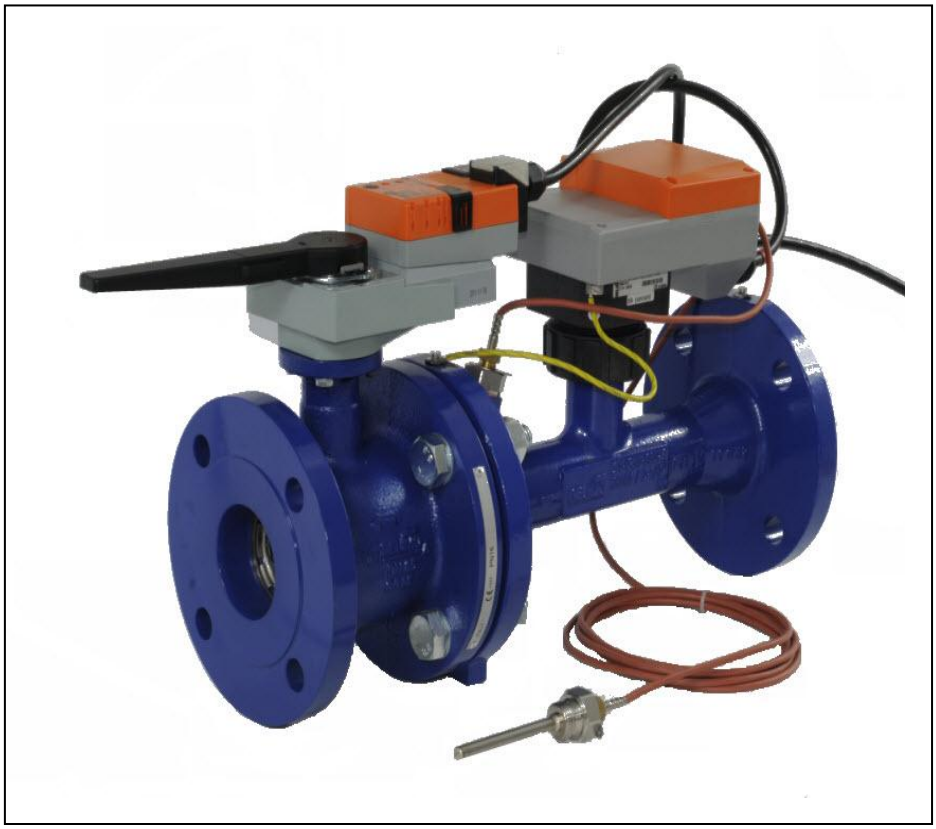

Characterised control valve (CCV) with adjustable flow rate, sensor-operated flow control and monitoring of power and energy

Contents

Protocol Implementation Conformance Statement - PICS

General information

Date: 8. June 2012

Vendor Name: BELIMO Automation AG
Vendor ID: 423

Product Name: P..W..EV-BAC
Product Model Number: N/A

Applications Software Version: 1.24.2.yyyymmdd
Firmware Revision: 1.0.2
BACnet Protocol Revision: 1.6

Product Description:
The device is a characterised control valve (CCV) with adjustable flow rate, sensor-operated flow control and monitoring of power and energy. The set-point, configuration parameters and feedback values are communicated either via BACnet/IP or BACnet MS/TP.
The commissioning of the device (BACnet Device Address, IP Address settings, MS/TP Address …) is done via the integrated web-server.

BACnet Standard Device Profile: BACnet Application Specific Controller (B-ASC)

BACnet Interoperability Building Blocks supported:
Data Sharing - ReadProperty-B (DS-RP-B)
Data Sharing - ReadPropertyMultiple-B (DS-RPM-B)
Data Sharing - WriteProperty-B (DS-WP-B)
Device Management - DynamicDeviceBinding-B (DM-DDB-B)
Device Management - DynamicObjectBinding-B (DM-DOB-B)
Device Management - DeviceCommunicationControl-B (DM-DCC-B)

Segmentation Capability: No

Data Link Layer Options: BACnet IP, (Annex J)
BACnet IP, (Annex J), Foreign Device
MS/TP master,
baud rates: 9'600, 19'200, 38'400, 76'800, 115'200

Device Address Binding: No static device binding supported

Networking Options: None

Character Sets Supported: ANSI X3.4

PICS *(continued)*

Standard objects

The device provides datapoints for common operation as well as datapoints for parameterization.

Datapoint	BACnet Object
Setpoint Relative in %	AO [1]
Relative Position in %	AI [1]
Absolute Position in °	AI [2]
Relative Flow in %	AI [10]
Absolute Flow in l/min	AI [11]
Absolute Flow in m^3/h	AI [12]
Absolute Flow in gpm	AI [13]
Temperature 1 (remote) in °C	AI [20]
Temperature 1 (remote) in °F	AI [25]
Temperature 2 (embedded) in °C	AI [21]
Temperature 2 (embedded) in °F	AI [26]
Delta Temperature in °C	AI [22]
Delta Temperature in °F	AI [27]
Power in kW	AI [30]
Power in kBTU/h	AI [35]
Cooling Energy in kWh	AI [31]
Cooling Energy in kBTU	AI [36]
Heating Energy in kWh	AI [32]
Heating Energy in kBTU	AI [37]
Override	MO [1]
Vmax	AV [100]
Vnom in l/min	AV [101]
Vnom in gpm	AV [102]
ControlMode	MV [100]
DeltaT Limitation	MV [101]
Setpoint DeltaT in °C	AV [103]
Setpoint DeltaT in °F	AV [104]

Object processing

Object type	Optional properties	Writeable properties
Analog Input	Description	
Analog Output	Description	Present_Value
Analog Value	Description	Present_Value
Binary Value	Description Active_Text Inactive_Text Relinquish_Default [1)] Priority_Array [1)]	Present_Value
Device	Description Location	Object_Identifier Object_Name Location APDU_Timeout Number_Of_APDU_Retries
Multi-state Value	Description State_Text Relinquish_Default [1)] Priority_Array [1)]	Present_Value
Multi-state Output	Description State_Text Relinquish_Default [1)] Priority_Array [1)]	Present_Value

1) Only if object commandable

- The properties Object_Name and Location of the Device Object support up to 255 characters (all other character strings are read-only).
- The device does not support the CreateObject and DeleteObject service.

Service processing

- The device supports DeviceCommunicationControl service. No password is required.

BACnet object description

Object Name	Object Type / Instance		Description	Values	Default
Device_Name	Device	[x]			
SpRel	Analog Output	[1]	Setpoint Relative in % The set point is interpreted either as position setpoint or as flow setpoint (related to Vmax). See ControlMode for more information.	0 … 100	0
RelPos	Analog Input	[1]	Relative Position in %	0 … 100	-
AbsPos	Analog Input	[2]	Absolute Position in °	0 … 90	-
RelFlow	Analog Input	[10]	Relative Flow in %	0 … 100	-
AbsFlow_SI1	Analog Input	[11]	Absolute Flow in l/min	0 … 100'000	-
AbsFlow_SI2	Analog Input	[12]	Absolute Flow in m3/h	0 … 600	-
AbsFlow_US	Analog Input	[13]	Absolute Flow in gpm	0 … 100'000	
T1_SI	Analog Input	[20]	Temperature 1 (remote) in °C	-10 … +120	-
T1_US	Analog Input	[25]	Temperature 1 (remote) in °F	14 … 248	
T2_SI	Analog Input	[21]	Temperature 2 (embedded) in °C	-10 … +120	-
T2_US	Analog Input	[26]	Temperature 2 (embedded) in °F	14 … 248	
DeltaT_SI	Analog Input	[22]	Delta Temperature in °C	-500 … +500	-
DeltaT_US	Analog Input	[27]	Delta Temperature in °F	-500 … +500	
P_SI	Analog Input	[30]	Power in kW	0 … 2.147e+9	-
P_US	Analog Input	[35]	Power in kBTU/h	0 … 2.147e+9	
E_Cooling_SI	Analog Input	[31]	Cooling Energy in kWh	0 … 2.147e+9	-
E_Cooling_US	Analog Input	[36]	Cooling Energy in kBTU	0 … 2.147e+9	
E_Heating_SI	Analog Input	[32]	Heating Energy in kWh	0 … 2.147e+9	-
E_Heating_US	Analog Input	[37]	Heating Energy in kBTU	0 … 2.147e+9	
Override	Multi-state Output	[1]	Override Control	Auto Close Open Vnom Vmax Stop	Auto
Vmax	Analog Value	[100]	Maximum Flow Limit in %	0 … 100	100
Vnom_SI	Analog Value	[101]	Nominal volume flow in l/min (read-only)	0 … 100'000	-
Vnom_US	Analog Value	[102]	Nominal volume flow in gpm (read-only)	0 … 100'000	-
ControlMode	Multi-state Value	[100]	Control Mode The value defines the interpretation of the setpoint.	PosCtrl FlowCtrl	FlowCtrl
DeltaT_Limitation	Multi-state Value	[101]	DeltaT Limitation	NoLimiting DeltaTLimiting	NoLimiting
SpDeltaT_SI	Analog Value	[103]	Setpoint DeltaT in °C	4 … 20	0
SpDeltaT_US	Analog Value	[104]	Setpoint DeltaT in °F	7 … 36	0