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ActronAir GW100K BMS Gateway Controller

Specifications

- Product Name: BMS Gateway Controller
- Model: GW100K
- Compatibility: Advance, Aires, Classic Series 2, and VCC product ranges
- Communication Protocols: Modbus RTU, BACnet/IP, Modbus TCP/IP, BACnet MSTP
- Maximum Connected Systems: Up to 10 Actron systems per unit

Product Usage Instructions

Introduction

Congratulations on your purchase of the ActronAir BMS Gateway Controller kit. This Gateway allows communication between Modbus RTU protocol and BACnet/IP, Modbus TCP/IP, or BACnet MSTP. It is compatible with various ActronAir product ranges.

Parts Included In the BMS Gateway Controller Kit (GW100K)

When unpacking the kit, ensure all parts are included as listed in the manual.

BMS Gateway (GW100)

The BMS Gateway facilitates control of air-cooled packaged units and split ducted systems by Building Management Systems. It allows up to 10 Actron systems to connect via ICUNO-MOD per unit.

Other Specifications

Refer to the manual for additional specifications such as connection diagram, maximum cable length, and ICUNO-MOD connection details.

Connection Diagram

Follow the schematic diagram provided in the manual for proper connection of the Gateway. Ensure adherence to the maximum cable length and ICUNO-MOD connection and addressing guidelines.

Installation and Configuration BMS Gateway

Install and configure the BMS Gateway as per the instructions provided in the manual to ensure proper functionality.

BMS Menu and Navigation

Explore the programming menu tree to navigate through the BMS Gateway settings effectively.

Screens Available

Familiarize yourself with the available screens on the Gateway for monitoring and control purposes.

Troubleshooting

Refer to the troubleshooting section for guidance on resolving common issues. Learn how to restore default values and access the register table if needed.

IMPORTANT NOTE:

Please read this manual carefully before installing the Gateway on to the Building Management System.

BMS GATEWAY CONTROLLER INSTALLATION AND COMMISSIONING GUIDE

Introduction

- CONGRATULATIONS on your purchase of an ActronAir BMS Gateway Controller kit. This Gateway translates Modbus RTU protocol communication to a choice of the following: BACnet/IP, Modbus TCP/IP or BACnet MSTP. It will be compatible with the Advance, Aires, Classic Series 2 and VCC product ranges.
- The Gateway will allow up to 10 Actron systems to connect it via ICUNO-MOD per unit (ICUNO-MOD are purchased separately). This will allow air-cooled packaged units and split ducted systems to be controlled by Building Management Systems (BMS).
- The procedures outlined in this manual are provided to correctly and safely install the ActronAir Gateway kit to control appropriate ActronAir Air Conditioner units.
- Failure to follow these procedures may result in personal injury, damage to the control kit or incorrect operation of the Air Conditioner unit. Such failure could render your warranty null and void.

Items to Consider

- Carefully unpack the ActronAir BMS Gateway Controller kit from its packaging and ensure that all parts are included.
- Check the contents of your kit against the content list upon receiving your shipment. Inspect the components and accessories for any sign of shipping damage. If there is any damage to the contents, contact ActronAir Customer Care immediately on: 1300 522 722.
- Take time to thoroughly read the installation and commissioning instructions before proceeding with the installation.

Safety Instructions

Safety instructions and warnings provided in this installation manual are non-exhaustive and given as a guide only. Prevailing WH&S regulations should be observed and will take precedence to the safety instructions contained in this manual. Safe work practices and environment should be of paramount importance in the performance of all service procedures.

- Read all instructions in this manual before operating the system. Failure to do so may result in damage to the unit and controllers that may void your warranty.
- Turn-Off power from mains supply by removing the fuse or switching the circuit breaker to the OFF position before performing the installation procedures.
- Follow sound LOCK-OUT/TAG-OUT (LOTO) procedures to ensure that power supply is not re-energized accidentally.
- Ensure that all safety work procedures and instructions are adhered to at all times in order to prevent personal injury or damage to the equipment.
- Only licensed technicians are allowed to perform the procedures described in this guide.
- The ActronAir BMS Gateway Controller kit is NOT FOR OUTDOOR USE. Install the kit away from excessive dust, heat and moisture.
- The air conditioning electrical panel and the ActronAir BMS Gateway Controller kit contain static sensitive electronic components. Careful handling and correct anti-static procedures should be followed to prevent damage of the equipment. Failure to protect the electronic components from static electricity may cause unrepairable damage, that is NOT COVERED for replacement under Warranty.
- The instructions herein refer to work involving a Computer CPU Chip and Electronic

CPU Board. Please ensure all Instructions are followed accurately so as to prevent damage to these fragile and delicate components.

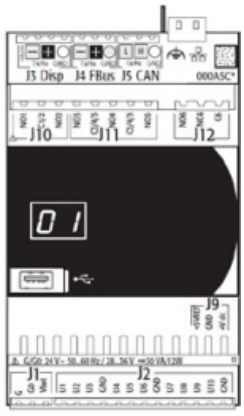
Codes, Regulations and Standards

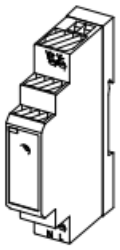
The installer and/or contractor assumes responsibility to ensure that ActronAir BMS Gateway Controller kit installation and commissioning comply with the relevant Council, State / Federal Codes, regulations and building code standards. All electrical wiring should be in accordance with current electrical authority regulations and all wiring connections to be as per electrical diagram provided with the unit.

Waste Electrical and Electronic Equipment Disposal Guidelines

- Do not dispose of the waste electrical and electronic equipment with local council waste. These should be disposed through the appropriate council designated waste disposal facilities.
- The equipment may contain hazardous substances. Improper or incorrect disposal may have a negative effect on human health and on the environment.

Parts Included In the BMS Gateway Controller kit (GW100K)

Part Number	Items	Images	Quantity
GW100	BMS Gateway		1
2020-184	Main Controller Connector		1

20245-1	Switched-Mode Power Supply (SMPS) (240VAC/ 21.6-29 VDC 15W)		1

Note:

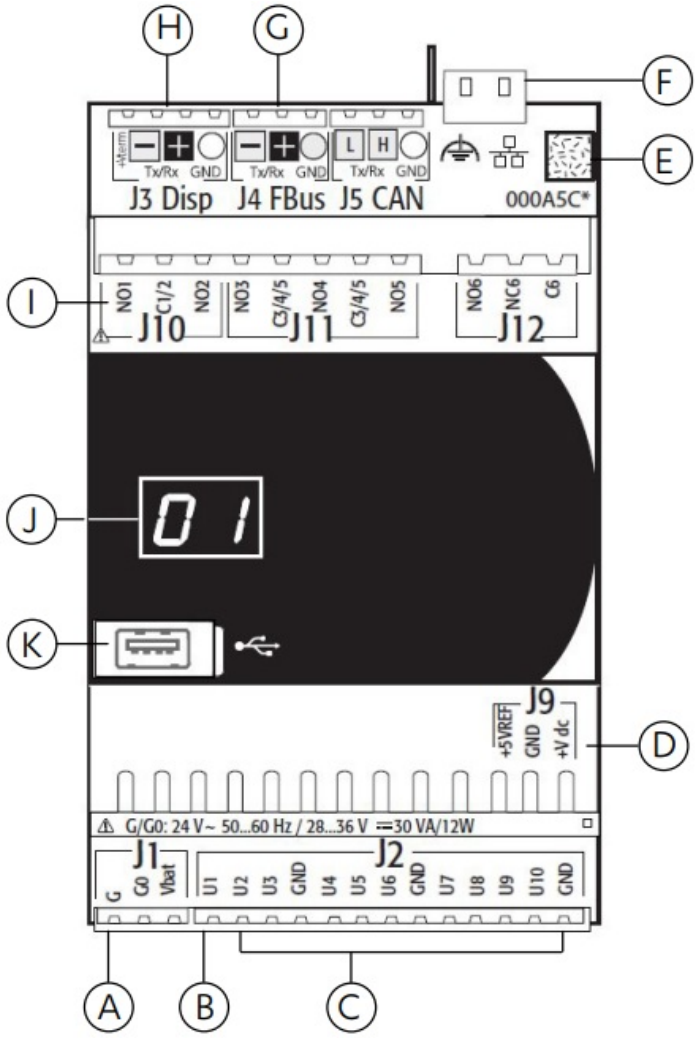
ICUNO-MOD needs to be purchased separately. One ICUNO-MOD controller will be needed for every system connected to the BMS Gateway

BMS Gateway (GW100)

The BMS Gateway (GW100) is a microprocessor-based controller designed to connect up to 10 ActronAir ICUNO-MOD compatible systems. It translates Modbus RS485 output from these systems into BACnet/IP, BACnet MS/TP, or Modbus TCP/IP, enabling communication with a Building Management System (BMS). This functionality allows for easy integration and remote management of multiple ActronAir systems.

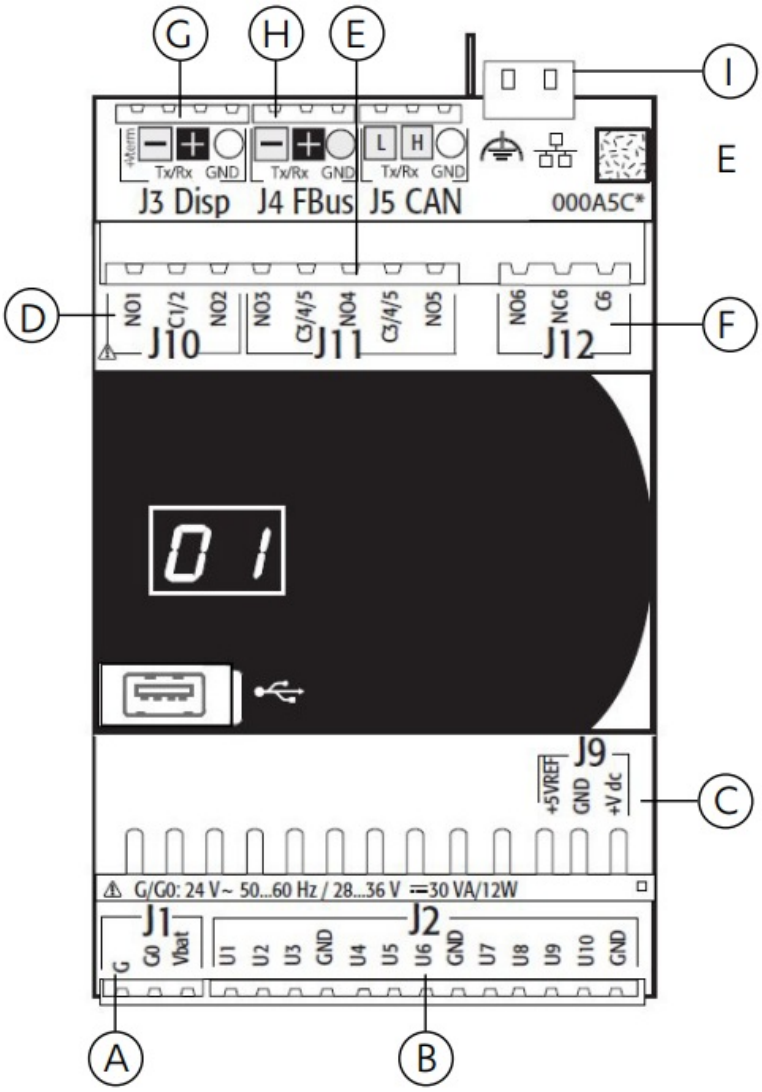
Structure/Terminal Connections

The front panel displays the pLAN address (01) when power is on.



Items	Label	Description
A	J1	Power connector [G(+), G0(-)] 24 Vac +10%/-15% 50/60 Hz or 28 to 36 Vdc ±10%
B	J2 | U1	Network default reset (U1-GND on power on)
C	J2 | U2-U10	Programable Universal inputs/outputs
D	J9	Vdc power supply to active probes +5V power supply to ratiometric probes
E	000A5C 4B138B	MAC address label
F		Ethernet Port – BACnet/IP and Modbus TCP/IP

G	J4 FBus	RS485 Network to ActronAir ICUNO-MOD cards
H	J3 Disp	RS485 Network to BMS – BACnet MS/TP
I	J10 -J12	Relay outputs (J12 BMS gateway Fault)
J		Display pLAN address
K		Micro USB (Manufacturer Use Only)



- For U2-U5, U7-U10, these are the programable inputs
- Programable Analogue inputs:
  - NTC (10K@25)
  - NTC (50K@25K)
  - PTC1000
  - 0-10 Vdc signals *

    - 4 to 20 mA signals **
    - Ratiometric probes ***
- Programable Digital inputs:
    - voltage-free contacts (not optically-isolated)
    - voltage-free Alarm contacts (not optically-isolated)
- Powered Externally
- Max 2 powered by controller. Max 4 powered Externally
- Max 2

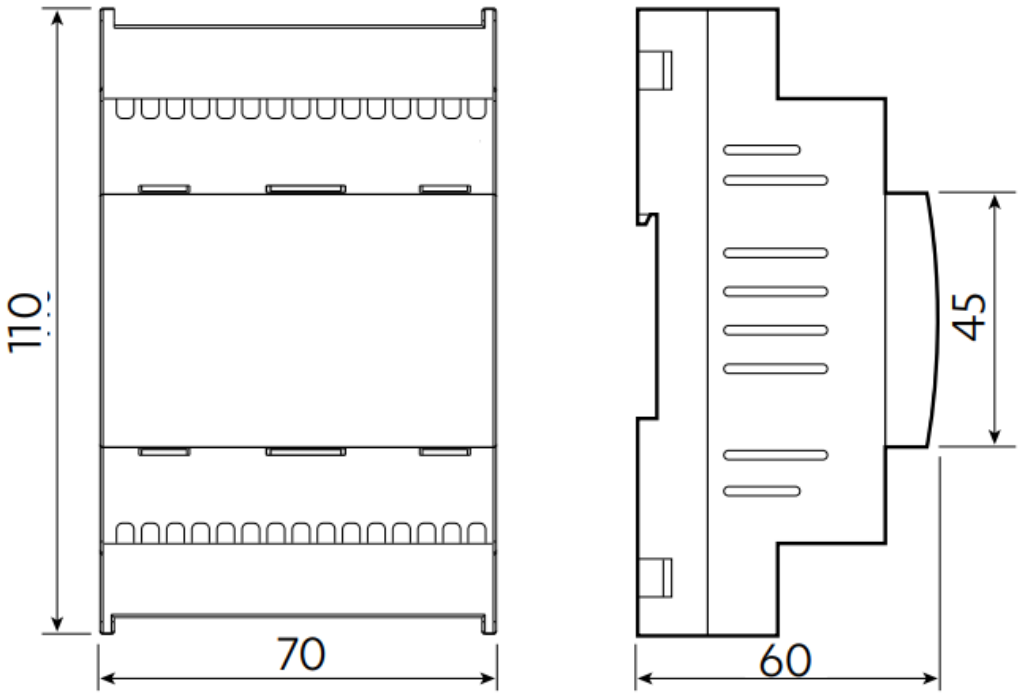
Reference	Terminal	Label	Extended desc.
A	J1-1	G	Power supply at Voltage A: 24 Vac or 28…36 Vdc
	J1-2	G0	Power reference
	J1-3	Vbat	Not Used
B	J2-1	U1	Network Reset
	J2-2	U2	Universal input 1
	J2-3	U3	Universal input 3
	J2-4	GND	Common for universal inputs 1, 2, 3
	J2-5	U4	Universal input 4
	J2-6	U5	Universal input 5
	J2-7	U6	Analogue output, 0 to 10 V
	J2-8	GND	Common for universal inputs/outputs 4, 5, 6
	J2-9	U7	Universal input 7
	J2-10	U8	Universal input 8
	J2-11	U9	Universal input 9

	J2-12	U10	Universal input 10
	J2-13	GND	Common for universal inputs 7, 8, 9, 10
C	J9-1	+5 VREF	Power supply to 0-5 V ratiometric probes
	J9-2	GND	Common for power supply
	J9-3	+Vdc	Power supply to active probes
D	J10-1	NO1	Relay 1, normally open contact
	J10-2	C1/2	Common for relays 1, 2
	J10-3	NO2	Relay 2, normally open contact
E	J11-1	NO3	Relay 3, normally open contact
	J11-2	C3/4/5	Common for relays 3,4,5
	J11-3	NO4	Relay 4, normally open contact
	J11-4	C3/4/5	Common for relays 3,4,5
	J11-5	NO5	Relay 5, normally open contact
F	J12-1	NO6	Gateway Alarm normally open contact
	J12-2	NC6	Gateway Alarm normally closed contact
	J12-3	C6	Common for relay 6
G	J3-1	+Vterm	Not Used
	J3-2	Tx-/Rx-	Terminal port RS485 Tx-/Rx-
	J3-3	Tx+/Rx+	Terminal port RS485 Tx+/Rx+

	J3-4	GND	GND for RS485 port
H	J4-1	Tx-/Rx-	Fieldbus port RS485 Tx-/Rx-
	J4-2	Tx+/Rx+	Fieldbus port RS485 Tx+/Rx+
	J4-3	GND	Fieldbus port RS485 GND
I		TxL/RxL	Ethernet Port

Mounting and Dimensions

- **Dimensions:** DIN rail modules, 70 x 110 x 60 mm (in accordance with DIN 43880 CEI EN 50022).
- **Mounting:** fitted on DIN rail. P Gateway on t ss it down get will snap into place and lock the controller.
- **Removing:** lift the tabs using a screwdriver applied to their release slots. The tabs are kept in place by springs.



Controller Electrical and Physical

Power Supply(should only be connected between G and G0)

Power supply to the product between G and G0 (J1)	24 Vac +10% / -15% 50/60 Hz, 24 to 36 Vdc ±10%
Basic model maximum power consumption	15 VA
Insulation	Reinforced insulation between main power supply and controller guaranteed by the safety power transformer (IEC61558-2-6)
Protection against short-circuits	Fuse (250VAC 2A)
Maximum connector voltage (NO1…C6)	250 VAC
Minimum size of digital output wires	1.5 mm^2
Minimum size of all other connector wires	0.5 mm^2

Removable Connectors Kit

Connector kit code	2020-184
Tightening torque	0.2 N·m for 3.81 mm connectors
Tightening torque	0.4 N·m for 5.08 mm connectors

Electrical Installation

- **Important:** before servicing the equipment, isolate the controller from mains power.
- Ensure the system is installed with a power disconnector conforming to regulations. Use cable lugs that are suitable for the terminals used. The maximum allowable length of the connections to the analogue/digital inputs and to the analogue outputs is 100 m other than temperature sensor; temperature sensor maximum length is only 50 m.

After making the connection, gently pull on the cables to ensure they are sufficiently tight.

Note:

- Secure the cables connected to the controller with clamps placed at 3 cm from the connectors.
- Ensure the earth conductor is bonded to the conductor that is connected to the terminal from J1. Important:
- To avoid damage to the device, terminate wires to all connectors prior to plugging connectors to controller.
- Using a supply voltage other than specified can seriously damage the system and void the warranty.
- The controller should only be installed, serviced and inspected by qualified personnel and in compliance with national and local regulations.
- All the extra low voltage connections should have reinforced or double insulation from the power mains.
- Avoid touching the electronic components to avoid electrostatic discharges from the operator to the components, which may cause considerable damage.
- Do not press the screwdriver on the connectors with excessive force, to avoid damaging the controller.
- Using the device in any way other than specified by the manufacturer can compromise its protection.
- Only connectors supplied with the kit shall be used.

Power Supply

- Only use the SMPS-1 240VAC/21.6-29VDC 15W Switch Mode Power Supply that is supplied with the kit.

Important:

- Using a supply voltage other than specified can seriously damage the controller.
- Make sure that the earth conductor is connected to terminal GND. Proper grounding should be applies to all the devices connected to the GW100.

- The power supply to GW100 should be kept separate from the power supply to the other electrical devices.

Note: When the controller is powered, the seven segment LED lights up to show 01.

Operating Conditions

- Storage: -40 To 90 °C, 90% RH non-condensing
- Operation: -40 To 90 °C, 90% RH non-condensing

Network Communications

Ethernet Network Connections and Connectors

- It is recommend to use Cat5e UTP or above Ethernet Cable (IEC11801 and EIA/TIA 568 Compliant).
- The maximum length of an Ethernet connection is 100 m between consecutive devices.

RS-485 Network

- To improve the controller immunity against electromagnetic interference, the serial connection cable should be a shielded twisted pair cable, 2 core twisted pair shielded or 4 core two twisted pair shielded depending on the isolation of the serial connection.
- The following rule applies:
- The serial port (J3 Disp) is isolated (functionally) from the power supply. A third wire is required in the serial cable to act as a common reference for the controllers. The serial port (J4 FBus) is not optically isolated and the common reference is already present, no third wire is required.
- For the RS-485 network, use a shielded twisted pair cable. The maximum allowable total cumulative data cable length between all devices is 500 m.
- Note: Enable the 120Ω, 1/2W terminating resistors on the ICUNO-MOD board first and last devices in the network. See ICUNO-MOD Installation and Commissioning Guide (9590-3013) for details. Important: Any Earth connections made to any controllers shall be from a common main earth point.

Procedure for Earthing the Shield

- The shield of the cable of the J4 FBus terminal on the BMS Gateway (GW100) should be earthed. Earth only one end of the serial cable shield (shield connected to every second device).

Universal Inputs/Outputs

- Universal inputs/outputs are distinguished by the letter U.
- U1 is designated as a digital input for network parameter reset.
- U6 has been designated as a 0-10VDC output, drivable by BMS.
- U2-U5 and U7-U10 can be configured to accept the following to be monitored by the BMS for site specific purposes:

Analogue Inputs

- NTC (10K@25)
- NTC (50K@25K)
- PTC1000
- 0-10 Vdc signals *
- 4 to 20 mA signals **
- Ratiometric probes ***

Digital inputs (not optically-isolated)

- voltage-free contacts (not optically-isolated)
- voltage-free Alarm contacts (not optically-isolated)
- Powered Externally
- Max 2 powered by controller. Max 4 powered Externally
- Max 2

Important: Important:

- The universal inputs/outputs cannot be used as digital outputs.

Digital Outputs

Digital Outputs are distinguished by the letter NO and NC.

- NO6 (J12) is designated as the BMS Gateway general alarm.
- NO1-NO5 (J10, J11) are available to be controlled via BMS input for site specific purposes.

Note:

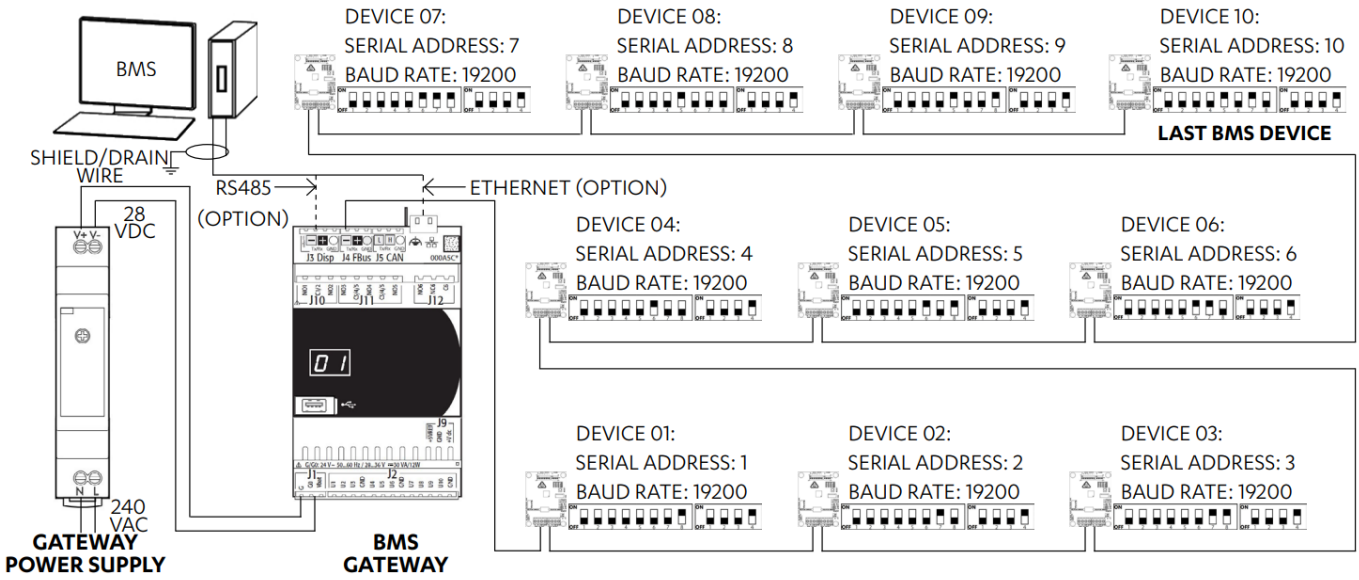
- Group 1 (R1, R2); Group 2 (R3, R4, R5): NO EN 60730-1 Maximum Switchable Load: 250VAC/2A resistive Group 3 (J6): NO EN 60730-1 Maximum Switchable Load: 250VAC/1A resistive
- Between J10 and J11 terminals there is basic insulation.
- J12 has reinforced insulation from the two other terminals (J10 and 11). Consequently a different power supply can be used.

Other Specifications

Environmental pollution	Level 3
Front panel ingress protection (with USB port closed)	IP40 front panel, IP10 remaining parts
Class of protection against electric sho ck	To be integrated into Class I and/or II applia nces
Material	Technopolymer
Flammability	V2 (UL94) and 850 °C (in accordance with IEC 60695-2-11)
PTI of the PCB insulating materials	PTI 250
Insulating material	PTI 175

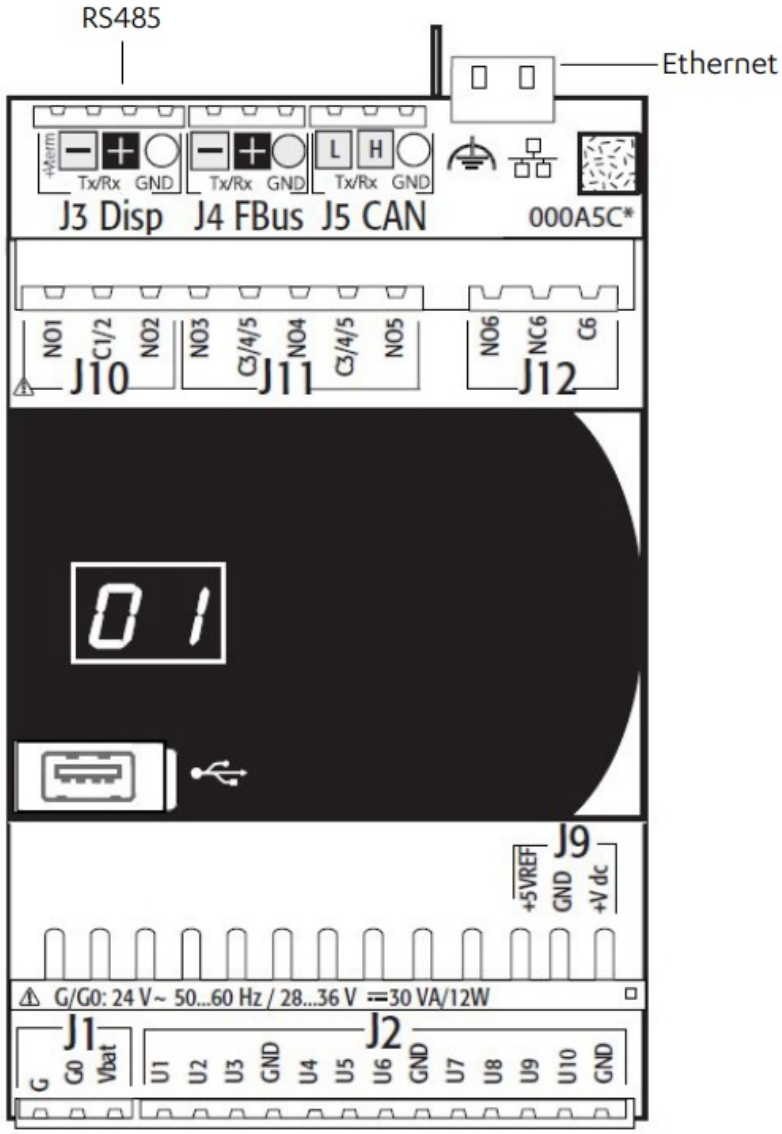
Colour	White RAL 9016
Ball pressure test temperature	125 °C
Period of stress across the insulating p arts	Long
Type of action digital output	1C
Type of disconnection or microswitchin g	Microswitching
Heat and fire resistance category	Category D (UL94 – V2)
Overvoltage category	Category III
Software class and structure	Class A
Do not touch or tamper with the device when powered.	

Connection Diagram



NOTE

- Ports available for this are Ethernet or RS485. However, only one port can be used and set as the network connection at a time.



Maximum Cable Length

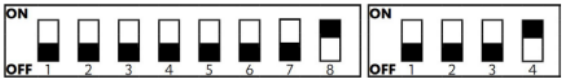
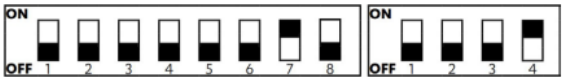
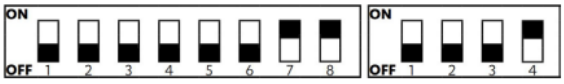
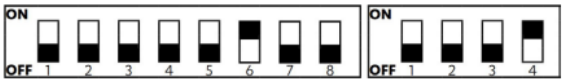
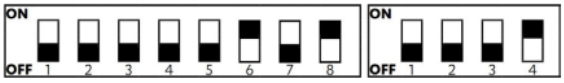
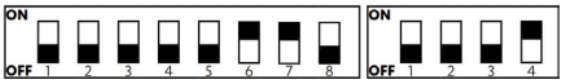
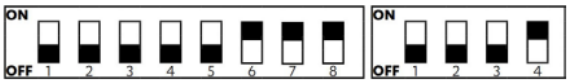
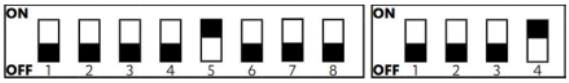
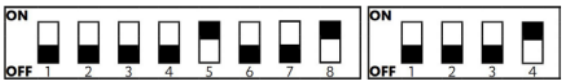
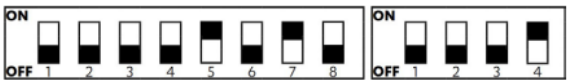
MAXIMUM CABLE LENGTH BETWEEN DEVICES

Connection	**Cable Type**	**Maximum Length**
Gateway Power Supply toBMS G ateway	Power Cable	12m for 1.5mm² / 8m for 1.0mm²
BMS Gateway to Customer BMS Master	Data Cable	500m
BMS Gateway to first Intermediat e Device	Signal Cable	500m

Customer BMS Master to Last Device	Data Cable	1000m total cummulative length
Note: Effective distance may vary depending on noise in the network surrounding.		

ICUNO-MOD Connection and Addressing

- The BMS Gateway Controller System connects to individual ActronAir units through an ActronAir ICUNO-MOD module. During installation and commissioning, each ICUNO-MOD must be assigned an address that corresponds to the connected unit's number, and the baud rate must be set. The BMS Gateway can support up to 10 ICUNO-MOD modules.
- To assign an address, adjust the DIP switches on each ICUNO-MOD to match the desired unit number. The GW100 Gateway is configured to automatically detect each module's assigned address.
- For detailed installation and configuration instructions, please refer to the ICUNO-MOD Installation and Commissioning Guide (Document 9590-3013).

Device	SW1-Dip Switch Setting of ICUNO-MOD	Serial Address	Baud Rate
01		01	19200
02		02	
03		03	
04		04	
05		05	
06		06	
07		07	
08		08	
09		09	
10		10	

Installation and Configuration BMS Gateway

- Step 1. Install BMS Gateway and the SMPS (included in the kit) in the desired locations.
- Step 2. Adjust the SMPS power output to 28VDC.
- Step 3. Connect 240VAC to SMPS.
- Step 4. Connect 28VDC from SMPS to the BMS gateway.
- Step 5. Install ICUNO-MOD cards (refer to ICUNO manual).
- Step 6. Set DIP switches according to unit number (listed in BMS gateway manual).
- Step 7. Run fieldbus cable between ICUNO-MOD cards and J4 on the BMS gateway.
- Step 8. Power BMS Gateway.

BMS Menu and Navigation

Menu Navigation

- Press the Up(↑) or Down(↓) arrow to go the previous or next line. When cursor is in a variable character, this will toggle the value or increment/decrease the set value.
- Press Enter (↵) to into the menu (see Menu Tree Section for guide). When cursor is in a variable character, this will select he value currently displayed.
- Press Esc (↵) to go back to main screen.

Complete programming menu tree

Below is the complete menu tree of the configuration menu.

Menu		**Screen Reference**	**Parameter**	**Settings**	**Menu Description**	**Menu Type**
	Test – Device 01 – 10	Aa01	Unit On/Off	0 – 1	Read and Write the ON/OFF command – ICUNO-MOD holding register 1	U
			Master Set Point	16.0 – 30.0	Read and Write the Master Set Point – ICUNO-MOD holding register 102	
			Indoor Coil Temperature		Returns Indoor Coil Temperature – ICUNO-MOD holding register 1301	
			OD Firmware		Returns OD Firmware – ICUNO-MOD holding register 1001	

Input/Output		Subsequent screens are replicated for Device 02 – 10: Aa02 – A10				
	Device 11 – Onboard	Aa11	Input/Output 01-05		Status of U1-U5	U
	Device 11 – Onboard	Aa12	Input/Output 06-10		Status of U6-U10	U
	Device 11 – Onboard	Aa13	Relay 01-06		Status of relay 01-06	U
	Output Override	Aa14	Relay 01-06	Auto – On – Off	Override output relay 01-06	S
	Output Overide	Aa15	Reset Overides	No – Yes	Resets the status of the relay overides	S
Info	Info	Ab01 – 07	Info		System Information (SW version, OS version, Device information)	S
	Universal Input U02	Ad01	Refer to 03.07.04		Universal Input U02 configuration	S
	Universal Input U03	Ad02	Refer to 03.07.04		Universal Input U03 configuration	S

Input Config	Universal Input U04	Ad03	Refer to 03.07.04		Universal Input U04 configuration	S
	Universal Input U05	Ad04	Refer to 03.07.04		Universal Input U05 configuration	S
	Universal Input U07	Ad05	Refer to 03.07.04		Universal Input U07 configuration	S
	Universal Input U08	Ad06	Refer to 03.07.04		Universal Input U08 configuration	S
	Universal Input U09	Ad07	Refer to 03.07.04		Universal Input U09 configuration	S
	Universal Input U10	Ad08	Refer to 03.07.04		Universal Input U10 configuration	S
		Ae00	Number of Devices	1-10	Sets the number of connected devices	S
			Disable Device	Y – N	Enable/Disable the device in from communication	
			Device 01	Y – N	Enable additional variables	
			Ana_01 reg#:	1-9999 | R – R/W	Set ICUNO-MOD holding register and read type – Additional Analogue Variables	

	Unit Configuration	Ae01A	Ana_02 reg#:	1-9999 | R – R/W	Set ICUNO-MOD holding register and read type – Additional Analogue Variables	S
			Ana_03 reg#:	1-9999 | R – R/W	Set ICUNO-MOD holding register and read type – Additional Analogue Variables	
			Ana_04 reg#:	1-9999 | R – R/W	Set ICUNO-MOD holding register and read type – Additional Analogue Variables	
			Ana_05 reg#:	1-9999 | R – R/W	Set ICUNO-MOD holding register and read type – Additional Analogue Variables	
			Device 01	Y – N	Enable additional variables	
			Dig_01 reg#:	1-9999 | R – R/W	Set ICUNO-MOD holding register and read type – Additional Digital Variables	
			Dig_02 reg#:	1-9999 | R – R/W	Set ICUNO-MOD holding register and read type – Additional Digital Variables	

Unit Config		Ae01D	Dig_03 reg #:	1-9999 | R – R/W	Set ICUNO-MOD holding register and read type – Additional Digital Variables	S
			Dig_04 reg #:	1-9999 | R – R/W	Set ICUNO-MOD holding register and read type – Additional Digital Variables	
			Dig_05 reg #:	1-9999 | R – R/W	Set ICUNO-MOD holding register and read type – Additional Digital Variables	
	Unit Configuration	Ae01I	Device 01	Y – N	Enable additional variables	S
			Int_01 reg#:	1-9999 | R – R/W	Set ICUNO-MOD holding register and read type – Additional Integer Variables	
			Int_02 reg#:	1-9999 | R – R/W	Set ICUNO-MOD holding register and read type – Additional Integer Variables	
			Int_03 reg#:	1-9999 | R – R/W	Set ICUNO-MOD holding register and read type – Additional Integer Variables	

			Int_04 reg# :	1-9999 | R – R/W	Set ICUNO-MOD holding register and read type – Additional Integer Variables	
			Int_05 reg# :	1-9999 | R – R/W	Set ICUNO-MOD holding register and read type – Additional Integer Variables	
		Subsequent screens are replicated for Device 02-10: Ae02A – Ae10A, Ae02D – Ae10D, Ae02I – Ae10I				

Menu		**Screen Reference**	**Parameter**	**Settings**	**Menu Description**	**Menu Type**
Unit C	Parameter Import/ Export	Ae11	Import/Export	Import – Export	Set choice to Import or Export configuration file	S
			Memory Type	Internal – External	Select location to Import from or Export to configuration file	
			File Name	00 – 99	Select the configuration file name for Import/Export	

onfig			Confirm	Yes – No	Confirm Import/Export request	
	Alarm Export	Ae12	Memory Type	Internal – USB	Set the location for alarm log to be exported	S
			File Name	00 – 99	Select the Alarm log file name for export	
			Confirm	Yes – No	Confirm Export request	
Alarm Logs	Data Logger				View the Alarm history	U
	Date/Time	Ba01	Format	DD-MM-YYYY	Set the Date format	U
			Date	DD-MM-YYYY	Set the Date	
			Hour	HH-MM-SS	Set the Time	
			Day	Monday-Sunday	Set the Day	
		Ba02	Time Zone	UTC	Sets the Time Zone	U
	UoM	Bb01	User interface UoM		Sets the User interface Unit of Measure	U

Language		Language	English	Sets the user interface language	U
		Enter to Change, Esc to confirm	Enter – Esc	Changes and confirms the set language	
	Bc01	Baud Rate	1200 – 375000	Sets the Baud rate speed for communication to ActronAir ICUNO-MOD cards	S
		Stopbits	1 – 2	Sets the Stop bits	
		Parity	Even – Odd – None	Sets the Parity	
	Bc02	Port	Ethernet – RS485	Selects the BMS output port	S
		Device Instance	1 – 99999	Sets the Device instance	
		Offline Delay	3000ms	Sets the BMS offline delay	
		Detect Timeout	1500ms	Sets the BMS detect Timeout	S

Settings	Network	Bc03	Station Address	1	Sets the unique station address of the gateway on the RS-485 bus	S
			Max. Master	127	Specifies the address of the network Master with the highest station address	
			Max. Info/Frame	10	Sets the maximum number of packages that can be exchanged	
		Bc04	Baud rate	19200	Sets the BACnet data transfer speed	S
			Stopbits	1	Sets the Stop bits	
			Parity	None	Sets the Parity	
		Bc05	Net Configuration	Enter	Enter the network configuration screen	S
		Ca01/2	Enable	Static – Off – DHCP	Set the unit’s IP address for the Ethernet connection. Set DHCP, subnet mask, gateway, DNS.	S
			IP	192.168.0.1	Set the IP address	
			Mask	255.255.255.0	Set the Subnet Mask	

		GW	0.0.0.0	Set the Gateway	
		DNS	0.0.0.	Set the DNS	
	Ca02/2	Update Config?	Yes – No	Set the “Update?” parameter to “YES” to update the network settings	S
Password Change		User:	0	Change the password (User, Service, Installer)	U
		Service	7378		
		Manufacturer	6268		
Initialisation		Delete alarm logs	Yes – No	Deletes the internal gateway alarm logs	M
		Clear Auto Reset counters	Yes – No	Clears the AutoReset counters	
		Enable Buzzer	Yes – No	Sets the function of the internal alarm buzzer	
Default Installation		Wipe Memory	Yes – No	Unit factory reset. Important: resetting the model will cancel all of the control settings and load the default values	M

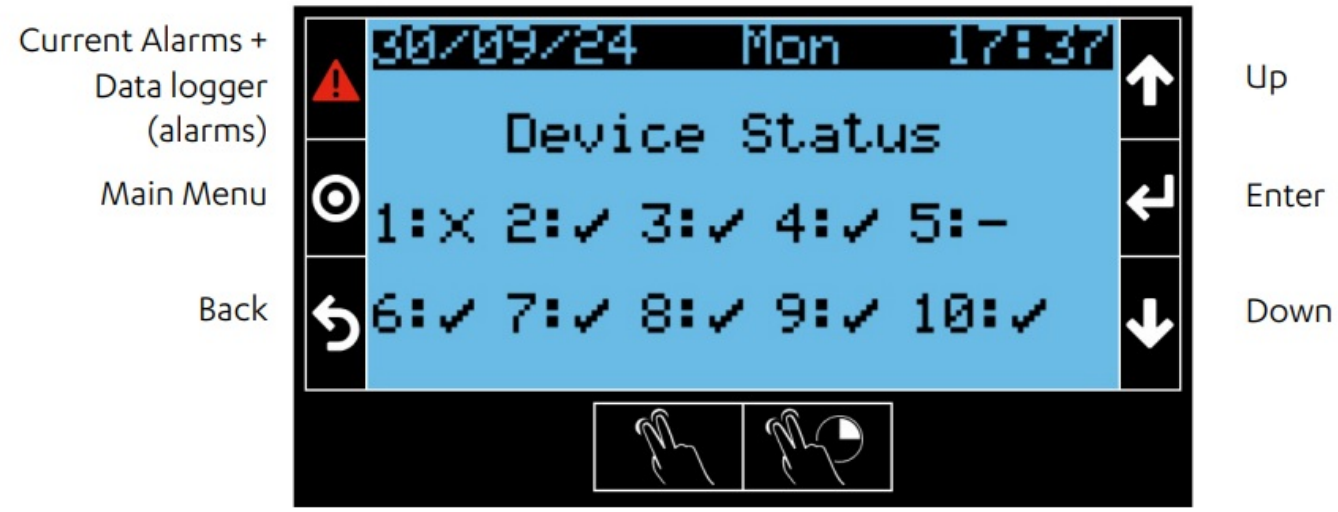
Logout	Logout		Enter to logout	Enter	Information on the type of login performed. Provides option to logout of that user access	U

Screens Available

- When the BMS Gateway is installed in the system, the Customer BMS Master could access and navigate the setting of the network.

Home Screen: Device Status

- This shows the connected devices.



- X = Device has been set up but no communication
- ✓ = Device has been set up and communication is established.
- – = Device is set up and has been disabled in the unit configuration menu

Alarm Screen and Data Logger:

- Below screen shows when the upper left corner button (⚠) is pressed.

- Press the Enter button(↵) until the screen below appears.
- Use the Up(↑) or Down(↓) arrows to navigate through the devices, as shown below:

- Use the Up(↑) or Down(↓) arrows to navigate through the devices, as shown below:

Main Menu

- To access the main menu, press the (◎) button on the left side of the display. Entering the main menu will prompt a log in screen where an access password will be required to be entered. See 08.01.04.

- This screen will show when the middle button, Menu ( ) on the left is pressed.
- Press the Up( ) or Down( ) arrow until the sub menu required appears. Press the Enter button to enter that menu.

Login Screen

- Press the Up( ) or Down( ) arrow until the number required appears. Press the Enter button( )to accept the value. Repeat until all numbers are set.

Password

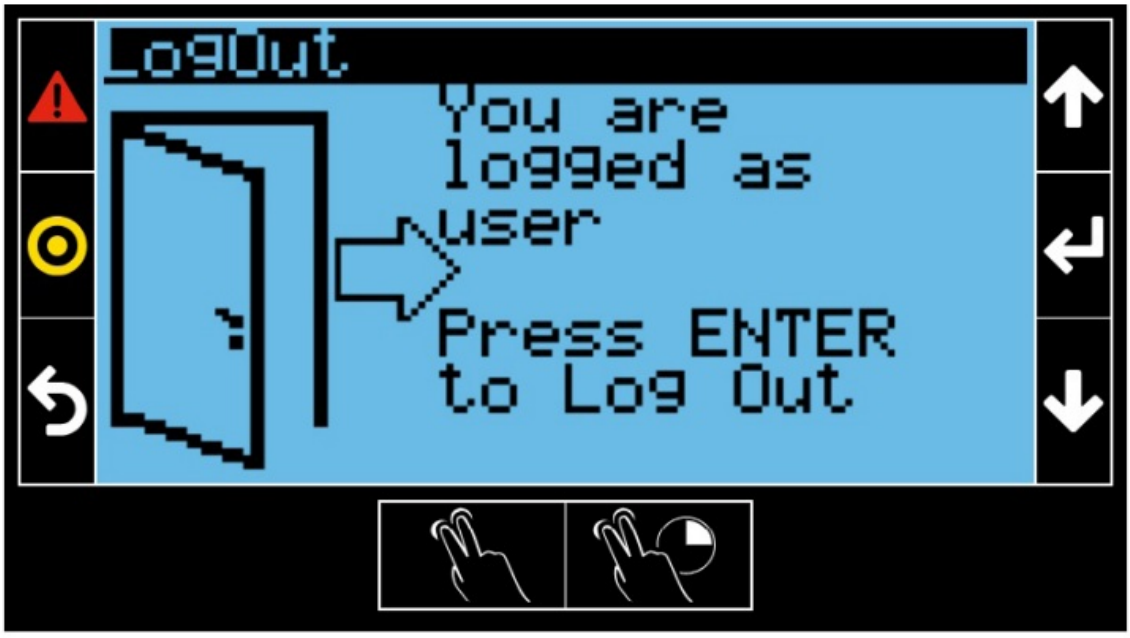
- User: 0000

- Service: 7378
- If you are logged in under USER and try to access a SERVICE restricted menu, it will be disallowed. You will need to log out as USER and log back in using the SERVICE password.

LogOut Screen

- To go to the Log Out screen, go to the Main Menu, press the Up( ) or Down( ) arrow until Logout is highlighted. Press the Enter button( )to select.

- The screen will show as below. Press the Enter button to log out.



Input / Output Menu

- The Input/Output menu provides viewing and testing of pre-set variables for the purpose of verifying communication between the BMS gateway and the connected ActronAir system. Press the Up( ) or Down( ) arrow to select desired setting to change. Press the Enter button( ) to select the setting. Press the Up( ) or Down( ) arrow to chage the parameter.

- There is a different input/output screen for each Device enabled.

NOTE

- Unit On/Off – ICUNO-MOD register 1 – Read/Writable
- Master Set Point – ICUNO-MOD register 102 – Read/Writable Indoor Coil Temperature – ICUNO-MOD register 1301 – Read only OD Firmware – ICUNO-MOD register 1001 – Read only

Information Menu

- Provides information on the gateway hardware, firmware and network polling.
- Software code and version will need to be provided when calling Actron Technical Service.

Unit Configuration Menu

- This menu allows for the configuration of the number of devices that the BMS gateway will be connected to.
- If units are not to be configured and commissioned all at the same time, and was allocated a Device number in the BMS Gateway, these devices can be disabled to prevent alarm generation from the Gateway.
- As an example, if three units (1, 2, and 3) are to be connected, but only units 1 and 3 will be commissioned at startup, set device 2 to ‘N.’ This will prevent the BMS Gateway from triggering an alarm when it cannot detect device 2.

Additional Variables

- This allows the configuration of additional ICUNO-MOD variables that are not currently mapped in the gateway.
- Each device connected to the BMS Gateway have the ability to configure an additional 5 Analog, 5 Integer, and 5 Digital variables, allowing for a maximum of 15 additional variables per device. The register entered will correspond to the holding register provided by the ICUNO-MOD. The read/write status can be set for each variable.

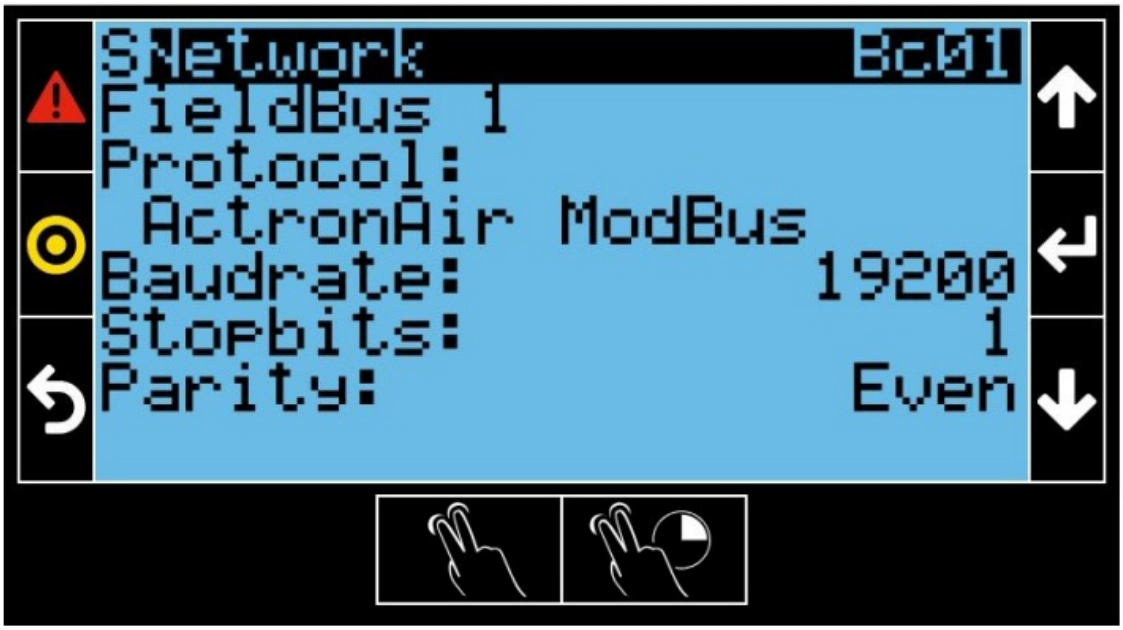
NOTE

- Ask for Actron Technical Support for further assistance on this.

Unit Configuration File This allows the export or import of configuration file.

Field Network Configuration

- Fieldbus 1 is the communication from the BMS gateway to the ICUNO-MOD devices. Default parameters are:
- Protocol: ActronAir Modbus (not changeable)
- Baudrate: 19200
- Stopbits: 1
- Parity: Even



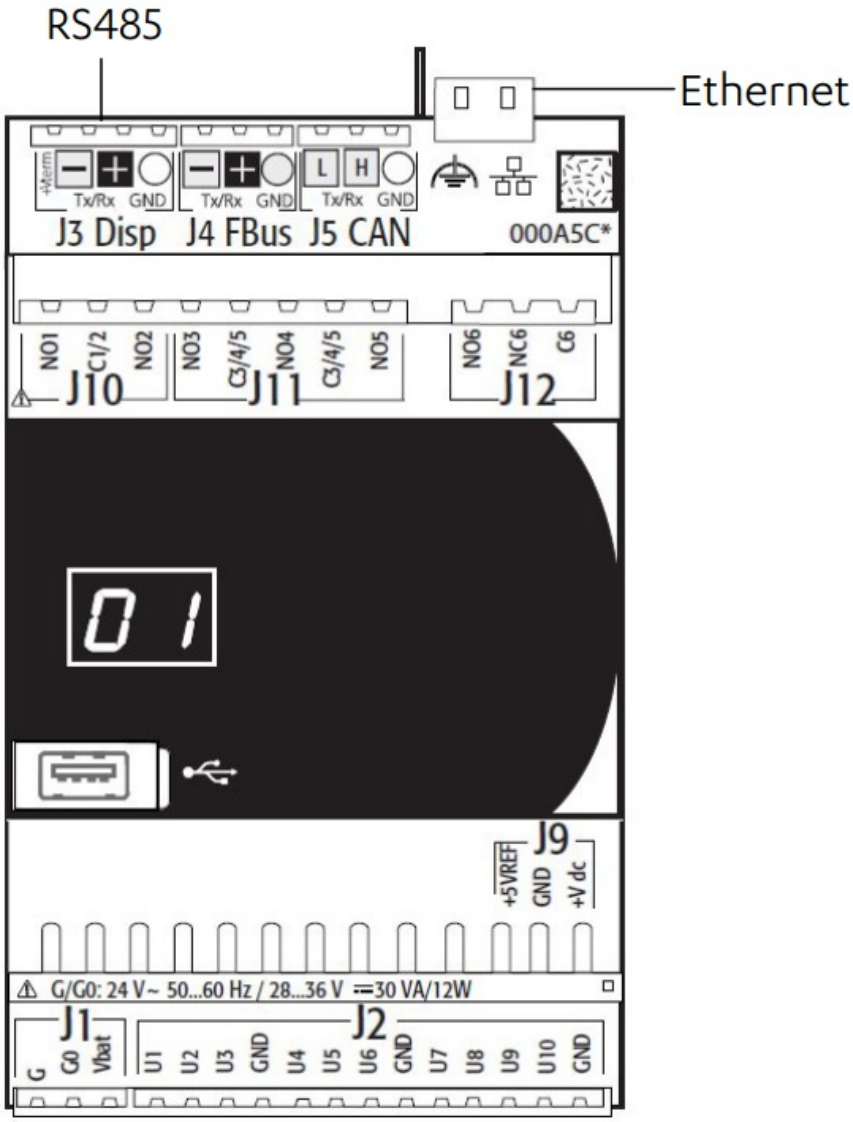
NOTE

- These values must correspond with the configuration of all connected ICUNO-MOD

cards.

BMS Network Connection

- Ports available for this are Ethernet or RS485. However, only one port can be used and set as the network connection at a time.



Ethernet

Ethernet is the default setting. This is used for used for BACnet/IP and Modbus TCP/IP.

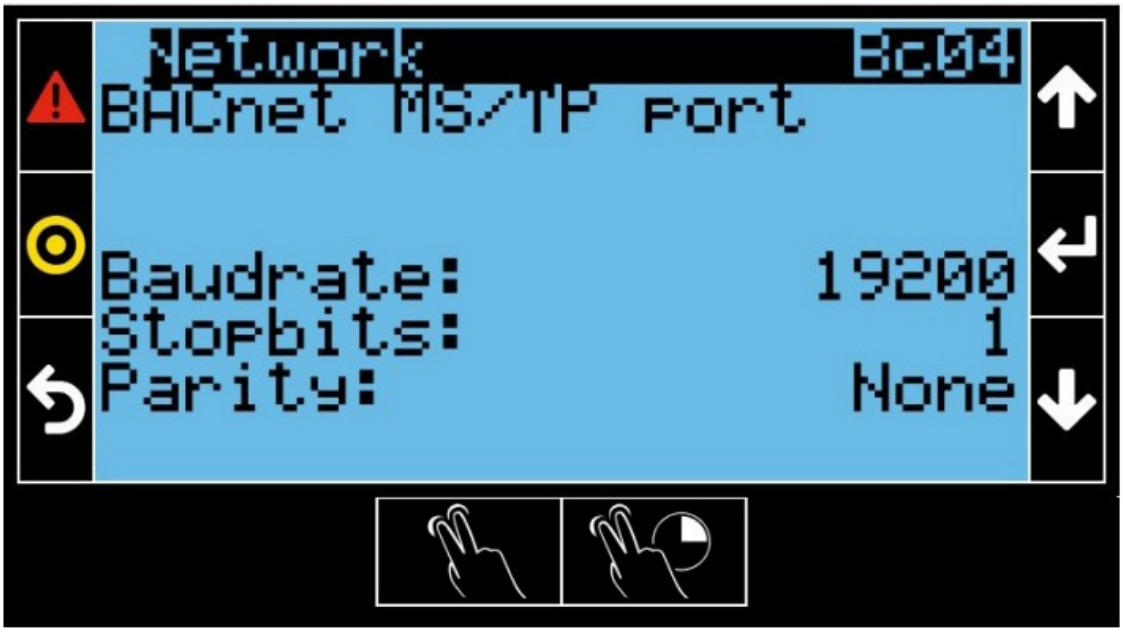
NOTE

- If Ethernet is selected, J3 can be used to plug a CP05 or a CP10 terminal display.
- Changing the Port selection requires the BMS gateway to be rebooted to take effect.

RS485

RS485 is selected for BACnet MS/TP (terminal J3). BACnet MS/TP configuration settings

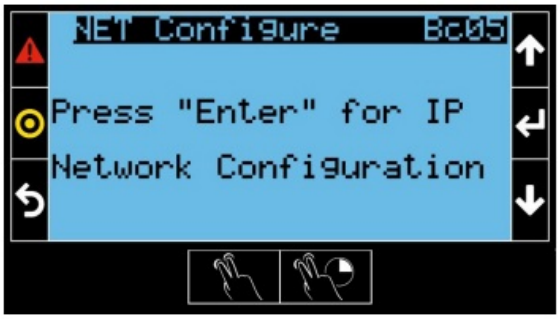
BACnet MS/TP port settings

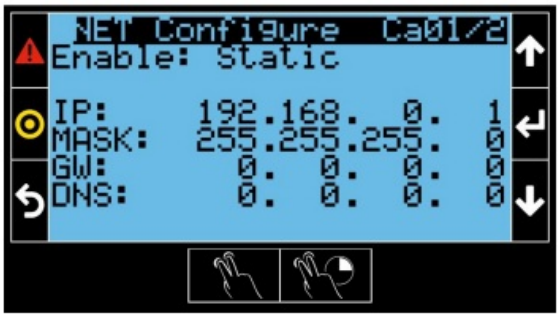


NOTE

- If RS485 is selected, J3 can only be used for BACnet MS/TP and a display terminal cannot be connected. Changing the Port selection requires the BMS gateway to be rebooted to take effect.

Network Configuration IP Settings This allows access and configuration of the Gateways IP settings.





To save the network configuration, ‘Update Config’ must be set to Yes.

NOTE

- The Net configuration menu is only visible when the BACnet port is set to Ethernet in menu Bc02

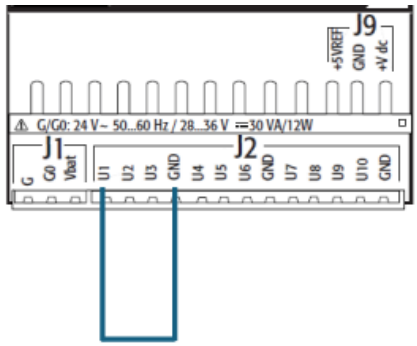
Troubleshooting

Restoring the Default values of the BMS Gateway

This provides the ability to physically reset the gateways network address to default:

- IP: 192.168.0.1
- Subnet: 255.255.255.0
- **Step 1.** Turn-Off power from mains supply by removing the fuse or switching the circuit breaker to the OFF position before performing the installation procedures. Follow sound LOCK-OUT/TAG-OUT (LOTO) procedures to ensure that power supply is not re-energized accidentally.

- **Step 2.** Bridge U1-GND. Connect ends of the jumper wire to U1 and GND terminals to short.



- **Step 3.** Power system ON and wait to load.
- **Step 4.** Remove the jumper wire (connected to the U1 and GND).
- **Step 5**. Connect to the Gateway using default IP address settings.
- **Step 6.** Configure desired IP address settings.

Link to the Register Table

There are two options to access the Registry Table.

Website

https://actronair.com.au/bmsgatewayregister/

QR

Once link is accessed, chose either View or Download the register table.

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FAQS

Q: What should I do if I encounter communication issues with the Gateway?

A: Check the cable connections, ensure proper addressing, and verify compatibility with the connected systems.

Q: Can I connect more than 10 Actron systems to a single Gateway unit?

A: No, the Gateway supports a maximum of 10 Actron systems per unit.

Q: How do I reset the Gateway to its default values?

A: Refer to section 09.01 in the manual for instructions on restoring default values.

Documents / Resources

	ActronAir GW100K BMS Gateway Controller [pdf] Installation Guide GW100K, GW100K BMS Gateway Controller, BMS Gateway Controller, Gateway Controller, Controller

References

- User Manual

ActronAir

ActronAir, BMS Gateway Controller, controller, Gateway Controller, GW100K, GW100K BMS Gateway Controller

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