



5-year warranty


**Technical data**

<b>Electrical data</b>	Nominal voltage	AC/DC 24 V
	Nominal voltage frequency	50/60 Hz
	Power consumption in operation	14 W (0.5" to 2"), 16 W (2.5" to 6")
<b>Data bus communication</b>	Communicative control	BACnet IP BACnet MS/TP Modbus RTU Modbus TCP MP-Bus
	Number of nodes	Max. 32 (without repeater)
<b>Functional data</b>	Valve size [mm]	3" [80]
	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
	Options positioning signal	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
	Sound power level Motor	45 dB(A)
	Noise level, fail-safe	45 dB(A)
	Control accuracy	±5%
	Min. controllable flow	1% of V <sup>nom</sup>
	Fluid	chilled or hot water, up to 60% glycol max (open loop/steam not allowed)
	Fluid Temp Range (water)	14...250°F [-10...120°C]
	Close-off pressure Δps	310 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 250, standard class B
GPM	180	
Servicing	maintenance-free	
Manual override	external push button	
<b>Flow measurement</b>	Measuring accuracy flow	±2%*
	Measurement Repeatability	±0.5% (Flow)
	Sensor Technology	Ultrasonic with glycol and temperature compensation

<b>Temperature measurement</b>	Remote Temperature Sensor Length	Optional: 4.9 ft. [1.5m], 9.8 ft. [3m], 16.4 ft. [5m] Standard: 32.8 ft. [10m]
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<b>Safety data</b>	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; Listed to UL 2043 - suitable for use in air plenums per Section 300.22(c) of the NEC and Section 602.2 of the IMC
	Quality Standard	ISO 9001
	Ambient temperature	-22...122°F [-30...50°C]
	Storage temperature	-40...176°F [-40...80°C]
	Ambient humidity	Max. 95% RH, non-condensing
<b>Materials</b>	Valve body	Cast iron - GG 25
	Flow measuring pipe	Ductile cast iron - GGG50
	Spindle	stainless steel
	Spindle seal	EPDM (lubricated)
	Characterized disc	stainless steel
	Seat	PTFE
	Pipe connection	pattern to mate with ANSI 250 flange
	O-ring	Viton
	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](http://www.p65warnings.ca.gov)

**Product features**

<b>Product features</b>	The Energy Valve measures energy using its built-in electronic flow sensor and supply and return temperature sensors. Controls power with its Power Control logic providing linear heat transfer regardless of temperature and pressure variations. Manages Low Delta-T syndrome with its built in Delta-T manager. An IoT device utilizing cloud-based technology to optimize performance.
<b>Application</b>	Water-side control of heating and cooling systems for AHUs and water coils.
<b>Operation</b>	The Energy Valve is an energy metering pressure independent control valve that measures, documents and optimises water coil performance.

**Product features**

<b>Flow measurement</b>	*All flow tolerances are at 68°F [20°C] & water.
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## Accessories

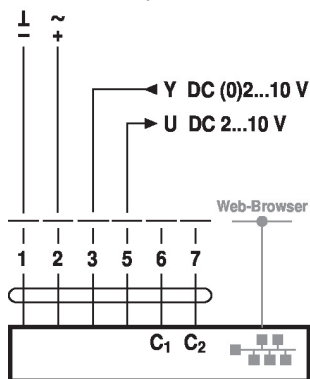
Electrical accessories	Description	Type
	Replacement flow sensor for Belimo Energy Valve™, electromagnetic	EV FS-60
	Replacement temperature sensors for Belimo Energy Valve™, 65...150 1.5 m	EV-RT-15
	Replacement temperature sensors for Belimo Energy Valve™, 65...150 10 ft [3 m]	EV-RT-30
	Replacement 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

## Electrical installation

**INSTALLATION NOTES**

- Actuators with appliance cables are numbered.
- Actuators may be connected in parallel. Power consumption and input impedance must be observed.
- Actuators may also be powered by DC 24 V.
- 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.

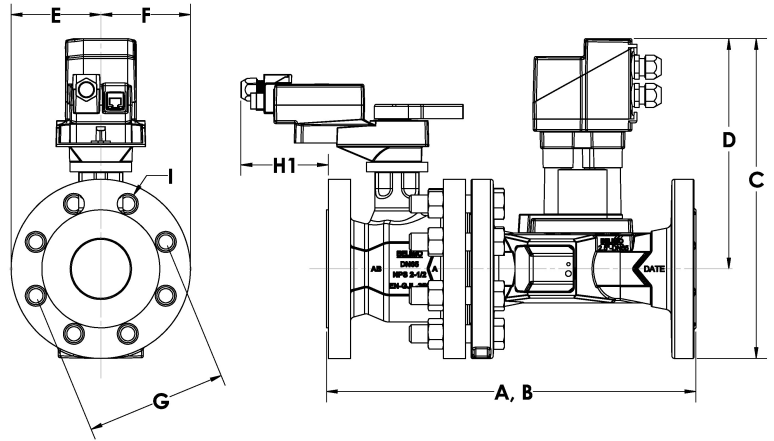
## Conventional operation


**Cable colors:**

- 1 = black
- 2 = red
- 3 = white
- 5 = orange
- 6 = pink
- 7 = grey

Dimensions

Dimensional drawings



Type

EV300SU-180-250+AKRX24-EV

Weight

86 lb [39 kg]

A	B	C	D	E	F	G	H1	I
17.0" [433]	17.0" [433]	14.0" [356]	9.9" [251]	4.1" [105]	4.1" [105]	6.6" [168]	3.3" [85]	0.9" [22]