

XAP 1.0



Extended Automation Platform



Benefits

- **Integration.** XAP 1.0 includes all the tools to set up and operate building automation functions
- **Scalability.** Together with the UWP 3.0 platform, it offers a complete solution from top to bottom to manage an efficient building
- **Openness.** XAP 1.0 can be easily programmed and connected to other devices thanks to standards such as CODESYS, OPC UA, KNX IP, BACnet
- **Reliability.** Trusted and secure Linux-based operating system
- **Connectivity.** XAP 1.0 is a server platform for connecting multiple and different devices and sub-systems
- **Interoperability.** IoT data distribution via MQTT

Description

XAP 1.0 is a rugged and compact controller designed as a powerful IIoT gateway and a programmable unit for building automation functions. It is empowered by a configurable web interface which makes it an outstanding HMI without screen. It integrates the standard IEC 61131 PLC (Codesys), so that any building automation function can be programmed by means of a standard and well-known tool. Together with the UWP platform, XAP 1.0 delivers a complete solution in building automation from the management level down to the field level. The powerful software Wizard permits an easy setup of graphic pages, functions and protocols.

Applications

XAP 1.0, as IIoT gateway, offers unique solutions for a wide range of applications in building automation and energy efficiency.

Main functions

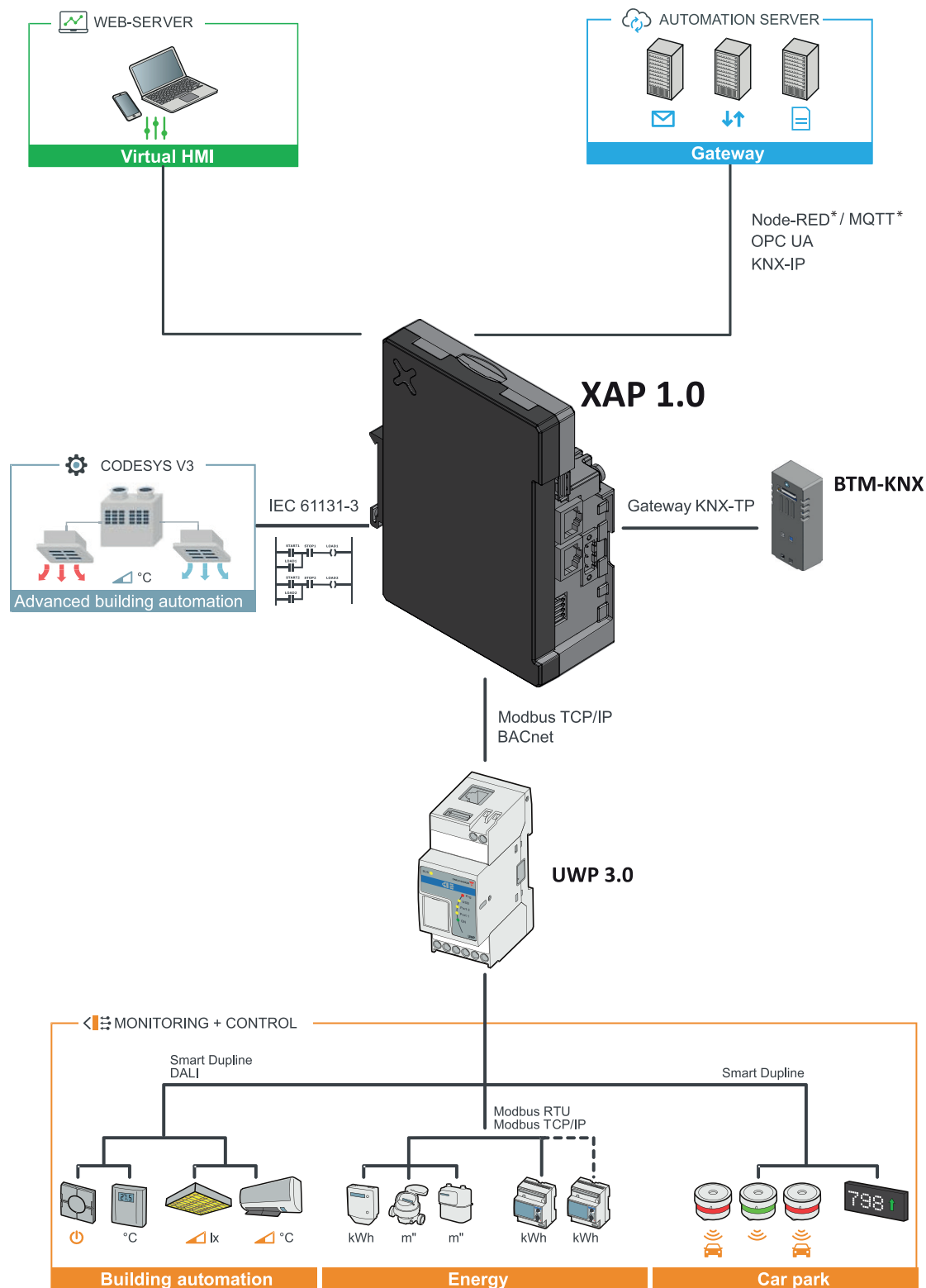
- Controller and gateway, HMI, PLC, PLC for building automation function
- Data communication: OPC UA*
- Cloud connectivity thanks to Node-RED*
- Operating System Linux
- Secure web server access: HTTPS
- Protocols: Modbus RTU/TCP-IP master and slave, BACnet client, KNX IP, KNX TP using an expansion module

**Note: optional*

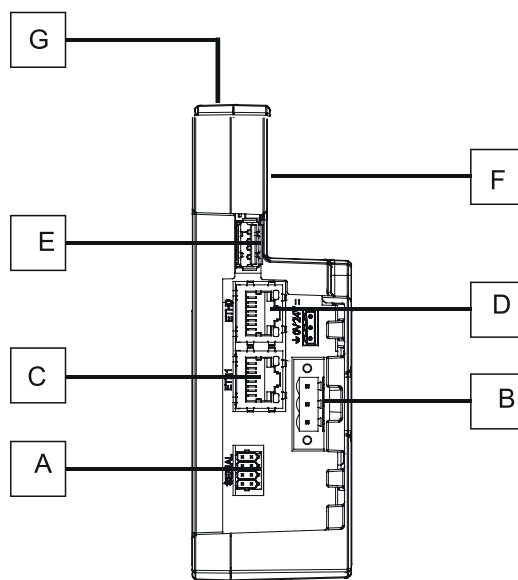
 Main features

- Compatible with CODESYS V3: it supports network stacks and local I/O expandability
- 2 Ethernet ports for network separation WAN/LAN
- Customizable web interface, with different access types according to the type of user
- Up to 32 Modbus devices connected to the RS485 port
- Connectible to UWP 3.0 via BACnet or Modbus/TCP

Architecture



Structure

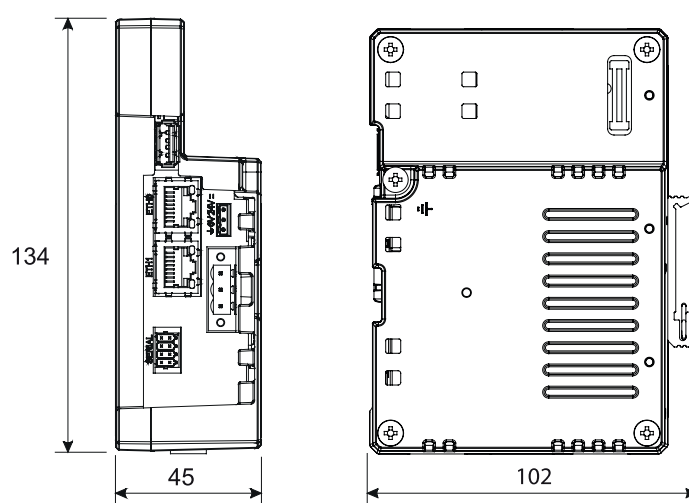


Area	Description
A	Serial port
B	Power supply
C	Ethernet port 1 (10 / 100 Mb)
D	Ethernet port 0 (10 / 100 Mb)
E	USB port 1
F	Expansion slots for plug-in module (BTM-KNX)
G	SD Card slot

Features

General

Material	Metal
Dimensions	2-DIN module
Weight	600 g
Protection degree	IP20
Terminals	8 terminals, screw-type; Section: 1.5 mm ² maximum; Torque: from 0.4 to 0.8 Nm



Environmental specifications

Operating temperature	-20° to 60°C
Storage temperature	-20° to +70°C
Humidity (non-condensing)	5 to 85% RH non-condensing
Shock	± 50 g, 11 ms, 3 pulses per axis
Vibration	5 ÷ 9 Hz, 7 mm p-p 9 ÷ 150 Hz, 1 g

Power supply

Power supply	24 Vdc: 10-32 Vdc
Current rating	0.35A @ 24 Vdc

Note: For applications requiring compliance with EN 61131-2 and specifically in reference to 10 ms voltage dips, the power supply range voltage is 18-32 Vdc



Compatibility and conformity

Standards	Electromagnetic compatibility (EMC) - immunity: EN 61000-6-1, EN 61000-6-2
	Electromagnetic compatibility (EMC) - emissions: EN61000-6-3, , EN 61000-6-4
	EN 60945, EMC emissions and immunity for marine applications
	Radiated disturbance test: CISPR 22, CISPR 16-2-3, CLASS A
Directives	EMC 2014/30/EU
	RoHS 2011/65/EU
Approvals	  

Ports

Ethernet port	2 (eth 0 - 10/100, eth 1 - 10/100)
USB port	1 (Host v. 2.0, max. 500 mA)
Serial port	1 (RS232, RS485, RS422, configurable software)
SD card	Yes
Expansion	1 slot for plug-in modules

Battery

Backup battery	3V 50 mAh Lithium, rechargeable, not user-replaceable, model VL2330.
Recharge	At first installation it must be charged for 48 hours. When the battery is fully charged, it ensures a period of 3 months of data backup at 25°C

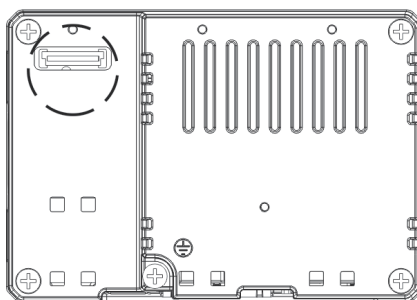


Fig. 1 Battery

System resources

CPU	ARM Cortex-A8 1 GHz
Operating System	Linux RT
Flash	4 GB
RAM	512 MB
Real Time Clock	RTC Backup; Buzzer: Yes; Accuracy <100 ppm

Connection Diagrams

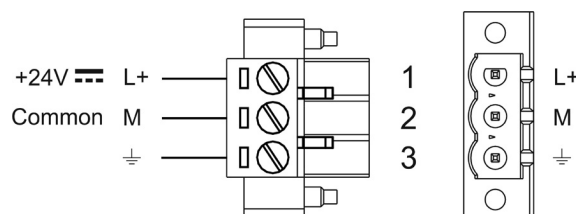
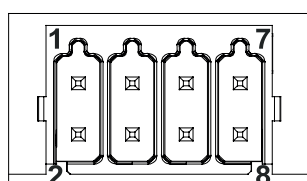


Fig. 2 Power supply



To operate in RS485 pins 1-2 and 3 - 4 must be connected externally (see Fig.4).

Pin	RS485	RS422	RS232
1	CHB-	CHB-	RX
2	CHA-	CHA-	TX
3	CHB+	CHB+	CTS
4	CHA+	CHA+	RTS
5	+5V output	+5V output	+5V output
6	GND	GND	GND
7			
8	SHIELD	SHIELD	SHIELD

Fig. 3 Serial port pinout*

XAP 1.0

Modbus device

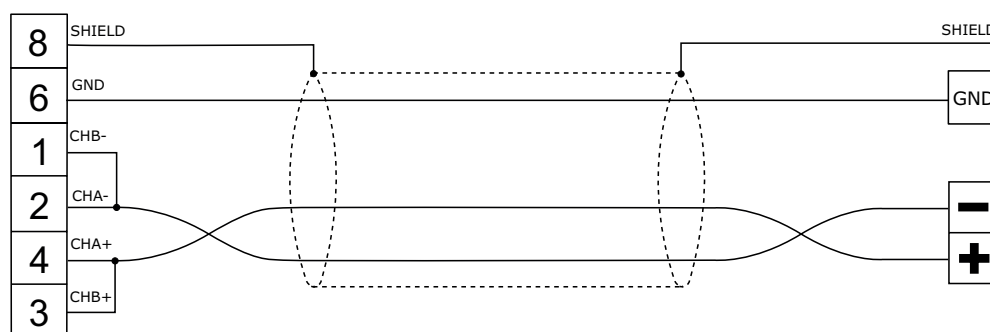


Fig. 4 Connection diagram for RS485**

*The serial port is software programmable. Make sure you select the appropriate interface in the programming software.

**It can be used as reference when the pinout of the PLC is not known

References



XAP10RSEXX



Further reading

Document	Where to find it
XAP 1.0 - Instruction manual	XAP1.0_im.pdf
UWP 3.0 - Instruction manual	uwp3.0_im.pdf
UWP 3.0 - Data sheet	UWP3.0_DS.pdf



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