

Electronic pressure-independent 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 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 Bit 4: ¹⁾ flow with closed valve Bit 5: ¹⁾ air bubbles Bit 6: ¹⁾ flow not reached Bit 7: ¹⁾ power not realized Bit 8: ¹⁾ gear disengaged 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
			The setpoint is related either to the position, the flow (Vmax) or the power (Pmax). See ControlMode for more information.		

21	Override	Override Control Range: 1=Auto 2=Close 3=Open 4=Vnom 5=Vmax 6=MotStop 7=Pnom ¹⁾ 8=Pmax ¹⁾	1	R/W
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)				
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	AbsPower_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
55	-			

Data-Pool Values

56	RelPower ¹⁾	Relative Power in % Datatype: uint16 Unit: 0.01 % Range: 0 ... 30'000 (0 ... 300 %)	2	R
57	-			
60	DeltaT_Status ¹⁾	Status of DeltaT-Manager Range: 0=not selected 1=standby 2=active 3=Scaling-standby 4=Scaling-active	1	R
Configuration				
-				
101	Vmax	Maximum flow limit in % Datatype: uint16 Unit: 0.01 % Range: 0 ... 10'000 (0 ... 100 %) Default: 100 %	2	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 2=PowerCtrl ¹⁾ Default: FlowCtrl	1	W
105	DeltaT_Limitation	DeltaT Limitation Range: 0=Disabled 1=dT-Manager 2=dT-Manager-Scaling ¹⁾ Default: Disabled	1	W
106	SpDeltaT_SI	Setpoint DeltaT in °C Datatype: int16 Unit: 0.01 °C Range: (0) 4.00 ... 20.00 °C	2	W
107	-			
108	Pmax ¹⁾	Maximum power limit in % Datatype: uint16 Unit: 0.01 % Range: 0 ... 10'000 (0 ... 100 %) Default: 100 %	2	W
109	Pnom_SI ¹⁾	Nominal power in kW Datatype: int32 Unit: 0.001 kW Range: -2147483.647...+2147483.647 kW	4	R
110	-			
112	SpFlow_DeltaT_SI ¹⁾	Setpoint Flow at DeltaT in l/min Datatype: int32 Unit: 0.001 l/min Range: -2147483.647 ... 2147483.647 l/min	4	W

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

Interface Versions Values and parameters marked with ¹⁾ are available on devices with production date 24-03-2014 or newer.

Reading undefined values on older devices cause an error 15 = "unknown ID".

Configuration Configuration data are password protected.
The default password is '0000'.

Configuration Parameters The writable parameters may be changed in different ways: web page, service tool and MP-Bus. The parameter stored in the data-pool represents the last value written via MP-Bus and doesn't reflect the actual setting in use. The respective parameters are marked with "W" (write only).

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