SUBMITTAL DATA SHEET

CBN02	**VRF Smart Gateway**
Job Name:	**Location:**
Purchaser:	**Order No.:**
Engineer:	**Construction:**
Submitted To:	**Approval:**
Submitted By:	**Date:**
Unit Designation:	**Schedule No.:**

FEATURES AND BENEFITS:

- Supports up to 64 VRF systems, up to 160 Indoor Units, and up to 200 total Indoor and Outdoor Units.
  (The stability and reliability of communications across the H-Link network is increased if the number of units in each H-Link segment is limited to 100.)
- Integrates with the Metasys and FX building automation systems.
- Integrates with third party building automation systems supporting the BACnet IP protocol.
- BACnet Gateway (B-GW) device profile
- BACnet IP, (Annex J), BACnet Broadcast Management Device (BBMD)
- Connect up to 4 Large Central Controllers (CCCL01) simultaneously to the same H-LINK II segment

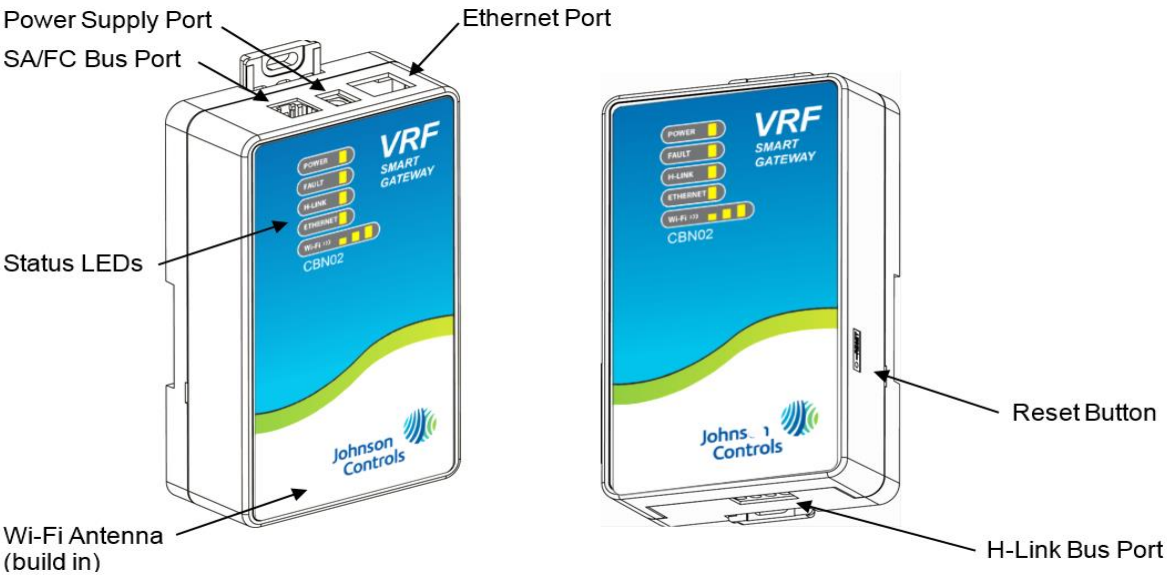
VRF Smart Gateway Specifications	
Power Consumption	12 to 15 VDC at 5.2 W maximum Note: The included power adapter is for connection to 100 to 240 VAC.
Ambient Temperature Conditions	Operating: 0 to 50°C (32 to 122°F)
	Operating Survival: -30 to 60°C (-22 to 140°F)
	Non-Operating: -40 to 70°C (-40 to 158°F)
Ambient Humidity Conditions	Storage: 5 to 95% RH, 30°C (86°F) maximum dew point conditions
	Operating: 5 to 95% RH, 30°C (86°F) maximum dew point conditions
Dimensions	145.4 x 85.4 x 40.1 mm (5.72 x 3.36 x 1.58 in.) when used vertically
Weight	0.21 kg (0.46 lb) Note: Weights do not include the external power supply.
BTL Certified	Software Version 1.1 or later

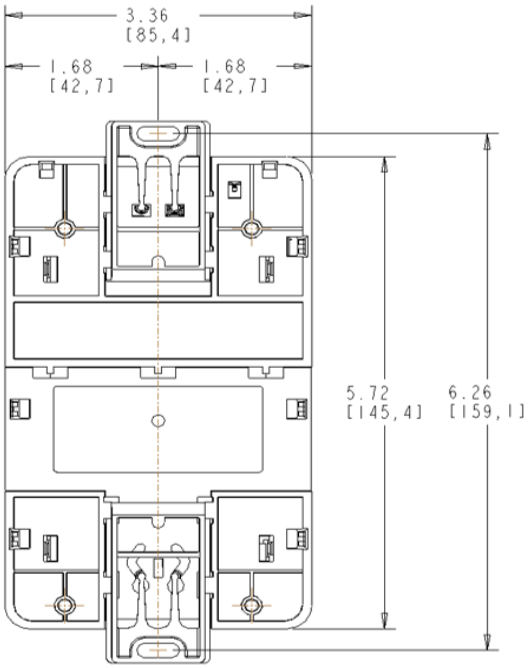
Communication Specifications	
Transmission Power (Typical)	Wireless Local Area Network (WLAN) Transmission Power at CE Compliant levels:
	+14.5 dBm @ 54 Mbps; +12.5 dBm @ 65 Mbps
	Channel 6 preconfigured, supported CH 1 to 11 for United States and Canada, and CH 1 to 12 for all other countries
WLAN Receiver Sensitivity (Typical)	-76 dBm, 10% packet error rate (PER), 54 Mbps
	-73 dBm, 10% PER, 65 Mbps
Transmission Speeds	Wireless Communication: 2.4 GHz ISM bands, 802.11 b/g/n, 11/22/54 Mbps
	Serial Communication (H-LINK Bus): 9600 bps, Connection to Outdoor and Indoor Units
	Ethernet Communication: 10, 100 Mbps, Connection to BAS over BACnet IP
Transmission Range (Typical)	Wireless Communication: 30 m (98 ft) line-of-sight indoors, 91 m (299 ft) line-of-sight outdoors
	Serial Communication (H-LINK Bus): 1,000 m (3,280 ft) cable length
	Ethernet Communication: 100 m (328 ft) cable length
Wireless Security	WPA2-PSK TKIP (Wi-Fi Protected Access Pre-Shared Key mode Temporal Key Integrity Protocol)
	WPA2-EAP-PEAP, WPA2-EAP-TLS

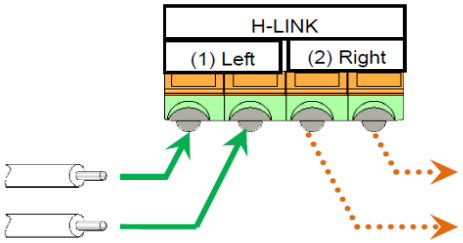
Indoor Unit Control Functions and Data		
	Function	**Description**
Control Functions	Unit Enable Mode	Sets the operation of the Indoor Unit (Shutdown / Enable)
	System Mode	Sets the operational mode of the Indoor Unit (Cool / Dry / Fan / Heat / Auto)
	Zone Temperature Setpoint	Sets the room temperature setpoint of the Indoor Unit (17-30°C / 62-86°F)
	Supply Fan Speed	Sets the supply fan speed of the Indoor Unit (Low, Medium, High, Auto)
	Remote Control Operation Lockouts	Enables or disables the remote controller's ability to control the Indoor Unit
	Filter Status Reset	Resets the air intake filter status
Monitoring Points	Supply Fan Status	Reports the operational status of the Indoor Unit (Off / On)
	System Status	Reports the actual operational mode of the Indoor Unit (Cool / Dry / Fan / Heat)
	Zone Temperature	Reports the current room temperature in the Indoor Unit (-50-99°C / -58-210°F)
	Remote Zone Temperature	Reports the current temperature measured by the thermistor in the remote controller
	Supply Fan Status	Reports the actual fan speed of the Indoor Unit (Low / Medium / High)
	Filter Status	Reports the intake air filter condition of the Indoor Unit (Clean / Dirty)
	Expansion Valve Position	Reports the position of the expansion valve in the Indoor Unit from 0-100%
	Liquid Pipe Temperature	Reports the temperature of the liquid pipe feeding the Indoor Unit (-50-99°C / -58-210°F)
	Gas Pipe Temperature	Reports the temperature of the gas pipe feeding the Indoor Unit (-50-99°C / -58-210°F)
	Return Air Temperature	Reports the current air intake temperature in the Indoor Unit (-50-99°C / -58-210°F)
	Discharge Air Temperature	Reports the current discharge air temperature of the Indoor Unit (-50-99°C / 58-210°F)
	Coil Differential Temperature	Reports the difference between the Return Air Temp and Discharge Air Temp in degrees C or F
	Requested Compressor Speed	Reports the requested compressor speed in Hz
	Unit Alarm Status	Reports whether or not the Indoor Unit is operating normally and issues an alarm if the Indoor Unit detects a malfunction
	Alarm Code	Reports the specific malfunction code of the Indoor Unit

Outdoor Unit Data		
	Object	**Description**
Monitoring Points	System Mode	Reports the system mode of the Outdoor Unit (Heat / Cool / Auto)
	System Status	Reports a specific status value of the Outdoor Unit
	Heat Exchanger State	Reports the state the heat exchanger is operating in (COND / EVAP)
	Inverter State	Reports the state the inverter is operating in
	Fan Controller State	Reports the state the fan is operating in
	Inverter Hours	Reports the runtime hours of the inverter compressor 1
	Compressor Hours	Reports the runtime hours of the compressor 2
	Inverter Compressor Frequency	Reports the current inverter compressor frequency in Hz
	Total Frequency	Reports the total running frequency in Hz of all inverter and standard compressors
	Fan Output	Reports the fan output level from 0-100%
	Expansion Valve Position	Reports the expansion valve position from 0-100%
	Discharge Pressure	Reports the discharge or high pressure from 0-3,698.5 psi
	Suction Pressure	Reports the suction or low pressure from 0-369.8 psi
	Outdoor Air Temperature	Reports the outside air temperature, or the temperature read by the thermistor in the Outdoor Unit (-50-99°C / -58-210°F)
	Inverter Compressor Primary Current	Reports the primary current draw in Amps of inverter compressor 1 (0-127 A)
	Inverter Compressor Secondary Current	Reports the secondary current draw in Amps of inverter compressor 1 (0-127 A)
	Compressor 2 Current	Reports the current draw in Amps of compressor 2 (0-127 A)
	Inverter Compressor Top Temperature	Reports the temperature of inverter compressor 1 (0-99°C / 32-210°F)
	Compressor 2 Top Temperature	Reports the temperature of compressor 2 (0-99°C / 32-210°F)
	Protection Code	Reports the specific protection code value
	Defrost Status	Reports if the Outdoor Unit is in defrost mode (Off / On)
	Emergency Run Status	Reports if the Outdoor Unit is in emergency run mode (Off / On)
	Alarm Code	Displays a specific malfunction code of the Outdoor Unit
	Inverter Status	Reports if the inverter is running (Stop / Run)
	Fan Status	Reports if the fan is running (Stop / Run)

CBN02


Power Supply Port
SA/FC Bus Port
Ethernet Port
Status LEDs
Wi-Fi Antenna
(build in)
VRF
SMART
GATEWAY
CBN02
Johnson
Controls
Reset Button
H-Link Bus Port


3.36
[85,4]
1.68
[42,7]
1.68
[42,7]
5.72
[145,4]
6.26
[159,1]


H-LINK
(1) Left
(2) Right