

Merlin RG Series



VRF REFRIGERANT GAS SENSORS



BACnet Functionality

This document provides details on BACnet functionality of the Merlin RG range.

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RG = Refrigerant Gas NOTE: Temperature and Humidity functions are disabled.

Parity: None / Data-Word length: 8-bit / Stop bit: 1

BACnet Interoperability Building Blocks Supported

Description	BIBB	Comments
Read Property	DS-RP-B	
Read Property Multiple	DS-RPM-B	
Write property	DS-WP-B	
Dynamic Device Binding	DM-DDB-B	Execute who is / Initiate I am
Dynamic Object Binding	DM-DOB-B	
Device Comm Control	DM-DCC-B	
Reinitialize Device	DM-RD-B	

BACnet Standard Object Types Supported

Object	No Of Instance	Instance Assignments
Device Object	1	
Analog Input (AI)	3	AI-1: RG AI-2: Temperature AI-3: Humidity
Analog Output (AO)	3	AO-1: RG V.Out AO-2: Temperature V.Out AO-3: Humidity V.Out
Analog Value (AV)	7	AV-1: RG Offset AV-2: Temperature Offset AV-3: Humidity Offset AV-4: Pre-Alarm Level AV-5: Alarm Level AV-6: Relay Set Point AV-7: Warning Code
Binary Output (BO)	1	BO-1: Relay
Multi State Value (MSV)	2	MSV:1 Temperature Unit MSV:2 Error Codes

BACnet Standard Object Types Supported

Property Name / ID	Default	Read/Write
Object Identifier	OBJECT_DEVICE: Vendor No x1000 & Mac Address	R/W
Object Name	RG Series	R/W

Object Type	8: Object Device	R
System Status	0: Operational	R
Vendor Name	American Gas Safety LLC	R
Vendor Identifier	1447	R
Model Name	Merlin RG Series	R
Firmware Revision	Reserved	R
Application SW Version	Reserved	R
Protocol Version	1	R
Protocol Revision	18	R
Protocol Services Supported	Binary List	R
Object List	Object Array	R
Max APDU Length	480	R
Segmentation Support	3: None	R
APDU Timeout	3000	R
Number APDU Retries	3	R
Database Revision	0	R
Description	Refrigerant Gas	R/W
Location	USA	R/W
Max Master	127	R/W
Max Info Frames	1-16	R/W
Link Speed	(Baud Rate Indicator)	R
Mac Address	(Network ID)	R
1000-Proprietary (Factory Reset)	0 (AI / AO / AV / BO / MSV ONLY) 1: Prompt Reset	R/W

Analog Input Objects (AI)

Property Name / ID	Default	R/W
Object Identifier	OBJECT_ANALOG_INPUT: #	R
Object Name	AI-1: RG AI-2: Temperature AI-3: Humidity	R
Object Type	0	R
Present Value	REAL	R
Status Flag	0000	R
Event State	NORMAL	R
Out-of-Service	FALSE	R/W
Description	N/A	R/W
Units	AI-1: PART PER MILLION AI-2: DEGREES CELSIUS AI-3: PERCENT RELATIVE HUMIDITY	R
Min Preset Value	AI-1: 0 AI-2: 0.0 AI-3: 0.0	R/W
Max Preset Value	AI-1: 5000 AI-2: 50 AI-3: 100	R/W
Resolution	AI-1: 1 AI-2: 0.1 AI-3: 0.1	R

Analog Output Objects (AO)

Property Name / ID	Default	R/W
Object Identifier	OBJECT_ANALOG_OUTPUT: #	R
Object Name	AO-1: RG V.Out AO-2: Temperature V.Out AO-3: Humidity V.Out	R
Object Type	1: Object Analog Output	R
*Present Value	Real	R – R/W

*Read Only	0 = AO Writable (AO based on Value Written) 1 = AO Read Only (AO based on Sensor Value)	R/W
Status Flag	0000	R
Event State	0: Normal	R
Out-of-Service	False	R/W
Units	5: Volts	R
Feedback Value	Real	R
Min Preset Value	0.0	R/W
Max Preset Value	10	R/W
Resolution	0.1	R

Analog Value Objects (AV)

Property Name / ID	Default	R/W
Object Identifier	OBJECT_ANALOG_VALUE: #	R
Object Name	AV-1: RG Offset AV-2: Temperature Offset AV-3: Humidity Offset AV-4: Pre-Alarm Level AV-5: Alarm Level AV-6: Relay Set Point	R
Object Type	2	R
Present Value	AV-1: 0 AV-2: 0 AV-3: 0 AV-4: 175 AV-5: 1000 AV-6: 1000	R/W
Status Flag	0000	R
Event State	NORMAL	R
Out-of-Service	FALSE	R/W
Units	AV-1: PART PER MILLION AV-2: DEGREES CELSIUS AV-3: PERCENT RELATIVE HUMIDITY AV-4: PART PER MILLION AV-5: PART PER MILLION AV-6: PART PER MILLION AV-7: NO UNIT	R

Binary Output Objects (BO)

Property Name / ID	Default	R/W
Object Identifier	OBJECT_BINARY_OUTPUT: #	R
Object Name	BO-1: RELAY	R
Object Type	4	R
Present Value	0: OFF 1: ON	R
Polarity	0: Normal 1: Reversed	R/W
Status Flag	0000	R
Event State	NORMAL	R
Out-of-Service	FALSE	R/W

Multi-State Value (MSV) Temperature Unit

Property Name / ID	Default	R/W
Object Identifier	OBJECT_MULTI_STATE_VALUE:1	R

Object Name	Temperature Unit	R
Object Type	19 Object Multi State Value	R
Present Value	1: (°Celsius)	R/W
Status Flag	0000	R
Event State	NORMAL	R
Out-of-Service	FALSE	R/W
Number of States	2	R
States	1: °C 2: °F	R

Multi-State Value (MSV) Error Codes

Property Name / ID	Default	R/W
Object Identifier	OBJECT_MULTI_STATE_VALUE:2	R
Object Name	Error Codes	R
Object Type	19 Object Multi State Value	R
Present Value	1: (No Error)	R
Status Flag	0000	R
Event State	NORMAL	R
Out-of-Service	FALSE	R/W
Number of States	7	R
States	1: No Error 2: RG Sensor Error 3: Temperature Sensor Error 4: Humidity Sensor Error 5: EEPROM Error 6: Display Error 7: DAC Error 17-40: Sensor Specific Errors	R

Multi-State Value (MSV) Audible Alarm

Property Name / ID	Default	R/W
Object Identifier	OBJECT_MULTI_STATE_VALUE:3	R
Object Name	Audible Alarm	R
Object Type	19 Object Multi State Value	R
Present Value	1: (Disabled)	R/W
Status Flag	0000	R
Event State	NORMAL	R
Out-of-Service	FALSE	R/W
Number of States	2	R
States	1: Disabled 2: Enabled	R

For more information visit www.bacnet.org

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