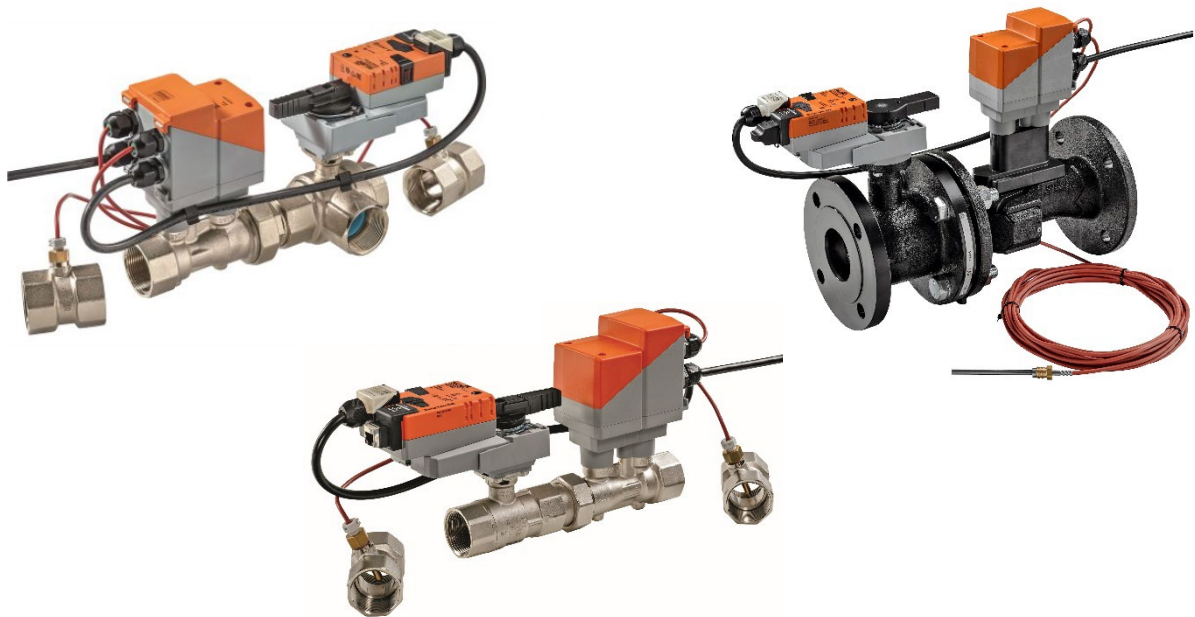
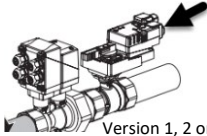
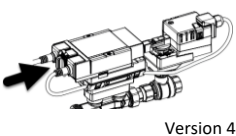




MPBUS®

Energy Valve (V3)

Where is the Ethernet socket?	
On the actuator	On the flow sensor
 Version 1, 2 or 3	 Version 4
✓ Stay with this document	✗ See «Data-pool Values Energy Valve (V4)»
For guidance in replacing an old EV with EV V4 -> see «Replacement Guide V1, V2, V3 vs. V4»	

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Data-Pool General Notes

- General information**
- 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.

Identification The connected type can be identified by its series number:

Prefix	Profile Type	Profile Category	Type
2	1	22	EV...+(K)BAC

Interface Version This description is valid for models:

Product Model Number	Remark
EV..R+(K)BAC	Version 3, DN 15...50
EV..R3+ BAC	3-way EV
EV..F+(K)BAC	DN 65...150

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'

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 are 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

Signed integer Signed integers are represented as two's complement.

Example Value of ID40 = $1111'1101'1111'0010_2 = -526_{10}$

Actual Value = Value * Scaling factor * Unit = $-526 * 0.01 * ^\circ\text{C} = -5.26\text{ }^\circ\text{C}$

Data-Pool Values Overview

	ID	Name	R/W
Process	12	Error State	R
	20	Setpoint [%]	R/W
	21	Override Control	R/W
	22	Relative Position [%]	R
	23	Absolute Position [°]	R
	24	Sensor 1 Value [V] ¹⁾	R
	30	Relative Flow [%]	R
	31	Absolute Flow [l/min]	R
	40	Temperature 1 (remote) [°C]	R
	42	Temperature 2 (embedded) [°C]	R
	44	Delta Temperature [K]	R
	50	Absolute Power [kW]	R
	52	Cooling Energy [kWh]	R
	54	Heating Energy [kWh]	R
	56	Relative Power [%]	R
	60	DeltaT Status	R
Configuration	102	Nominal Volume Flow [l/min]	R
	104	Control Mode	R/W
	105	DeltaT Limitation	R/W
	106	Setpoint DeltaT [°C]	R/W
	108	Maximum Power Limit [%]	R/W
	109	Nominal Power [kW]	R
	112	Setpoint Flow at DeltaT [l/min]	R/W
	150	Glycol Concentration [%] ¹⁾	R

¹⁾ Only available with Energy Valve V3.0.

Data-Pool Values

Process Data

Nr	Description	Unit	Scaling	Values	Size	Datatype	R/W
12	Error State (Malfunction & Service information)			Bit00(1) =Temp sensor T1 error Bit01(2) =Temp sensor T2 error Bit02(4) =Error flow sensor Bit03(8) =Actuator can't move Bit04(16) =Flow with closed valve Bit05(32) =Airbubbles Bit06(64) =Flow not reached Bit07(128) =Power not realized Bit08(256) =Gear disengaged Bit09(512) =Reverse flow Bit10(1024) =Intern communication fault Bit11(2048) =Freeze warning Bit12(4096) :- Bit13(8192) :-	2		R
20	Setpoint	%	0.01	0...100.00	2	unit16	R/W
21	Override Control			1=None 5=Vmax 2=Close 6=MotStop 3=Open 7=Pnom 4=Vnom 8=Pmax			R/W
22	Relative Position	%	0.01	0...100.00	2	unit16	R
23	Absolute Position	°	0.01	0...100.00	2	unit16	R
24	Setpoint Analog1)	V	0.01	0...10'000	2	int16	R
30	Relative Flow	%	0.01	0...100'000	2	unit16	R
31	Absolute Flow	l/min	0.001	0...2'147'483.647	4	int32	R
40	Temperature 1 (remote)	°C	0.01	-327.67...327.67	2	int16	R
42	Temperature 2 (embedded)	°C	0.01	-327.67...327.67	2	int16	R
44	Delta Temperature	K	0.01	0...327.67	2	int16	R
50	Absolute Power	kW	0.001	0...2'147'483.647	4	int32	R
52	Cooling Energy	kWh	1	0...2'147'483'647	4	int32	R
54	Heating Energy	kWh	1	0...2'147'483'647	4	int32	R
56	Relative Power	kW	0.01	0...100.00	2	unit16	R
60	DeltaT Status			0=not selected 1=standby 2=active 3=scaling-standby 4=scaling-active	1		R

Configuration Data

Nr	Description	Unit	Scaling	Values	Size	Datatype	R/W
101	Maximum Flow Limit	%	0.01	0...100.00	2	unit16	R/W
102	Absolute Vnom	l/min	0.001	-2'147'483.647...2'147'483.647	4	int32	R
104	Control Mode			0=Position Control 1=Flow Control 2=Power Control	1		R/W
105	DeltaT Limitation			0=Disabled 1=dT-Manager 2=dT-Manager-Scaling	1		R/W
106	Setpoint DeltaT	K	0.01	1.00...33.00	2	int16	R/W
108	Maximum Power Limit	%	0.01	0...100.00	2	unit16	R/W
109	Nominal Power	kW	0.1	0...429'496'729.5	4	int32	R
112	Setpoint Flow at DeltaT	l/min	0.01	0...4'294'967.295	4	int32	R/W
150	Glycol Concentration ¹⁾	%	1	0...100	2	unit16	R

¹⁾ Only available with Energy Valve V3.0