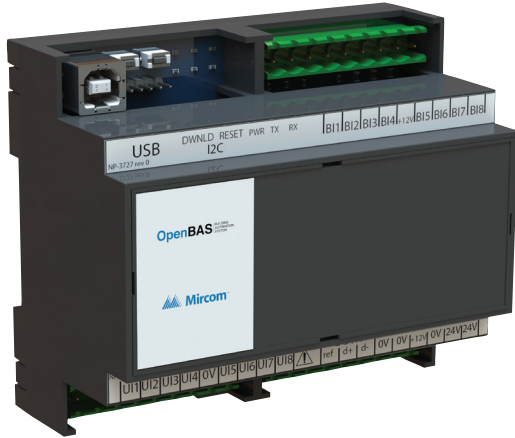# OpenBAS | BUILDING AUTOMATION SYSTEM

Description

Mircom's OpenBAS-HV-NXSF building automation controller is an HVAC controller with an integrated PLC (programmable logic controller) and scheduler. It includes 16 hardware input points, 1 RS-485 field bus connection, 1 USB bus, and 1 I2C bus. Current transformers can be added to 8 universal inputs to measure current and power.

The NXSF is a microprocessor-based programmable controller, specifically designed to control various building automation applications including HVAS and mechanical rooms. The NXSF incorporates energy management features and lighting control, offering building owners and management seamless operation.
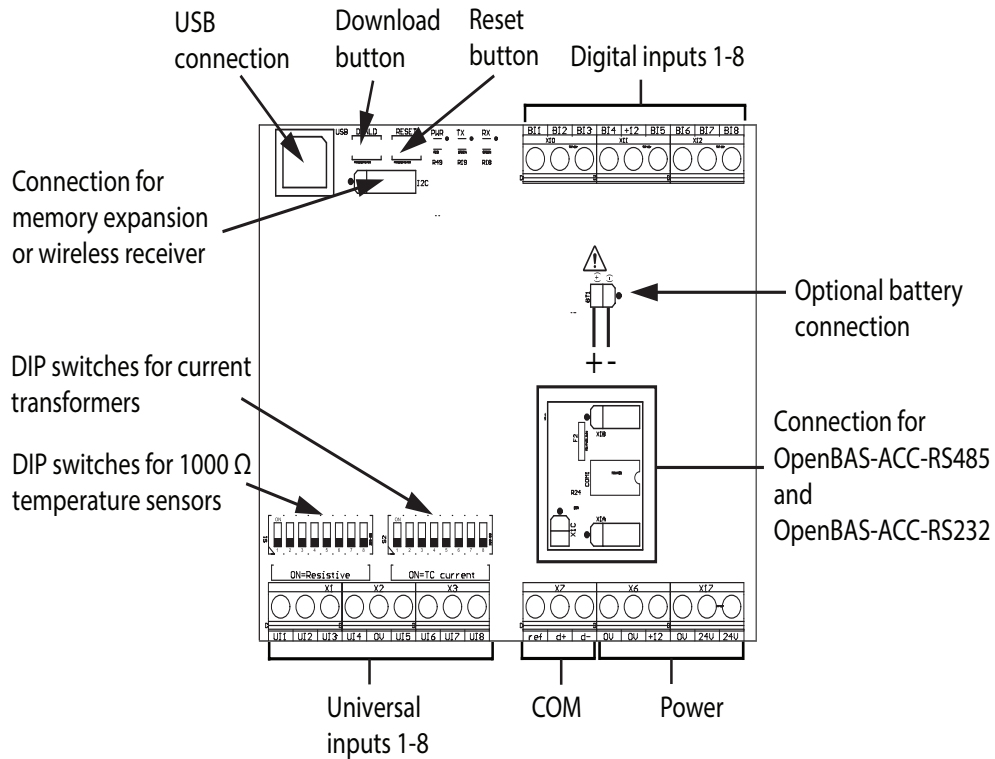
Features

- Modular design to cover any small, medium or large project.
- Standard field bus protocols to integrate into any existing BAS system such as: BACnet, Modbus, Optomux, N2-Open, ECM, and ASCII.
- Connects to the Ethernet Gateway (OpenBAS-NWK-ETH3) to provide advanced networking to integrate into IP networks while using the most advanced features and protocols such as distributed computing, USB and Cloud Storage, HTML5, JavaScript, XML, Ajax, SMS, and GSM.
- 8 Universal inputs to connect any industry standard sensor.
- Current and Power metering when paired with the OpenBAS-PM-ME11.
- 8 Digital Inputs.
- Modular add-ons for every Building Automation System solution.
- DIN Rail mountable.
- Powerful Configuration Software supports ladder templates and script programs for an effortless solution.

Some typical applications are:
- System expansion
- Current and Power metering
- Point monitoring

Wiring Diagram

USB connection · Download button · Reset button · Digital inputs 1-8

Connection for memory expansion or wireless receiver

Optional battery connection

DIP switches for current transformers

DIP switches for 1000 Ω temperature sensors

Connection for OpenBAS-ACC-RS485 and OpenBAS-ACC-RS232

Universal inputs 1-8 · COM · Power

Technical Information

Standards	UL 61010-1, 3rd Edition, May 11, 2012, Revised July 15 2015
	CAN/CSA-C22.2 No. 61010-1-12, 3rd Edition, Revision dated July 2015
	IEC 61010-1:2010 (Third Edition)
	IEC/EN 61010-1:2010 (Third Edition)
Input:	24 Vdc, 150 mA max., or 24 Vac 50/60 Hz, 275 mA max., or 12 Vdc,
	250 mA max.
	Overvoltage Category II
	Mains supply voltage fluctuations not to exceed ± 10 percent of the nominal voltage
Output:	12 Vdc, 100 mA max. (when 24V powered)
Power Supply Protection:	Resettable fuse 0.30 A
Optional Battery:	FDK Corporation ML2430
	Type: lithium
	Nominal capacity: 100 mAh
	Nominal voltage: 3 V
	Mircom part number: BT-025

8 Universal Inputs: Class 2 / LPS Limited Energy	Used as analog inputs: • 0-10 VDC • 0-5 VDC • 0.5-4.5 VDC ratiometric • 0-20 mA • 4-20 mA • 1000 Ω temperature sensor • Thermocouple input with x200 amplifiers Used as digital inputs • 0-12 VDC • The absolute maximum voltage is 15 VDC. Can receive up to 30 VDC with the addition of a 15 kΩ ½ Watt 1% resistor in series Used as frequency or pulse counters: • Digital inputs 1-2 can measure square wave or pulsed signals. The maximum measurable frequency is 250 Hz (15,000 pulses per minute). The minimum pulse width detectable is 2 milliseconds. • Digital inputs 3-8 can measure frequencies up to 10 Hz (600 pulses per minute). The minimum pulse width detectable is 50 milliseconds. Used as current and power meters: • Measurement Category CAT III • Use UL Listed Energy Monitor Current Transformers rated at 100 mA max. secondary Used to measure voltages: • The absolute maximum voltage is 15 VDC. Can measure up to 30 • VDC with the addition of a 15 kΩ
8 Digital Inputs: Class 2 / LPS Limited Energy	Range: • 0-12 VDC • The absolute maximum voltage is 15 VDC. Can receive up to 30 VDC with the addition of a 15 kΩ ½ Watt 1% resistor in series Used as frequency or pulse counters: • Digital inputs 1-2 can measure square wave or pulsed signals. The • maximum measurable frequency is 250 Hz (15,000 pulses per minute). The minimum pulse width detectable is 2 milliseconds. • Digital inputs 3-8 can measure frequencies up to 10 Hz (600 pulses per minute). The minimum pulse width detectable is 50 milliseconds. Used to measure voltages: • The absolute maximum voltage is 15 VDC. Can measure up to 30 VDC with the addition of a 15 kΩ ½ Watt 1% resistor in series with the higher voltage to be measured
Communication Ports:	2 RS-485 ports supporting the following protocols: COM1 • BACnet/MSTP • Modbus/RTU-Slave • Modbus/RTU-Master • N2-Open • Optomux COM2 • N2-Open • Optomux • N2/O22-master • ASCII • ECM Can be configured as RS-232 or optically isolated RS-485 BAUD Rate: 2400, 4800, 9600, 19200, 38400, 76800 1 USB 2.0 port supporting the following protocols: • Optomux • ASCII 1 I2C port for memory expansion or OpenBAS-HV-RF433R

Physical Characteristics:	Weight: 0.14 kg (0.30 lb)
	Enclosure dimensions: 106 mm x 90 mm x 58 mm (4 3/16" x 3 35/64" x 2 17/64")
Ambient Conditions:	• Operating Temperature: 0° to 40°C (32° to 104°F) • Maximum Relative Humidity: 80 percent for temperatures up to 31°C • decreasing linearly to 50 percent relative humidity at 40°C • Indoor Use Only
Mounting:	Mount the controller 9.6 mm away from adjacent equipment or 12.7 mm away from metal Mount in a National Recognized Test Laboratory certified enclosure
Cleaning:	This product does not require cleaning and should not be cleaned
Pollution Degree:	2

Ordering Information

Model	Description
OpenBAS-HV-NXSF	Input Expansion Module with CT Support
BT-025	Replacement / Optional battery for NX10, NX12R, NXHALF, NXSF