Smart Boiler Control 294BAC

BAS Integration Manual



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⚠ WARNING

Please read carefully before proceeding with installation. Your failure to follow any attached instructions or operating parameters may lead to the product's failure.

Keep this Manual for future reference.

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Introduction

The Smart Boiler Control 294BAC communicates with a Building Automation System (BAS) using BACnet/IP and BACnet MS/TP. This manual provides information about control parameters that can be accessed by building automation or management systems using BACnet.

BACnet Protocol Implementation Conformance Statement

Vendor Name: tekmar Control Systems Ltd.
Vendor ID: 585
Product Name: Smart Boiler Control
Product Model Number: 294BAC
Application Software Version: J1308
Firmware Revision: 1.14.0 or later
BACnet Protocol Revision: 18
Product Description: Boiler Control

BACnet Standardized Device Profile (ANNEX L)
BACnet Application Specific Controller (B-ASC)

Supported BIBBs (Annex K)	Name
DS-RP-B	Data Sharing-ReadProperty-B
DS-RPM-B	Data Sharing-ReadPropertyMultiple-B
DS-WP-B	Data Sharing-WriteProperty-B
DM-DDB-B	Device Management-Dynamic Device Binding-B
DM-DOB-B	Device Management-Dynamic Object Binding-B
DM-DCC-B	Device Management-Device Communication Control-B
DM-RD-B	Reinitialize Device B
NM-FDR-A	Network Management - Foreign Device Registration - A

Segmentation Capability	Supported
Able to transmit segmented messages	No
Able to receive segmented messages	No

Standard Object Types Supported	Creatable	Deletable
Device	No	No
Analog Input	No	No
Analog Value	No	No
Binary Input	No	No
Binary Value	No	No
Network Port	No	No

Data Link Layer Option	Supported
BACnet/IP, 'DIX' Ethernet	Yes
BACnet MS/TP	Yes

Device Address Binding	Supported
Static Device Address Binding	No

Network Security Options
Non-Secure Device

Character Sets Supported	Supported
ANSI X3.4 -- ISO 10646 (UTF-8)	Yes

BACnet Standard Application Services Supported	Supported
ReadProperty	Execute
ReadPropertyMultiple	Execute
WriteProperty	Execute
DeviceCommunicationControl	Execute
Who-Has	Execute
I-Have	Initiate
Who-Is	Execute
I-Am	Initiate
ReinitializeDevice	Execute

Special Functionality	Supported
Maximum APDU size in octets	480

Default Property Value Restrictions	Supported
Unsigned-integer	minimum: 0; maximum: 18446744073709551615
Signed-integer	minimum: -9223372036854775808; maximum: 9223372036854775807
Real	minimum: -3.40282347E38; maximum: 3.40282347E38; resolution: 0.01
Double	minimum: -1.7976931348623157E+308; maximum: 1.7976931348623157E+308; resolution: 0.0001
Date	minimum: 01-January-1970; maximum: 31-December-2038
Octet-string	maximum length string: 256
Character-string	maximum length string: 64
List	maximum length list: 10
Variable-length-array	maximum length array: 10

BACnet Connection

The control can be connected to a Building Automation System via BACnet/IP or BACnet MS/TP.

BACnet Settings in the 294BAC BAS Menu

Parameter	Range	Description
BAS Type	None, BACnet MS/TP, BACnet/IP Default: None	Selects the communication protocol used for BAS integration. When set to None, BAS communication is disabled. When BACnet/IP or BACnet MS/TP is selected, the corresponding network settings become available. The Internet Connection Type must be set to Ethernet when selecting BAS Type to BACnet/IP.
BACnet Device ID	0 to 4194302 Default: 1	Sets the unique BACnet device instance number used to identify the control on the BAS network. Each device on the network must have a unique Device ID.
BACnet Object Name	String (32-Length) Default: Smart Boiler Control	Defines the BACnet device name shown in the BAS. This text identifier is used for system identification and should be unique and descriptive.
BACnet MAC Address	0 to 127 Default: 1	Sets the MS/TP MAC address of the control. This address must be unique on the MS/TP network to ensure proper communication. Only available when BAS Type is BACnet MS/TP.
BACnet Max Masters	0 to 127 Default: 127	BACnet Max Masters caps the highest MAC address a master device searches for when passing the token or polling for new devices. It optimizes bandwidth by preventing devices from searching up to the default address of 127 when fewer physical devices exist on the trunk. Only available when BAS Type is BACnet MS/TP.
BACnet Max Info Frames	1 to 255 Default: 1	Specifies the number of frames a device can transmit before passing the token; higher values can improve throughput but may affect network balance. Only available when BAS Type is BACnet MS/TP.
BACnet Baud Rate	9600, 19200, 38400, 57600, 76800, 115200 Default: 19200	Selects the communication speed for the BACnet MS/TP network. All devices on the same network segment must use the same baud rate. Only available when BAS Type is BACnet MS/TP.
BACnet Port	0 to 65535 Default: 47808	Sets the UDP port used for BACnet/IP communication. The default port (47808) is standard for BACnet and should only be changed if required by the network configuration. Only available when BAS Type is BACnet/IP.
BACnet BBMD Enable	Off, On Default: Off	Enables or disables foreign device registration with a BACnet Broadcast Management Device (BBMD). When enabled, the control can communicate across IP subnets. Only available when BAS Type is BACnet/IP.
BACnet BBMD IP Address	0.0.0.0 to 255.255.255.255 Default: 127.127.127.127	Specifies the IP address of the BBMD server used for foreign device registration. This must match the BBMD configured on the network. Only available when BACnet BBMD Enable is On.
BACnet BBMD IP Port	0 to 65535 Default: 47808	Sets the UDP port used to communicate with the BBMD. This must match the BBMD port configuration. Only available when BACnet BBMD Enable is On.
BACnet BBMD Time	30 to 65535 Default: 30	Defines the time-to-live (TTL) in seconds for foreign device registration with the BBMD. The control must periodically renew registration before this time expires. Only available when BACnet BBMD Enable is On.

BACnet Analog Parameters

AI = Analog Input Object
AV = Analog Value Object
R = Read
R/W = Read/Write
(n) = specific sensor number (1 – 100) or the specific extender number (1 – 20)

BACnet Analog Input Values

BACnet ID	Parameter Name	Data Type	R/W	Unit	Range/Value
0	Error code	AI	R		See error list
1	Boiler target temperature	AI	R	°F	50 – 230
2	Boiler supply temperature	AI	R	°F	32.0 – 266.0
3	Plant output	AI	R	%	0 – 100
4	Domestic hot water tank target	AI	R	°F	32.0 – 266.0
5	Domestic hot water tank temperature	AI	R	°F	32.0 – 266.0
6	Setpoint target temperature	AI	R	°F	32.0 – 266.0
7	Central heating target	AI	R	°F	32.0 – 266.0
8	Room target	AI	R	°F	32.0 – 266.0
9	Pressure	AI	R	PSI	0.0 – 150.0
10	Indoor	AI	R	°F	32.0 – 266.0
11	Override	AI	R	-	0 = Auto, 1 = Hand, 2 = Max Heat, 3 = Purge, 4 = Off, 5 = Exercise
12	System pump run time hours	AI	R	Hours	0 – 999999
13	System cycles	AI	R	-	0 – 999999
14	DHW pump run time hours	AI	R	Hours	0 – 999999
15	DHW cycles	AI	R	-	0 – 999999
100	Boiler 1 firing rate	AI	R	%	0 – 100
101	Boiler 1 EMS temperature output	AI	R	°F	50.0 – 210.2
102	Boiler 1 run time hours	AI	R	Hours	0 – 999999
103	Boiler 1 cycles	AI	R		0 – 999999
104	Boiler 1 pump or valve run time hours	AI	R	Hours	0 – 999999
110	Boiler 2 firing rate	AI	R	%	0 – 100
111	Boiler 2 EMS temperature output	AI	R	°F	50.0 – 210.2
112	Boiler 2 run time hours	AI	R	Hours	0 – 999999
113	Boiler 2 cycles	AI	R		0 – 999999
114	Boiler 2 pump or valve run time hours	AI	R	Hours	0 – 999999
120	Boiler 3 firing rate	AI	R	%	0 – 100

BACnet ID	Parameter Name	Data Type	R/W	Unit	Range/Value
121	Boiler 3 EMS temperature output	AI	R	°F	50.0 – 210.2
122	Boiler 3 run time hours	AI	R	Hours	0 – 999999
123	Boiler 3 cycles	AI	R		0 – 999999
124	Boiler 3 pump or valve run time hours	AI	R	Hours	0 – 999999
130	Boiler 4 firing rate	AI	R	%	0 – 100
131	Boiler 4 EMS temperature output	AI	R	°F	50.0 – 210.2
132	Boiler 4 run time hours	AI	R	Hours	0 – 999999
133	Boiler 4 cycles	AI	R		0 – 999999
134	Boiler 4 pump or valve run time hours	AI	R	Hours	0 – 999999
140	Boiler 5 firing rate	AI	R	%	0 – 100
141	Boiler 5 EMS temperature output	AI	R	°F	50.0 – 210.2
142	Boiler 5 run time hours	AI	R	Hours	0 – 999999
143	Boiler 5 cycles	AI	R		0 – 999999
144	Boiler 5 pump or valve run time hours	AI	R	Hours	0 – 999999
150	Boiler 6 firing rate	AI	R	%	0 – 100
151	Boiler 6 EMS temperature output	AI	R	°F	50.0 – 210.2
152	Boiler 6 run time hours	AI	R	Hours	0 – 999999
153	Boiler 6 cycles	AI	R		0 – 999999
154	Boiler 6 pump or valve run time hours	AI	R	Hours	0 – 999999
160	Boiler 7 firing rate	AI	R	%	0 – 100
161	Boiler 7 EMS temperature output	AI	R	°F	50.0 – 210.2
162	Boiler 7 run time hours	AI	R	Hours	0 – 999999
163	Boiler 7 cycles	AI	R		0 – 999999
164	Boiler 7 pump or valve run time hours	AI	R	Hours	0 – 999999
170	Boiler 8 firing rate	AI	R	%	0 – 100
171	Boiler 8 EMS temperature output	AI	R	°F	50.0 – 210.2
172	Boiler 8 run time hours	AI	R	Hours	0 – 999999
173	Boiler 8 cycles	AI	R		0 – 999999
174	Boiler 8 pump or valve run time hours	AI	R	Hours	0 – 999999
180	Boiler 9 firing rate	AI	R	%	0 – 100
181	Boiler 9 EMS temperature output	AI	R	°F	50.0 – 210.2
182	Boiler 9 run time hours	AI	R	Hours	0 – 999999
183	Boiler 9 cycles	AI	R		0 – 999999
184	Boiler 9 pump or valve run time hours	AI	R	Hours	0 – 999999
190	Boiler 10 firing rate	AI	R	%	0 – 100
191	Boiler 10 EMS temperature output	AI	R	°F	50.0 – 210.2
192	Boiler 10 run time hours	AI	R	Hours	0 – 999999
193	Boiler 10 cycles	AI	R		0 – 999999
194	Boiler 10 pump or valve run time hours	AI	R	Hours	0 – 999999

BACnet ID	Parameter Name	Data Type	R/W	Unit	Range/Value
200	Boiler 11 firing rate	AI	R	%	0 – 100
201	Boiler 11 EMS temperature output	AI	R	°F	50.0 – 210.2
202	Boiler 11 run time hours	AI	R	Hours	0 – 999999
203	Boiler 11 cycles	AI	R		0 – 999999
204	Boiler 11 pump or valve run time hours	AI	R	Hours	0 – 999999
210	Boiler 12 firing rate	AI	R	%	0 – 100
211	Boiler 12 EMS temperature output	AI	R	°F	50.0 – 210.2
212	Boiler 12 run time hours	AI	R	Hours	0 – 999999
213	Boiler 12 cycles	AI	R		0 – 999999
214	Boiler 12 pump or valve run time hours	AI	R	Hours	0 – 999999
220	Boiler 13 firing rate	AI	R	%	0 – 100
221	Boiler 13 EMS temperature output	AI	R	°F	50.0 – 210.2
222	Boiler 13 run time hours	AI	R	Hours	0 – 999999
223	Boiler 13 cycles	AI	R		0 – 999999
224	Boiler 13 pump or valve run time hours	AI	R	Hours	0 – 999999
230	Boiler 14 firing rate	AI	R	%	0 – 100
231	Boiler 14 EMS temperature output	AI	R	°F	50.0 – 210.2
232	Boiler 14 run time hours	AI	R	Hours	0 – 999999
233	Boiler 14 cycles	AI	R		0 – 999999
234	Boiler 14 pump or valve run time hours	AI	R	Hours	0 – 999999
240	Boiler 15 firing rate	AI	R	%	0 – 100
241	Boiler 15 EMS temperature output	AI	R	°F	50.0 – 210.2
242	Boiler 15 run time hours	AI	R	Hours	0 – 999999
243	Boiler 15 cycles	AI	R		0 – 999999
244	Boiler 15 pump or valve run time hours	AI	R	Hours	0 – 999999
250	Boiler 16 firing rate	AI	R	%	0 – 100
251	Boiler 16 EMS temperature output	AI	R	°F	50.0 – 210.2
252	Boiler 16 run time hours	AI	R	Hours	0 – 999999
253	Boiler 16 cycles	AI	R		0 – 999999
254	Boiler 16 pump or valve run time hours	AI	R	Hours	0 – 999999
1000 to 10800 (increment = 100)	Sensor (n)_Temp (temperature) (n) = 1 through 99 or Sensor Name from Nexa	AI	R	°F	41.0 – 140.0
1001 to 10801 (increment = 100)	Sensor (n)_Hum (Relative Humidity) (n) = 1 through 99 or Sensor Name from Nexa	AI	R	% RH	0 – 100
1002 to 10802 (increment = 100)	Sensor (n)_Bat (Battery) (n) = 1 through 99 or Sensor Name from Nexa	AI	R	%	10 – 100

BACnet Analog Value Object

BACnet ID	Description	Data Type	R/W	Unit	Range/Value
0	Outdoor air temperature	AV	R/W	°F	-85 – 149
1	Room occupied	AV	R/W	°F	34.7 – 100.4
2	Room unoccupied	AV	R/W	°F	34.7 – 100.4
3	Terminal unit	AV	R/W	-	0 = Radiant Floor, 1 = Baseboard, 2 = Radiator, 3 = Fancoil
4	Outdoor design temperature	AV	R/W	°F	-60 – 45
5	Outdoor start temperature	AV	R/W	°F	34.7 – 100.4
6	Boiler start temperature	AV	R/W	°F	34.7 – 100.4
7	Boiler design temperature	AV	R/W	°F	50 – 230
8	Warm weather shut down occupied	AV	R/W	°F	34.7 – 100.4
9	Warm weather shut down unoccupied	AV	R/W	°F	34.7 – 100.4
10	DHW Type	AV	R/W	-	0 = System, 1 = Side, 2 = Dedicated
11	DHW tank occupied	AV	R/W	°F	50 – 230
12	DHW tank unoccupied	AV	R/W	°F	50 – 230
13	DHW tank differential	AV	R/W	Delta °F	0.9 – 42.4
14	DHW exchange occupied	AV	R/W	°F	50 – 230
15	Indirect DHW priority override	AV	R/W	min	20 – 240
16	Indirect DHW boiler limiting	AV	R/W	-	1 – 16
17	Constant setpoint occupied	AV	R/W	°F	50 – 230
18	Boiler minimum	AV	R/W	°F	50 – 230
19	Boiler maximum	AV	R/W	°F	50 – 230
20	Staging	AV	R/W	-	0 = PID, 1 = Proportional
21	PID manual boiler differential	AV	R/W	Delta °F	1.8 – 42.4
22	Proportional interstage differential	AV	R/W	Delta °F	0.9 – 10.0
23	Proportional interstage manual	AV	R/W	min	0.5 – 40.0
24	Proportional interstage on delay	AV	R/W	min	0.5 – 10.0
25	Proportional interstage off delay	AV	R/W	min	0.5 – 10.0
26	Minimum stage run time	AV	R/W	min	0.5 – 10.0
27	Minimum stage off time	AV	R/W	min	0.5 – 10.0
28	Condensing group sequencing	AV	R/W	-	0 = Sequential, 1 = Parallel
29	Non-Condensing group sequencing	AV	R/W	-	0 = Sequential, 1 = Parallel
30	Feature lead type	AV	R/W	-	0 = First On First Off, 1= First On Last Off
31	Combustion air delay	AV	R/W	sec	0 – 360
32	Variable primary flow	AV	R/W	-	0 = Pump, 1 = Valve

BACnet ID	Description	Data Type	R/W	Unit	Range/Value
33	Outdoor sensor	AV	R/W	-	0 = Control, 1 = tN4, 2 = Cloud, 3 = Wireless, 4 = BAS
34	Alert Boiler High temperature	AV	R/W	°F	50 – 230
35	Alert Boiler Low temperature	AV	R/W	°F	50 – 230
36	Alert High Pressure	AV	R/W	PSI	0 – 150
37	Alert Low Pressure	AV	R/W	PSI	0 – 150
38	Alert No Heat	AV	R/W	Hours	0.5 – 80
100	Alert Boiler 1 hours	AV	R/W	Hours	1000 – 15000
101	Alert Boiler 1 cycles	AV	R/W		1 – 25000
110	Alert Boiler 2 hours	AV	R/W	Hours	1000 – 15000
111	Alert Boiler 2 cycles	AV	R/W		1 – 25000
120	Alert Boiler 3 hours	AV	R/W	Hours	1000 –15000
121	Alert Boiler 3 cycles	AV	R/W		1 – 25000
130	Alert Boiler 4 hours	AV	R/W	Hours	1000 –15000
131	Alert Boiler 4 cycles	AV	R/W		1 – 25000
140	Alert Boiler 5 hours	AV	R/W	Hours	1000 – 15000
141	Alert Boiler 5 cycles	AV	R/W		1 – 25000
150	Alert Boiler 6 hours	AV	R/W	Hours	1000 – 15000
151	Alert Boiler 6 cycles	AV	R/W		1 – 25000
160	Alert Boiler 7 hours	AV	R/W	Hours	1000 – 15000
161	Alert Boiler 7 cycles	AV	R/W		1 – 25000
170	Alert Boiler 8 hours	AV	R/W	Hours	1000 – 15000
171	Alert Boiler 8 cycles	AV	R/W		1 – 25000
180	Alert Boiler 9 hours	AV	R/W	Hours	1000 – 15000
181	Alert Boiler 9 cycles	AV	R/W		1 – 25000
190	Alert Boiler 10 hours	AV	R/W	Hours	1000 – 15000
191	Alert Boiler 10 cycles	AV	R/W		1 – 25000
200	Alert Boiler 11 hours	AV	R/W	Hours	1000 – 15000
201	Alert Boiler 11 cycles	AV	R/W		1 – 25000
210	Alert Boiler 12 hours	AV	R/W	Hours	1000 – 15000
211	Alert Boiler 12 cycles	AV	R/W		1 – 25000
220	Alert Boiler 13 hours	AV	R/W	Hours	1000 – 15000
221	Alert Boiler 13 cycles	AV	R/W		1 – 25000
230	Alert Boiler 14 hours	AV	R/W	Hours	1000 – 15000
231	Alert Boiler 14 cycles	AV	R/W		1 – 25000
240	Alert Boiler 15 hours	AV	R/W	Hours	1000 – 15000
241	Alert Boiler 15 cycles	AV	R/W		1 – 25000
250	Alert Boiler 16 hours	AV	R/W	Hours	1000 – 15000
251	Alert Boiler 16 cycles	AV	R/W		1 – 25000

BACnet Binary Parameters

BI = Binary Input Object
BV = Binary Value Object
R = Read
R/W = Read/Write
(n) = specific sensor number (1 – 100) or the specific extender number (1 – 20)

BACnet Binary Input Objects

BACnet ID	Parameter Name	Data Type	R/W	Range/Value
0	tekmarNet call status	BI	R	0 = Off, 1 = On
1	System pump status	BI	R	0 = Off, 1 = On
2	DHW pump status	BI	R	0 = Off, 1 = On
3	Combustion air damper status	BI	R	0 = Off, 1 = On
4	Domestic Hot Water Priority	BI	R	0 = Off, 1 = On
5	Warm Weather Shut Down	BI	R	0 = Off, 1 = On
100	Boiler 1 status	BI	R	0 = Off, 1 = On
101	Boiler 1 pump or valve status	BI	R	0 = Off, 1 = On
110	Boiler 2 status	BI	R	0 = Off, 1 = On
111	Boiler 2 pump or valve status	BI	R	0 = Off, 1 = On
120	Boiler 3 status	BI	R	0 = Off, 1 = On
121	Boiler 3 pump or valve status	BI	R	0 = Off, 1 = On
130	Boiler 4 status	BI	R	0 = Off, 1 = On
131	Boiler 4 pump or valve status	BI	R	0 = Off, 1 = On
140	Boiler 5 status	BI	R	0 = Off, 1 = On
141	Boiler 5 pump or valve status	BI	R	0 = Off, 1 = On
150	Boiler 6 status	BI	R	0 = Off, 1 = On
151	Boiler 6 pump or valve status	BI	R	0 = Off, 1 = On
160	Boiler 7 status	BI	R	0 = Off, 1 = On
161	Boiler 7 pump or valve status	BI	R	0 = Off, 1 = On
170	Boiler 8 status	BI	R	0 = Off, 1 = On
171	Boiler 8 pump or valve status	BI	R	0 = Off, 1 = On
180	Boiler 9 status	BI	R	0 = Off, 1 = On
181	Boiler 9 pump or valve status	BI	R	0 = Off, 1 = On
190	Boiler 10 status	BI	R	0 = Off, 1 = On
191	Boiler 10 pump or valve status	BI	R	0 = Off, 1 = On
200	Boiler 11 status	BI	R	0 = Off, 1 = On
201	Boiler 11 pump or valve status	BI	R	0 = Off, 1 = On
210	Boiler 12 status	BI	R	0 = Off, 1 = On
211	Boiler 12 pump or valve status	BI	R	0 = Off, 1 = On

BACnet ID	Parameter Name	Data Type	R/W	Range/Value
220	Boiler 13 status	BI	R	0 = Off, 1 = On
221	Boiler 13 pump or valve status	BI	R	0 = Off, 1 = On
230	Boiler 14 status	BI	R	0 = Off, 1 = On
231	Boiler 14 pump or valve status	BI	R	0 = Off, 1 = On
240	Boiler 15 status	BI	R	0 = Off, 1 = On
241	Boiler 15 pump or valve status	BI	R	0 = Off, 1 = On
250	Boiler 16 status	BI	R	0 = Off, 1 = On
251	Boiler 16 pump or valve status	BI	R	0 = Off, 1 = On
1000 to 10800 (increment 100)	Sensor (n)_Status (n) = 1 through 99 or Sensor Name from Nexa	BI	R	0 = Lost Communication 1 = Online

BACnet Binary Value Objects

BACnet ID	Parameter Name	Data Type	R/W	Range/Value
0	Central heating	BV	R/W	0 = Off, 1 = On
1	Warm weather shut down	BV	R/W	0 = Off, 1 = On
2	DHW available	BV	R/W	0 = Off, 1 = On
3	DHW sensor available	BV	R/W	0 = Off, 1 = On
4	DHW exchange unoccupied	BV	R/W	0 = Off, 1 = On
5	Indirect DHW priority	BV	R/W	0 = Off, 1 = On
6	Indirect DHW system pump	BV	R/W	0 = Off, 1 = On
7	Constant setpoint	BV	R/W	0 = Off, 1 = On
8	Constant setpoint unoccupied	BV	R/W	0 = Off, 1 = On
9	Constant setpoint priority	BV	R/W	0 = Off, 1 = On
10	Constant setpoint system pump	BV	R/W	0 = Off, 1 = On
11	Remote setpoint	BV	R/W	0 = Off, 1 = On
12	Boiler Auto Diff	BV	R/W	0 = Off, 1 = On
13	Interstage Auto	BV	R/W	0 = Off, 1 = On
14	Condensing Boiler Rotation	BV	R/W	0 = Off, 1 = On
15	Non-Condensing Boiler Rotation	BV	R/W	0 = Off, 1 = On
16	Staging Fixed Lead	BV	R/W	0 = Off, 1 = On
17	Staging Fixed Last	BV	R/W	0 = Off, 1 = On
18	Pressure sensor available	BV	R/W	0 = Off, 1 = On
19	Exercise available	BV	R/W	0 = Off, 1 = On
100	Boiler 1 available	BV	R/W	0 = Off, 1 = On
110	Boiler 2 available	BV	R/W	0 = Off, 1 = On
120	Boiler 3 available	BV	R/W	0 = Off, 1 = On
130	Boiler 4 available	BV	R/W	0 = Off, 1 = On
140	Boiler 5 available	BV	R/W	0 = Off, 1 = On
150	Boiler 6 available	BV	R/W	0 = Off, 1 = On
160	Boiler 7 available	BV	R/W	0 = Off, 1 = On
170	Boiler 8 available	BV	R/W	0 = Off, 1 = On
180	Boiler 9 available	BV	R/W	0 = Off, 1 = On
190	Boiler 10 available	BV	R/W	0 = Off, 1 = On
200	Boiler 11 available	BV	R/W	0 = Off, 1 = On
210	Boiler 12 available	BV	R/W	0 = Off, 1 = On
220	Boiler 13 available	BV	R/W	0 = Off, 1 = On
230	Boiler 14 available	BV	R/W	0 = Off, 1 = On
240	Boiler 15 available	BV	R/W	0 = Off, 1 = On
250	Boiler 16 available	BV	R/W	0 = Off, 1 = On

BACnet Network Port Object

R = Read **R/W** = Read/Write

BACnet IP Configuration

Property	Read/Write	Property Datatype
Object Identifier	R	Object Network Port: 0
Object Name	R	IP
Object Type	R	56: Object Network Port
Status Flags	R	IN ALARM, FAULT, OVERRIDDEN, OUT OF SERVICE
Reliability	R	0: No Fault detected 1: Fault detected
Out Of Service	R	False, True
Network Type	R	IPv4
Protocol Level	R	BACNET APPLICATION
Changes Pending	R	FALSE, TRUE
Link Speed	R	0
MAC Address	R	6 Octets
BACnet IP Mode	R	NORMAL, FOREIGN
IP Address	R	0.0.0.0-255.255.255.255
BACnet IP UDP Port	R	0 - 65535
IP Subnet Mask	R	255.0.0.0,255.255.255.0,255.255.255.0
IP Default Gateway	R	0.0.0.0-255.255.255.255
IP DNS Server	R	0.0.0.0-255.255.255.255
IP DHCP ENABLE	R	FALSE, TRUE
Foreign Device BBMD Address:Port	R, W when BACnet IP mode is FORIEGN	0.0.0.0-255.255.255.255: 0-65535
Foreign Device Subscription Lifetime	R, W when BACnet IP mode is FORIEGN	0-65535
Property List	R	List all properties

BACnet IP Configuration

Property	Read/Write	Property Datatype
Object Identifier	R	Object Network Port:0
Object Name	R	MS/TP
Object Type	R	56: Object Network Port
Status Flags	R	IN ALARM, FAULT, OVERRIDDEN, OUT OF SERVICE
Reliability	R	0: No Fault detected 1: Fault detected
Out Of Service	R	False, True
Network Type	R	MSTP
Protocol Level	R	BACNET APPLICATION
Changes Pending	R	False, True
Link Speed	R	9600, 19K2, 38K4, 57K6, 76K8, 115K2
MAC Address	R	1 Octet
Max Master	R/W	0-127
Max Info Frames	R/W	1-255
Property List	R	List all properties

Reinitialize Device – DM-RD-B

The device supports the BACnet Reinitialize Device service (DM-RD-B), allowing an authorized BACnet client to remotely request that the device restart. The service supports the following reinitialization states:

- **Warm Start** – Restarts the application while retaining operating information where possible, allowing the device to resume normal operation with minimal interruption.
- **Cold Start** – Performs a complete device restart, equivalent to a power-on initialization, reloading the device and its configuration before returning to normal operation.

Reinitialize Device Password: tekmar1150

Device Communication Control – DM-DCC-B

The device supports the BACnet **Device Communication Control** service (DM-DCC-B), allowing an authorized BACnet client to temporarily control the device's network communication state for maintenance, commissioning, or troubleshooting purposes.

Device Communication Control Password: tekmar1150

Error Code List

Code	Description
1	Control Memory Error
2	Hardware Fault
3	Outdoor Sensor Open Error
4	Outdoor Sensor Short Error
5	tekmarNet Outdoor Sensor Error
6	Internet Outdoor Sensor Error
7	Boiler Sensor Open Error
8	Boiler Sensor Short Error
9	Domestic Hot Water Open Sensor Error
10	Domestic Hot Water Short Sensor Error
11	Pressure Sensor Open Circuit Error
12	Pressure Sensor Short Circuit Error
13	Expansion Communication Error
14	Expansion 1 Lost Error
15	Expansion 2 Lost Error
16	Expansion 3 Lost Error
17	tN4 Bus Error
18	tN4 Duplicate Master Error
19	tN4 Mix Unsupported
20 to 43	tN4 Device 1 -24 Lost Error
44 to 67	tN4 Device 1 -24 Error
68	Ethernet Disconnected Error
69	Wi-Fi Disconnected Error
70	Wi-Fi Invalid Password Error
71	DHCP Address Error
72	Internet Unavailable Error
73	Nexa Error
74	ModBus Error
75 to 90	Modbus Boiler 01 – 16 Lost Error
91 to 106	Boiler 01 – 16 Error
107	Boiler High Temperature Alert
108	Boiler Low Temperature Alert
109	High Pressure Alert
110	Low Pressure Alert
111	Boiler Plant No Heat Alert

Code	Description
112 to 127	Boiler 01 – 16 Service Hours Alert
128 to 143	Boiler 01 – 16 Service Cycles Alert
144	Wireless Mesh Extender Lost Error
145	Wireless Sensor Lost Error
146	Wireless Sensor Fault
147	Change Battery Alert
148	Wireless Indoor Temperature Hot Alert
149	Wireless Indoor Temperature Cold Alert
150	Wireless Network Error
151	Wireless Outdoor Sensor Error
152	BACnet MS/TP Network Error
153	BAS Outdoor Sensor Error
154	BACnet BBMD Lost Error

Notes

Notes

All specifications are subject to change without notice

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