Configurable

Electr. 2-way PI-CCV Belimo Energy Valve™, 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+GRX24-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	8 W
	Transformer sizing	12 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
	Noise level Motor	45 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
	Pipe connection	Flange for use with ASME/ANSI class 125
	Servicing	maintenance-free

Technical data

Functional data	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

Accessories

Description	Type
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

(A) Actuators with appliance cables are numbered.

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

⚠3 Actuators may also be powered by DC 24 V.

⚠18 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.
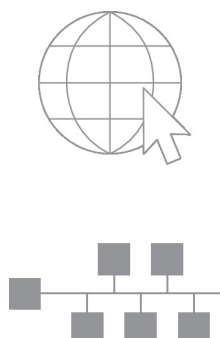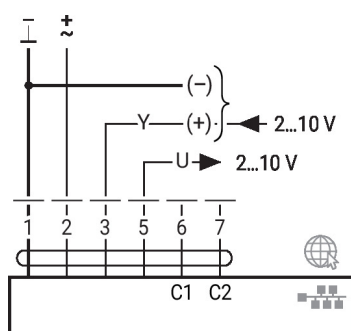
Connection of a notebook for parametrisation and manual control via RJ45.

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

Operating controls and indicators
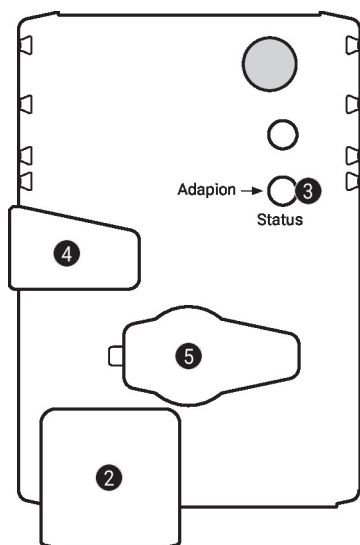
2 LED display green

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

3 Push-button and LED display yellow

| On: | Adaptation or synchronisation process active |
| Press button: | Triggers angle of rotation adaptation, followed by standard mode |

4 Manual override button

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

5 Service plug
For connecting parametrisation and service tools

Dimensions

Dimensional drawings
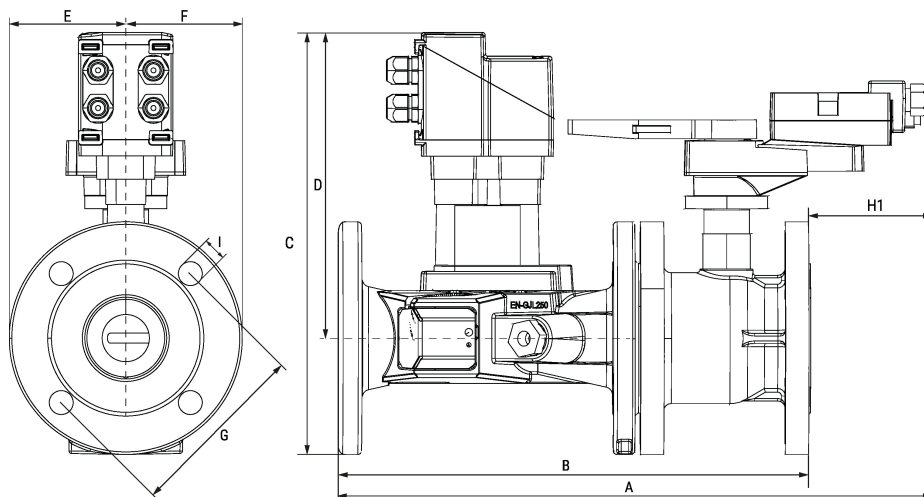
Type										Weight
EV400SU-317+GRX24-EV										110 lb [50 kg]
A	B	C	D	E	F	G	H1	I	Number of Bolt Holes	
20.5" [521]	18.7" [474]	14.5" [368]	9.9" [251]	4.5" [114]	4.5" [114]	7.5" [191]	1.8" [46]	0.7" [19]	8	