

Measurement and control solutions

Zelio temperature controller

Zelio RTC48

Catalog

April 2013



General contents

Zelio temperature controller

■ Overview

- Added simplicity page 2
- Combined performance and economy page 3

Selection guide page 4

■ Presentation

- Product page 6
- Operation page 6
- Applications page 6

■ **Software configuration** page 7

■ **Description** page 7

■ References

- Zelio temperature controller page 8
- Accessories page 9

■ How to find products?

- Search, visualize and download page 10
- Access product references with adapted tools page 12
- Compare, select and compile page 14
- Check the product status, design your equipment page 15

■ **Product index references** page 16

Zelio RTC48

The A to Z of temperature control

The Zelio RTC48 temperature controllers are key components for temperature regulation solutions (solid state relays, electromechanical relays, PLCs, and displays).



Featuring intelligent adaptive display and Modbus communication, the RTCs offer easy installation and implementation with unique performance.

Added simplicity

Easy to implement

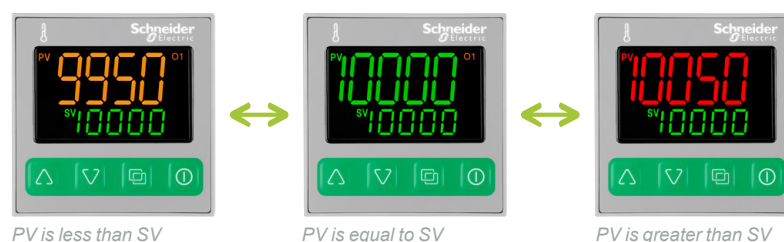
Zelio RTC48 is designed with the operator in mind. The set-up is intuitive and can be completed in a few simple steps. Schneider Electric's powerful PID and auto-tuning algorithm makes the setting up of device faster and simplifies operation.

The Zelio RTC48 can also be configured from a PC loaded with **Zelio Temperature Control Soft** software via a USB cable.



Adaptive display

The minimalistic design of Zelio RTC48 makes the display panel simple and user friendly. The intelligent PV (Process Value) display continuously changes color (Red, Green, Orange) according to its varying value from the SV (Set Value) range. This high quality display with status indicated by color can be easily viewed and read from a distance.



Make the most of your energy

Combined performance and economy

Zelio RTC48 clearly demonstrates Schneider Electric's determination to do more with less, in line with the efficiency needs of machine manufacturers.

Simplified installation

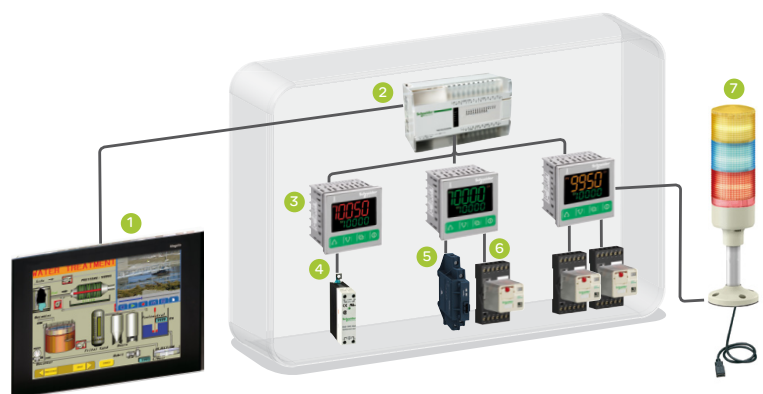
Zelio RTC48 is a compact and space saving solution that requires less panel depth than the conventional temperature controllers. Installation is easy, quick and much simpler that makes it ideal for various types of machines.

The display front face is IP66 rated, thus making the device suitable for operation in harsh industrial environments.



Open communication

With an ever increasing level of automation, the Zelio RTC48 is built to be Modbus communication ready. By connecting to a central monitoring system, up to 31 temperature controllers can be daisy-chained in a single loop and monitored easily.



- 1 Display unit Magelis XBT GT
- 2 Programmable controllers Twido TWD LC
- 3 Temperature controller Zelio RTC48
- 4 Solid-state relay Zelio SSR
- 5 Solid-state relay Zelio SSM
- 6 Electromechanical relay Zelio RUM
- 7 Illuminated indicator bank Harmony XVGU

Measurement and control solutions
Zelio temperature controller
Zelio RTC48

Supply voltage		~ 24 V
		
Size - Standard		48 x 48 mm/1.900 x 1.900 in. – 1/16 DIN
Inputs		Universal – Thermocouple, RTD, DC voltage, and DC current
Sampling time		250 ms
Communication on Modbus		Yes, with “C” models RTC48PUNC●●●●
IP degree of protection for front panel		IP66 (conforming to NEMA-4X)
Conformity to international standards		LVD EN 61010-1, EMC EN 61326-1
Functions	Hysteresis ON/OFF	Yes
	PID	Yes
	Auto-tuning	Yes
	Auto-reset (For PD control only)	Yes
	Operating mode	Automatic/Manual control
	Control output OFF	Yes
Alarm outputs	Number of outputs	1 output on RTC48PUN1●●●● or RTC48PUNC●●●● and 2 outputs on RTC48PUN2●●●●
	Output voltage	3 A, 250 V ~ for resistive load
Display	11 segments, 5 digits	LCD
	Operating indicators	9
Process Outputs	Number-type	Output 1 and Output 2 are available in various relay and SSR output combinations depending on the model (1)
	Relay output rating	3 A, 250 V ~ for resistive load and 1 A, 250 V ~ for inductive load
	Relay electrical durability (operating cycles per hour)	100,000 cycles
	Solid state output rating	Max 40 mA , 12 V --- +/-15% (short-circuit protected)
Temperature controller type		RTC48PUN●●●LU
Page		8

(1) For more information on output types and the models, please refer to the Reference table on page 8.

Supply voltage		~ 100...240 V
		
Size - Standard		48 x 48 mm/1.900 x 1.900 in. – 1/16 DIN
Inputs		Universal – Thermocouple, RTD, DC voltage, and DC current
Sampling time		250 ms
Communication on Modbus		Yes, with “C” models RTC48PUNC●●●●
IP degree of protection for front panel		IP66 (conforming to NEMA-4X)
Conformity to international standards		LVD EN61010-1, EMC EN61326-1
Functions	Hysteresis ON/OFF	Yes
	PID	Yes
	Auto-tuning	Yes
	Auto-reset (For PD control only)	Yes
	Operating mode	Automatic/Manual control
	Control output OFF	Yes
Alarm outputs	Number of outputs	1 output on RTC48PUN1●●●● or RTC48PUNC●●●● and 2 outputs on RTC48PUN2●●●●
	Output voltage	3 A, 250 V ~ for resistive load
Display	11 segments, 5 digits	LCD
	Operating indicators	9
Process Outputs	Number-type	Output 1 and Output 2 are available in various relay and SSR output combinations depending on the model (1)
	Relay output rating	3 A, 250 V ~ for resistive load and 1 A, 250 V ~ for inductive load
	Relay electrical durability (operating cycles per hour)	100,000 cycles
	Solid state output rating	Max 40 mA , 12 V --- +/-15% (short-circuit protected)
Temperature controller type		RTC48PUN●●●HU
Page		8

(1) For more information on output types and the models, please refer to the Reference table on page 8.





Presentation

Product

The Zelio RTC48 is a compact sized temperature controller with high quality display and performance. This user-friendly device can be easily installed and integrated into various solutions.

The range includes 28 models which offer the following characteristics:

- 48 x 48 mm/1.900 x 1.900 in. (1/16 DIN),
- 62 mm/2.440 in. depth,
- Supply voltage: ~ 100 to 240 V or ≈ 24 V,
- Input: Thermocouple, RTD, DC Voltage, or DC current,
- 11 segment LCD display in 3 colors (Green, Red, Orange),
- 1 or 2 alarm outputs, depending on the model,
- Communication: Serial and Console, with communication on Modbus ("C" models RTC48PUNC●●●●).

Operation

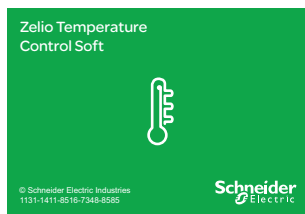
- One or two dedicated outputs for heating or cooling based on PID algorithms.
- Advanced functions:
 - ☐ hysteresis (for ON/OFF control),
 - ☐ auto-tuning or auto-reset,
 - ☐ automatic or manual operating mode.

Applications

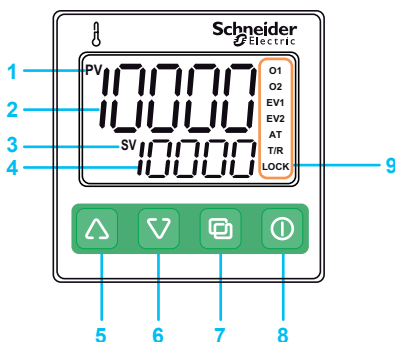
The **RTC48** temperature controller is aimed at system integrators and machine manufacturers. RTC48 offers temperature control solutions for industries like HVAC, industrial machines, packaging, and textiles.

Application examples:

- Extrusion lines,
- Plastic and rubber injection presses,
- Thermo-forming,
- Production of synthetic fibres and polymerisation,
- Food and beverage processing lines,
- Moulding presses,
- UV and Laser technologies,
- Maintaining temperature of a color bath,
- Cold rooms,
- Paint booths,
- Horticultural and livestock farms.



Zelio Temperature Control Soft software



Software configuration

“**Zelio Temperature Control Soft**” software is used to configure the parameter settings of **RTC** temperature controller with Modbus communication (“C” models RTC48PUNC●●●●).

■ Available as a freeware and can be downloaded from our web site: www.schneider-electric.com,

■ Runs on a PC with Microsoft Windows 98, Windows XP, Windows Vista or Windows 7 operating system,

■ Allows you to modify and save parameter settings in the PC and upload the configurations to RTC48.

Description

48 x 48 size/1.900 x 1.900 in. – 1/16 DIN standard

- 1 PV indicator: Lights when the PV (Process Value) is indicated in PV/SV display mode.
- 2 PV display: Indicates the PV.
- 3 SV indicator: Lights when the SV (Set Value) is indicated in PV/SV display mode.
- 4 SV display: Indicates the SV.
- 5 Increase key: Increases the numeric value.
- 6 Decrease key: Decreases the numeric value.
- 7 Mode key: Selects the setting mode or registers the set value.
- 8 ON/OFF key: Switches control output ON/OFF or Auto/Manual control function.
- 9 Action indicators:
 - O1(OUT1): Lights when control output is ON or when heating output is ON
 - O2(OUT2): Lights when cooling output is ON
 - EV1: Lights when Alarm 1 output is ON
 - EV2: Lights when Alarm 2 output (A2 option) is ON or when Heater burnout alarm is ON
 - AT: Flashes during AT (Auto-tuning)
 - T/R: Lights during Serial communication (TX output)
 - LOCK: Lights when Lock 1, Lock 2, or Lock 3 is selected



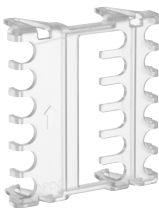
RTC48PUN1RNHU

Zelio temperature controller**48 x 48 mm/1.900 x 1.900 in. size – 1/16 DIN standard, Universal input**

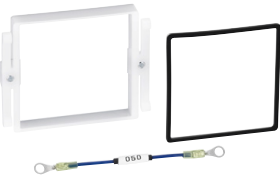
Description	Supply voltage	Output 1		Output 2		Alarm	Reference	Weight kg/lb
		Relay	SSR	Relay	SSR			
Temperature Controller	~ 100 to 240 V	Yes	–	–	–	2	RTC48PUN2RNHU	0.135/0.298
		–	Yes	–	–	2	RTC48PUN2SNHU	0.135/0.298
		Yes	–	–	–	1	RTC48PUN1RNHU	0.135/0.298
		–	Yes	–	–	1	RTC48PUN1SNHU	0.135/0.298
		Yes	–	Yes	–	1	RTC48PUN1RRHU	0.135/0.298
		Yes	–	–	Yes	1	RTC48PUN1RSRU	0.135/0.298
		–	Yes	Yes	–	1	RTC48PUN1SRHU	0.135/0.298
		–	Yes	–	Yes	1	RTC48PUN1SSHU	0.135/0.298
Temperature Controller with Modbus communication	~ 100 to 240 V	Yes	–	–	–	1	RTC48PUNCRNHU	0.135/0.298
		–	Yes	–	–	1	RTC48PUNCSNHU	0.135/0.298
		Yes	–	Yes	–	1	RTC48PUNCRRHU	0.135/0.298
		Yes	–	–	Yes	1	RTC48PUNCRSHU	0.150/0.331
		–	Yes	Yes	–	1	RTC48PUNCSRHU	0.135/0.298
		–	Yes	–	Yes	1	RTC48PUNCSSHU	0.150/0.331
Temperature Controller	~ 24 V	Yes	–	–	–	2	RTC48PUN2RNLU	0.135/0.298
		–	Yes	–	–	2	RTC48PUN2SNLU	0.135/0.298
		Yes	–	–	–	1	RTC48PUN1RNLU	0.135/0.298
		–	Yes	–	–	1	RTC48PUN1SNLU	0.135/0.298
		Yes	–	Yes	–	1	RTC48PUN1RRLU	0.135/0.298
		Yes	–	–	Yes	1	RTC48PUN1RSLU	0.135/0.298
		–	Yes	Yes	–	1	RTC48PUN1SRLU	0.135/0.298
		–	Yes	–	Yes	1	RTC48PUN1SSLU	0.135/0.298
Temperature Controller with Modbus communication	~ 24 V	Yes	–	–	–	1	RTC48PUNCRNLU	0.135/0.298
		–	Yes	–	–	1	RTC48PUNCSNLU	0.135/0.298
		Yes	–	Yes	–	1	RTC48PUNCRRLU	0.135/0.298
		Yes	–	–	Yes	1	RTC48PUNCRSLU	0.150/0.331
		–	Yes	Yes	–	1	RTC48PUNCSRSLU	0.135/0.298
		–	Yes	–	Yes	1	RTC48PUNCSSLU	0.150/0.331



RTCCBL



RTCCOV



RTCACC

Accessories		
Description	Reference	Weight kg/lb
USB cable	RTCCBL	0.135/ 0.298
Terminal cover	RTCCOV	0.135/ 0.298
Spare parts pack (gasket, shunt resistor, and mounting frame)	RTCACC	0.135/ 0.298

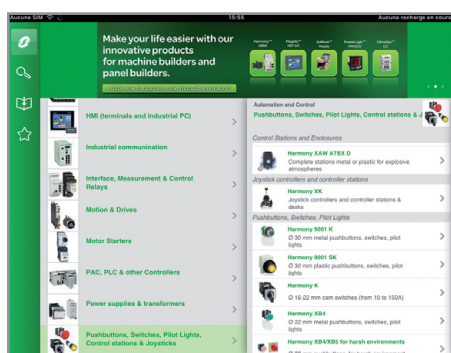
Search, visualize, and download

Use your tablet or your PC to quickly access detailed and comprehensive information on all our products

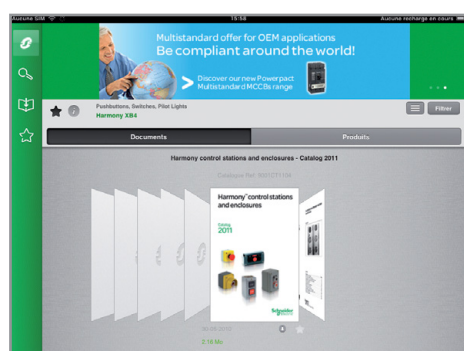


Tablets

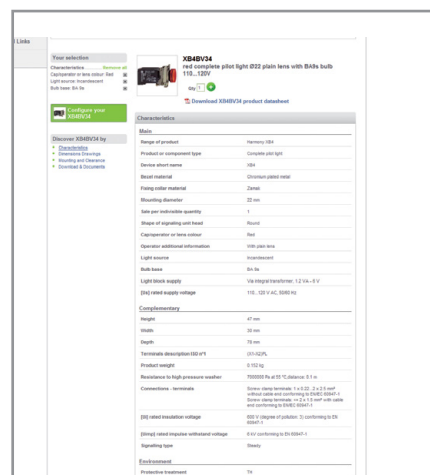
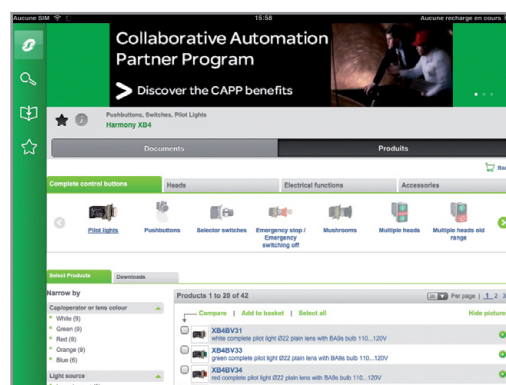
Application name: "Automation Library by Schneider Electric"



All product ranges displayed by function



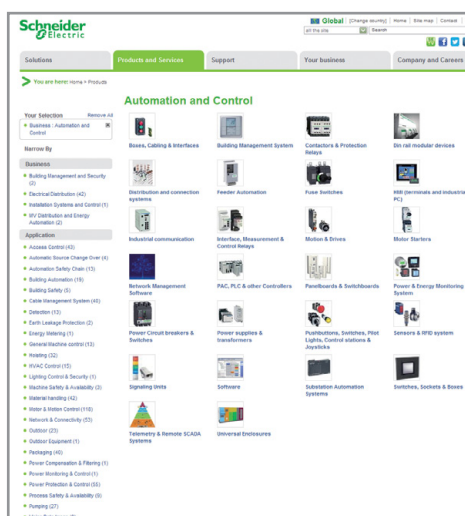
Dynamic catalogs
(hyperlinks, video, ...)



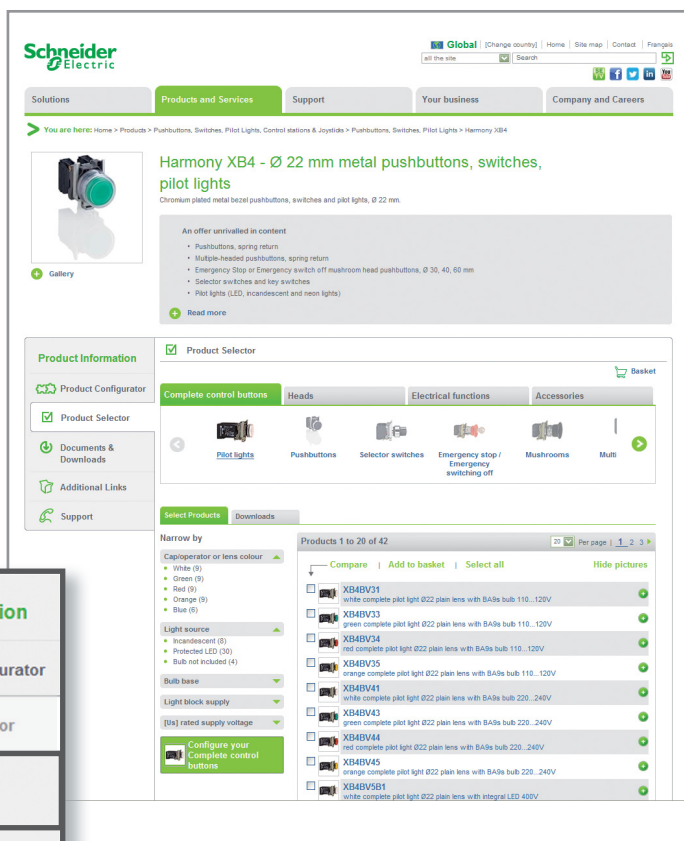
Product selector: dynamic filters to get easily your part number

Personal computer

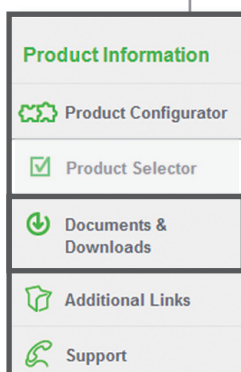
Path: www.schneider-electric.com > **Products and Services** > Automation and control > Product offer



All product ranges displayed by function



Dynamic catalogs (hyperlinks, video, ...)

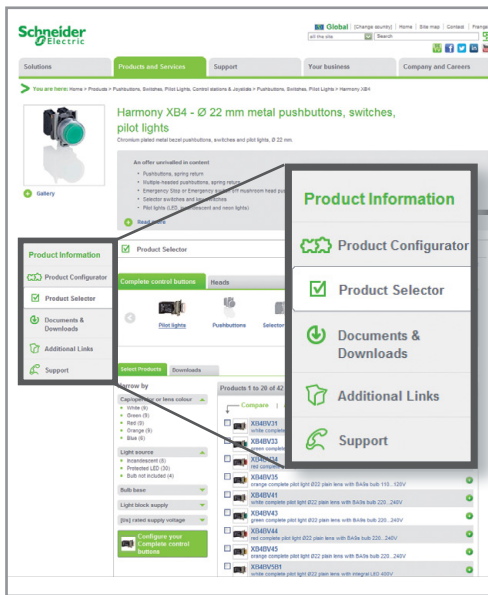


Product selector: dynamic filters to get easily your part number

Access product references with adapted tools

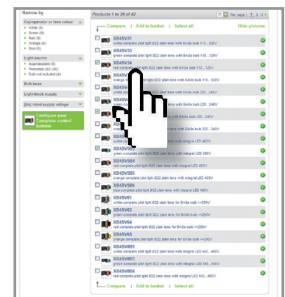
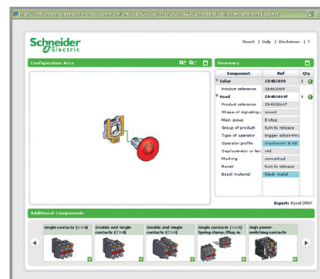
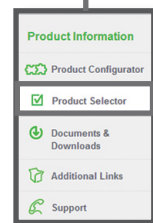
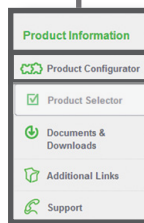


Path: www.schneider-electric.com > **Products and Services** > Automation and control > ... > Product offer



Graphic product configurator
Select the right product with just a few clicks

Dynamic product selector
Visualize product characteristics and dimensions



Product data sheet
with technical characteristics
and dimensions

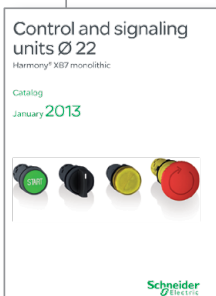
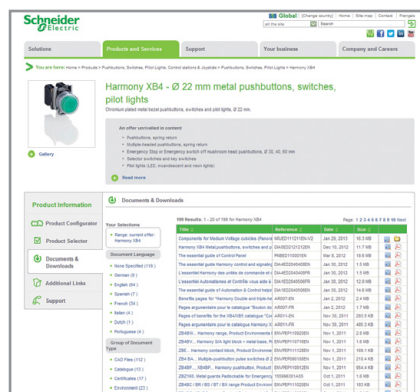
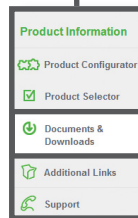


Dimensions

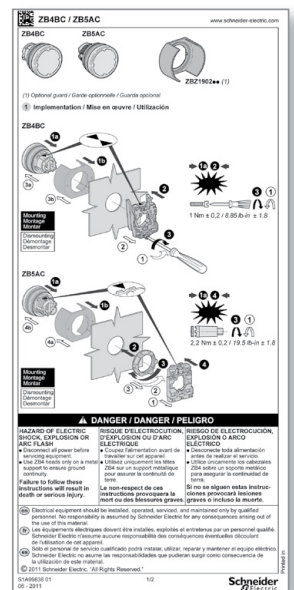
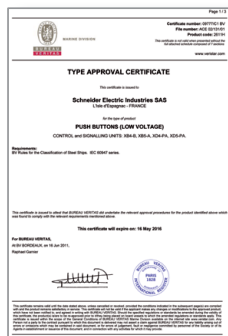
**Technical
characteristics**

Documents and downloads

Visualize and download catalogs, technical publications, certificates, etc.



Essential guides



Dynamic catalogs

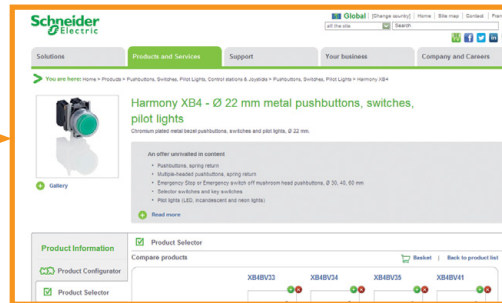
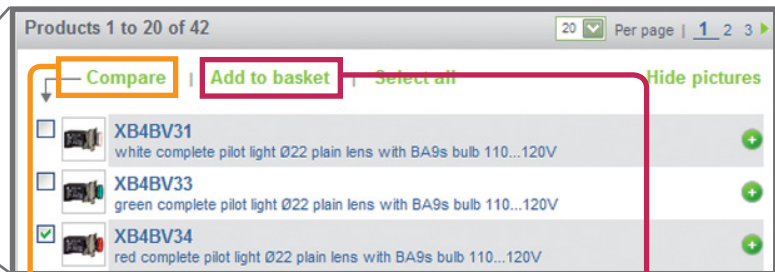
Certificates

Technical publications

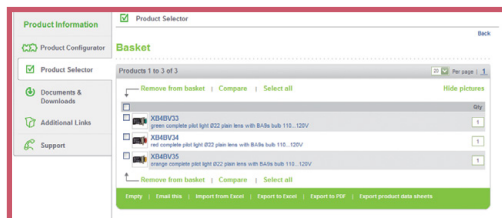
Compare, select, and compile



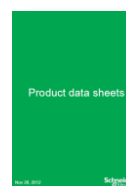
Path: www.schneider-electric.com > **Products and Services** > Automation and control > ... > Harmony XB4*



Compare
technical
characteristics



Select
and store
your products
into
the basket



Compile
all data sheets
in a unique
document

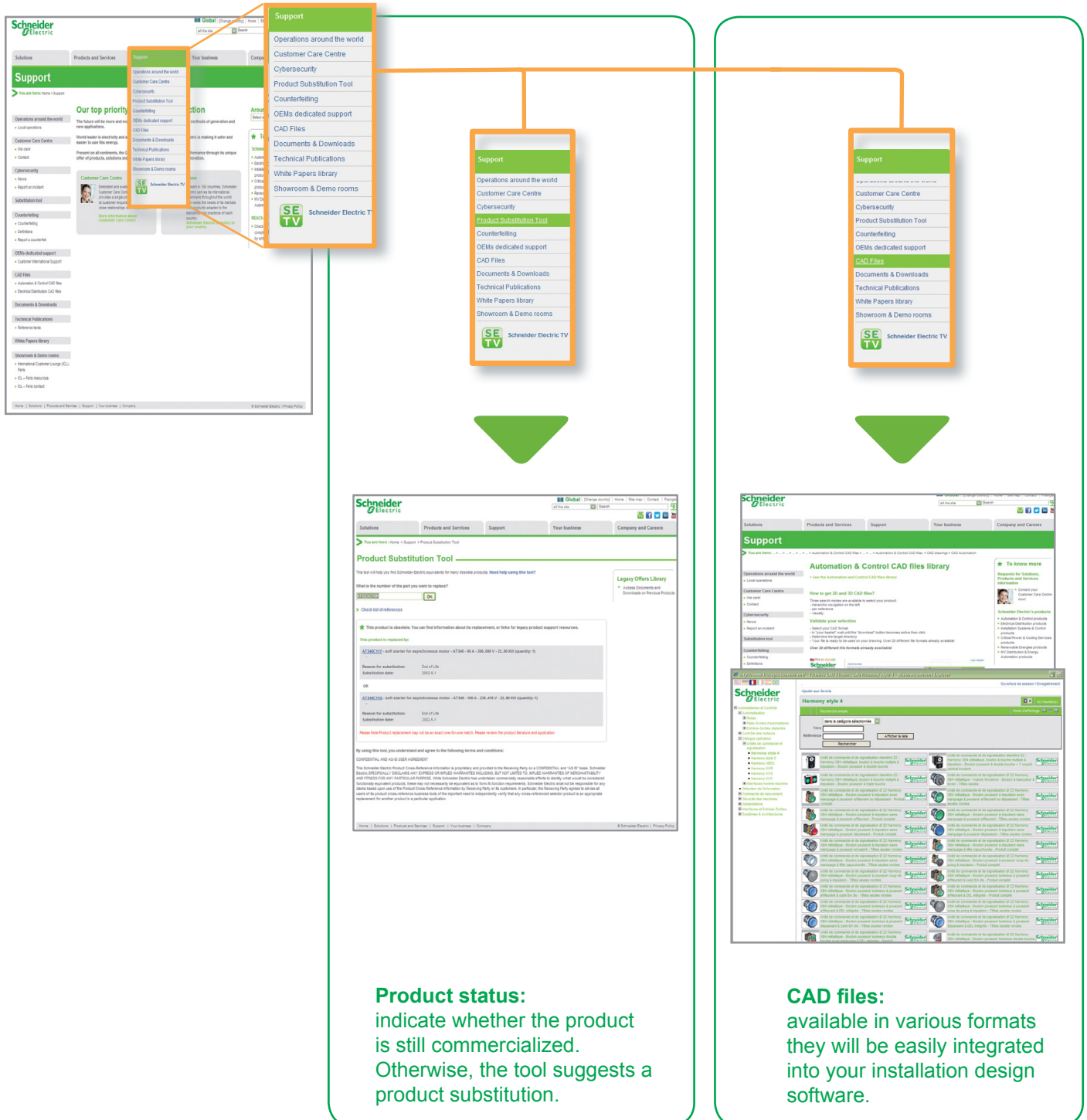
* Example of research on a product

Check the product status, design your equipment



Path: www.schneider-electric.com > **Support** > Product Substitution Tool

Path: www.schneider-electric.com > **Support** > CAD files



Please note that all references to products and services are just examples.

R	
RTC48PUN1RNHU	8
RTC48PUN1RNLU	8
RTC48PUN1RRHU	8
RTC48PUN1RRLU	8
RTC48PUN1RSHU	8
RTC48PUN1RSLU	8
RTC48PUN1SNHU	8
RTC48PUN1SNLU	8
RTC48PUN1SRHU	8
RTC48PUN1SRLU	8
RTC48PUN1SSHU	8
RTC48PUN1SSLU	8
RTC48PUN2RNHU	8
RTC48PUN2RNLU	8
RTC48PUN2SNHU	8
RTC48PUN2SNLU	8
RTC48PUNCRNHU	8
RTC48PUNCRNLU	8
RTC48PUNCRRHU	8
RTC48PUNCRRLU	8
RTC48PUNCRSHU	8
RTC48PUNCRSLU	8
RTC48PUNCSNHU	8
RTC48PUNCSNLU	8
RTC48PUNCSRHU	8
RTC48PUNCSRLU	8
RTC48PUNCSSHU	8
RTC48PUNCSSLU	8
RTCACC	9
RTCCBL	9
RTCCOV	9

Schneider Electric Industries SAS

www.schneider-electric.com

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

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
Printed by: