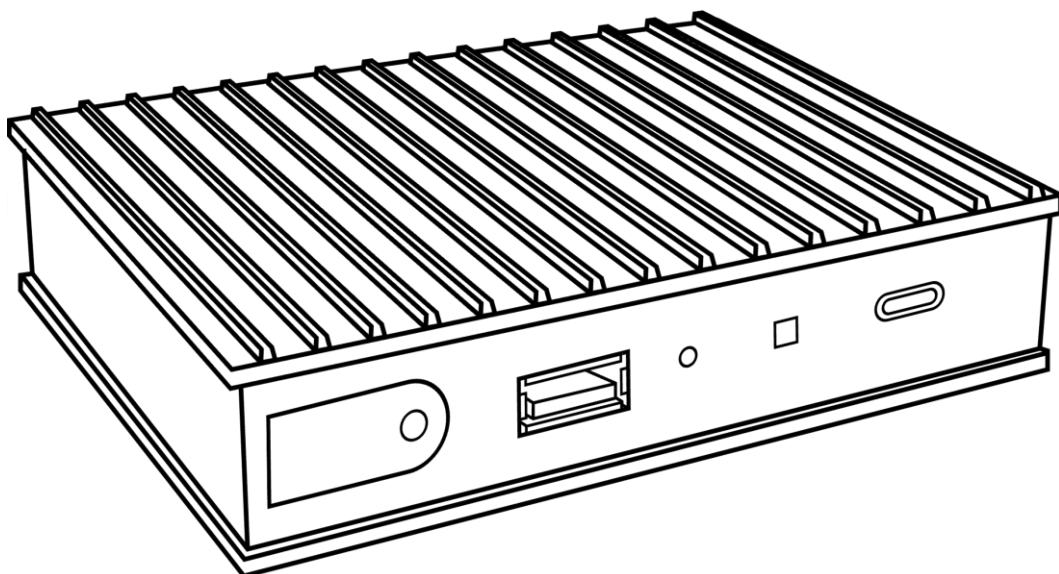# BlueRange Gateway V4 –
with KNX/IP and optional BACnet/IP support

Data sheet

The BlueRange Gateway in combination with the BlueRange Connect USB is used to transfer data between the BlueRange Mesh and the BlueRange IoT-Platform. Support for KNX/IP* or BACnet/IP** is possible with some additional configuration.

Product variations:

- BR-GW-V4-KNX
- BR-GW-V4-KNX-BACNET

BlueRange Gateway V4
with KNX/IP and optional BACnet/IP support

Bottom line

- Gateway requires the BlueRange IoT-Platform to operate
- Gateway device to transfer data between BlueRange Mesh and BlueRange IoT-Platform (requires BlueRange Connect USB)
- Conversion of BlueRange Mesh input messages to MQTTS output messages (requires BlueRange IoT-Platform)
- Power input requires Power-over-Ethernet (PoE) splitter or 12 V power supply
- Ability to streamline KNX or BACnet messages to the BlueRange IoT-Platform (requires additional KNX/IP gateway or BACnet/IP gateway)
- Proper NTP-based time server required for Gateway
- Fanless device that can be operated silently

Functional Description

The BlueRange Gateway in combination with the BlueRange Connect USB transfers data from the BlueRange Mesh into the BlueRange Server. Moreover, the BlueRange Gateway makes it possible to send commands to the mesh nodes.

For most use cases, we recommend a maximum size of 100 nodes per BlueRange Gateway. However, it is possible to connect and manage more devices. The more devices there are in a single closed BlueRange Mesh, the higher the latency to fully penetrate the mesh with information, depending on the number of hops between the nodes.

Depending on the type of different use cases running in parallel, the traffic increases depending on the number of parallel use cases and their data consumption. Since the BlueRange Gateway itself is also a mesh participant, it must be within the communication range of at least one mesh node to connect to the mesh.

*KNX/IP

To use the BlueRange Gateway with a KNX installation, an additional KNX/IP gateway is necessary because the BlueRange Gateway doesn't speak KNX natively. To maximize the number of external devices supported by the KNX/IP gateway, it is possible to set up a virtual KNX router as part of your BlueRange Server cluster. BlueRange uses unique group addresses to address KNX devices and their respective data points.

**BACnet/IP

BACnet/IP is fundamentally based on TCP/IP broadcast communication. In order to connect BACnet devices to the BlueRange Gateway, an additional BACnet/IP gateway must be added to the setup because the BlueRange Gateway doesn't speak BACnet natively.

As a result, the BlueRange Gateway can connect to all other BACnet devices on the same network. The (sub)network boundaries are defined by the broadcast address, which the BlueRange Gateway must share with all other devices. Communication between multiple subnets based on BACnet/IP Broadcast Management Device (BBMD) is not supported out-of-the-box but can be enabled with external BBMD hardware. BlueRange uses unique instance numbers to address each BACnet device and their respective data points.

Specifications

Basic	
Processor	NXP i.MX8M Mini, quad-core ARM Cortex-A53, 1.8GHz
RAM size	2 GB LPDDR4
Storage	16 GB eMMC flash, soldered on-board
Connectivity	WLAN 802.11 b/g/n/ac (2,4 + 5,0 GHz), 2 x LAN RJ45 Port for 10/100 MBit/s, 3 x USB2.0
Input voltage range	8 to 36 V
Cooling	Passive cooling, fanless design
KNX/IP	Connection up to 5 KNX/IP gateways*
BACnet/IP	Connection up to 1000 data points**
Radio	
Max. Tx power	+4 dBm
Rx. sensitivity	-96 dBm typical
Frequency range	2.402 to 2.483 GHz
Typical range	20m (open space)
Other	
Geometry (L/W/H)	112 x 84 x 25 mm
Weight	approx. 450 g
Operating and storage temperature	0 to 60 °C
LED blink codes	Supported

Setup

There are two ways to connect the BlueRange Gateway to a proper power and network source.

Power for the BlueRange Gateway is supplied via a conventional power outlet or an 802.3af/at Power over Ethernet (PoE) splitter.

The network can be provided to the BlueRange Gateway by either connecting it via LAN or wirelessly via WiFi. We strongly recommend that you use the BlueRange Setup App to enroll the BlueRange Gateway with the BlueRange Server. In addition, the BlueRange Setup App allows you to specify network information such as the static IPv4 address, WiFi credentials, DNS, time server and proxy information.

	Power Supply	**Network Connection**
Option 1	LAN via PoE-Splitter	LAN via PoE-Splitter
Option 2	Power Plug	WiFi (or LAN)

Note: By default, we supply PoE splitters that require a DC input voltage of 44-57V. Please ensure that the required input voltage is compatible with your infrastructure when using the PoE standard. We recommend using the latest PoE Plus standard. If you have any questions about customising the PoE splitters, please contact us.

The BlueRange Setup App is available for both iOS and Android. Find the download links below.

Apple App Store	**Google Play**

Order Information

The BlueRange Gateway packaging comes with additional equipment such as

- 1 x BlueRange Connect USB
- 1 x PoE splitter or a power plug to supply 12 V
- 2 x WiFi antennas
- 1 x Mounting plate with screws (optional)

At the customer's request, BlueRange can customize the equipment of the packaging in terms of gateway type (KNX/IP or BACNet/IP ready), network/power supply and mounting options. Please consult us before placing your order.

For more information we invite you to read our new assembly guide of the BlueRange Gateway:

[QR code]	https://www.bluerange.io/downloads/BlueRange_Gateway_V4_Montageanleitung.pdf

Signs and certificates

[WEEE symbol]	**WEEE directive 2012/19/EU** Do not dispose of with household waste!
[CE symbol]	**CE certification – Conformité_Européenne** Declaration in accordance with EU Regulation 765/2008 that the product complies with the applicable requirements laid down in the Community harmonisation legislation on its affixing.
[FC symbol]	**FCC certification – Federal Communications Commission** The product conforms to the required conditions of the FCC for operation and sale.

Further information and tools

Please find our documentation on how to set up and enroll a BlueRange Mesh at bluerange.io/developer.

Contact:

Technical question:	Inquiries:
info@bluerange.io	po@bluerange.io

General information on BlueRange
www.bluerange.io

Disclaimer

Subject to change without notice. All data without guarantee.
The data sheet refers to the current factory setting.

Operation in installations with other equipment should be checked for compatibility.