

## Butterfly Valve with Lug types

- Disc 304 stainless steel
- Bubble tight shut-off
- Resilient seat
- Valve face-to-face dimensions comply with API 609 & MSS-SP-67
- Completely assembled and tested, ready for installation



5-year warranty

## Type overview

Type	DN
F680HD	80

## Technical data

<b>Functional data</b>	Valve size [mm]	3" [80]
	Fluid	chilled or hot water, up to 60% glycol
	Fluid Temp Range (water)	-22...250°F [-30...120°C]
	Body Pressure Rating	ANSI Class Consistent with 125, 232 psi CWP
	Close-off pressure $\Delta$ ps	200 psi
	Flow characteristic	modified equal percentage
	Leakage rate	0% leakage, leakage rate A
	Servicing	maintenance-free
	Flow Pattern	2-way
	Controllable flow range	90° rotation
	Cv	302
	Maximum Velocity	12 FPS
	Lug threads	5/8-11 UNC
<b>Materials</b>	Valve body	Ductile cast iron ASTM A536
	Body finish	epoxy powder coating (blue RAL 5002)
	Stem	416 stainless steel
	Stem seal	EPDM (lubricated)
	Seat	EPDM
	Pipe connection	for use with ANSI class 125/150 flanges
	Bearing	RPTFE
	Disc	304 stainless steel
Gear operator materials	Gears - hardened steel	
<b>Suitable actuators</b>	Non-Spring	GRB(X)
	Spring	(2*AFB(X))
	Electrical fail-safe	GKRB(X)

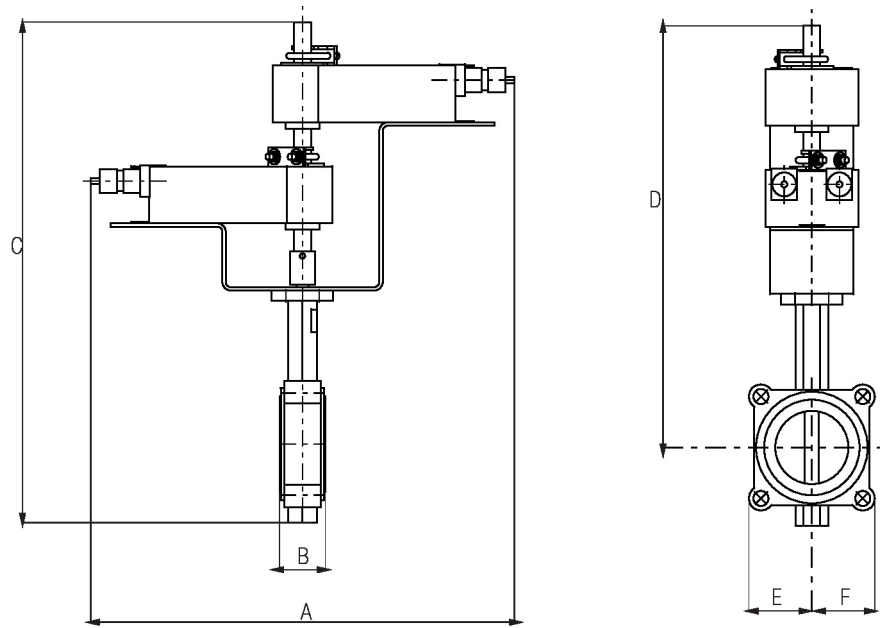
Product features

Flow/Mounting details



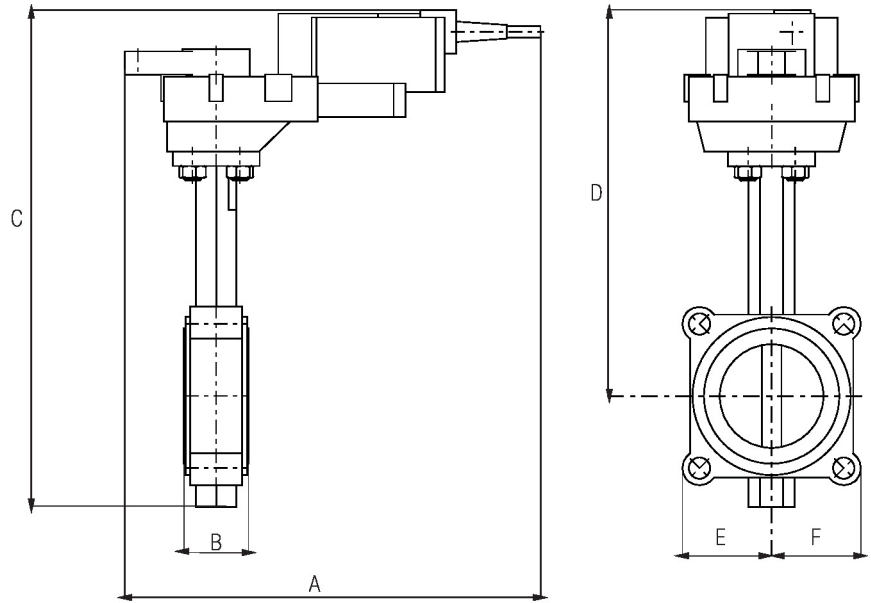
Dimensions

Type	DN	Weight
F680HD	80	6.9 lb [3.1 kg]



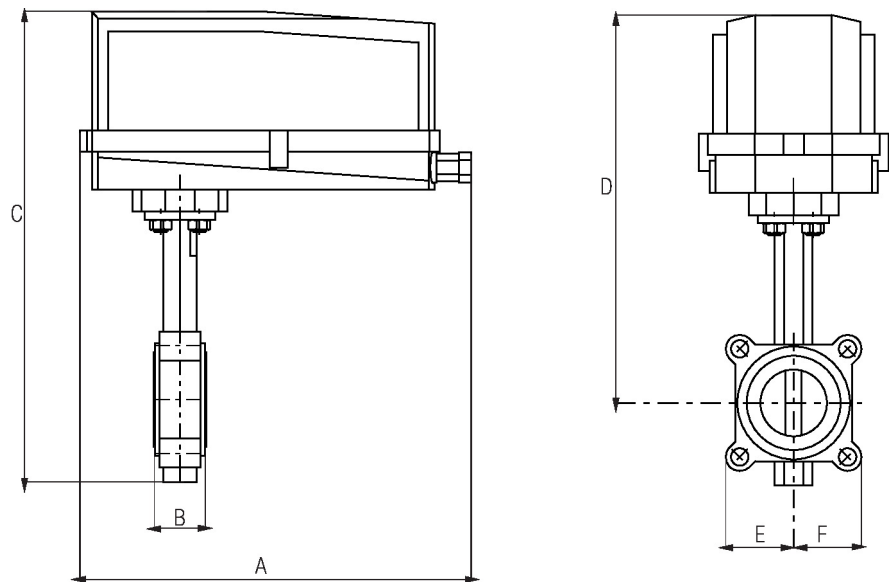
Valve with 2\*AF Actuator

A	B	C	D	E	F	Number of Bolt Holes
17.6" [448]	1.9" [49]	21.4" [544]	18.0" [457]	3.5" [89]	3.5" [89]	4



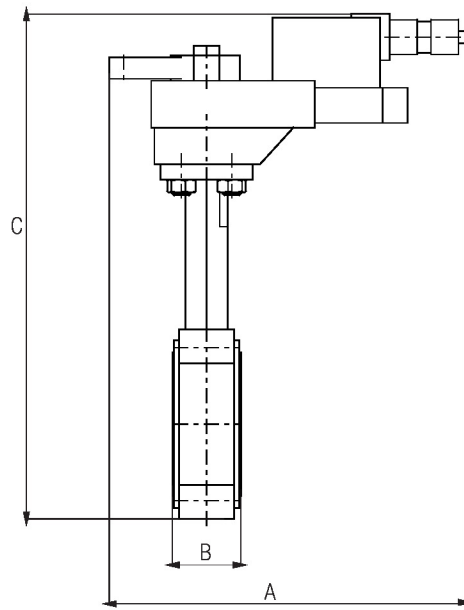
Valve with GK Actuator

A	B	C	D	E	F	Number of Bolt Holes
10.9" [277]	1.9" [49]	16.5" [419]	13.1" [334]	3.5" [89]	3.5" [89]	4

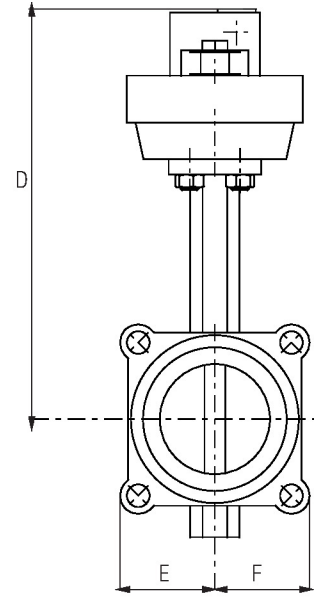


Valve with GR/GK..N4 Actuator

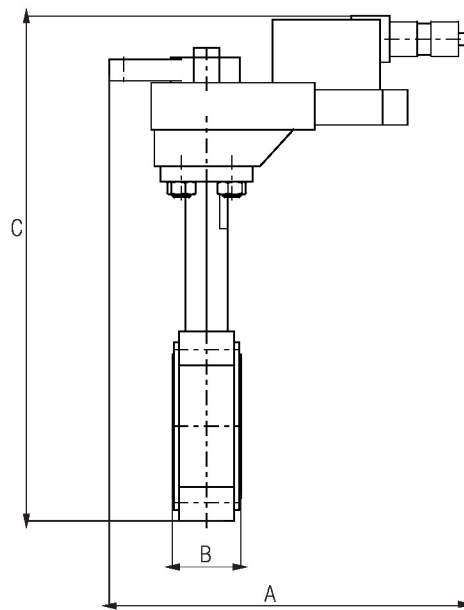
A	B	C	D	E	F	Number of Bolt Holes
14.1" [358]	1.9" [49]	17.8" [451]	14.3" [363]	3.7" [95]	3.7" [95]	4



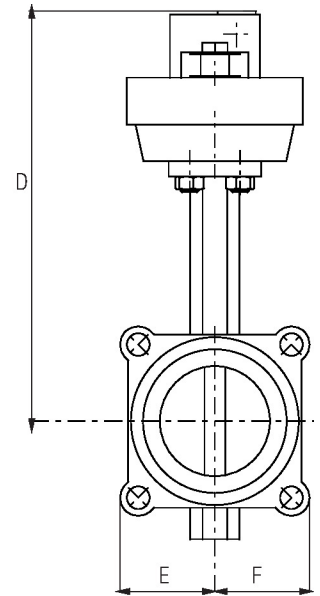
Valve with GR Actuator



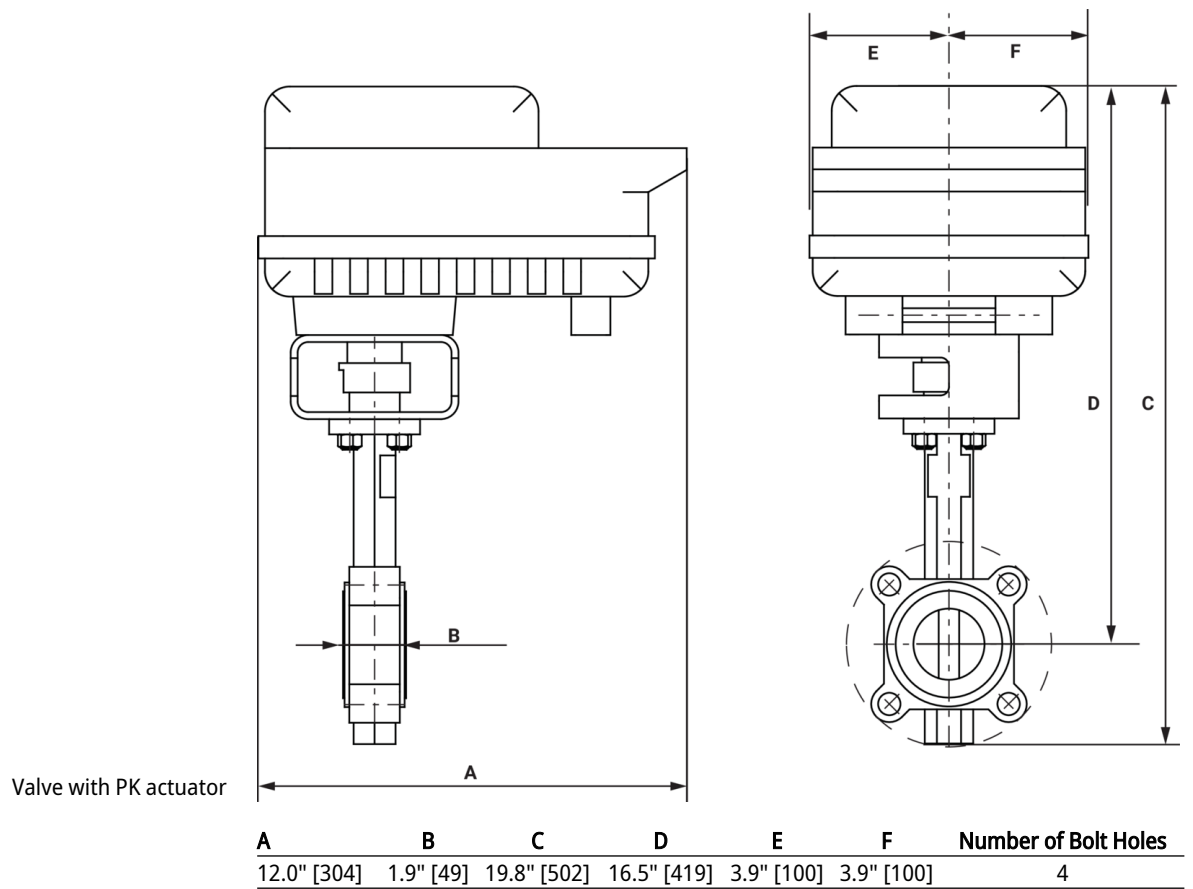
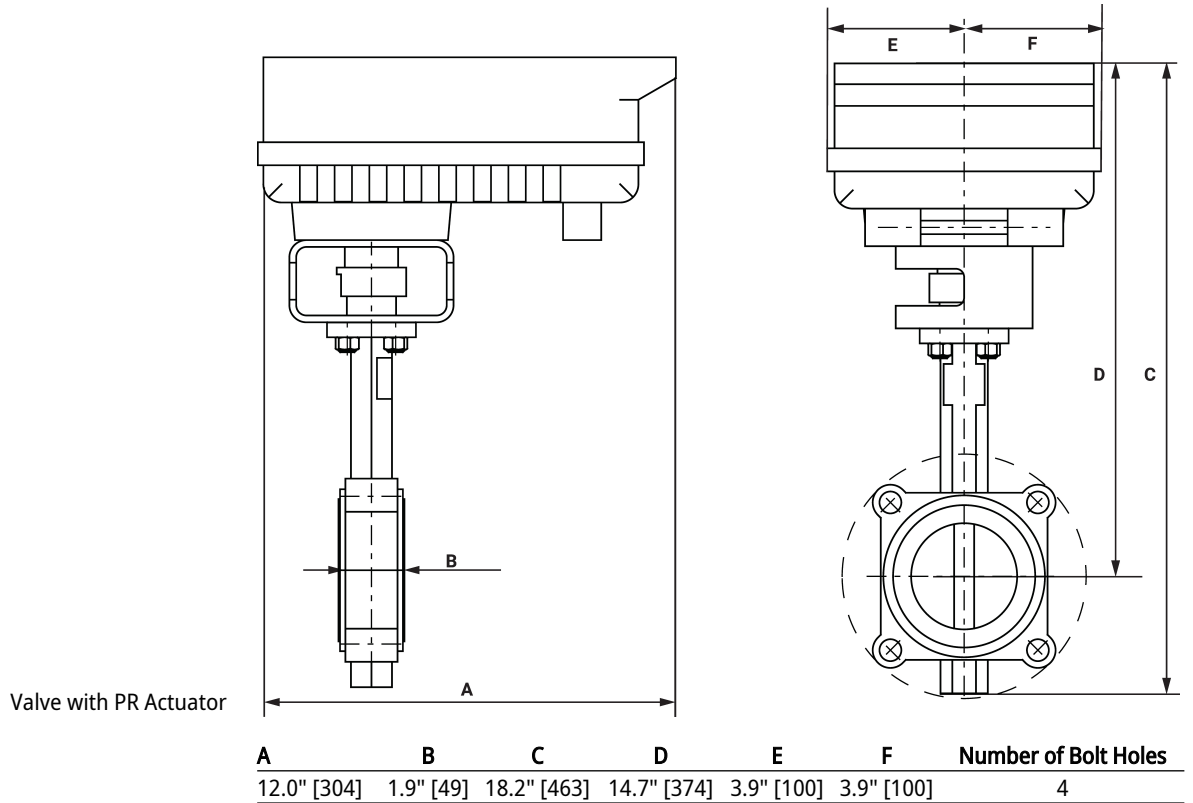
A	B	C	D	E	F	Number of Bolt Holes
10.8" [275]	1.9" [49]	14.3" [362]	11.0" [279]	3.5" [89]	3.5" [89]	4

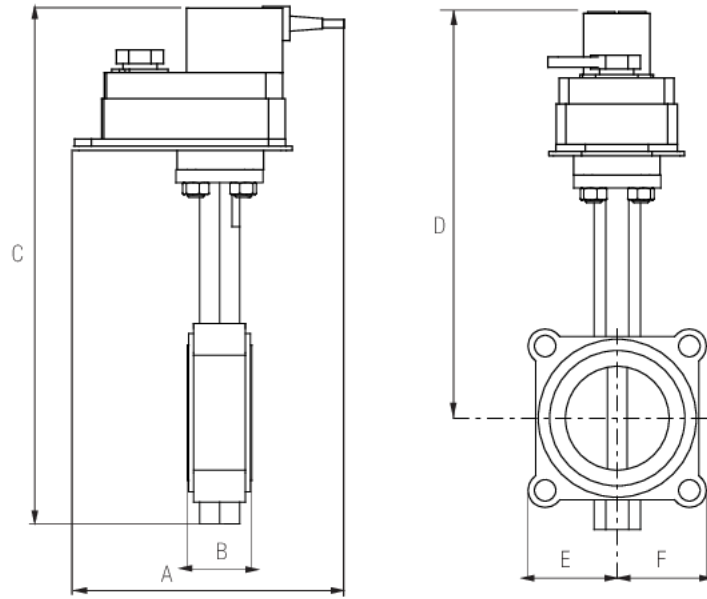


Valve with GM Actuator



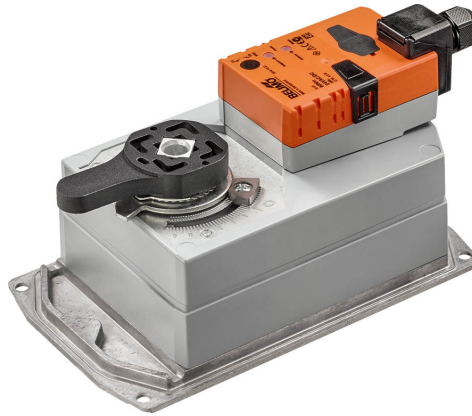
A	B	C	D	E	F	Number of Bolt Holes
9.1" [231]	1.9" [49]	16.5" [419]	13.1" [334]	3.5" [89]	3.5" [89]	4





Valve with DR actuator

A	B	C	D	E	F	Number of Bolt Holes
11.3" [286]	1.9" [49]	15.6" [397]	12.4" [315]	3.5" [89]	3.5" [89]	4



5-year warranty



Technical data

<b>Electrical data</b>	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	12 W	
	Power consumption in rest position	3 W	
	Transformer sizing	21 VA	
	Electrical Connection	Screw terminal (for 22 to 12 AWG wire)	
	Overload Protection	electronic throughout 0...90° rotation	
<b>Functional data</b>	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 for 2...10 V (0.1 mA), 500 Ω for 4...20 mA, 1500 Ω for On/Off	
	Operating range Y variable	Start point	0.5...30 V
		End point	2.5...32 V
	Operating modes optional	variable (VDC, on/off, floating point)	
	Position feedback U	2...10 V	
	Position feedback U note	Max. 0.5 mA	
	Position feedback U variable	VDC variable	
	Direction of motion motor	selectable with switch 0/1	
	Manual override	external push button	
	Running Time (Motor)	150 s / 90°	
	Running time motor variable	75...150 s	
	Noise level, motor	45 dB(A)	
Position indication	integrated into handle		
<b>Safety data</b>	Power source UL	Class 2 Supply	
	Degree of protection IEC/EN	IP54	
	Degree of protection NEMA/UL	NEMA 2	
	Enclosure	UL Enclosure Type 2	
	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]	
	Servicing	maintenance-free	

<b>Weight</b>	Weight	7.8 lb [3.5 kg]
<b>Materials</b>	Housing material	Die cast aluminium and plastic casing

**Accessories**

<b>Gateways</b>	<b>Description</b>	<b>Type</b>
	Gateway MP to BACnet MS/TP	UK24BAC
	Gateway MP to Modbus RTU	UK24MOD
	Gateway MP to LonWorks	UK24LON
<b>Electrical accessories</b>	<b>Description</b>	<b>Type</b>
	Battery backup system, for non-spring return models	NSV24 US
	Battery, 12 V, 1.2 Ah (two required)	NSV-BAT
	Feedback potentiometer 140 Ω add-on, grey	P140A GR
	Feedback potentiometer 5 kΩ add-on, grey	P5000A GR
	Feedback potentiometer 1 kΩ add-on, grey	P1000A GR
	Feedback potentiometer 2.8 kΩ add-on, grey	P2800A GR
	Feedback potentiometer 500 Ω add-on, grey	P500A GR
	Feedback potentiometer 10 kΩ add-on, grey	P10000A GR
	Auxiliary switch 1x SPDT add-on	S1A
	Auxiliary switch 2x SPDT add-on	S2A
	Connecting cable 16 ft [5 m], A: RJ11 6/4 ZTH EU, B: 6-pin for connection to service socket	ZK1-GEN
	Service tool, with ZIP-USB function, for programmable and communicative Belimo actuators, VAV controller and HVAC performance devices	ZTH US
<b>Mechanical accessories</b>	<b>Description</b>	<b>Type</b>
	Terminal-strip cover for NEMA 2 rating (-T models).	ZS-T
<b>Tools</b>	<b>Description</b>	<b>Type</b>
	Connecting cable 10 ft [3 m], A: RJ11 6/4 ZTH EU, B: 3-pin Weidmüller and supply connection	ZK4-GEN
	Service tool, with ZIP-USB function, for programmable and communicative Belimo actuators, VAV controller and HVAC performance devices	ZTH US

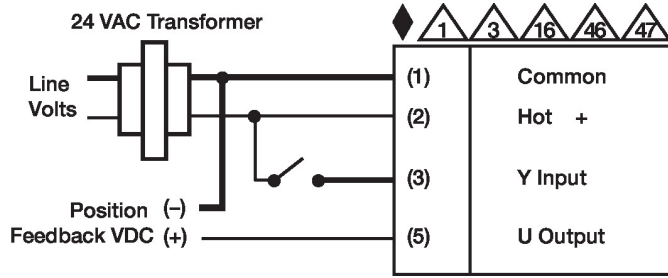
**Electrical installation**
**INSTALLATION NOTES**

- Provide overload protection and disconnect as required.
- Actuators may also be powered by DC 24 V.
- Only connect common to negative (-) leg of control circuits.
- A 500 Ω resistor (ZG-R01) converts the 4...20 mA control signal to 2...10 V.
- For triac sink the Common connection from the actuator must be connected to the Hot connection of the controller. Position feedback cannot be used with a triac sink controller; the actuator internal common reference is not compatible.
- IN4004 or IN4007 diode. (IN4007 supplied, Belimo part number 40155).
- Actuators are provided with a numbered screw terminal strip instead of a cable.
- 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.

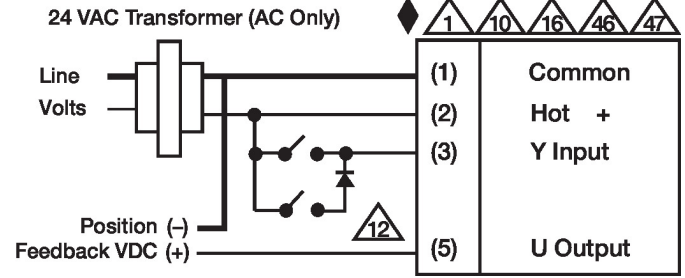


**Wiring diagrams**

On/Off



Floating Point



VDC/mA Control

