



Energy Valve DN 15...50 (V4)

Where is the Ethernet socket?	
On the actuator	On the flow sensor
<p>Version 1, 2 or 3</p>	<p>Version 4</p>
<p>See «Data-pool Values Energy Valve (V1, V2, V3)»</p>	<p>Stay with this document</p>

For guidance in replacing an old EV with EV V4 -> see «Replacement Guide V1, V2, V3 vs. V4»

Contents

Data-Pool General Notes	2
Data-Pool Values Overview	3
Data-Pool Values	4

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...R2+...

Interface Version This description is valid for models:

Product Model Number	Remark
EV...R2+(K)BAC	Version 4, DN 15...50
EV...R2+MID	Version 4, DN 15...50

Configuration Configuration data are not password protected. No Login is required.

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 = $-526 * 0.01 * ^\circ\text{C} = -5.26\text{ }^\circ\text{C}$



All writeable datapoints with ID >100 (configuration data) are persistent and are not supposed to be written on a regular base.

Data-Pool Values Overview

	ID	Name	R/W
Process	10	Setpoint [%]	R/W
	11	Command	R/W
	12	Relative Position [%]	R
	13	Absolute Position [°]	R
	14	Override	R/W
	15	Sensor 1 Value [mV] [Ω] [-]	R
	16	Setpoint Analog [%]	R
	19	Relative Volumetric Flow [%]	R
	20	Absolute Volumetric Flow [l/s]	R
	26	Glycol Concentration [%]	R
	27	Temperature 1 (remote) [°C]	R
	29	Temperature 2 (integrated) [°C]	R
	31	Delta Temperature [K]	R
	33	Relative Power [%]	R
	34	Absolute Cooling Power [kW]	R
	37	Absolute Heating Power [kW]	R
	51	Total Volume [m ³]	R
	54	Cooling Energy [kWh]	R
	57	Heating Energy [kWh]	R
Configuration	110	Malfunction & Service information	R
	111	Control Mode	R/W
	115	Bus Fail Position [%]	R/W
	116	Communication Watchdog [s]	R/W
	117	Setpoint Source	R/W
	120	Sensor 1 Type	R/W
	125	Vmin [%]	R/W
	129	Vmax [%]	R/W
	133	Vnom [l/s]	R
	140	Pnom [kW]	R
	143	Pmax [%]	R/W
	147	DeltaT Limitation	R/W
	148	DeltaT Manager Status	R
	160	Setpoint DeltaT [K]	R/W
	162	Setpoint Abs Flow DeltaT [l/s]	R/W
200	Meter Serial Number (Part 1)	R	
201	Meter Serial Number (Part 2)	R	
202	Select Meter Register	R/W	

Data-Pool Values

Process Data

Nr	Description	Unit	Scaling	Values	Size	R/W
10	<p>Setpoint</p> <p>The setpoint refers to the demanded position, flow or power according to the selected control mode. It is scaled between Min and Max limits.</p> <p>The setpoint is active, if the setpoint is controlled by bus (Setpoint Source = Bus)</p>	%	0.01	0...10'000	2	R/W
11	<p>Command</p> <p>Initiation of actuator functions for service. After command is sent, value changes back to None (0)</p>	-	-	0: None 1: - 2: Sync	1	R/W
12	Relative Position	%	0.01	0...10'000	2	R
13	Absolute Position	°	0.01	0...9'600	2	R
14	<p>Override Control</p> <p>Overriding the setpoint with defined values</p>			0: None 1: Open Valve 2: Close Valve 3: Min Flow 4: - 5: Max Flow 6: Nom Flow 7: - 8: - 9: - 10: - Motor Stop	1	R/W
15	<p>Sensor 1 Value</p> <p>Current value of sensor 1, depending on setting of "Sensor 1 Type" (ID 120)</p>	mV Ω -	1	0...65'535	2	R
16	<p>Setpoint Analog</p> <p>Shows the setpoint in % if the actuator is controlled by analog signal (ID 117)</p>	%	0.01	0...10'000	2	R
19	<p>Relative Volumetric Flow</p> <p>Related to "Nominal Volumetric Flow" (ID 133)</p>	%	0.01	0...15'000	2	R
20	Absolute Volumetric Flow	l/s	0.01	0...10'000	2	R
26	Glycol Concentration	%	0.01	0...10'000	2	R
27	Temperature 1 (remote)	°C	0.01	-2'000...12'000	2	R
29	Temperature 2 (integrated)	°C	0.01	-2'000...12'000	2	R
31	Delta Temperature	K	0.01	0...14'000	2	R
33	<p>Relative Power</p> <p>Related to "Nominal Power" (ID 140)</p>	%	0.01	0...30'000	2	R
34	Absolute Cooling Power	kW	0.001	0...21'474'836	4	R
37	Absolute Heating Power	kW	0.001	0...21'474'836	4	R
51	Total Volume	m ³	0.01	0...21'474'836	4	R
54	Cooling Energy	kWh	1	0...21'474'836	4	R
57	Heating Energy	kWh	1	0...21'474'836	4	R

Configuration Data

Nr	Description	Unit	Scaling	Values	Size	R/W
110	Malfunction & Service information	-	-	Bit 0: No communication to actuator Bit 1: Gear disengaged Bit 2: Actuator cannot move Bit 3: Reverse flow Bit 4: Flow setpoint not reached Bit 5: Flow with closed valve Bit 6: Actual flow > Vnom Bit 7: Flow measurement error Bit 8: Remote temperature error Bit 9: Integrated temperature error Bit 10: Comm. to sensor interrupted Bit 11: Freeze warning Bit 12: Glycol detected Bit 13: Power setpoint not reached	2	R
111	Control Mode	-	-	0: Position Control 1: Flow Control 2: Power Control	1	R/W
115	Bus Fail Position <i>Not functional, reserved for future extension</i>	%	0.01	0...10'000	2	R/W
116	Communication Watchdog <i>Not functional, reserved for future extension</i>	s	1	0...3'600 (0=Watchdog deactivated)	2	R/W
117	Setpoint Source Defines whether the setpoint is controlled by the analog input signal on wire 3 or the MP-Bus	-	-	0: Analog 1: Bus	1	R/W
120	Sensor 1 Type If Setpoint Source (ID 117) is analog (Hybrid mode), the Sensor 1 Type can be set to Active (1) to see the Setpoint Analog in mV.	-	-	0: None 1: Active 2: - 3: Passive 4: Switch	1	R/W
125	Vmin The min setpoint in % is related to Vnom (ID 133) and considered when Control Mode = Flow Control or Power Control.	%	0.01	0...Vmax	2	R/W
129	Vmax The max setpoint in % is related to Vnom (ID 133) and considered when Control Mode = Flow Control or Power Control.	%	0.01	2'500...10'000	2	R/W
133	Vnom Nominal volumetric flow	l/s	0.01	0...10'000	2	R
140	Pnom Nominal power	kW	0.001	0...21'474'836	4	R
143	Pmax The max setpoint in % is related to Pnom (ID 140) and considered when Control Mode = Power Control.	%	0.01	50...10'000	2	R/W
147	DeltaT Limitation Defines whether the device acts on low delta T. Check datasheet for further information.	-	-	0: Disabled 1: DeltaT-Manager 2: DeltaT-Manager-Scaled	1	R/W
148	DeltaT Manager Status	-	-	0: Not selected	1	R

	Indicates the status of the DeltaT Manager. Check datasheet for further information.			1: Standby 2: Active 3: Scaling-standby 4: Scaling-active		
160	Setpoint DeltaT Considered when DeltaT Limitation active (not disabled). Check datasheet for further information.	K	0.01	0...6'000	2	R/W
162	Setpoint Abs Flow DeltaT Considered when DeltaT Limitation is set to DeltaT-Manager-Scaled. Check datasheet for further information.	l/s	0.001	0...100'000	4	R/W
200	Meter Serial Number (Part 1)	-	-	0...2'147'483'647	4	R
201	Meter Serial Number (Part 2)	-	-	0...2'147'483'647	4	R
202	Select Meter Register Select the active meter register: The certified meter register is not compensated for glycol and will be reset when the sensor module is replaced. The lifetime register is compensated for glycol (if applicable). Avoid toggling between the two registers.	-	-	0: Certified meter register 1: Lifetime meter register	1	R/W