Date:	22/09/2023
Vendor Name:	ISOIL Industria spa
Product Name:	MV311
Product Model Number:	MV311
Application Software Version:[1]	1.05.0004.XXXX
Firmware Revision:[2]	**1.0.4**
BACnet Protocol Revision:	1.15

Product Description:
The converter MV311-ISONRG is a highly accurate thermal energy measurement in water and water/glycol heating and cooling systems.

BACnet Standardized Device Profile (Annex L):

- ☐ BACnet Cross-Domain Advanced Operator Workstation (B-XAWS)
- ☐ BACnet Advanced Operator Workstation (B-AWS)
- ☐ BACnet Operator Workstation (B-OWS)
- ☐ BACnet Operator Display (B-OD)
- ☐ BACnet Advanced Life Safety Workstation (B-ALSWS)
- ☐ BACnet Life Safety Workstation (B-LSWS)
- ☐ BACnet Life Safety Annunciator Panel (B-LSAP)
- ☐ BACnet Advanced Access Control Workstation (B-AACWS)
- ☐ BACnet Access Control Workstation (B-ACWS)
- ☐ BACnet Access Control Security Display (B-ACSD)
- ☐ BACnet Building Controller (B-BC)
- ☐ BACnet Advanced Application Controller (B-AAC)
- ☑ **o BACnet Application Specific Controller (B-ASC)**
- ☐ BACnet Smart Actuator (B-SA)
- ☐ BACnet Smart Sensor (B-SS)
- ☐ BACnet Advanced Life Safety Controller (B-ALSC)
- ☐ BACnet Life Safety Controller (B-LSC)
- ☐ BACnet Advanced Access Control Controller (B-AACC)
- ☐ BACnet Access Control Controller (B-ACC)
- ☐ BACnet Router (B-RTR)
- ☐ BACnet Gateway (B-GW)
- ☐ BACnet Broadcast Management Device (B-BBMD)
- ☐ BACnet Access Control Door Controller (B-ACDC)
- ☐ BACnet Access Control Credential Reader (B-ACCR)

- ☐ BACnet General (B-GENERAL)

[1] Referred to whole application; will be upgraded also for changes not related to BACnet implementation.
[2] **Referred to BACnet implementation ONLY; also reported on BTL Listing and Conformance Certificate.**

List all BACnet Interoperability Building Blocks Supported (Annex K):

BIBB	Name	BACnet Service	Init.	Exec.
DS-RP-B	Data Sharing – Read Property-B	ReadProperty		X
DS-RPM-B	Data Sharing – Read Property Multiple-B	ReadPropertyMultiple		X
DS-WP-B	Data Sharing – Write Property-B	WriteProperty		X
DM-DDB-B[3]	Device Management - Dynamic Device Binding-B	Who-Is		X
		I-Am	X	
DM-DOB-B[3]	Device Management - Dynamic Object Binding-B	Who-Has		X
		I-Have	X	
DM-DCC-B	Device Management - Device Communication Control-B	DeviceCommunicationControl		X
DM-TS-B	Device Management – Time Syncronization-B	Time Syncronization		X
DM-UTC-B	Device Management – UTC Time Syncronization-B	UTCTime Syncronization		X
DM-RD-B	Device Management - Reinitialize Device-B	ReinitializeDevice		X

Table 1

Segmentation Capability:

☐ Able to transmit segmented messages Window Size _____

☐ Able to receive segmented messages Window Size _____

[3] Available only when configured as a MS/TP Master.

Standard Object Types Supported:

Type	ID	Name	R/W	Description	ASHRAE Units
Device	…	*MV 311*		*MV 311 description*	-
PositiveIntegerValue	0	TOT_HEAT_NRG_C	R	Tot. Heat. Thermal Energy [②]	**② (R)**
PositiveIntegerValue	1	PAR_HEAT_NRG_C	R	Par. Heat. Thermal Energy [②]	**② (R)**
PositiveIntegerValue	2	TOT_COOL_NRG_C	R	Tot. Cool. Thermal Energy [②]	**② (R)**
PositiveIntegerValue	3	PAR_COOL_NRG_C	R	Par. Cool. Thermal Energy [②]	**② (R)**
PositiveIntegerValue	4	TOT_VF_VOL_C	R	Tot. Volume Conveying Liquid [④]	**④ (R)**
PositiveIntegerValue	5	PAR_VF_VOL_C	R	Par. Volume Conveying Liquid [④]	**④ (R)**
PositiveIntegerValue	6	TOT_HW_VOL_C	R	Tot. Volume Hot Water [④]	**④ (R)**
PositiveIntegerValue	7	PAR_HW_VOL_C	R	Par. Volume Hot Water [④]	**④ (R)**
PositiveIntegerValue	8	TOT_CW_VOL_C	R	Tot. Volume Cold Water [④]	**④ (R)**
PositiveIntegerValue	9	PAR_CW_VOL_C	R	Par. Volume Cold Water [④]	**④ (R)**
PositiveIntegerValue	10	TOT_AUX_IN_C	R	Tot. Volume Aux Input [④⑥⑦]	**④⑥⑦ (R)**
PositiveIntegerValue	11	PAR_AUX_IN_C	R	Par. Volume Aux Input [④⑥⑦]	**④⑥⑦ (R)**
AnalogValue	0	TOT_HEAT_NRG_V	R	Tot. Heat. Thermal Energy [②]	**② (W)** [4]
AnalogValue	1	PAR_HEAT_NRG_V	R	Par. Heat. Thermal Energy [②]	**② (W)** [4]
AnalogValue	2	TOT_COOL_NRG_V	R	Tot. Cool. Thermal Energy [②]	**② (W)** [4]
AnalogValue	3	PAR_COOL_NRG_V	R	Par. Cool. Thermal Energy [②]	**② (W)** [4]
AnalogValue	4	TOT_VF_VOL_V	R	Tot. Volume Conveying Liquid [④]	**④ (W)** [5]
AnalogValue	5	PAR_VF_VOL_V	R	Par. Volume Conveying Liquid [④]	**④ (W)** [5]
AnalogValue	6	TOT_HW_VOL_V	R	Tot. Volume Hot Water [④]	**④ (W)** [5]
AnalogValue	7	PAR_HW_VOL_V	R	Par. Volume Hot Water [④]	**④ (W)** [5]
AnalogValue	8	TOT_CW_VOL_V	R	Tot. Volume Cold Water [④]	**④ (W)** [5]
AnalogValue	9	PAR_CW_VOL_V	R	Par. Volume Cold Water [④]	**④ (W)** [5]
AnalogValue	10	TOT_AUX_IN_V	R	Tot. Volume Aux Input [④⑥⑦]	**④⑥⑦ (W)**
AnalogValue	11	PAR_AUX_IN_V	R	Par. Volume Aux Input [④⑥⑦]	**④⑥⑦ (W)**
AnalogInput	0	TH_POWER	R	Thermal Power [①]	**① (R)**
AnalogInput	1	FLOW_RATE	R	V.F. Flow Rate [⑤]	**⑤ (R)**
AnalogInput	2	T1_TEMP	R	T1 Flow Temperature [③]	**③ (R)**
AnalogInput	3	T2_TEMP	R	T2 Return Temperature [③]	**③ (R)**
AnalogInput	4	TD_TEMP	R	Delta Temperature [③]	**③ (R)**
AnalogInput	5	BRD_TEMP	R	Board Temperature [③]	**③ (R)**
AnalogInput	6	BATT_CHARGE	R	Battery Charge [**%**]	**(98) percent**
MultiStateValue	0	GLOBAL_ALARM	R	Global alarm	-
MultiStateValue	1	TH_PWR_ALARM	R	Thermal Power alarm	-
MultiStateValue	2	FL_RATE_ALARM	R	V.F. Flow rate alarm	-
MultiStateValue	3	T1_ALARM	R	Temperature T1 alarm	-
MultiStateValue	4	T2_ALARM	R	Temperature T2 alarm	-
MultiStateValue	5	TD_ALARM	R	Temperature Delta alarm	-
MultiStateValue	6	AIN_STATE	R	Analog input status	-
MultiStateValue	7	BATT_STATE	R	Battery status	-
MultiStateValue	8	P_TYPE_CTRL	R	Plant Type Control	-
BitStringValue	0	MEA_ERROR	R	Measure error	-
BitStringValue	1	PLS_ERROR	R	Pulse error	-
BitStringValue	2	RTD_ERROR	R	RTD error	-
BitStringValue	3	SUPP_ERROR	R	Supply error	-
BinaryValue	0	P_TYPE_DET	R	Plant Type Detected	-
BinaryValue	1	P_TYPE_SEL	R-W[6]	Plant Type Selected	-
BinaryValue	2	RST_SEL_CNT	W[7]	Reset Selected Counters (Active=Reset)	-

Table 2

[4] Same unit for all energy counters
[5] Same unit for all volume counters
[6] Depends on local Device settings.
[7] Writing "1" (Active) cause reset ; Present_Value is always read as "0" (Inactive).

NOTE :

- **Object Description** change in accordance with the Units of Measure selected ; below how description can be :

• NOTE	Unit of Measure	Text	ASHRAE Unit
① "Power"	**Watt**	W	(47) watt
	KiloWatt	kW	(48) kilowatts
	MegaWatt	MW	(49) megawatts
	GigaWatt	GW	*(5120)[8] gigawatts*

NOTE	Unit of Measure	Text	ASHRAE Unit
② "Energy"	**Joule**	J	(16) joule
	KiloJoule	kJ	(17) kilojoules
	WattHour	Wh	(18) watt-hours
	MegaJoule	MJ	(126) megajoules
	KiloWattHour	kWh	(19) kilowatt-hours
	GigaJoule	GJ	*(5184)[8] gigajoules*
	MegaWattHour	MWh	(146) megawatt-hours
	GigaWattHour	GWh	*(5185)[8] gigawatt-hours*

NOTE	Unit of Measure	Text	ASHRAE Unit
③ "Temperature"	**Degrees Celsius**	C	(62) degrees-Celsius
	Degrees Fahrenheit	F	(64) degrees-Fahrenheit

NOTE	Unit of Measure	Text	ASHRAE Unit
④ "Volume" Metric	**MilliLiter**	ml	(197) milliliters
	Cubic Centimeter	cm~	*(4096)[8] cubic-centimeters*
	Liter	l	(82) liters
	Cubic Decimeter	dm~	*(4097)[8] cubic-decimeters*
	DecaLitre	dal	*(4098)[8] decaliters*
	HectoLitre	hl	*(4099)[8] hectoliters*
	Cubic Meter	m~	(80) cubic-meters
	MegaLitre	Ml	*(4100)[8] megaliters*
④ "Volume" Imperial / USC	**Cubic Inch**	in~	*(4352)[8] cubic-inch*
	US Gallon	Gal	(83) us-gallons
	UK Gallon	IGL	(81) imperial-gallons
	Cubic Foot	ft~	(79) cubic-feet
	Standard Barrel	bbl	*(4353)[8] standard-barrels*
	Oil Barrel	BBL	*(4354)[8] oil-barrels*
	Hundred Cubic Feet	hf~	*(4355)[8] hundred-cubic-feet*
	Kilo US Gallon	KGL	*(4356)[8] us-kilo-gallons*
	Kilo UK Gallon	IKG	*(4357)[8] imperial-kilo-gallons*
	Kilo Cubic Feet	kf~	*(4358)[8] kilo-cubic-feet*
	Ten Thousand Gallon	ttG	*(4359)[8] ten-thousand-gallons*
	Acre Foot	Aft	*(4360)[8] acre-feet*
	Mega US Gallon	MGL	*(4361)[8] us-mega-gallons*
	Mega UK Gallon	IMG	*(4362)[8] imperial-mega-gallons*

[8] Custom Value

NOTE	Unit of Measure	Text	ASHRAE Unit
⑤ **"Flow"** **Metric**	**④ \ Second**	④/s	(198) milliliters-per-second *(4614)[8] cubic-centimeter-per-second* (87) liters-per-second *(4619)[8] cubic-decimeter-per-second* *(4623)[8] decaliters-per-seconds* *(4627)[8] hectoliters-per-seconds* (85) cubic-meters-per-second *(4631)[8] megaliters-per-seconds*
	④ \ Minute	④/m	*(4610)[8] milliliters-per-minute* *(4613)[8] cubic-centimeter-per-minute* (88) liters-per-minute *(4618)[8] cubic-decimeter-per-minute* *(4622)[8] decaliters-per-minute* *(4626)[8] hectoliters-per-minute* (165) cubic-meters-per-minute *(4630)[8] megaliters-per-minute*
	④ \ Hour	④/h	*(4609)[8] milliliters-per-hour* *(4612)[8] cubic-centimeter-per-hour* (136) liters-per-hour *(4617)[8] cubic-decimeter-per-hour* *(4621)[8] decaliters-per-hour* *(4625)[8] hectoliters-per-hour* (135) cubic-meters-per-hour *(4629)[8] megaliters-per-hour*
	④ \ Day	④/d	*(4608)[8] milliliters-per-day* *(4611)[8] cubic-centimeter-per-day* *(4615)[8] liters-per-day* *(4616)[8] cubic-decimeter-per-day* *(4620)[8] decaliters-per-day* *(4624)[8] hectoliters-per-day* (249) cubic-meters-per-day *(4628)[8] megaliters-per-day*

NOTE	Unit of Measure	Text	ASHRAE Unit
⑤ **"Flow"** **Imperial / USC**	**④ \ Second**	④/s	*(4867)[8] cubic-inch*-per-second *(4869)[8] us-gallons*-per-second *(4872)[8] imperial-gallons*-per-second (142) cubic-feet-per-second *(4876)[8] standard-barrels*-per-second *(4880)[8] oil-barrels*-per-second *(4884)[8] hundred-cubic-feet*-per-second *(4888)[8] us-kilo-gallons*-per-second *(4892)[8] imperial-kilo-gallons*-per-second *(4896)[8] kilo-cubic-feet*-per-second *(4900)[8] ten-thousand-gallons*-per-second *(4904)[8] acre-feet*-per-second *(4908)[8] us-mega-gallons*-per-second *(4912)[8] imperial-mega-gallons*-per-second
	④ \ Minute	④/m	*(4866)[8] cubic-inch*-per-minute (89) us-gallons-per-minute (86) imperial-gallons-per-minute (84) cubic-feet-per-minute *(4875)[8] standard-barrels*-per-minute *(4879)[8] oil-barrels*-per-minute *(4883)[8] hundred-cubic-feet*-per-minute *(4887)[8] us-kilo-gallons*-per-minute *(4891)[8] imperial-kilo-gallons*-per-minute *(4895)[8] kilo-cubic-feet*-per-minute *(4899)[8] ten-thousand-gallons*-per-minute *(4903)[8] acre-feet*-per-minute *(4907)[8] us-mega-gallons*-per-minute *(4911)[8] imperial-mega-gallons*-per-minute
	④ \ Hour	④/h	*(4865)[8] cubic-inch*-per-hour (192) us-gallons-per-hour *(4871)[8] imperial-gallons*-per-hour (191)cubic-feet-per-hour *(4874)[8] standard-barrels*-per-hour *(4878)[8] oil-barrels*-per-hour *(4882)[8] hundred-cubic-feet*-per-hour *(4886)[8] us-kilo-gallons*-per-hour *(4890)[8] imperial-kilo-gallons*-per-hour *(4894)[8] kilo-cubic-feet*-per-hour *(4898)[8] ten-thousand-gallons*-per-hour *(4902)[8] acre-feet*-per-hour *(4906)[8] us-mega-gallons*-per-hour *(4910)[8] imperial-mega-gallons*-per-hour
	④ \ Day	④/d	*(4864)[8] cubic-inch*-per-day *(4868)[8] us-gallons*-per-day *(4870)[8] imperial-gallons*-per-day (248) cubic-feet-per-day *(4873)[8] standard-barrels*-per-day *(4877)[8] oil-barrels*-per-day *(4881)[8] hundred-cubic-feet*-per-day *(4885)[8] us-kilo-gallons*-per-day *(4889)[8] imperial-kilo-gallons*-per-day *(4893)[8] kilo-cubic-feet*-per-day *(4897)[8] ten-thousand-gallons*-per-day *(4901)[8] acre-feet*-per-day *(4905)[8] us-mega-gallons*-per-day *(4909)[8] imperial-mega-gallons*-per-day

NOTE	Unit of Measure	Text	ASHRAE Unit
⑥ "Gas Volume"	**StandardCubicMeters**	**Sm^3**	*(5376)[8] standard-cubic-meters*
	NormalCubicMeters	**Nm^3**	*(5377)[8] normal-cubic-meters*
⑦ "Electrical Energy"	**WattHour**	**Wh**	(18) watt-hours
	Kilo WattHour	**kWh**	(19) kilowatt-hours
	Mega WattHour	**MWh**	(146) megawatt-hours
	Giga WattHour	**GWh**	*(5185)[8] gigawatt-hours*

"Device" Object :

Property Identifier	Property Datatype	R/W/O	Value
Object_Identifier	BACnetObjectIdentifier	R-W[9]	device, *XXXXX*
Object_Name	CharacterString	R-W[9]	*MV 311*
Object_Type	BACnetObjectType	R	device
System_Status	BACnetDeviceStatus	R	0, operational
Vendor_Name	CharacterString	R	ISOIL Industria spa
Vendor_Identifier	Unsigned16	R	589
Model_Name	CharacterString	R	MV311
Firmware_Revision	CharacterString	R	1.0.4
Application_Software_Version	CharacterString	R	*XX.XX.XXXX*
Location	CharacterString	R-W[9] (O)	*MV 311 location*
Description	CharacterString	R-W[9] (O)	*MV 311 description*
Protocol_Version	Unsigned	R	1
Protocol_Revision	Unsigned	R	15
Protocol_Services_Supported	BACnetServicesSupported	R	…
Protocol_Object_Types_Supported	BACnetObjectTypesSupported	R	…
Object_List	BACnetARRAY[N]of BACnetObjectIdentifier	R	…
Max_Apdu_Length_Accepted	Unsigned	R	480
Segmentation_Support	BACnetSegmentation	R	3 => no
Local_Time	Time	W (O)	*hh:mm:ss.cc*
Local_Date	Date	W (O)	*dd/mm/yyyy weekday*
Utc_Offset	INTEGER	W (O)	*+/- min ("+" ➔ E, "-" ➔ W)*
Daylight_Saving_Status	BOOLEAN	W (O)	0 / 1
Apdu_Timeout	Unsigned	R	10000
Number_Of_Apdu_Retries	Unsigned	R	3
Max_Master	Unsigned(1..127)	W (O)	127
Max_Info_Frames	Unsigned	R (O)	2
Device_Address_Binding	List of BACnetAddressBinding	R	**0** :
Database_Revision	Unsigned	R	*RRRRR*
Last_Restart_Reason	BACnetRestartReason	R (O)	*See list below …*
Time_Of_Device_Restart	BACnetTimeStamp	R (O)	*date, time*
Serial_Number	CharacterString	R (O)	*NNNNNNNN*
Property_List	BACnetARRAY[N]of BACnetPropertyIdentifier	R	…
Status_Flags	BACnetStatusFlag	R (O)	*InAlarm = "F"* *Fault = "T" or "F"* *Overridden = "F"* *OutOfService = "F"*

Table 3

	BACnetRestartReason
Standard	*0, Unknown;* *1, cold start; 2, warm start;* *3, detected power lost; 4, detected power off;* *5, hardware watchdog; 6, software watchdog*

	BACnetRestartReason
Custom	*65, low power mode* *70, software update* *80, system exception* *85, nv memory fault* *90, os error*

[9] Depends on local Device settings.

"Positive Integer Value" Objects :

Property Identifier	Property Datatype	R/W/O	Value
Object_Identifier	BACnetObjectIdentifier	R	0 … 11
Object_Name	CharacterString	R	See "Name" on **Table 2**
Object_Type	BACnetObjectType	R	Positive-integer-value
Present_Value	Unsigned	R	
Description	CharacterString	R (O)	See "Description" on **Table 2**
Status_Flags	BACnetStatusFlag	R	InAlarm = "F" Fault = "T" or "F" Overridden = "F" OutOfService = "F"
Event_State	BACnetEventState	R	0, normal
Reliability	BACnetReliability	R (O)	0, no-fault-detected 1, no-sensor 7, unreliable-other 64, not-installed[10] 102, simulation[10]
Out_Of_Service	BOOLEAN	R	0, False
Units	BACnetEngineeringUnit	R	See "Units" on **Table 2**
Property_List	BACnetARRAY[N]of BACnetPropertyIdentifier	R	…
Decimal_Point_Position (4096)[11]	Unsigned	R (O)	0 … 8

Table 4

"Analog Value" Objects :

Property Identifier	Property Datatype	R/W	Value
Object_Identifier	BACnetObjectIdentifier	R	0 … 11
Object_Name	CharacterString	R	See "Name" on **Table 2**
Object_Type	BACnetObjectType	R	analog-value
Present_Value	REAL	R	
Description	CharacterString	R (O)	See "Description" on **Table 2**
Status_Flags	BACnetStatusFlag	R	InAlarm = "F" Fault = "T" or "F" Overridden = "F" OutOfService = "F"
Event_State	BACnetEventState	R	0, normal
Reliability	BACnetReliability	R (O)	0, no-fault-detected 1, no-sensor 7, unreliable-other 64, not-installed[12] 102, simulation[12]
Out_Of_Service	BOOLEAN	R	0, False
Units	BACnetEngineeringUnit	R, W	See "Units" on **Table 2**
Property_List	BACnetARRAY[N]of BACnetPropertyIdentifier	R	…

Table 5

[10] Custom Value.
[11] Custom Property.
[12] Custom Value.

"Analog Input" Objects :

Property Identifier	Property Datatype	R/W	Value
Object_Identifier	BACnetObjectIdentifier	R	0 … 6
Object_Name	CharacterString	R	See "Name" on **Table 2**
Object_Type	BACnetObjectType	R	analog-input
Present_Value	REAL	R	
Description	CharacterString	R (O)	See "Description" on **Table 2**
Status_Flags	BACnetStatusFlag	R	InAlarm = "F" Fault = "T" or "F" Overridden = "F" OutOfService = "F"
Event_State	BACnetEventState	R	0, normal
Reliability	BACnetReliability	R (O)	0, no-fault-detected 1, no-sensor 7, unreliable-other 64, not-installed[13] 102, simulation[13]
Out_Of_Service	BOOLEAN	R	0, False
Units	BACnetEngineeringUnit	R	See "Units" on **Table 2**
Property_List	BACnetARRAY[N]of BACnetPropertyIdentifier	R	…

Table 6

"Multi State Value" Objects :

Property Identifier	Property Datatype	R/W	Value
Object_Identifier	BACnetObjectIdentifier	R	0 … 9
Object_Name	CharacterString	R	See "Name" on **Table 2**
Object_Type	BACnetObjectType	R	multi-state-value
Present_Value	Unsigned	R	**See below …**
Description	CharacterString	R (O)	See "Description" on **Table 2**
Status_Flags	BACnetStatusFlag	R	InAlarm = "F" Fault = "T" or "F" Overridden = "F" OutOfService = "F"
Event_State	BACnetEventState	R	0, normal
Reliability	BACnetReliability	R (O)	0, no-fault-detected 64, not-installed[14]
Out_Of_Service	BOOLEAN	R	0, False
Number_Of_States	Unsigned	R	**See below …**
State_Text	BACnetARRAY[N] of CharacterString	R (O)	**…**
Property_List	BACnetARRAY[N]of BACnetPropertyIdentifier	R	…

Table 7

[13] Custom Value.
[14] Custom Value.

Object	Number Of States	Present Value	explanation
GLOBAL_ALARM	4	1	No Alarm
		2	Main Alarm
		3	Secondary Alarm
		4	Main and Secondary Alarm
TH_PWR_ALARM, FL_RATE_ALARM, TD_ALARM, T1_ALARM, T2_ALARM.	3	1	No Alarm
		2	Min Value Alarm
		3	Max Value Alarm
AIN_STATE	3	1	AIN_OK
		2	No Current (disconnected)
		3	Current Over Range
BATT_STATE	4	1	Battery OK (if enabled)
		2	Battery Low
		3	Battery Empty
		4	Battery Fault
P_TYPE_CTRL	3	1	Auto (by Power)
		2	Local (by IN4)
		3	Remote (by Com. Protocol)

"BitString Value" Objects :

Property Identifier	Property Datatype	R/W	Value
Object_Identifier	BACnetObjectIdentifier	R	0 … 4
Object_Name	CharacterString	R	See "Name" on **Table 2**
Object_Type	BACnetObjectType	R	Bit-string-value
Present_Value	BIT STRING	R	**See below …**
Bit_Text	BACnetARRAY[N] of CharacterString	R (O)	**…**
Description	CharacterString	R (O)	See "Description" on **Table 2**
Status_Flags	BACnetStatusFlag	R	"F", "F", "F", "F".
Event_State	BACnetEventState	R	0, normal
Out_Of_Service	BOOLEAN	R	0, False
Property_List	BACnetARRAY[N]of BACnetPropertyIdentifier	R	…

Table 8

Object	Bit	explanation
MEA_ERROR	1	Power Measure Overflow
	2	Vector Fluid Overflow
	3	Temperature T1 Overflow
	4	Temperature T2 Overflow
	5	Temperature Delta Overflow
PLS_ERROR	1	Pulse In 1 Overflow
	2	Pulse In 2 Overflow
	3	Pulse In 3 Overflow
	4	Pulse In 4 Overflow
	5	Pulse Out 1 Overflow
	6	Pulse Out 2 Overflow
RTD_ERROR	1	Disconnected
	2	RTD1 Limit
	3	RTD2 Limit
	4	Shunt Error
	5	Ref Error
SUPP_ERROR	1	Internal Power Error
	2	Pulse In Power Error

"Binary Value" Objects :

Property Identifier	Property Datatype	R/W	Value
Object_Identifier	BACnetObjectIdentifier	R	0 … 2
Object_Name	CharacterString	R	See "Name" on **Table 2**
Object_Type	BACnetObjectType	R	binary- value
Present_Value	BACnetBinaryPV	R-W[15]	
Description	CharacterString	R (O)	See "Description" on **Table 2**
Status_Flags	BACnetStatusFlag	R	InAlarm = "F" Fault = "T" or "F" Overridden = "F" OutOfService = "F"
Event_State	BACnetEventState	R	0, normal
Reliability	BACnetReliability	R (O)	0, no-fault-detected 70, plant-type-mismatch[16]
Out_Of_Service	BOOLEAN	R	0, False
Inactive_Text	CharacterString	R (O)	See below
Active_Text	CharacterString	R (O)	See Below
Priority_Array	BACnetPriorityArray	R (O)[17]	…
Relinquish_Default	BACnetBinaryPV	R (O)[17]	… [18]
Property_List	BACnetARRAY[N]of BACnetPropertyIdentifier	R	…

Table 9

Object	R/W	Value	Text
P_TYPE_DET	R	Inactive	Heating
		Active	Cooling
P_TYPE_SEL	R-W[15]	Inactive	Heating
		Active	Cooling
RST_SEL_CNT	W	Inactive	No Command
		Active	Reset Command

[15] "P_TYPE_SEL" may be Writable, Depends on local Device settings.
[16] Custom Value for "P_TYPE_DET" and "P_TYPE_SEL".
[17] "Priority_Array" and "Relinquish_Default" properties are present only on objects with "Present_Value" Writable.
[18] On "P_TYPE_SEL". Present_Value is automatically copied to Relinquish_Default to keep last settings also when all settings are Relinquished.

Data Link Layer Options:

☐ ARCNET (ATA 878.1), 2.5 Mb. (Clause 8)
☐ ARCNET (ATA 878.1), EIA-485 (Clause 8), baud rate(s) _____
☐ BACnet IP, (Annex J)
☐ BACnet IP, (Annex J), BACnet Broadcast Management Device (BBMD)
☐ BACnet IP, (Annex J), Network Address Translation (NAT Traversal)
☐ BACnet IPv6, (Annex U)
☐ BACnet IPv6, (Annex U), BACnet Broadcast Management Device (BBMD)
☐ BACnet/ZigBee (Annex O) _____
☐ Ethernet, ISO 8802-3 (Clause 7)
☐ LonTalk, ISO/IEC 14908.1 (Clause 11), medium: _____
☑ **MS/TP master (Clause 9), baud rate(s): 9600, 19200, 38400, 57600, 76800, 115200.**
☑ **MS/TP slave (Clause 9), baud rate(s): 9600, 19200, 38400, 57600, 76800, 115200.**
☐ Point-To-Point, EIA 232 (Clause 10), baud rate(s):
☐ Point-To-Point, modem, (Clause 10), baud rate(s):
☐ Other:

Device Address Binding:

Is static device binding supported? (This is currently necessary for two-way communication with MS/TP slaves and certain other devices.) ☐ Yes ☑ **No**

Networking Options:

☐ Router, Clause 6 - List all routing configurations, e.g., ARCNET-Ethernet, Ethernet-MS/TP, etc.
☐ Annex H, BACnet Tunneling Router over IP

Character Sets Supported:

Indicating support for multiple character sets does not imply that they can all be supported simultaneously.

☑ ***ANSI X3.4 - ISO 10646 (UTF-8)***[19]	☐ IBM™/Microsoft™ DBCS	☐ ISO 8859-1
☐ ISO 10646 (UCS-2)	☐ ISO 10646 (UCS-4)	☐ JIS X 0208

Gateway Options:

If this product is a communication gateway, describe the types of non-BACnet equipment/networks(s) that the gateway supports: **Not a gateway**

Network Security Options:

☐ Non-secure Device - is capable of operating without BACnet Network Security
☐ Secure Device - is capable of using BACnet Network Security (NS-SD BIBB)
- ☐ Multiple Application-Specific Keys:
- ☐ Supports encryption (NS-ED BIBB)
- ☐ Key Server (NS-KS BIBB)

[19] With some limitation, see user manual.

History of Revisions:

Firmware Revision	Date	Protocol Revision	Summary of Changes
F.R.: **1.0.4**	22/09/2023	1.15	New test: Silently dropping ” BACnet-Confirmed-Request-PDU” received as BROADCAST.
F.R.: **1.0.3**	08/01/2018	1.15	“Priority_Array” and “Relinquish_Default” properties on Binary_Value Objects are present only on object instances with “Present_Value” Writable.
F.R.: **1.0.2**	27/12/2017	1.15	Fixed followings errors : • Reading single element or array size of Bit_Text property on BitString Value Object, return the error: PROPERTY, PROPERTY_IS_NOT_AN_ARRAY instead of the value. • Trying to writing a text property over its maximum size return the error; PROPERTY, VALUE_OUT_OF_RANGE instead of: RESURCES, VALUE_OUT_OF_RANGE. • Reinitialize_Device return the wrong PROPERTY Class for error OPTIONAL_FUNCTIONALITY_NOT_SUPPORTED instead of SERVICE class.
F.R.: **1.0.1**	24/11/2017	1.15	Added, to “MEA_ERROR” BitStringValue Object, bits 3 to 5 : • Temperature T1 Overflow • Temperature T2 Overflow • Temperature Delta Overflow.
F.R.: **1.0.0**	15/11/2017	1.15	-