

ClimaCheck PA Pro III IoT Gateway - RTCU NX-400

State-of-the-art platform for tomorrows demanding applications in refrigeration, heat pump and air conditioning industry.

ClimaCheck has selected the most advanced, powerful and flexible platform on the market. This will collect data and administrate communication from sensor to PC or sensor to the ClimaCheck online cloud based servers efficiently.

The selected platform is prepared for continued development of state of the art IoT solutions. The multiple interphases with wired as well as wireless communications options allow data to be gathered and distributed in a flexible way.



The RTCU NX-400 is the result of accumulated experience combined with valuable feedback from hundreds of professional and mission critical applications by major organizations around the world. RTCU products are deployed underground, stationary, on the road, at sea, on the rail and in the skies! - In any imaginable application and environment.

ClimaCheck PA Pro can handle over 100 inputs from virtually all types of sensors.

Device Advantages

- Powerful processor
- Large memory capacity
- Penta-band UMTS cellular engine
- Wi-Fi
- Bluetooth (Classic / LE)
- USB host port
- Digital and analog input/outputs
- Modbus expandable I/O
- Graphical display with touchscreen
- Multiple RS232/RS485 channels
- Full CAN 2.0B support
- Ethernet interface
- 1-Wire bus
- Digital audio with playback / record
- Integrated battery backup

Platform Advantages

- Secure platform
- Hardware accelerated security
- Open platform SDK
- Comprehensive protocol support
- Device Emulator
- Sophisticated deployment tools

Accessories

- Accessories Modbus I/O extension modules.
- HD Camera with video stream.
- GPS receiver.
- Antennas.
- 1-Wire temperature and other

Example on common sensors:

- Pressure
- Differential pressure
- Temperature
- Humidity
- Flow/Energy

ClimaCheck PA Pro III RTCU NX-400 Highlights Advanced Industrial IoT Gateway

Platform

- NX32L (NX32 for Linux) execution architecture
- RTCU IDE development tool
- Operates under a full and highly optimized Linux variant
- Secure communication with TLS and hardware assisted encryption/authentication
- Open and extendable with Platform SDK

Wireless Communication

- Penta-band world-wide UMTS/HSPA engine
- Wireless LAN (Wi-Fi)
- Classic and Low-Energy Bluetooth
- Optional: Wireless M-Bus, ZigBee and KNX

Wired Communication

- 100 Mbps Ethernet LAN interface
- Full CAN 2.0B controller with hardware filtering and multi-speed support
- 1-Wire bus for accessories such as ID-button reader, temperature sensors, etc.
- USB host port for expandability
- 2 x RS232 channels and 2 x RS485 channels

I/O Interfaces

- 4 x analog inputs and 4 x analog outputs with 0..10 volt / 0..20 mA (+-0.5%)
- 8 x digital inputs and 8 x high-power solid-state digital outputs
- Up to 4 digital inputs can be configured as IEC62053-31 Class A compliant
- Expandable I/O with standard Modbus modules
- 1-Wire bus for temperature sensors, etc.

User Interaction

- Graphical 240x160 pixels White-on-Blue display
- Touch-screen with virtual buttons
- Digitized audio with GSM / Speaker / Line-out and Microphone
- DTMF support for Interactive Voice Response applications
- High-speed Mini-USB service-port connector

Storage

- Internal flash drive with up-to 512 MByte capacity
- Persistent memory and circular datalogger
- Standard SD-CARD reader
- USB flash media



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Technical Specifications Dimensions

- 9M DIN-rail (EN60715)
- Self-extinguishing blend PC/ABS.
- Approx. 465 gram.
- W 160.2 x H 89 x D53.5 mm.
(without connectors and terminal blocks)

User Interaction

- Touch screen with virtual buttons



- White-on-blue back-lit. Dot-matrix LCD, 240x160 pixels
- 4 x bi-colour LED Status-bar with interphase information.
- DIP-switches.
- I/O configuration jumpers for analog mode.
- Virtual jumpers for RS485 and CAN termination
- Reset / recovery switch

Cellular UMTS

- Penta-band UMTS/HSPA
GSM: 850/900/1800/1900 MHz. UMTS: 800/850/900/1900/2100 MHz. SMS / PDU
- DTMF decoding / transmission
- Digitized voice playback/IVR
- External SIM card-reader, with Mini-SIM 1.8/3 volt
- Optional eSIM

Wireless LAN

- WiFi at 2,4 GHz ISM bands
- IEEE 801.11b/g/n/d/e/h/i
- WPA/WPA2 certification
- Up-to 150 Mbps

Bluetooth

- Classic and Low Energy (LE)
- Bluetooth 2.1+EDR up-to 3 Mbps
- Bluetooth 3.0/4.0 Dual mode
- Intelligent co-existence with WiFi

Optional Wireless

- Wireless M-Bus
- ZigBee / IEEE 802.15.4
- KNX RF

Wired Communication

- 100BASE-T Ethernet interface
- Full CAN2.0B with hardware filtering and multi-speed support
- 2 x RS232. One with control signals
- 2 x RS485
- 1-Wire bus
- USB host port. USB service/programming port

Storage

- Persistent data flash
- Non-volatile SRAM
- Internal flash drive (Up-to 512 MByte)
- Circular datalogger
- SD-CARD
- USB flash media

RTCU M2M Platform

- NX32 for Linux - NX32L
- Lua prepared*

NX32L Hardware Core

- Cortex-A5 32-bit ARM processor.
- Hardware floating point and DSP
- 128 MByte LP-DDR RAM
- 512 MByte NAND flash
- 16 MByte NOR flash
- 8 MByte Dataflash
- 128 KByte SRAM with battery-backup
- Real-time clock bat.backup

Security

- Embedded firewall
- TLS/SSL support with full certificate management
- TLS/SSL support for SMTP, MQTT, FTP, HTTP, Gateway 2 and TCP/IP sockets
- Hardware assisted strong encryption/authentication: AES-128, AES-192, AES 256, DES, TripleDES, HASH, RND and RSA signature

Audio

- Fully digitized audio system
- Transfer, store - play audio
- Line and amplified speaker output
- Microphone input
- Digitized GSM audio

