Brochure

Link IO

BMS I/O Modules Reimagined

Overview

I/O Modules are such a key component in any building automation system, that we wanted to see how we can perfect every aspect of its operation looking at the hardware, software and overall usability.

Together with Carel, an Italian controls manufacturer trusted all over the world in critical control applications for more than 40 years, we have created **Link IO** - a scalable and fully integrated BMS product that will last you for many years to come! Now available World-Wide.

Key Benefits

- Simplify the installation, speed up the commissioning and maintenance activities using the built-in display
- View all the inputs and control all the outputs bypassing the BMS using the built-in display password protected Hand/Off/Auto switches
- Save panel space, reduce spare IOs and gain flexibility for future additions with the Universal Input/Outputs (UIO)
- 5 Years Warranty

Key Features

- 10 x Universal Input/Outputs (UIO)
- 6 x Digital outputs (DO)
- 2 x Digital Inputs (DI)
- 2 x Analogue Outputs (AO)
- Expandable up to 180 I/O points (up to 10 Expansion Modules)
- Commissioning using the display
- Online configurator (save a file and import via USB port)
- Hand/Off/Auto using the display
- Modbus TCP/IP (check model)
- Modbus RS485 (check model)
- BACnet TCP/IP check model)
- BACnet RS485 (check model)
- BACnet BTL, EU, UL Certified
- Niagara 4 Palette for productivity
- Watchdog for safe operation
- Built-in stand-alone IO functions

Main Unit models:

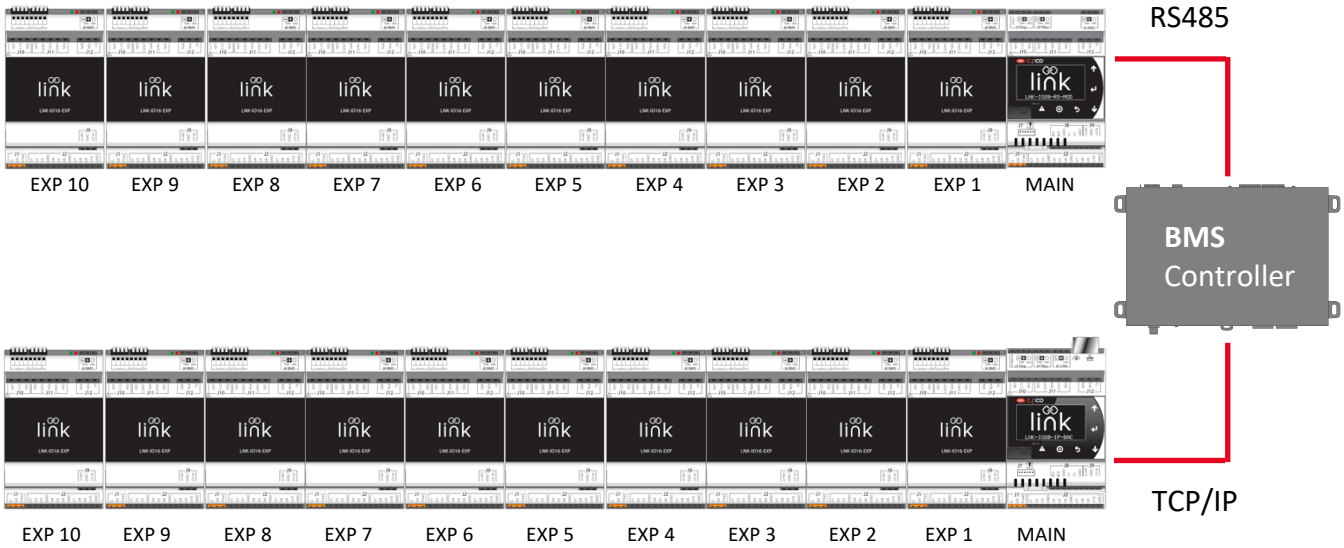
LNK-IO20-IP-MOD 20 Points Modbus TCP/IP
LNK-IO20-RS-MOD 20 Points Modbus RS485
LNK-IO20-IP-BAC 20 Points Modbus & BACnet TCP/IP
LNK-IO20-RS-BAC 20 Points Modbus & BACnet RS485

Accessories:

LNK-IO16-EXP 16 Points Expansion
LNK-ADD-BAC BACnet License Upgrade
LNK-IO20-CON LINK IO20 Spare Screw Connectors Kit
LNK-IO16-CON LINK IO16 Spare Screw Connectors Kit
LNK-IO16-DISP LINK IO Main Remote Display

System Overview

A single Link IO Main Module can have a maximum of 10 x Expansions (180 x I/O points in total)



Comparison Table

Selecting the most appropriate modules based on the I/O point count and network capabilities.

Module	Part Number	Type	RS485	IP	BMS	Display	UIO	DO	DI	AO
	LNK-IO20-IP-MOD	Link IO Main Module	-	Yes	Modbus	Yes	10	6	2	2
	LNK-IO20-RS-MOD	Link IO Main Module	Yes	-	Modbus	Yes	10	6	2	2
	LNK-IO20-IP-BAC LNK-IO20-IP-MOD + LNK-ADD-BAC	Link IO Main Module	-	Yes	Modbus + BACnet	Yes	10	6	2	2
	LNK-IO20-RS-BAC LNK-IO20-RS-MOD + LNK-ADD-BAC	Link IO Main Module	Yes	-	Modbus + BACnet	Yes	10	6	2	2
	LNK-IO16-EXP	Link IO Expansion Module	Yes	-	-	-	10	6	-	-

Input/Output Channels

All the available options for each I/O type

Input/Output	Available options
(UIO) Universal Input/Outputs	Passive Inputs NTC 10K3, Carel NTC 10K, PT1000, PT500, PT100 (3 wires), PTC_R, Carel NTC 0-150, Carel -50T90, Carel -10T170 Active Inputs (0-1 V, 0-10 V, 0-5 V (Link powered), 0-5 V, 0-20 mA, 4-20 mA Digital Inputs Volt free contact, Digital Pulse Counter (up to 2KHz) max 2 per module, Digital Frequency Measure (up to 2KHz, res +-1Hz) Analogue Outputs 0-10V, PWM 3.3V 100Hz, PWM 3.3V 2KHz
(DO) Digital Outputs	Outputs 1 to 5 Relay max 5A, 250Vac only with NO contacts Output 6 Relay max 1A, 250Vac with NO/NC contacts
(DI) Digital Inputs	Digital Inputs Volt free contact
(AO) Analogue Outputs	Analogue Outputs 0-10V, PWM 3.3V 100Hz, PWM 3.3V 2KHz

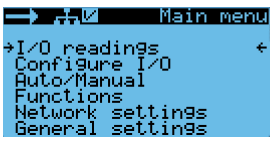
Special Functions

These features are specially designed to save time and improve usability

Built-in Display

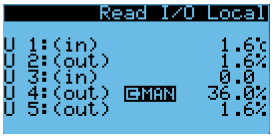
General Settings

configure the IP and RS485 ports, watchdog and special functions



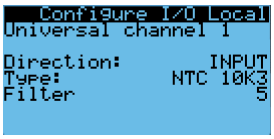
Verify inputs

conduct all point to point checks and pre-commissioning



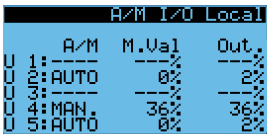
I/O Settings

select each input/output type and associated settings



Override outputs

test all outputs and take manual control for maintenance purposes

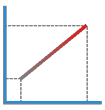


Built-in Logic

Pulsed counters

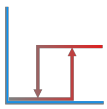
pre-set value and command, scaling factor, reset command

AI link to AO



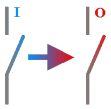
outputs control based on the input with a min and max re-scaling

Thermostat



outputs control based on the input against setpoint

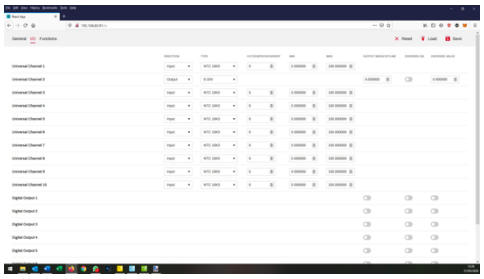
DI link to DO



outputs control based on the input with a reverse option

Web Configuration Tool

Quickly create and modify the Link IO configuration file. The tool is available at https://link.innon.com/



USB Port

Use the USB memory stick to upload an existing configuration exported from the web configurator. Save time with backup and restore.

Frequently Asked Questions

What voltage can I use to power these units?

All Link IO modules work with 24Vac or 28..36Vdc.

Supplying the Link IO modules with 24Vdc is not supported.

Are the units opto-isolated?

The Ethernet port is opto-isolated.
All the RS485 ports are not opto-isolated.

Are there any limitations on the configuration of the Universal Channels?

Each individual channel can be configured independently as Input or Output and pretty much any configuration is allowed. There are a few limitations, like maximum 2 x pulse counter inputs, 4 x current inputs (0-20mA or 4-20mA) and 5 x 0-10V analogue outputs per device. This is explained in detail in the manual.

Can I use the LNK-IO16-EXP without the main unit?

Short answer is NO. The main unit manages the configuration of the expansion, outputs Auto/Manual, all the functions and sensor conversions required for the expansion to work. We will not support any use different from the one specified in the manual

Can I connect more than 1 main unit to my BMS network?

Absolutely. Each unit is configurable with individual addresses (IP, Modbus and BACnet) so multiple devices can be used, according to network restrictions (i.e. 127 devices on RS485).

Can I use Modbus or BACnet with any main Link I/O device?

Modbus is supported on all Link IO devices. BACnet requires to be licensed for it to be enabled. Link IO can be ordered with support for both protocols pre-licensed (part numbers ending with -BAC). If you purchased a Modbus only device (part number ending with -MOD) and would like to use BACnet on it in the future, an add-on license is available to enable BACnet (LNK-ADD-BAC)

Can I use Modbus and BACnet at the same time?

Yes, only with the IP version of Link it is possible to use Modbus IP and BACnet IP on the BMS port at the same time

Are the settings on the display protected?

Yes. The display allows always to view the status of the inputs and outputs of all devices, but setting of "Auto/Manual", I/O configuration and all other device configurations are password protected. The password can be modified on the general settings.

How do I access the Web Configurator?

The Web Configurator is accessible from our website (**https://link.innon.com**)

How do I access the USB configuration?

The USB port can be used in 2 ways: you can connect a USB drive and store/restore configurations from it directly, or connect to a PC to view the Link device as a USB mass storage itself (90MB available)