

Nextriv Hub Edge

Edge building gateway with BACnet and KNX

NX-GW-EDG

Nextriv Hub

An all-in-one edge building gateway: long-range radio for approx. 2,000 wireless sensors, RS485/Modbus buses, BACnet and KNX, plus 19 of its own physical I/O points. The bridge between field devices, the BMS and the Nextriv platform — acquiring data over Modbus, BACnet and KNX and exposing it via BACnet/IP, Modbus TCP, MQTT or HTTP. A quad-core 1.5 GHz processor with 2 GB of RAM executes control logic locally, so the site keeps running without the internet. The triple backhaul (Ethernet, Wi-Fi, 4G) with automatic failover maintains the cloud link.



19

physical I/O points

~2,000

wireless devices per gateway

4× 1.5 GHz

edge processor (2 GB RAM)

-40...+60 °C

operating temperature range

Key features

- Radio gateway, protocol converter, I/O modules and controller in a single DIN-rail housing — replaces several separate devices
- 19 physical I/O points: 8 universal inputs (digital / 0–10 V / 4–20 mA / PT1000 / NTC), 4 pulse inputs, 3 relays and 4 analogue outputs
- Field buses on board: 2× RS485 (Modbus RTU / BACnet MS/TP) and KNX/TP; M-BUS in preparation
- Two-way protocol conversion — acquisition over Modbus, BACnet and KNX; data exposed via BACnet/IP, Modbus TCP, MQTT(s) or HTTP(s)
- Triple internet backhaul with automatic failover: 2× Gigabit Ethernet (PoE PD), 2.4 GHz Wi-Fi and 4G LTE Cat 1
- Local logic at the edge — custom apps with the Python SDK and Node-RED; control keeps working without the internet
- 1.3" OLED screen with 7 buttons for laptop-free servicing, plus NFC for fast wireless sensor onboarding
- Secure communication: VPN tunnels (OpenVPN, IPsec, WireGuard and more), a firewall and multi-level user permissions

Technical specification

Edge platform	
Processor	quad-core 1.5 GHz, 64-bit ARM, industrial grade
RAM	2 GB DDR4
Storage	32 GB eMMC
Storage expansion	1× micro SD slot

Radio — sensor side

Technology	long-range, low-power radio (LPWAN)
Radio band	EU868 (EU); regional variants: US915, AU915, AS923, IN865, KR920, RU864
Channels	8 (half-duplex)
Tx power	27 dBm max
Receiver sensitivity	down to -140 dBm (at 292 bps)
Device capacity	approx. 2,000 end devices (at a 10-min reporting interval) [1]
Antenna	external, 50 Ω SMB connector; magnetic antenna included
Sensor-gateway range	up to approx. 2 km in built-up areas / approx. 15 km in open terrain
Advanced features	multicast, over-the-air sensor updates (FUOTA), noise analyser, gateway fleet, listen-before-talk (LBT)
Communication	two-way — readings to the platform, remote sensor configuration via downlink

Internet backhaul

Ethernet	2× RJ45, 10/100/1000 Mbps (WAN/LAN software-switchable), auto MDI/MDIX, 1.5 kV RMS isolation
Wi-Fi	IEEE 802.11 b/g/n, 2.4 GHz; access point (AP) or client mode; Tx power up to 18 dBm
Wi-Fi security	WPA/WPA2 (PSK; Enterprise also in client mode), WEP/TKIP/AES encryption
Cellular	4G LTE Cat 1 + GSM (2G); Tx power: class 3 (23 dBm $\pm$ 2 dB); 1× nano SIM (4FF)
Cellular bands	global variant: LTE-FDD B1/2/3/4/5/7/8/12/13/17/18/19/20/25/26/28/66, LTE-TDD B34/38/39/40/41, GSM B2/3/5/8; North America variant: LTE-FDD B2/4/5/12/13/66
Antennas	external cellular and Wi-Fi, 50 Ω SMB connectors; magnetic antennas included
Reliability	automatic link failover

Field buses

RS485	2× RS485; 1,200...115,200 bps (software-switchable); software-switchable 120 Ω terminator; up to 128 devices per bus, 256 in total
KNX	1× KNX/TP; 21–30 V DC powered from the bus; 9,600 bps; up to 63 devices
M-BUS	1× M-BUS (under development); 24–42 V, load up to 10 mA; 300...9,600 bps; up to 20 devices

Inputs and outputs

Universal inputs	8×, software-selectable mode
— as digital input	wet contact, 0–24 V DC
— as analogue input	0–10 V or 4–20 mA; 12-bit resolution; ±1% full-scale accuracy
— as RTD input	PT1000 or Ni1000, 2-wire connection; ±0.5 °C accuracy
— as NTC input	NTC 10k type 2 / type 3 or NTC 20k; ±0.5 °C accuracy at 25 °C
— as resistance input	1,000 Ω or 2,000 Ω; 1 Ω accuracy
Digital inputs	4× dry contact; digital input or pulse counter mode (≥1 kHz)
Relay outputs	3×; resistive load max. 3 A at 30 V DC or 3 A at 110 V AC
Analogue outputs	4×; 4–20 mA or 0–10 V (software-switchable); 12-bit resolution; ±1% full-scale accuracy; max. load 20 mA

Protocols and integration

Data acquisition	Modbus RTU and BACnet MS/TP (RS485); KNX/TP; BACnet/IP, Modbus TCP, Modbus RTU over TCP (Ethernet/Wi-Fi)
Data forwarding	MQTT(s), HTTP(s), BACnet/IP, Modbus TCP, Modbus RTU over TCP
Custom apps	Python SDK, Node-RED
Configuration	web panel, CLI (SSH/Telnet), SNMP
Remote management	Nextriv platform
Event alarms	power on, network up/down, VPN up/down and more
Diagnostics	ping, traceroute, tcpdump, log server

Security

VPN tunnels	OpenVPN, IPsec, PPTP, L2TP, WireGuard
Firewall	access control, DMZ, port mapping (DNAT), MAC binding, IP and domain filtering
Permissions	multiple levels of user authority
DDNS	14 providers + manual configuration

Local operation	
Display	1.3" OLED, 128 × 64 px
Buttons	7× screen control buttons, 1× reset
NFC	13.56 MHz — fast onboarding of Nextriv wireless sensors
USB	1× USB-C — power supply and service console
Indicators	1× status LED (SYS)
Built-in	watchdog, RTC, timer

Power	
Power inputs	24 V DC/AC (2-pin terminal block), 802.3af PoE (PD on the ETH1 port) or USB-C 5 V/3 A [2]
Power consumption	typical 8.2 W (411 mA at 20 V); max. 11.24 W (562 mA at 20 V)

Enclosure and operating environment	
Operating temperature	-40...+60 °C (-40...+140 °F)
Storage temperature	-40...+85 °C (-40...+185 °F)
Ambient humidity	0...95% RH, non-condensing (at 25 °C)
Ingress protection	IP30 (indoor / cabinet use)
Housing	PC + aluminium alloy, grey
Dimensions	123 × 90 × 36 mm (4.84 × 3.54 × 1.42 in)
Weight	375.6 g
Wire connection	AWG 24–16 terminals
Mounting	wall screw mounting or DIN rail

Compliance and approvals	
Approvals	CE, CE (RED), FCC

Ordering information	
Product code (SKU)	NX-GW-EDG
Variants	cellular modem: global or North America variant (4G bands) — specify the variant when ordering
Included	magnetic sensor-radio antenna, cellular antenna, Wi-Fi antenna, 2× wall mounting kits, label sticker
Works with	Nextriv Sense / Probe / Weather sensors

[1] Capacity determined at a 10-min reporting interval — indicative value; the actual number of devices depends on reporting intervals and radio conditions.

[2] When powered via USB-C, the M-BUS interface and the universal inputs will not work properly.

Specifications are subject to change without notice. The latest document versions are available in the download centre: nextriv.com/files. Questions: nextriv.com/contact.