Configurable

Electr. 2-way PI-CCV Belimo Energy Valve™ fail-safe, AC/DC 24 V, BACnet/IP, BACnet MS/TP, Modbus TCP, Modbus RTU, MP-Bus, Cloud, DN 4"[], Flange, ANSI Class 125, GPM 317, 14...250°F [-10...120°C]

5

5-year warranty

EV

Type Overview

Type	ANSI Class
EV400SU-317+GKRX24-EV	125

Technical data

Electrical data	Nominal voltage	AC/DC 24 V
	Nominal voltage frequency	50/60 Hz
	Nominal voltage range	AC 19.2...28.8 V / DC 21.6...28.8 V
	Power consumption in operation	17 W
	Transformer sizing	29 VA
Data bus communication	Communicative control	BACnet/IP, BACnet MS/TP Modbus TCP, Modbus RTU MP-Bus Cloud
Functional data	Valve size [mm]	4" [100]
	Operating range Y	2...10 V
	Operating range Y note	4...20 mA w/ ZG-R01 (500 Ω, 1/4 W resistor)
	Input impedance	100 kΩ (0.1 mA), 500 Ω
	Operating modes optional	VDC variable
	Position feedback U	2...10 V
	Position feedback U variable	VDC variable
	Running Time (Motor)	90 s
	Running time fail-safe	<35 s
	Noise level Motor	52 dB(A)
	Noise level, fail-safe	61 dB(A)
	Control accuracy	±5%
	Min. controllable flow	1% of V'nom
	Fluid	chilled or hot water, up to 60% glycol max (open loop/steam not allowed)
	Fluid temperature	14...250°F [-10...120°C]
	Close-off pressure Δps	175 psi
	Differential Pressure Range	5...50 psi or 1...50 psi see flow reductions chart in tech doc
	Flow characteristic	equal percentage or linear
	Body Pressure Rating	ANSI Class 125, standard class B
	GPM	317

Technical data

Functional data	Pipe connection	Flange for use with ASME/ANSI class 125	
	Servicing	maintenance-free	
	Manual override	external push button	
Temperature measurement	Remote Temperature Sensor Length	Optional: 4.9 ft. [1.5m], 9.8 ft. [3m], 16.4 ft. [5m] Standard: 32.8 ft. [10m]	
Flow measurement	Measuring principle	Ultrasonic volumetric flow measurement	
	Measuring accuracy flow	±2%*	
	Measurement repeatability	±0.5% (Flow)	
	Sensor technology	Ultrasonic with glycol and temperature compensation	
Safety data	Power source UL	Class 2 Supply	
	Degree of protection IEC/EN	IP54	
	Degree of protection NEMA/UL	NEMA 1	
	Enclosure	UL Enclosure Type 1	
	Agency Listing	cULus acc. to UL60730-1A/-2-14, CAN/CSA E60730-1:02 CE acc. to 2014/30/EU and 2014/35/EU	
	Quality Standard	ISO 9001	
	UL 2043 Compliant	Suitable for use in air plenums per Section 300.22(C) of the NEC and Section 602 of the IMC	
	Ambient humidity	Max. 95% RH, non-condensing	
	Ambient temperature	-22...122°F [-30...50°C]	
	Storage temperature	-40...176°F [-40...80°C]	
Materials	Valve body	Cast iron - GG 25	
	Flow measuring pipe	Ductile cast iron - GGG50	
	Stem	stainless steel	
	Stem seal	EPDM (lubricated)	
	Seat	PTFE	
	Characterized disc	stainless steel	
	O-ring	EPDM (lubricated)	
	Ball	stainless steel	

Safety notes

⚠️

- WARNING: This product can expose you to lead which is known to the State of California to cause cancer and reproductive harm. For more information go to www.p65warnings.ca.gov

Product features

Application — Water-side control of heating and cooling systems for AHUs and water coils.

Operation — The Energy Valve is an energy metering pressure independent control valve that measures, documents and optimises water coil performance.

Flow measurement — *All flow tolerances are at 68°F [20°C] & water.

Accessories

Electrical accessories	Description	Type
	Replacement flow sensor for Belimo Energy Valve™, Ultrasonic 4" 100	M24400-EV
	Replacement temperature sensors for Belimo Energy Valve™, 65…150 1.5 m	EV-RT-15
	Replacement temperature sensors for Belimo Energy Valve™, 65…150 10 ft [3 m]	EV-RT-30
	Replacement temperature sensors for Belimo Energy Valve™, 65…150 16 ft [5 m]	EV-RT-50
	Replacement temperature sensors for Belimo Energy Valve™, 65…150 10 m	EV-RT-100
	Service tool, with ZIP-USB function, for programmable and communicative Belimo actuators, VAV controller and HVAC performance devices	ZTH US

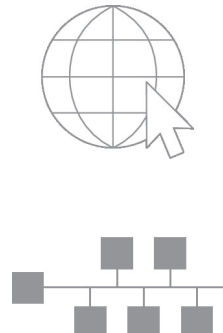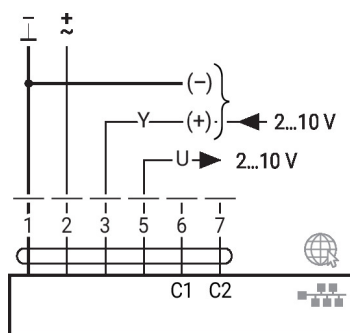| Mechanical accessories	Description	Type
	Weather shield for Belimo Energy Valve™, 100…150, Ultrasonic models only	ZS-EPIV-EV-150U

Electrical installation

Wire colors:
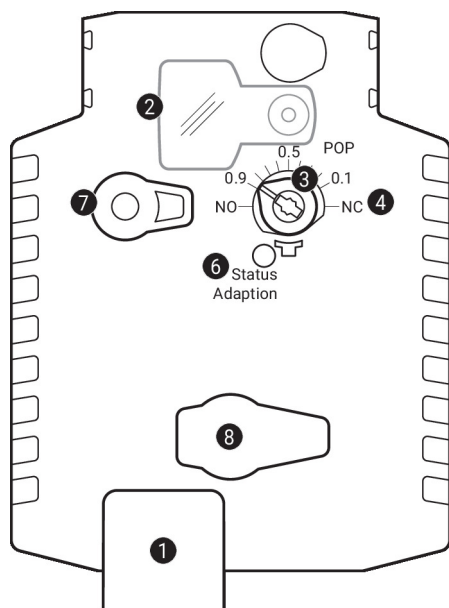1 = black
2 = red
3 = white
5 = orange
6 = pink
7 = grey

INSTALLATION NOTES
Ⓐ Actuators with appliance cables are numbered.

②̷ Actuators may be connected in parallel. Power consumption and input impedance must be observed.

③̷ Actuators may also be powered by DC 24 V.

⑱̷ Actuators with plenum cable do not have numbers; use color codes instead.

◆ Meets cULus requirements without the need of an electrical ground connection.

⚠ **Warning! Live electrical components!**
During installation, testing, servicing and troubleshooting of this product, it may be necessary to work with live electrical components. Have a qualified licensed electrician or other individual who has been properly trained in handling live electrical components perform these tasks. Failure to follow all electrical safety precautions when exposed to live electrical components could result in death or serious injury.

Connection of a notebook for parametrisation and manual control via RJ45.

Optional connection via RJ45 (direct connection to notebook / connection via Intranet or Internet) for access to the integrated web server

Operating controls and indicators

1 **LED display green**

Off:	No power supply or wiring error
On:	In operation
Flickering:	Internal communication (Valve/Sensor)

2 **Cover, POP button**

3 **POP button**

4 **Scale for manual adjustment**

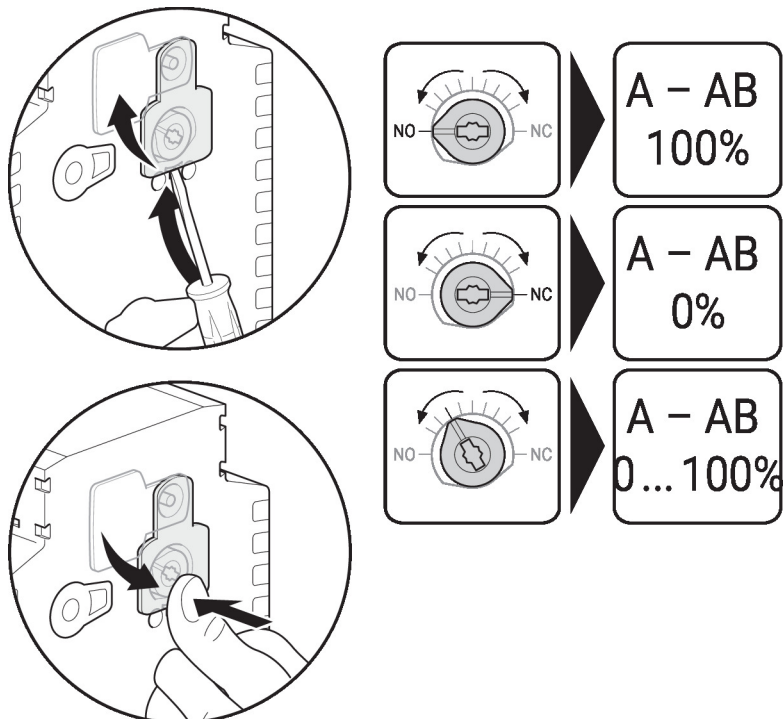**6** **Push-button and LED display yellow**

On:	Adaptation or synchronisation process active
Flashing:	POP function active
Off:	Not in operation, pre-charging time SuperCap, fault SuperCap
Press button:	Triggers angle of rotation adaptation, followed by standard mode

7 **Manual override button**

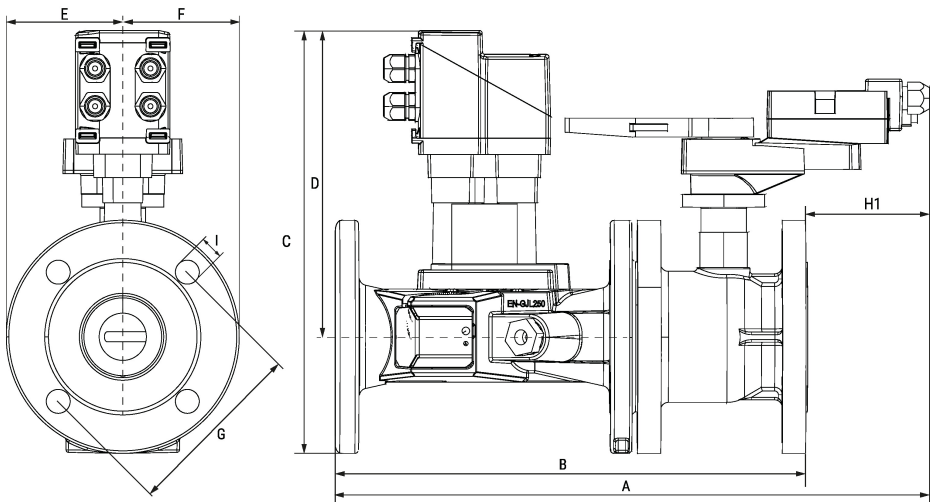| Press button: | Gear train disengages, motor stops, manual override possible |
| Release button: | Gear train engages, followed by standard mode |

8 **Service plug**
For connecting parametrisation and service tools

Setting fail-safe position

Setting emergency setting position (POP)

Dimensions

Dimensional drawings

Type								Weight	
EV400SU-317+GKRX24-EV								110 lb [50 kg]	
A	B	C	D	E	F	G	H1	I	Number of Bolt Holes
20.5" [521]	18.7" [474]	14.5" [368]	9.9" [251]	4.5" [114]	4.5" [114]	7.5" [191]	1.8" [46]	0.7" [19]	8