

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

- For closed cold and warm water systems
- For modulating water-side control of air purification and heating systems
- Nominal voltage AC/DC 24V
- Communication via MP-Bus



About this Document



- The device supports the MP Data-Pool functional profile. All available data points are managed in a data pool and accessible with MP read/write commands.
- This document describes all public data pool values of the device. It's divided into process values and configuration values.
- The MP Data-Pool functional profile is specified in the MP Cooperation Documentation. The document is provided to Belimo MP-Partners.
- See the technical datasheet T5-P6..W..EV-BAC for technical information about the device itself.

Data-Pool Values

	ID	Name	Description	Size	Access
Process	11	-			
	12	ErrorState	Error status of the device Bit 0: temperature sensor T1 error Bit 1: temperature sensor T2 error Bit 2: flow sensor error Bit 3: mechanical overload The flag is reset automatically, if the error condition disappears.	2	R
	13	-			
	20	SpRel	Relative Setpoint in % Datatype: uint16 Unit: 0.01 % Range: 0 ... 10'000 (0 ... 100 %)	2	R/W
	21	Override	Override Control Range: 1=Auto 2=Close 3=Open 4=Vnom 5=Vmax 5=Stop The relative setpoint (SpRel) is ignored in override mode. If the command is not repeated within 120 min, the override control will be disabled (None)	1	R/W
	22	RelPos	Relative Position in % Datatype: uint16 Unit: 0.01 % Range: 0 ... 10'000 (0 ... 100 %)	2	R

23	AbsPos	Absolute Position in ° Datatype: uint16 Unit: 0.01 ° Range: 0.00 ... 100.00	2	R
24	-			
30	RelFlow	Relative Flow in % Datatype: uint16 Unit: 0.01 % Range: 0 ... 10'000 (0 ... 100 %)	2	R
31	AbsFlow_SI	Absolute Flow in l/min Datatype: int32 Unit: 0.001 l/min Range: -2147483.647 ... 2147483.647 l/min	4	R
32	-			
40	T1_SI	Temperature 1 (remote) in °C Datatype: int16 Unit: 0.01 °C Range: -327.67 .. 327.67 °C	2	R
41	-			
42	T2_SI	Temperature 2 (embedded) in °C Datatype: int16 Unit: 0.01 °C Range: -327.67 .. 327.67 °C	2	R
43	-			
44	DeltaT_SI	Delta Temperature in °C Datatype: int16 Unit: 0.01 °C Range: -327.67 .. 327.67 °C	2	R
45	-			
50	P_SI	Power in kW Datatype: int32 Unit: 0.001 kW Range: -2147483.647...+2147483.647 kW	4	R
51	-			
52	E_Cooling_SI	Cooling Energy in kWh Datatype: uint32 Unit: 1 kWh Range: 0 ... 4'294'967'295 kWh	4	R
53	-			
54	E_Heating_SI	Heating Energy in kWh Datatype: uint32 Unit: 1 kWh Range: 0 ... 4'294'967'295 kWh	4	R

Configuration

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101	Vmax	Maximum flow limit in % Datatype: uint16 Unit: 0.01 % Range: 0 ... 10'000 (0 ... 100 %) Default: 100 %	2	R/W
102	Vnom_SI	Nominal volume flow in l/min Datatype: int32 Unit: 0.001 l/min Range: -2147483.647 ... 2147483.647 l/min	4	R
103	-			
104	ControlMode	ControlMode Range: 0=PosCtrl 1=FlowCtrl Default: FlowCtrl	1	R/W
105	DeltaT_Limitation	DeltaT Limitation Range: 0=Disabled 1=Enabled Default: Enabled	1	R/W

106	SpDeltaT_SI	Setpoint DeltaT in °C	2	W
		Datatype: int16		
		Unit: 0.01 °C		
		Range: (0) 4.00 ... 20.00 °C		

Application Remarks

Working with temperature values

The device provides the actual values for the remote temperature T1 and the delta temperature Delta_T. The temperature value measured local to the valve is not provided but can be easily calculated ($T2 = T1 + \text{Delta_T}$).

Implementation Remarks

Identification

The connected type can be identified by its series number:

Prefix	Profile Type	Profile Category	Type
2	1	22	P6..W..EV-BAC

Configuration

Configuration data are password protected.

The default password is '0000'.

Timing of MP-Bus queries

Master implementations typically poll the slaves in cycles (MP1, MP2, MP3, ...). Reading all data pool values of this node in one cycle is not recommended, because it would reduce the overall MP-Bus performance.

Recommendation:

- Split up the queries into several cycles (e.g. 3 queries per cycle).
- Adjust repetition rates (reading values) according to the rate of change of the value
- Prevent from reading unused data pool values