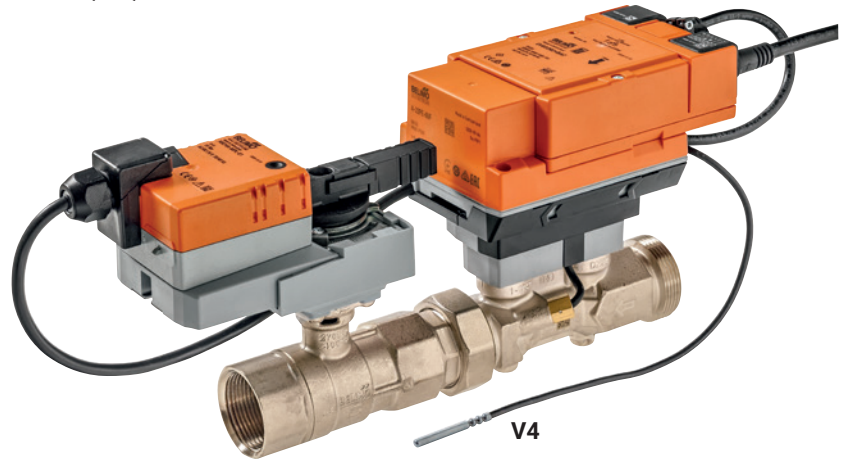**V1, V2, V3**

V4

Replacement Guide V1, V2, V3 vs. V4

Guide for System Integrators on how to replace an old Energy Valve with an Energy Valve V4
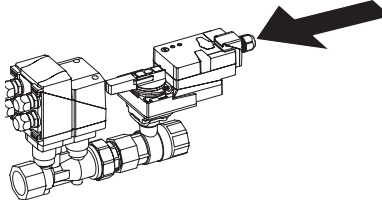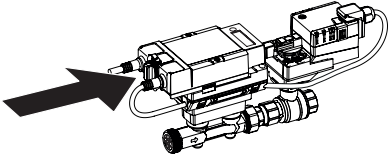
BELIMO®

Contents

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Introduction

Purpose of this document

In this document you will find the most important information on replacing an old Energy Valve (Version 1, 2 or 3) with an Energy Valve Version 4 from the perspective of BACnet and Modbus. This document focuses on the interfaces only and does not address mechanical or application topics that need to be considered when replacing a device.

Identify the Energy Valve version number

If you want to determine the version number of the energy valve, please check the following:

	Version 1, 2 or 3	**Version 4**
By product type:	– EV…R+(K)BAC – EV…F+(K)BAC – EV…R3+BAC up to production date 15/01/2022	– EV…R2+(K)BAC – EV…R3+BAC as of production date 15/01/2022
By Ethernet socket:	 Ethernet socket on the actuator	 Ethernet socket on the flow sensor
By Application Software Version:	BACnet: Device object -> Application Software Version 01.24-xxxx (V1), 01.35-xxxx (V2) or 03.xx-xxxx (V3) Modbus: Register No. 104 -> 3.xx (Version 1 and 2 do not support Modbus) Web server: Status -> Version information -> Model version 1.xx.xxx (V1), 2.xx.xxx (V2) or 3.xx.xxx (V3)	BACnet: Device object -> Application Software Version 04.xx-xxxx Modbus: Register No. 104 -> 4.xx Web server: Status -> Version information -> Model version 1.x.x
Belimo Assistant 2:	not supported	supported

BACnet

Overview of changes

- BACnet Protocol Revision changes from 1.6 (V1/V2) and 1.12 (V3) to 1.14 in V4
- In V4 Binary Value [BV] is no longer supported and Positive Integer Value [PIV] was introduced
- Writable strings limited to 32 char or 64 char respectively in V4
- Version 4 supports 6 active COV subscriptions versus 5 active COV subscriptions in Version 1, 2 or 3 and max. subscription time was reduced from 12 hours in Version 3 to 8 hours
- COV Increment is writeable in Version 4
- Relinquish default for Analog Output [AO] is writable in Version 4

Version 1, 2 or 3

Object type	Optional properties	Writable properties
Device	Description Location Active COV Subscriptions Max Master Max Info Frames Profile Name	Object Identifier Object Name Location Description APDU Timeout (1'000...60'000) Number of APDU Retries (0...10) Max Master (1...127) Max Info Frames (1...255)
Analog Input [AI]	Description COV Increment	
Analog Output [AO]	Description COV Increment	Present Value
Analog Value [AV]	Description	Present Value
Binary Input [BI]	Description Active text Inactive text	
Binary Value [BV]	**Description Active Text Inactive text**	**Present Value**
Multi-state Input [MI]	Description State text	
Multi-state Output [MO]	Description State text	Present Value
Multi-state Value MV]	Description State text	Present Value

Version 4

Object type	Optional properties	Writable properties
Device	Description Location Active COV Subscriptions Max Master Max Info Frames Profile Name	Object Identifier Object Name Location Description APDU Timeout (1'000...60'000) Number of APDU Retries (0...10) Max Master (1...127) Max Info Frames (1...255)
Analog Input [AI]	Description COV Increment	**COV Increment**
Analog Output [AO]	Description COV Increment	Present Value **COV Increment Relinquish Default**
Analog Value [AV]	Description	Present Value **COV Increment**
Binary Input [BI]	Description Active text Inactive text	
Multi-state Input [MI]	Description State text	
Multi-state Output [MO]	Description State text	Present Value **Relinquish Default**
Multi-state Value MV]	Description State text	Present Value
Positive Integer Value [PIV]	**Description**	

Overview of changes

If you integrated any of the BACnet objects in the list below, actions are required since the object type, the instance no., the unit or the functionality of the object changed. Errors can occur, if you do not adapt the implementation of the integration on the controller after the replacement.

Version 3		**Version 4**		
Object name	**Object type [Inst.No.]**	**Object name**	**Object type [Inst.No.]**	**Remarks**
AbsPos	AI[2]	AbsPos	AV[2]	Object type changed from Analog Input to Analog Value.
SpAnalog_V	AI[5]	SpAnalog_%	AI[6]	Object AI[5] is no longer supported. Use instead AI[6]. Be aware that the unit is different.
RelFlow	AI[10]	RelFlow	AV[10]	Object type changed from Analog Input to Analog Value.
AbsFlow_lmin	AI[11]	AbsFlow_UnitSel	AV[19]	Object AI[11] is no longer supported. Use instead AV[19]. The unit can be selected in object MV[123]. Be aware that the unit is by default l/h and needs to be changed to l/min.
AbsFlow_m3h	AI[12]	AbsFlow_UnitSel	AV[19]	Object AI[12] is no longer supported. Use instead AV[19]. The unit can be selected in object MV[123]. Be aware that the unit is by default l/h and needs to be changed to m^3/h.
AbsFlow_gpm	AI[13]	AbsFlow_UnitSel	AV[19]	Object AI[13] is no longer supported. Use instead AV[19]. The unit can be selected in object MV[123]. Be aware that the unit is by default l/h and needs to be changed to gpm.
AbsFlow_ls	AI[14]	AbsFlow_UnitSel	AV[19]	Object AI[14] is no longer supported. Use instead AV[19]. The unit can be selected in object MV[123]. Be aware that the unit is by default l/h and needs to be changed to l/s.
AbsFlow_lh	AI[15]	AbsFlow_UnitSel	AV[19]	Object AI[15] is no longer supported. Use instead AV[19]. The unit can be selected in object MV[123]. The unit is by default l/h.
T1_C	AI[20]	T1_UnitSel	AI[22]	Object AI[20] is used differently. Use instead AI[22]. The unit can be selected in object MV[127]. The unit is by default °C.
T2_C	AI[21]	T2_UnitSel	AI[23]	Object AI[21] is used differently. Use instead AI[23]. The unit can be selected in object MV[127]. The unit is by default °C.
DeltaT_K	AI[22]	DeltaT_UnitSel	AV[22]	Object AI[22] is no longer supported. Use instead AV[22]. The unit can be selected in object MV[128]. The unit is by default K.
T1_F	AI[25]	T1_UnitSel	AI[22]	Object AI[25] is no longer supported. Use instead AI[22]. The unit can be selected in object MV[127]. Be aware that the unit is by default °C and needs to be changed to °F.
T2_F	AI[26]	T2_UnitSel	AI[23]	Object AI[26] is no longer supported. Use instead AI[23]. The unit can be selected in object MV[127]. Be aware that the unit is by default °C and needs to be changed to °F.
DeltaT_F	AI[27]	DeltaT_UnitSel	AV[22]	Object AI[27] is no longer supported. Use instead AV[22]. The unit can be selected in object MV[128]. Be aware that the unit is by default K and needs to be changed to °F.
AbsPower_kW	AI[30]	CoolingPower_UnitSel	AV[45]	Object AI[30] is no longer supported. Use instead AV[45] or AV[46].
		HeatingPower_UnitSel	AV[46]	The unit can be selected in object MV[124]. The unit is by default kW.
E_Cooling_kWh	AI[31]	CoolingEnergy_UnitSel	AV[47]	Object AI[31] is no longer supported. Use instead AV[47] or PIV[31]. The unit can be selected in object MV[125]. The unit is by default kW.
E_Heating_kWh	AI[32]	HeatingEnergy_UnitSel	AV[48]	Object AI[32] is no longer supported. Use instead AV[47] or PIV[32]. The unit can be selected in object MV[125]. The unit is by default kW.

Version 3		Version 4		
Object name	**Object type [Inst.No.]**	**Object name**	**Object type [Inst.No.]**	**Remarks**
E_Cooling_MJ	AI[33]	CoolingEnergy_UnitSel	AV[47]	Object AI[33] is no longer supported. Use instead AV[47] or PIV[31]. The unit can be selected in object MV[125]. Be aware that the unit is by default kWh and needs to be changed to MJ.
E_Heating_MJ	AI[34]	HeatingEnergy_UnitSel	AV[48]	Object AI[34] is no longer supported. Use instead AV[47] or PIV[32]. The unit can be selected in object MV[125]. Be aware that the unit is by default kWh and needs to be changed to MJ.
AbsPower_kBTUh	AI[35]	CoolingPower_UnitSel	AV[45]	Object AI[35] is no longer supported. Use instead AV[45] or AV[46].
		HeatingPower_UnitSel	AV[46]	The unit can be selected in object MV[124]. Be aware that the unit is by default kW and needs to be changed to kBTUh.
E_Cooling_kBTU	AI[36]	CoolingEnergy_UnitSel	AV[47]	Object AI[36] is no longer supported. Use instead AV[47] or PIV[31]. The unit can be selected in object MV[125]. Be aware that the unit is by default kWh and needs to be changed to kBTU.
E_Heating_kBTU	AI[37]	HeatingEnergy_UnitSel	AV[48]	Object AI[37] is no longer supported. Use instead AV[47] or PIV[32]. The unit can be selected in object MV[125]. Be aware that the unit is by default kWh and needs to be changed to kBTU.
RelPower	AI[40]	RelPower	AV[40]	Object type changed from Analog Input to Analog Value.
AbsPower_ton	AI[45]	CoolingPower_UnitSel	AV[45]	Object AI[45] is no longer supported. Use instead AV[45] or AV[46].
		HeatingPower_UnitSel	AV[46]	The unit can be selected in object MV[124]. Be aware that the unit is by default kW and needs to be changed to ton.
E_Cooling_tonh	AI[46]	CoolingEnergy_UnitSel	AV[47]	Object AI[47] is no longer supported. Use instead AV[47] or PIV[32]. The unit can be selected in object MV[125]. Be aware that the unit is by default kWh and needs to be changed to tonh.
E_Heating_tonh	AI[47]	HeatingEnergy_UnitSel	AV[48]	Object AI[47] is no longer supported. Use instead AV[47] or PIV[32]. The unit can be selected in object MV[125]. Be aware that the unit is by default kWh and needs to be changed to tonh.
Glycol Concentration	AI[60	Glycol Concentration	AV[60	Object type changed from Analog Input to Analog Value.
V'$_{max}$_lmin	AI[90]	V'$_{max}$_UnitSel	AV[97]	Object AI[90] is no longer supported. Use instead AV[97]. The unit can be selected in object MV[123]. Be aware that the unit is by default l/h and needs to be changed to l/min.
V'$_{max}$_gpm	AI[91]	V'$_{max}$_UnitSel	AV[97]	Object AI[91] is no longer supported. Use instead AV[97]. The unit can be selected in object MV[123]. Be aware that the unit is by default l/h and needs to be changed to gpm.
P'$_{max}$_kW	AV[95]	P'$_{max}$_UnitSel	AV[113]	Object AV[95] is no longer supported. Use instead AV[113]. The unit can be selected in object MV[124]. The unit is by default kW.
P'$_{max}$_kBTUh	AV[96]	P'$_{max}$_UnitSel	AV[113]	Object AV[95] is no longer supported. Use instead AV[113]. The unit can be selected in object MV[124]. The unit is by default kW and needs to be changed to kBTUh.

Version 3		Version 4		Remarks
Object name	**Object type [Inst.No.]**	**Object name**	**Object type [Inst.No.]**	
ErrorState	AI[100]	ErrorState	AV[140]	Object type changed from Analog Input to Analog Value. Bit Enumeration changed.

V1, V2, V3	V4
Bit 0: Error Sensor T1	Bit 8: Remote temperature not OK
Bit 1: Error Sensor T2	Bit 9: Flow sensor body temperature not OK
Bit 2: Error Flow Sensor	Bit 10: Com. to sensor interrupted
Bit 3: Actuator cannot move	Bit 2: Actuator cannot move
Bit 4: Flow with closed valve	Bit 5: Flow with closed valve
Bit 5: Air bubbles	Bit 7: Flow measurement error
Bit 6: Flow not reached	Bit 4: Flow setpoint not reached
Bit 7: Power not realised	Bit 13: Power setpoint not reached
Bit 8: Gear train disengaged	Bit 1: Gear train disengaged
Bit 9: Reverse flow detected	Bit 3: Reverse flow
Bit 10: MP communication faulty	Bit 0: No communication to actuator
Bit 11: Freeze warning	Bit 11: Freeze warning
	Bit 6: Flow actual exceeds flow nominal
	Bit 12: Glycol detected

Version 3		Version 4		Remarks
V'_{max}	AV[100]	V'_{max}	AV[94]	Instance number changed.
V'_{nom_lmin}	AI[101]	$V'_{nom\_UnitSel}$	AV[100]	Object AI[101] is no longer supported. Use instead AV[100]. The unit can be selected in object MV[123]. Be aware that the unit is by default l/h and needs to be changed to l/min.
V'_{nom_gpm}	AI[102]	$V'_{nom\_UnitSel}$	AV[100]	Object AI[102] is no longer supported. Use instead AV[100]. The unit can be selected in object MV[123]. Be aware that the unit is by default l/h and needs to be changed to gpm.
SpDeltaT_K	AV[103]	SpDeltaT_UnitSel	AV[120]	Object AV[103] is no longer supported. Use instead AV[120]. The unit can be selected in object MV[128]. The unit is by default K.
P'_{max}	AV[105]	P'_{max}	AV[110]	Instance number changed.
P'_{nom_kW}	AI[106]	$P'_{nom\_UnitSel}$	AV[116]	Object AV[106] is no longer supported. Use instead AV[116]. The unit can be selected in object MV[124]. The unit is by default kW.
P'_{nom_kBTUh}	AI[107]	$P'_{nom\_UnitSel}$	AV[116]	Object AV[107] is no longer supported. Use instead AV[116]. The unit can be selected in object MV[124]. Be aware that the unit is by default kW and needs to be changed to kBTUh.
SpFlow_DeltaT_lmin	AV[108]	SpAbsFlowDeltaT_UnitSel	AV[127]	Object AI[108] is no longer supported. Use instead AV[127]. The unit can be selected in object MV[123]. Be aware that the unit is by default l/h and needs to be changed to l/min.
SpFlow_DeltaT_gpm	AV[109]	SpAbsFlowDeltaT_UnitSel	AV[127]	Object AI[109] is no longer supported. Use instead AV[127]. The unit can be selected in object MV[123]. Be aware that the unit is by default l/h and needs to be changed to gpm.
SpAbsFlow_lmin	AI[111]	SpAbsFlow_UnitSel	AV[17]	Object AI[111] is no longer supported. Use instead AV[17]. The unit can be selected in object MV[123]. Be aware that the unit is by default l/h and needs to be changed to l/min.

Version 3		Version 4		
Object name	**Object type [Inst.No.]**	**Object name**	**Object type [Inst.No.]**	**Remarks**
SpAbsFlow_m3h	AI[112]	SpAbsFlow_UnitSel	AV[17]	Object AI[112] is no longer supported. Use instead AV[17]. The unit can be selected in object MV[123]. Be aware that the unit is by default l/h and needs to be changed to m³/h.
SpAbsFlow_gpm	AI[113]	SpAbsFlow_UnitSel	AV[17]	Object AI[113] is no longer supported. Use instead AV[17]. The unit can be selected in object MV[123]. Be aware that the unit is by default l/h and needs to be changed to gpm.
SpAbsFlow_ls	AI[114]	SpAbsFlow_UnitSel	AV[17]	Object AI[114] is no longer supported. Use instead AV[17]. The unit can be selected in object MV[123]. Be aware that the unit is by default l/h and needs to be changed to l/s.
SpAbsFlow_lh	AI[115]	SpAbsFlow_UnitSel	AV[17]	Object AI[115] is no longer supported. Use instead AV[17]. The unit can be selected in object MV[123]. The unit is by default l/h.
SpPosReached	BI[1]			No longer exists
RstCoolEnergy	BV[31]			No longer exists
RstHeatEnergy	BV[32]			No longer exists
RstErrCount	BV[100]			No longer exists
SummaryStatus	BI[101]	SummaryStatus	MV[99]	Object BI[101] is no longer supported. Use instead MV[99]. A third status „Warning" was added.

V1, V2, V3	V4
False: OK	1: OK
True: Not OK	2: Warning
	3: Not OK

Version 3		Version 4		
Override	MO[1]	Override	MV[1]	Object type changed from Multi-state Output to Multi-state Value. Mapping changed! Please be aware that the override does no longer return to None (1) after 2 hours.

V1, V2, V3	V4
1: None	1: None
2: Close	2: Open Valve
3: Open	3: Close Valve
4: V'$_{nom}$	4: Minimum
5: V'$_{max}$	5: not used
6: MotStop	6: Maximum
7: P'$_{nom}$	7: Nominal
8: P'$_{max}$	8: Not used
	9: Not used
	10: Not used
	11: Motor Stop

Version 3		Version 4		
DeltaT_MgrStatus	MI[102]	StatusDeltaTMgr	MV[102]	Object type changed from Multi-state Input to Multi-state Value. Object name changed.

Version 3		Version 4		
Object name	**Object type [Inst.No.]**	**Object name**	**Object type [Inst.No.]**	**Remarks**
StatusSensor	MI[103]	StatusSensor	MV[103]	Object type changed from Multi-state Input to Multi-state Value. Mapping changed!

V1, V2, V3	V4
1: OK	1: OK
2: Flow sensor not OK	2: Flow measurement error
3: T1 not OK	3: Flow sensor body temperature not OK
4: T2 not OK	4: Remote temperature not OK
	5: Com. to flow sensor interrupted

Version 3		Version 4		
StatusFlow	MI[104]	StatusFlow	MV[104]	Object type changed from Multi-state Input to Multi-state Value. Mapping changed!

V1, V2, V3	V4
1: OK	1: OK
2: Reverse flow detected	2: Actual flow exceeds nominal flow
3: Flow not reached	3: Flow sensor body with closed valve
4: Flow in closed position	4: Flow setpoint cannot be reached
	5: Reverse flow

Version 3		Version 4		
StatusMedia	MI[105]	StatusMedia	MV[105]	Object type changed from Multi-state Input to Multi-state Value. Mapping changed! Air bubbles (2) now covered in MV[103]: Flow mesurement error (2)

V1, V2, V3	V4
1: OK	1: OK
2: Air bubbles	2: Glycol detected
3: Freeze warning	3: Freeze warning

Version 3		Version 4		
StatusActuator	MI[106]	StatusActuator	MV[106]	Object type changed from Multi-state Input to Multi-state Value.
StatusPower	MI[107]	StatusPower	MV[107]	Object type changed from Multi-state Input to Multi-state Value.

Modbus

Modbus Register Description

If you integrated any of the registers in the list below, actions are required since the Register No., the unit, the mapping or the functionality of the register changed. If you do not adapt the implementation of the integration on the controller after the replacement, errors can occur.

Version 3		Version 4		Remarks	
No.	**Register**	**No.**	**Register**	**Remarks**	
2	Override	2	Override	Mapping changed! Please be aware that the override does no longer return to None (1) after 2 hours.	
				0: None	0: None
				1: Close	1: Open Valve
				2: Open	2: Close Valve
				3: V'_{nom}	3: Minimum
				4: V'_{max}	4: not used
				5: MotStop	5: Maximum
				6: P'_{nom}	6: Nominal
				7: P'_{max}	7: Not used
					8: Not used
					9: Not used
					10: Motor Stop
8/9	Absolute volumetric flow in UnitSel	10/11	Absolute volumetric flow in UnitSel	Register No. changed.	
10/11	Absolute volumetric flow in l/s	8	Absolute volumetric flow in l/s	Register No. changed. Scaling factor changed from 0.001 to 0.01. If you need higher resolution, use Register No. 8/9.	
12/13	Absolute volumetric flow in gpm	9	Absolute volumetric flow in gpm	Register No. changed. Scaling factor changed from 0.001 to 0.1. If you need higher resolution, use Register No. 8/9.	
14/15	Setpoint absolute volumetric flow in UnitSel	18/19	Setpoint absolute volumetric flow in UnitSel	Register No. changed.	
16	Setpoint Analog in V	12	Setpoint Analog in %	Register No. Changed. Be aware that the unit is different.	
17	Temperature 1 in °C	20	Temperature 1 in °C	Register No. changed.	
18	Temperature 1 in °F	21	Temperature 1 in °F	Register No. changed.	
19	Temperature 2 in °C	22	Temperature 2 in °C	Register No. changed.	
20	Temperature 2 in °F	23	Temperature 2 in °F	Register No. changed.	
21	Delta Temperature in K	24	Delta Temperature in K	Register No. changed.	
22	Delta Temperature in °F	25	Delta Temperature in °F	Register No. changed.	
23	Glycol Concentration in %	26	Glycol Concentration in %	Register No. changed.	
24	Relative Power in %	27	Relative Power in %	Register No. changed.	

Version 3		Version 4		Remarks	
No.	**Register**	**No.**	**Register**		
25/26	Absolute Power in UnitSel	32/33	Absolute Power Cooling in UnitSel	Register No. changed.	
		38/39	Absolute Power Heating in UnitSel	Register No. changed.	
27/28	Absolute Power in kW	28/29	Absolute Power Cooling in kW	Register No. changed.	
		34/35	Absolute Power Heating in kW	Register No. changed.	
29/30	Absolute Power in kBTU/h	30/31	Absolute Power Cooling in kBTU/h	Register No. changed.	
		36/37	Absolute Power Heating in kBTU/h	Register No. changed.	
31/32	Energy Cooling in UnitSel	70/71	Energy Cooling in UnitSel	Register No. changed.	
33/34	Energy Cooling in kWh	66/67	Energy Cooling in kWh	Register No. changed.	
35/36	Energy Cooling in kBTU	68/69	Energy Cooling in kBTU	Register No. changed.	
37/38	Energy Heating in UnitSel	76/77	Energy Heating in UnitSel	Register No. changed.	
39/40	Energy Heating in kWh	72/73	Energy Heating in kWh	Register No. changed.	
41/42	Energy Heating in kBTU	74/75	Energy Heating in kBTU	Register No. changed.	
105	Malfunction and Service info	105	Malfunction and Service info	Bit Enumeration changed	
				V1, V2, V3	**V4**
				Bit 0: Error Sensor T1	Bit 8: Remote temperature not OK
				Bit 1: Error Sensor T2	Bit 9: Flow sensor body temperature not OK
				Bit 2: Error Flow Sensor	Bit 10: Com. to sensor interrupted
				Bit 3: Actuator cannot move	Bit 2: Actuator cannot move
				Bit 4: Flow with closed valve	Bit 5: Flow with closed valve
				Bit 5: Air bubbles	Bit 7: Flow measurement error
				Bit 6: Flow not reached	Bit 4: Flow setpoint not reached
				Bit 7: Power not realized	Bit 13: Power setpoint not reached
				Bit 9: Gear train disengaged	Bit 1: Gear train disengaged
				Bit 11: Reverse flow detected	Bit 3: Reverse flow
				Bit 12: MP communication faulty	Bit 0: No communication to actuator
				Bit 13: Freeze warning	Bit 11: Freeze warning
					Bit 6: Flow actual exceeds flow nominal
					Bit 12: Glycol detected

Version 3

No.	Register	No.	Register	Remarks
106	V'_{max}	107	V'_{max}	Register No. changed.
107/108	Absolute V'_{max} in l/s	134	Absolute V'_{max} in l/s	Register No. changed. Scaling factor changed from 0.001 to 0.01. If you need higher resolution, use Register No. 132/133.
109/110	Absolute V'_{max} in gpm	131	Absolute V'_{max} in gpm	Register No. changed. Scaling factor changed from 0.001 to 0.1. If you need higher resolution, use Register No. 132/133.
111/112	V'_{nom} in UnitSel	113/114	V'_{nom} in UnitSel	Register No. changed.
113/114	V'_{nom} in l/s	111	V'_{nom} in l/s	Register No. changed. Scaling factor changed from 0.001 to 0.01. If you need higher resolution, use Register No. 111/112.
115/116	V'_{nom} in gpm	112	V'_{nom} in gpm	Register No. changed. Scaling factor changed from 0.001 to 0.1. If you need higher resolution, use Register No. 111/112.
117	P'_{max}	166	P'_{max}	Register No. changed.
118/119	Absolute P'_{max} in kW	167/168	Absolute P'_{max} in kW	Register No. changed.
120/121	Absolute P'_{max} in kBTU/h	169/170	Absolute P'_{max} in kBTU/h	Register No. changed.
122/123	P'_{nom} in UnitSel	164/165	P'_{nom} in UnitSel	Register No. changed. Scaling factor changed from 0.001 to 0.1.
124/125	P'_{nom} in kW	160/161	P'_{nom} in kW	Register No. changed.
126/127	P'_{nom} in kBTU/h	162/163	P'_{nom} in kBTU/h	Register No. changed.
131	DeltaT Limitation	180	DeltaT Limitation	Register No. changed.
132	DeltaT Manager Status	181	DeltaT Manager Status	Register No. changed.
133	Setpoint DeltaT in K	40	Setpoint DeltaT in K	Register No. changed.
134	Setpoint DeltaT in °F	41	Setpoint DeltaT in °F	Register No. changed.
135/136	Setpoint Flow at DeltaT in l/s	42/43	Setpoint Flow at DeltaT in l/s	Register No. changed.
137/138	Setpoint Flow at DeltaT in gpm	44/45	Setpoint Flow at DeltaT in gpm	Register No. changed. Scaling factor changed from 0.001 to 0.01.
141	Control Mode	117	Control Mode	Register No. changed.
142	Unit Selection for Flow	148	Unit Selection for Flow	Register No. changed.
143	Unit Selection for Power	149	Unit Selection for Power	Register No. changed. Mapping changed!

The second column group is headed **Version 4** (No. / Register).

V1, V2, V3	V4
0: W	0: W
1: kW	1: kW
2: BTU/h	2: MW
3: kBTU/h	3: BTU/h
4: ton	4: kBTU/h
	5: ton

Version 3		Version 4		Remarks	
No.	**Register**	**No.**	**Register**		
144	Unit Selection for Energy	151	Unit Selection for Energy	Register No. changed. Mapping changed!	
				V1, V2, V3	V4
				0: J	0: J
				1: kWh	1: kJ
				2: MWh	2: MJ
				3: kBTU	3: GJ
				4: tonh	4: Wh
				5: MJ	5: kWh
				6: GJ	6: MWh
					7: BTU
					8: kBTU
					9: tonh
145	Setpoint Source	119	Setpoint Source	Register No. changed.	

Additional documentation

BACnet
– BACnet Interface description - Belimo Energy Valve™ (V4)
– BACnet Interface description - Belimo Energy Valve™ (V3.2.2)

Modbus
– Modbus Interface description - Belimo Energy Valve™ (V4)
– Modbus Interface description - Belimo Energy Valve™ (V3)

Further documentation can be found at www.belimo.com.

BELIMO

All inclusive.

Belimo is the global market leader in the development, production, and sales of field devices for the energy-efficient control of heating, ventilation and air-conditioning systems. The focus of our core business is on damper actuators, control valves, sensors and meters.

Always focusing on customer value, we deliver more than only products. We offer you the complete product range for the regulation and control of HVAC systems from a single source. At the same time, we rely on tested Swiss quality with a five-year warranty. Our worldwide representatives in over 80 countries guarantee short delivery times and comprehensive support through the entire product life. Belimo does indeed include everything.

The "small" Belimo devices have a big impact on comfort, energy efficiency, safety, installation and maintenance.

In short: Small devices, big impact.

5 | 5-year warranty

On site around the globe

Complete product range

Tested quality

Short delivery times

Comprehensive support

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