH	1/7 3/5
XCMW115	3/8	ZBRT1	3/4 2/6
XCMW116	3/8	ZBRT2	3/4 2/6
XCMW145	3/8	ZBRTC1	3/8
XZBWE112A24	3/8	ZBRTC2	3/8
Z		ZBRTC3	3/8
ZB4BZ009	2/9 3/7	ZBRTT1	3/8
ZB4RTA1	2/6 3/4	ZBRV1	3/4 2/6
ZB4RTA2	2/6 3/4	ZBRZ1	3/4
ZB4RTA3	2/6 3/4	ZBY0101T	2/9 3/7
ZB4RTA4	2/6 3/4		
ZB4RTA5	2/6 3/4		
ZB4RTA6	2/6 3/4		
ZB4RTA331	2/6 3/4		
ZB5AZ009	2/9 3/7		
ZB5RTA1	2/6 3/4		
ZB5RTA2	2/6 3/4		
ZB5RTA3	2/6 3/4		
ZB5RTA4	2/6 3/4		
ZB5RTA5	2/6 3/4		
ZB5RTA6	2/6 3/4		
ZB5RTA331	2/6 3/4		
ZB5RTA432	2/6 3/4		
ZB5RTC2	2/6		

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