

Flanged Globe Valves 2½" to 6"

Pressure Compensated G6...C Series

G6...C	Two-way Pressure Compensated
G6...CS	Two-way Pressure Compensated Stainless Steel Trim
G6...LCS	Two-way Pressure Compensated Stainless Steel Trim Linear Characteristic

2½" to 6"

Service	Chilled/hot water, 60% glycol, steam
C_v Range	65 – 344
Material	Stainless steel stem, Bronze plug or Stainless plug
Control	On/Off, Floating Point Multi-Function Technology® Electronic Fail-Safe or Non-Spring Return



FEATURES

- Balanced Plug Design
- Spring Return Solutions for up to 6" Valves
- Bronze or Stainless Trim

BENEFITS

- Perfect for high close-off requirements
- Fail-safe on larger valves
- Covers wide range of operating temperatures
- Equal percent (G6C) (G6CS) or linear characteristic (G6LCS) for steam applications

Electronic
 G6...C(S), G7...(S) Series

G6...C(S)-250	Two-way Flanged ANSI 250 Bronze or Stainless Trim
G7...(S)	Three-way Flanged Bronze or Stainless Trim
G7...(S)-250	Three-way Flanged ANSI 250 Bronze or Stainless Trim

Three-way Valves available in Mixing or Diverting

2½" to 6"	
Service	Chilled/hot water, 60% glycol, steam (G6C)
C _v Range	65-344 (Two-way) 68-340 (Three-way Mixing) 68-248 (Three-way Diverting)
Material	Stainless steel stem, Bronze plug or Stainless plug
Control	On/Off, Floating Point, 2-10 VDC Multi-Function Technology® Electronic Fail-Safe or Non-Spring Return

FEATURES

- Complete flanged product range
- Mixing or diverting options
- Multi-Function Technology®
- ANSI 125/ANSI 250

BENEFITS

- Fits wide range of applications
- Capable of any control signal
- Suitable for piping systems



Warning!

Valve should not be used for combustible gas applications. Gas leaks and explosions may result. Do not install in systems which exceed the ratings of the valve.

- Avoid installations where valve may be exposed to excessive moisture, corrosive fumes, vibration, high ambient temperatures, elements, or high traffic areas with potential for mechanical damage.
- Valve assembly location must be within ambient ratings of actuator. If the temperature is below -22°F, a heater is required.
- The valve assembly will require heat shielding, thermal isolation, or cooling at the actuator if combined effect of medium and ambient temperatures (conduction, convection, and radiation) is above 122°F for prolonged time periods.
- Strainers should be installed before coil and valve.
- Visual access must be provided. Assembly must be accessible for routine service. Contractor should provide unions for removal from line and isolation valves.
- Avoid excessive stresses. Mechanical support must be provided where reducers have been used and the piping systems may have less structural integrity than full pipe sizes.
- Vertical pipes with valves and dual actuators may require support for linkage.
- Sufficient upstream and downstream piping runs must be provided to ensure proper valve capacity and flow response. Five diameters in each direction are recommended.
- Life span of the valve stems and packing is dependent on maintaining non-damaging conditions. Poor water treatment or filtration, corrosion, scale or other particulate can result in damage to trim components. A water treatment specialist should be consulted.
 1. Inspect shipping package, valve, linkage, and actuator for physical damage. If shipping damage has occurred, notify appropriate carrier. Do not install.
 2. If this is a replacement, remove the existing valve, linkage, and actuator from the piping system.
 3. If actuator and linkage are removed, they must be reinstalled correctly. The actuator must be rotated so that the valve seats properly for close-off.
 4. Install valve with the proper ports as inlets and outlets. See piping charts on next page. Check that inlet and outlet of 2-way valves are correct; check that the "A", "B", and "AB" ports of 3-way valves are piped correctly. Flow direction arrows must be correct.
 5. Blow out all piping and thoroughly clean below valve installation.
 6. Clean male pipe threads with wire brush and rag. If threads have been damaged or exposed to weather, running a tap or die over the threads may straighten them. Clean pipes, threads, and valve threads before installation. Check for any foreign material that can become lodged in trim components. Strainers should be cleaned after initial startup.
 7. Pipe sealing compound may not be applied to either flange or gasket.

8. Flanged bodies must be used with flanges which are rated for the service. 125 lb. flanges have flat faces and may not be bolted to raised face flanges. Gaskets rated for the medium and temperature-pressure must be used.
9. Valve must be installed with the stem towards the vertical, not below the horizontal.
10. Tighten bolts alternatively and evenly around the flange.
11. 2-way valve Normally Open (NO) or Normally Closed (NC) configurations must be verified by examining both the mechanical drawings and the valve and actuator.
12. 3-way valve Normally Open (NO) or Normally Closed (NC) configurations for the control port and the bypass port must be verified by examining both the mechanical drawings and the valve and actuator.

Check specifications for every application to be sure of ports and designations.

U, L, and C designations

U is for Upper, the control port.

L is for Lower, the bypass port.

C is for Common.

Viewed with the bonnet upwards and the U port on the left, the L port is the bottom port, and the C is the right port. With the stem up, L is open to Common. With the stem down, U is open to Common.

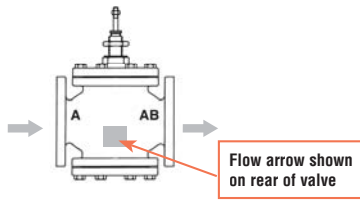
Flanged Globe Valves 2½" to 6"

Installation Instructions

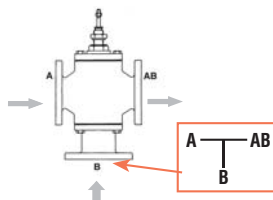


FLOW PATTERN – Flow Pattern is Marked on Valve

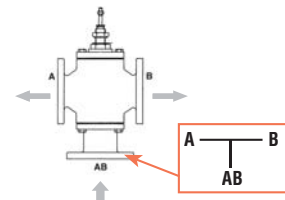
G6 2-way Valve
Stem Up = Open A to AB



G7 3-way Mixing Valve
Stem Up = Open B to AB



G7...D 3-way Diverting Valve
Stem Up = Open AB to B



VALVE ASSEMBLY SET-UP - Specify Upon Ordering

2-WAY VALVE

NON-SPRING RETURN STAYS IN LAST POSITION	EV, RV Series	NC: Normally closed A to AB, valve will open upon increase in signal/power. Note: To change valve to A to AB open, reverse the directional switch in actuator.	NO: Normally open A to AB, valve will close upon increase in signal/power. Note: To change valve to A to AB closed, reverse the directional switch in actuator.
SPRING RETURN NOTE FAIL POSITION	AFB, AFX Series On/Off	NO/FO: Normally open A to AB valve will drive closed. Spring Action: Will fail open A to AB upon power loss.	NC/FC: Normally closed A to AB valve will drive open. Spring Action: Will fail closed A to AB upon power loss.
	AFB, AFX MFT Series	NC/FO: Normally closed A to AB, valve will open upon increase in signal. Note: To change valve to A to AB open, reverse CW/CCW switch. Spring Action: Will fail open A to AB upon power loss.	NO/FC or NC/FC: Normally Open/Normally Closed: valve can be open or closed, will drive closed or open A to AB (can be chosen with CW/CCW switch). Spring Action: Closed A to AB upon power loss. NO/FO: Normally open A to AB. Spring Action: Will fail open A to AB upon power loss. (NO or NC action can be chosen with CW/CCW switch).
ELECTRONIC FAIL-SAFE	AVK, GK Series	NC/FO: Normally closed A to AB, valve will open upon increase in signal. Note: To change valve to A to AB open, reverse CW/CCW switch. Fail Position: Will default fail A to AB open, from the factory. Fail position can be set from 0%-100%, in 10% increments.	NO/FC or NC/FC: Valve: Can be open or closed, will drive closed or open A to AB (can be chosen with CW/CCW switch). Fail Position: Will default fail A to AB open, from the factory. Fail position can be set from 0%-100%, in 10% increments.
			NO/FO: Normally open A to AB. Fail Position: Will default fail A to AB open, from the factory. Fail position can be set from 0%-100%, in 10% increments.

3-WAY MIXING VALVE

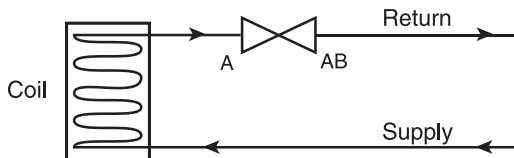
NON-SPRING RETURN STAYS IN LAST POSITION	EV, RV Series	NC: Normally closed A to AB, will open upon increase in signal/power. Note: To change valve to A to AB open, reverse the directional switch in actuator.	NO: Normally open A to AB, will close upon increase in signal/power. Note: To change valve to A to AB closed, reverse the directional switch in actuator.
SPRING RETURN NOTE FAIL POSITION	AFB, AFX Series On/Off	NO/FO Normally open A to AB, valve will drive closed. Spring Action: Will fail open A to AB upon power loss.	NC/FC Normally closed A to AB, valve will drive open. Spring Action: Will fail closed A to AB upon power loss.
	AFB, AFX MFT Series	NC/FO Normally closed A to AB, valve will open upon increase in signal. Note: To change valve to A to AB open, reverse CW/CCW switch. Spring Action: Will fail open A to AB upon power loss.	NO/FC or NC/FC Normally Open/Normally Closed: valve be open or closed, will drive closed or open A to AB (can be chosen with CW/CCW switch). Spring Action: Closed A to AB upon power loss. NO/FO Normally open A to AB. Spring Action: Will fail open A to AB upon power loss. (NO or NC action can be chosen with CW/CCW switch).
ELECTRONIC FAIL-SAFE	AVK, GK Series	NC/FO Normally closed A to AB, valve will open upon increase in signal. Note: To change valve to A to AB open, reverse CW/CCW switch. Fail Position: Will default fail A to AB open, from the factory. Fail position can be set from 0%-100%, in 10% increments.	NO/FC or NC/FC Valve: Can be open or closed, will drive closed or open A to AB (can be chosen with CW/CCW switch). Fail Position: Will default fail A to AB open, from the factory. Fail position can be set from 0%-100%, in 10% increments.
			NO/FO Normally open A to AB. Fail Position: Will default fail A to AB open, from the factory. Fail position can be set from 0%-100%, in 10% increments.

3-WAY DIVERTING VALVE

NON-SPRING RETURN STAYS IN LAST POSITION	EV, RV Series	NC: Normally closed AB to B, will open upon increase in signal/power. Note: To change valve to AB to B open, reverse the directional switch in actuator.	NO: Normally open AB to B, will close upon increase in signal/power. Note: To change valve to AB to B closed, reverse the directional switch in actuator.
SPRING RETURN NOTE FAIL POSITION	AFB, AFX Series On/Off	NO/FO Normally open AB to B, valve will drive closed. Spring Action: Will fail open AB to B upon power loss.	NC/FC Normally closed AB to B, valve will drive open. Spring Action: Will fail closed AB to B upon power loss.
	AFB, AFX MFT Series	NC/FO Normally closed AB to B, valve will open upon increase in signal. Note: To change valve to AB to B open, reverse CW/CCW switch. Spring Action: Will fail open AB to B upon power loss.	NO/FC or NC/FC Normally Open/Normally Closed: valve be open or closed, will drive closed or open AB to B (can be chosen with CW/CCW switch). Spring Action: Closed AB to B upon power loss. NO/FO Normally open AB to B. Spring Action: Will fail open AB to B upon power loss. (NO or NC action can be chosen with CW/CCW switch).
ELECTRONIC FAIL-SAFE	AVK, GK Series	NC/FO Normally closed AB to B, valve will open upon increase in signal. Note: To change valve to AB to B open, reverse CW/CCW switch. Fail Position: Will default fail AB to B open, from the factory. Fail position can be set from 0%-100%, in 10% increments.	NO/FC or NC/FC Valve: Can be open or closed, will drive closed or open AB to B (can be chosen with CW/CCW switch). Fail Position: Will default fail AB to B open, from the factory. Fail position can be set from 0%-100%, in 10% increments.
			NO/FO Normally open AB to B. Fail Position: Will default fail AB to B open, from the factory. Fail position can be set from 0%-100%, in 10% increments.

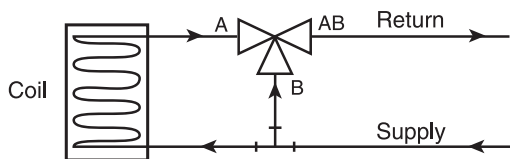
2-WAY

2-way Valve Piping Diagram
(1 Input, 1 Output)

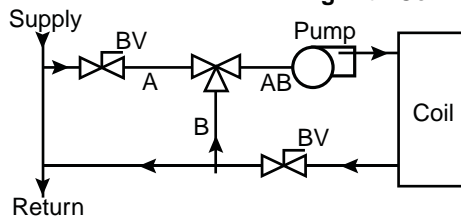


3-WAY MIXING

3-way Mixing Valve Piping Diagram
(2 Inputs, 1 Output)

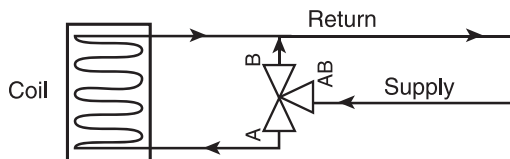


Mixing with Coil Pump



3-WAY DIVERTING

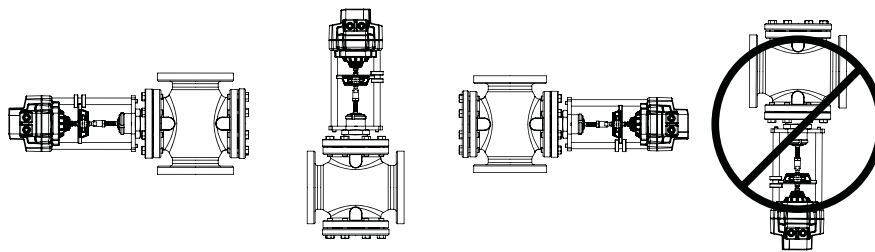
3-way Diverting Valve Piping Diagram
(1 Input, 2 Outputs)



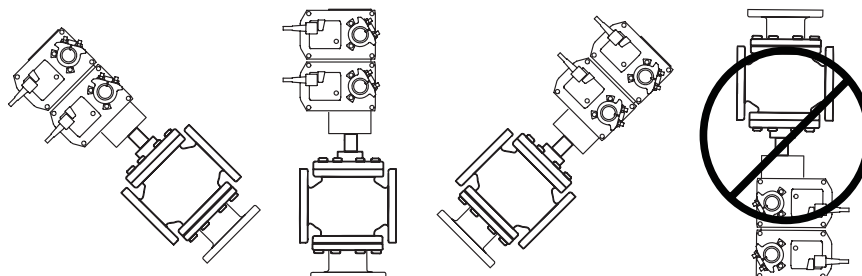
INSTALLATION

Valve must be installed in these orientations only.

Linear Actuators

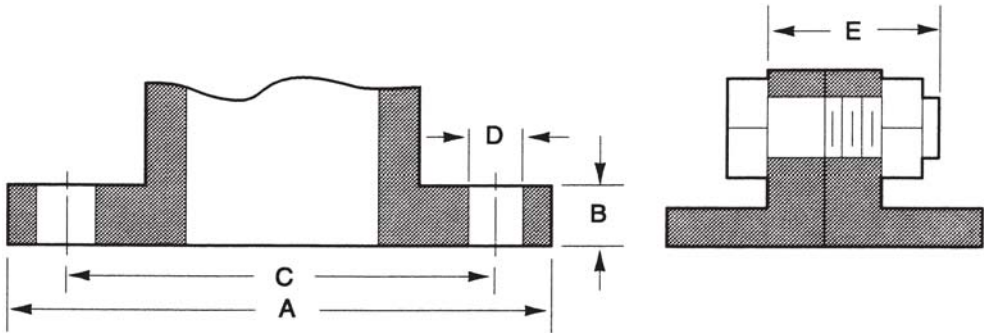


UGLK Linkage



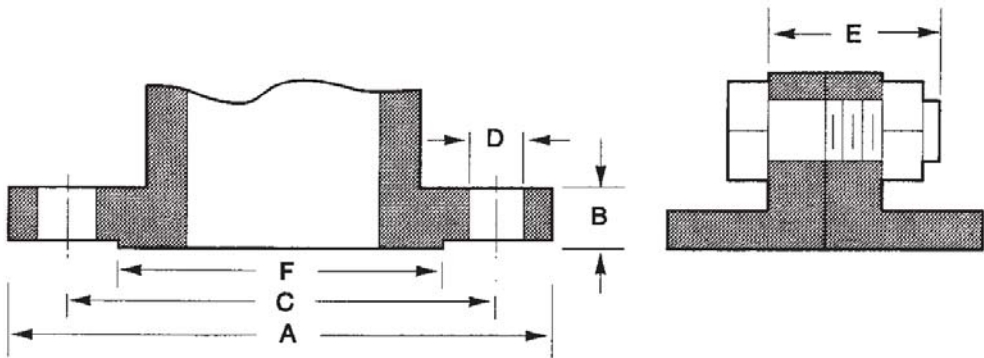
ANSI 125

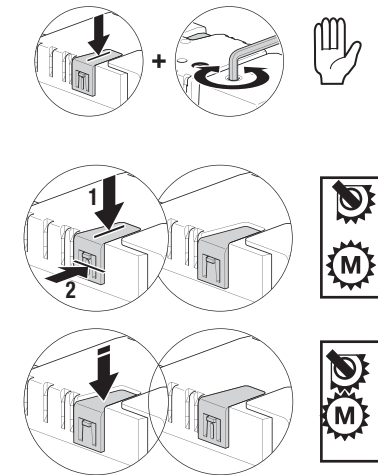
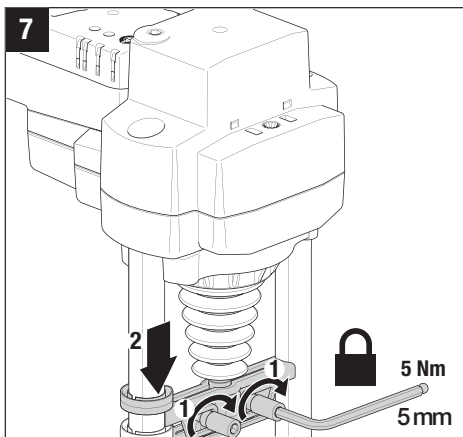
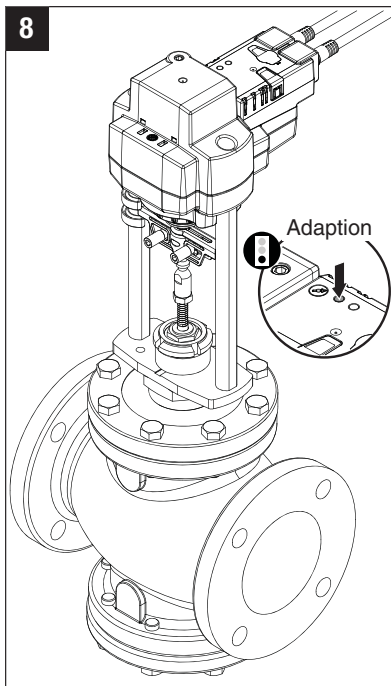
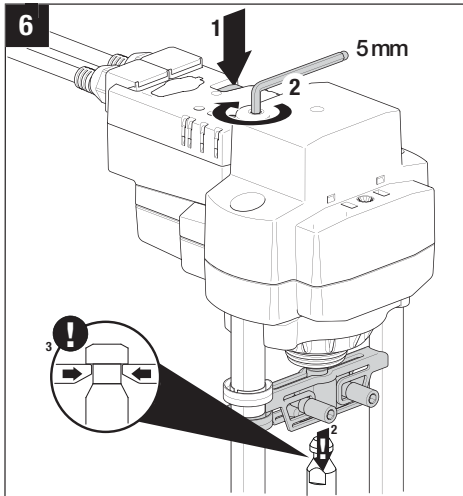
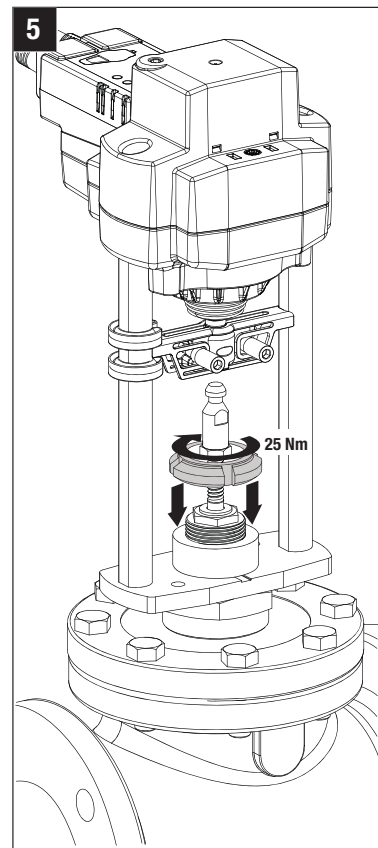
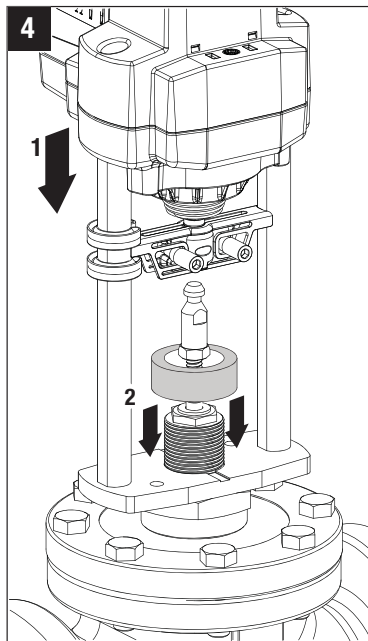
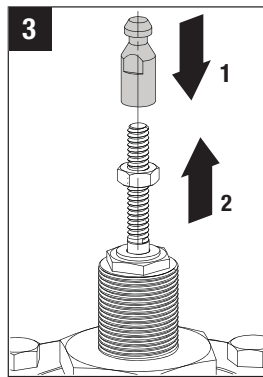
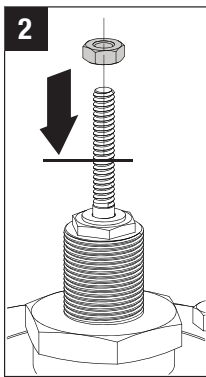
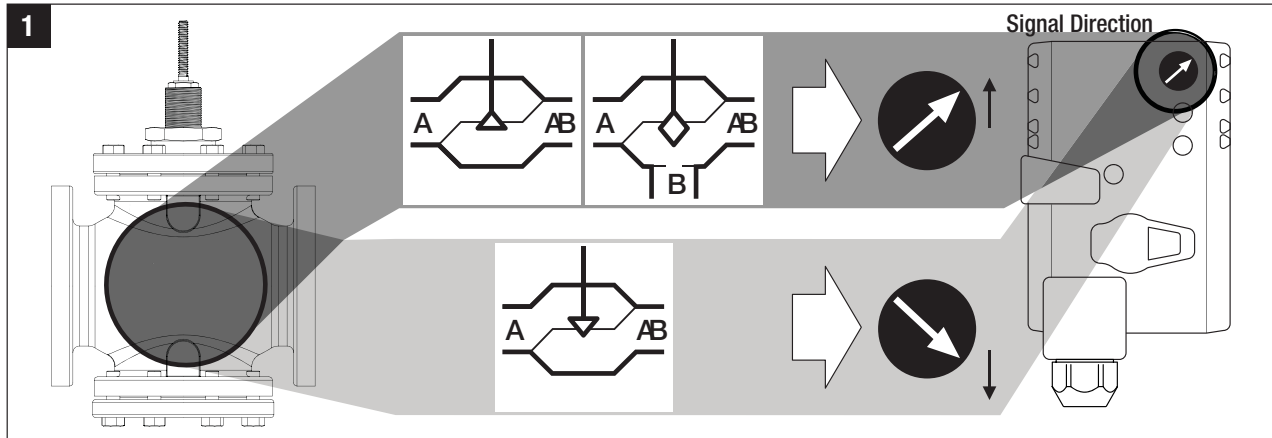
Flange Detail for American Standard 125 lb. Cast Iron Pipe Flanges												
	FLANGES			DRILLING		BOLTING						
Nominal Pipe Size	A	Flange Diameter	B	Flange Thickness	C	Diameter of Bolt Circle	D	Diameter of Bolt Holes	Number of Bolts	Diameter of Bolts	E	Length of Machine Bolts
2½"		7"		11⁄16"		5½"		¾"	4	5⁄8"		2½"
3"		7½"		¾"		6"		¾"	4	5⁄8"		2½"
4"		9"		15⁄16"		7½"		¾"	8	5⁄8"		3"
5"		10"		15⁄16"		8½"		7⁄8"	8	¾"		3"
6"		11"		1"		9½"		7⁄8"	8	¾"		3¼"



ANSI 250

Flange Detail for American Standard 250 lb. Cast Iron Pipe Flanges															
	FLANGES			DRILLING			BOLTING								
Nominal Pipe Size	A	Flange Diameter	B	Flange Thickness	F	Diameter of Raised Face	C	Diameter of Bolt Circle	D	Diameter of Bolt Holes		Number of Bolts	Diameter of Bolts	E	Length of Machine Bolts
2½"		7½"		1"		4 15⁄16"		5 7⁄8"		7⁄8"		8	¾"		3¼"
3"		8¼"		1 1⁄8"		5 11⁄16"		6 5⁄8"		7⁄8"		8	¾"		3¼"
4"		10"		1 ¼"		6 15⁄16"		7 7⁄8"		7⁄8"		8	¾"		3¾"
5"		11"		1 3⁄8"		8 5⁄16"		9 ¼"		7⁄8"		8	¾"		4"
6"		12½"		1 7⁄16"		9 11⁄16"		10 5⁄8"		7⁄8"		12	¾"		4"





Non-Spring Return Actuator with -3

On/Off

On/Off

On/Off

On/Off

On/Off

Non-Spring Return Actuator with -SR

Floating Point

Floating Point

Floating Point

Floating Point

Floating Point

Signal Direction

Signal Direction

Selector Switches

BRN	Brown	Marron	Brun	Marron
BLU	Blue	Azul	Bleu	Azul
ORG	Orange	Anaranjado	Orange	Alaranjado
PNK	Pink	Rosado	Rosa	Cor-de ros
WHT	White	Blanco	Blanc	Branco
RED	Red	Rogo	Rouge	Vermelho
BLK	Black	Negro	Noir	Preto

Selector Switches

Notes:

- Meets cULus requirements without the need of an electrical ground connection
- 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 24 VDC.
- Only connect common to neg. (-) leg of control circuits.
- A 500 Ohm resistor converts the 4 to 20 mA control signal to 2 to 10 VDC.
- Control signal may be pulsed from either the Hot (Source) or Common (Sink) 24 VAC line.
- Contact closures A & B also can be triacs. A & B should both be closed for the triac source and open for triac sink.
- 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 with plenum rated cable do not have numbers on wires; use color codes instead.

Notes:

On/Off

On/Off

On/Off

On/Off

On/Off

On/Off

Floating Point

Floating Point

Floating Point

Floating Point

Floating Point

Floating Point

Override Control Min, Mid, Max Postions

Functions	a	b	c
Min*	0%	50%	100%
Mid*	50%	100%	100%
Max*	100%	100%	100%
Normal**	Control mode acc. to Y	Control mode acc. to Y	Control mode acc. to Y

Override Control Min, Mid, Max Postions

Override Control Min, Mid, Max Postions

Functions	a	b	c
Min*	0%	50%	100%
Mid*	50%	100%	100%
Max*	100%	100%	100%
Normal**	Control mode acc. to Y	Control mode acc. to Y	Control mode acc. to Y

Override Control Min, Mid, Max Postions

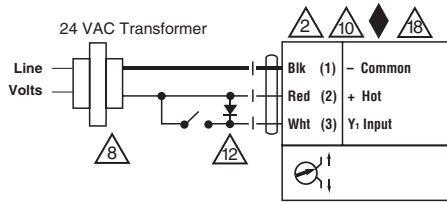
Override Control Min, Mid, Max Postions

Functions	a	b	c
Min*	0%	50%	100%
Mid*	50%	100%	100%
Max*	100%	100%	100%
Normal**	Control mode acc. to Y	Control mode acc. to Y	Control mode acc. to Y

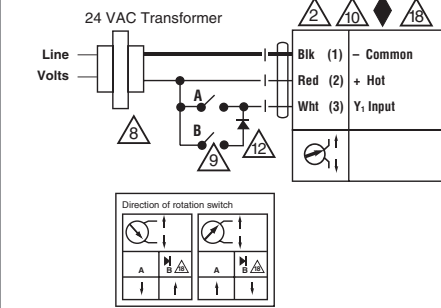
Override Control Min, Mid, Max Postions

8

Non-Spring Return Actuator with -3



On/Off



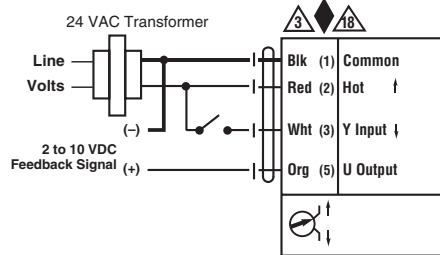
Floating Point

Signal Direction

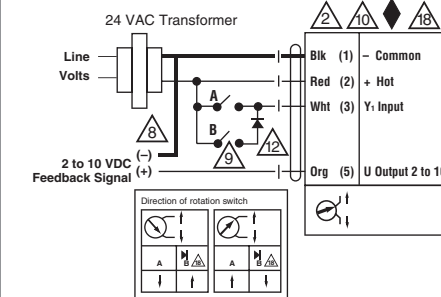


Selector Switches

Non-Spring Return Actuator with MFT



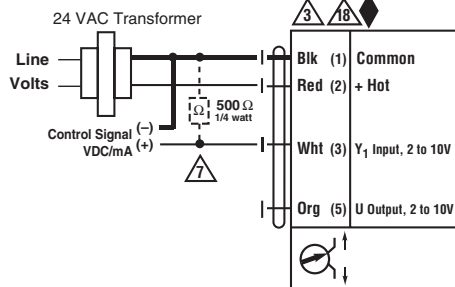
On/Off



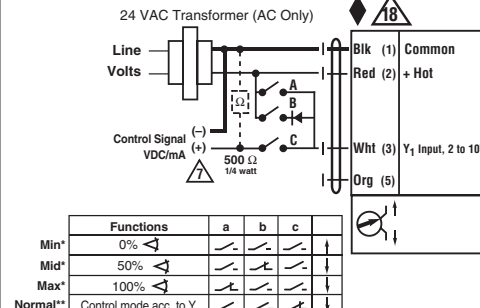
Floating Point

Notes:

- Meets cULus requirements without the need of an electrical ground connection
- 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 24 VDC.
- Only connect common to neg. (-) leg of control circuits.
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- IN4004 or IN4007 diode. (IN4007 supplied, Belimo Part number 40155)
- Actuators with plenum rated cable do not have numbers on wires; use color codes instead.



VDC / 4 to 20 mA



Override Control Min, Mid, Max Postions

* Default selectable 0-100%. See Configuration Data Sheet.
** Customizable. See Configuration Data Sheet.

BRN
Brown
Marron
Brun
Marron

BLU
Blue
Azul
Bleu
Azul

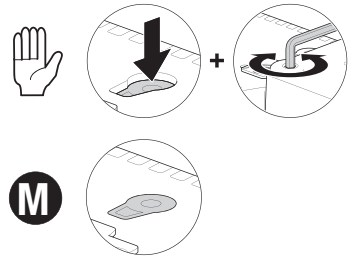
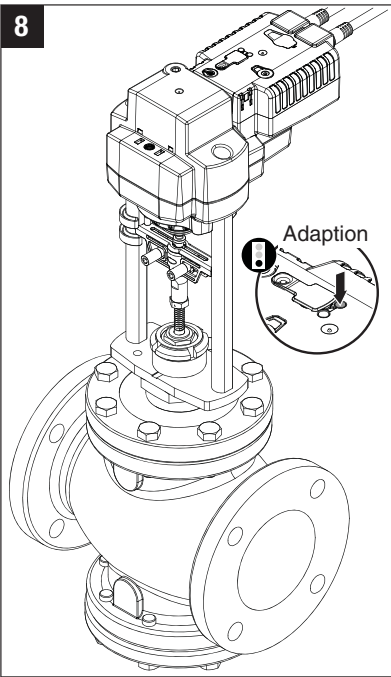
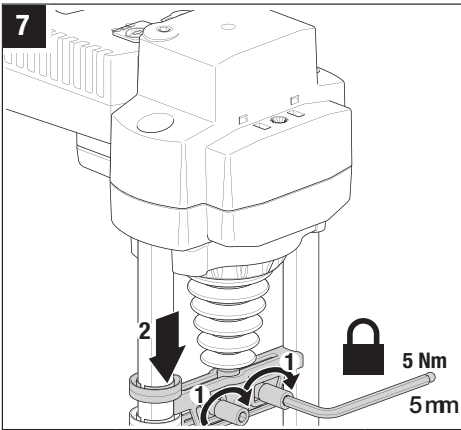
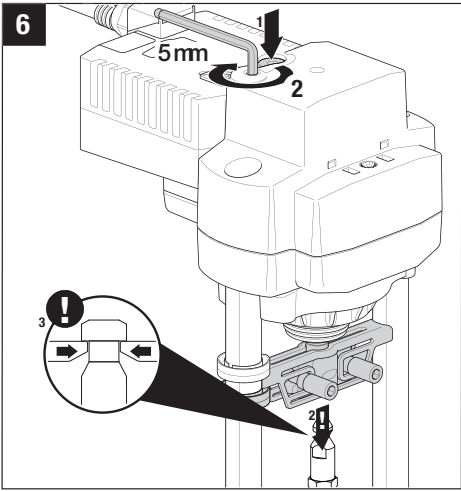
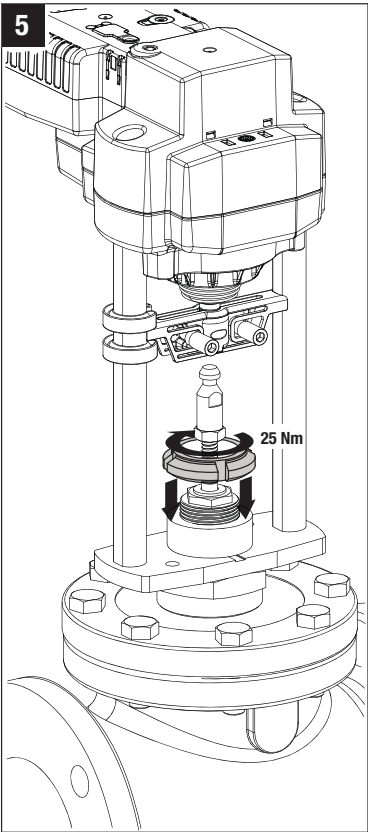
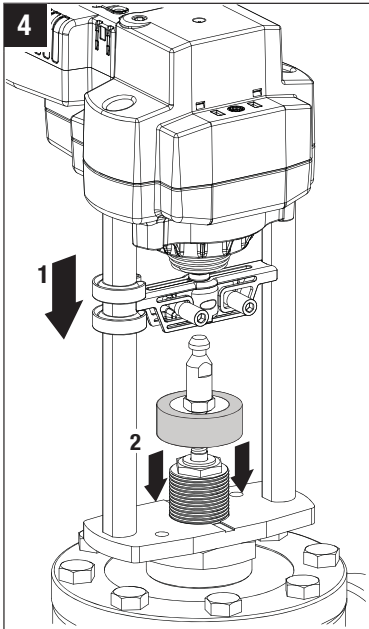
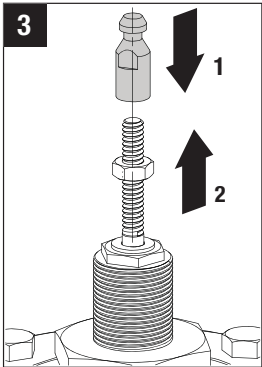
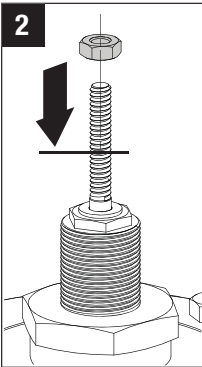
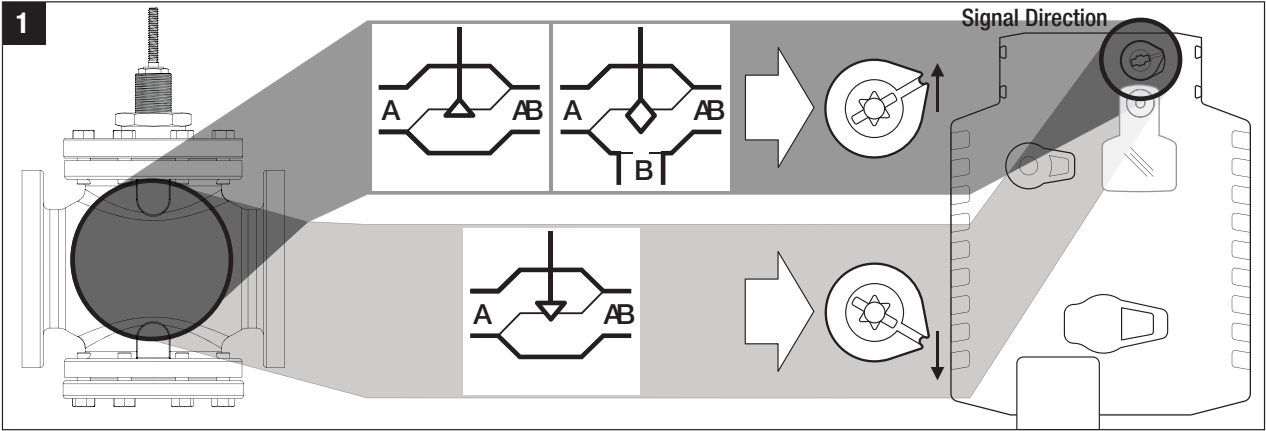
ORG
Orange
Anaranjado
Orange
Alaranjado

PNK
Pink
Rosado
Rosa
Cor-de ros

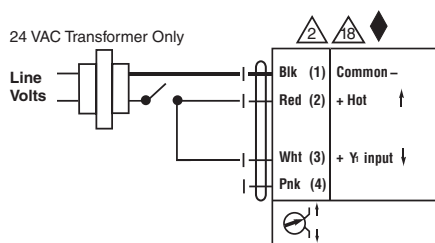
WHT
White
Blanco
Blanc
Branco

RED
Red
Rojo
Rouge
Vermelho

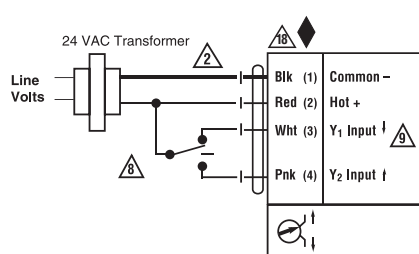
BLK
Black
Negro
Noir
Preto



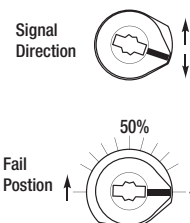
Electronic Fail-Safe Actuator with -3



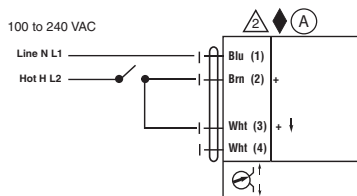
On/Off



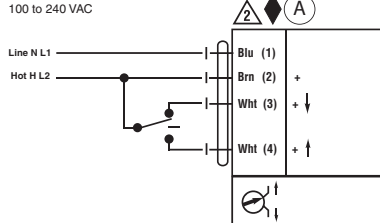
Floating Point



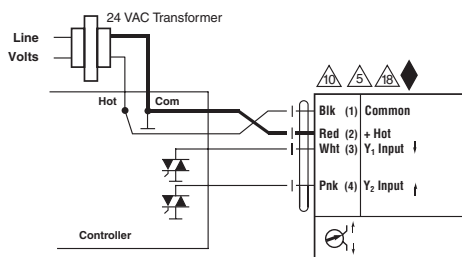
Selector Switches



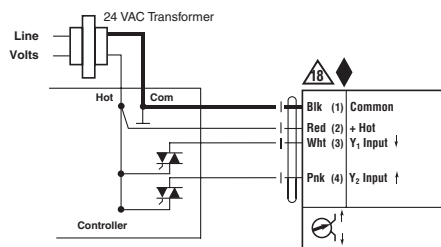
On/Off



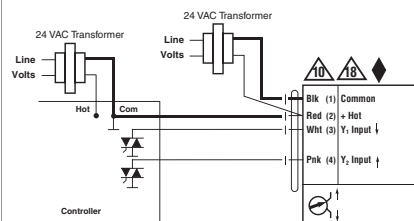
Floating Point



Triac Sink

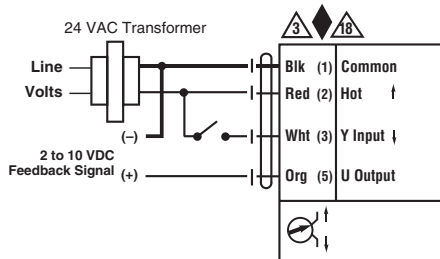


Triac Source

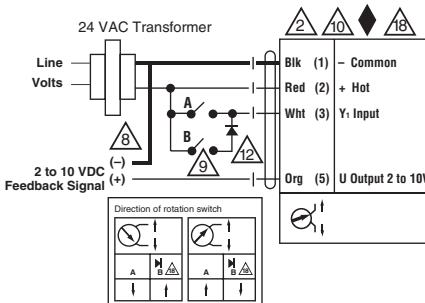


Triac Sink with Separate Transformer

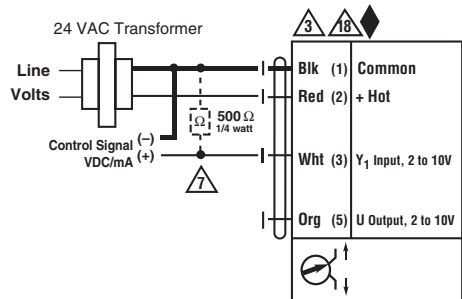
Electronic Fail-Safe Actuator with MFT



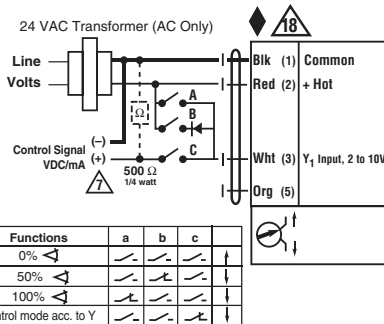
On/Off



Floating Point



VDC / 4 to 20 mA



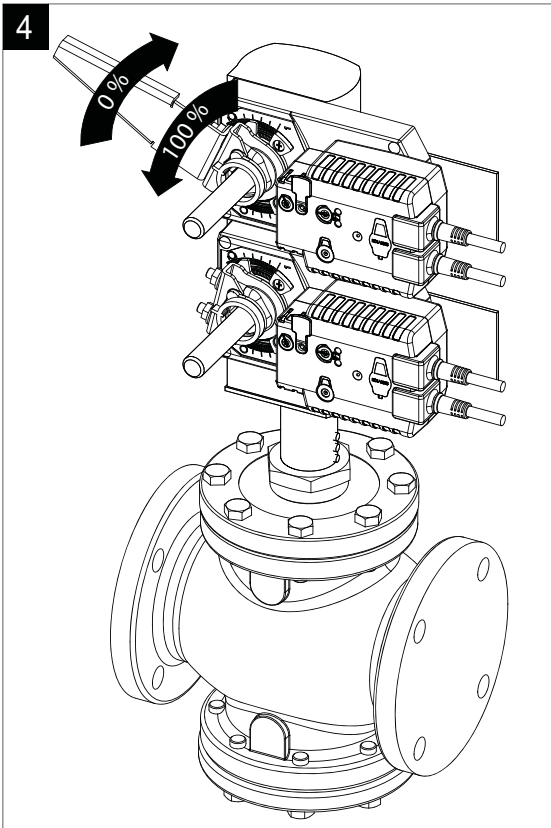
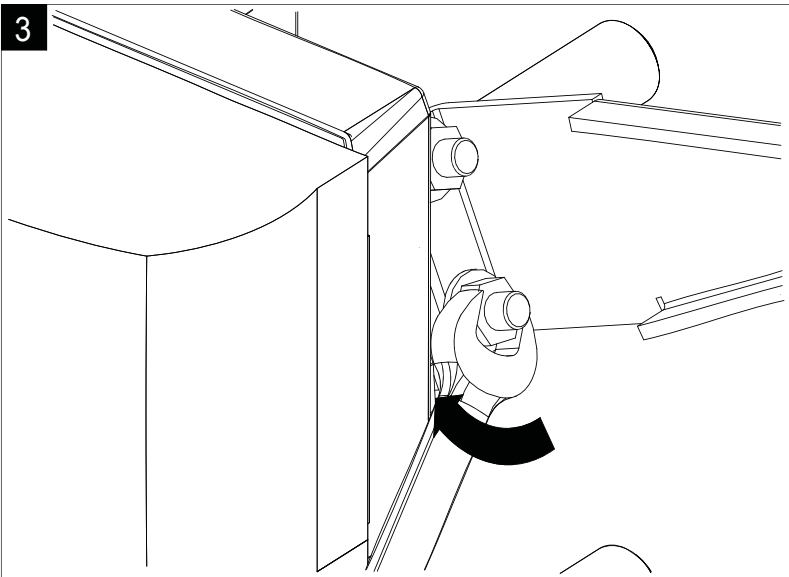
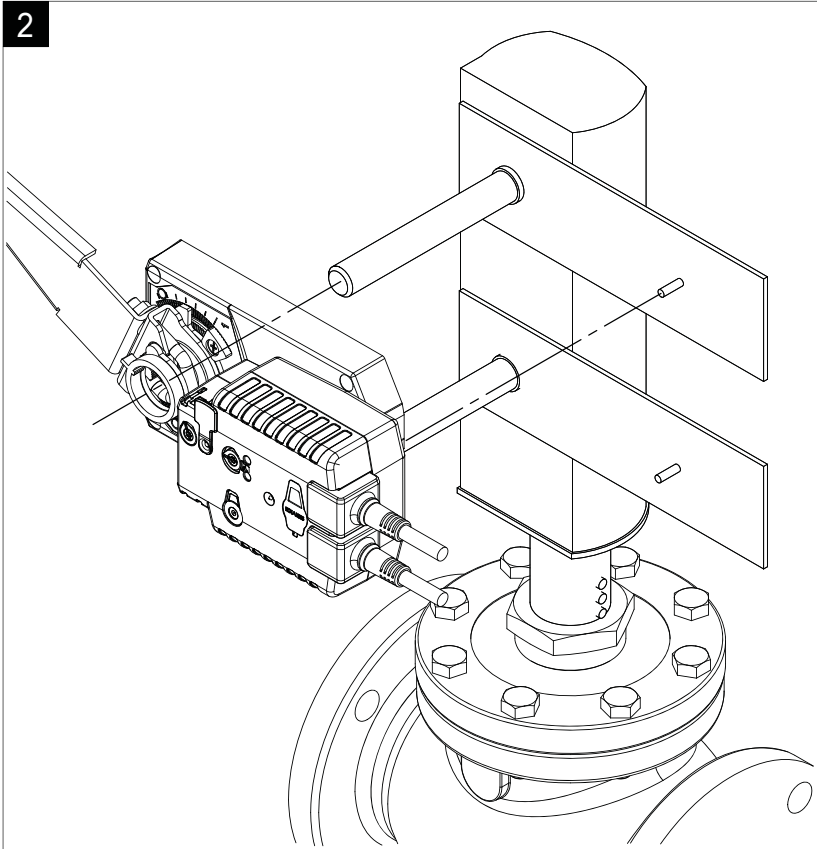
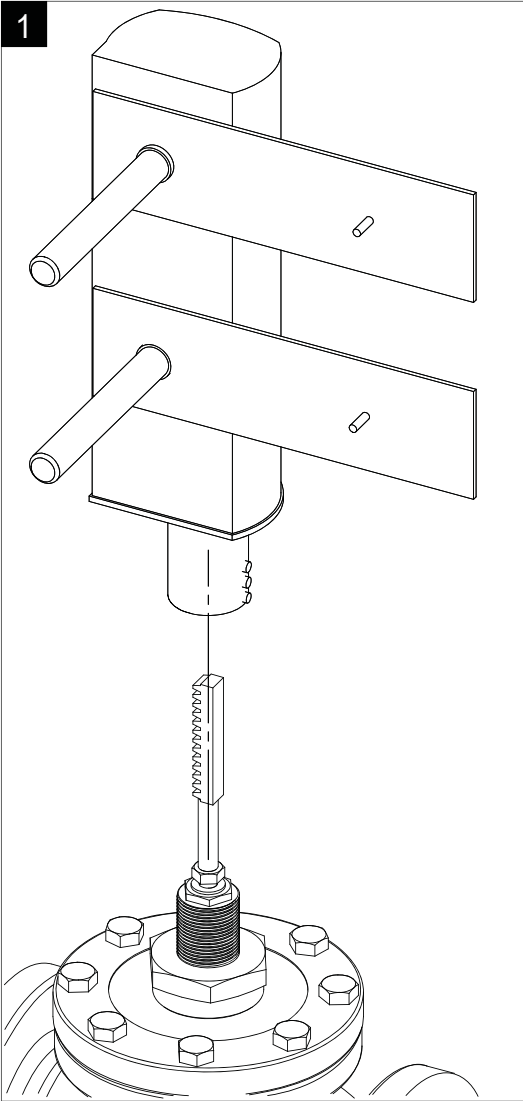
* Default selectable 0-100%. See Configuration Data Sheet.
** Customizable. See Configuration Data Sheet.

Override Control Min, Mid, Max Postions

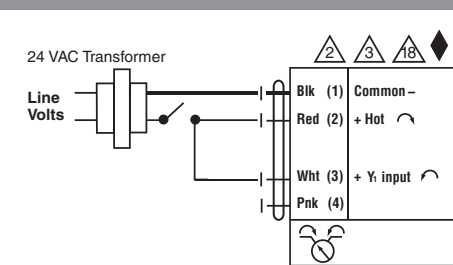
Notes:

- Meets cULus requirements without the need of an electrical ground connection
- 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 24 VDC.
- Only connect common to neg. (-) leg of control circuits.
- A 500 Ω resistor converts the 4 to 20 mA control signal to 2 to 10 VDC.
- Control signal may be pulsed from either the Hot (Source) or Common (Sink) 24 VAC line.
- Contact closures A & B also can be triacs. A & B should both be closed for the triac source and open for triac sink.
- 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 with plenum rated cable do not have numbers on wires; use color codes instead.

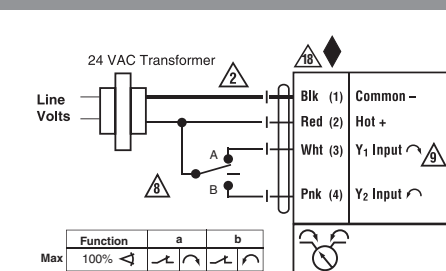
BRN	Brown	Marron	Brun	Marrom
BLU	Blue	Azul	Bleu	Azul
ORG	Orange	Anaranjado	Orange	Alaranjado
PNK	Pink	Rosado	Rosa	Cor-de ros
WHT	White	Blanco	Blanc	Branco
RED	Red	Rouge	Rouge	Vermelho
BLK	Black	Negro	Noir	Preto



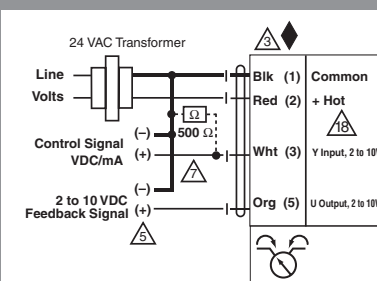
Electronic Fail-Safe Actuator with -3 and -SR



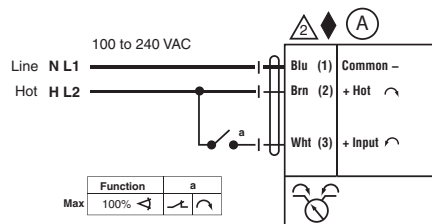
On/Off



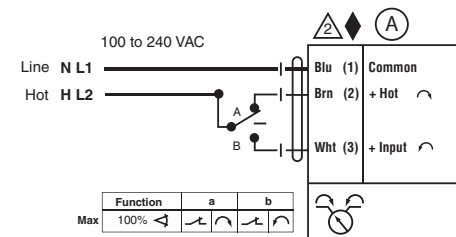
Floating Point



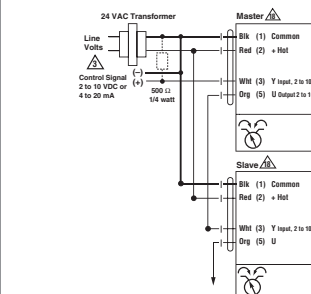
VDC / 4 to 20 mA



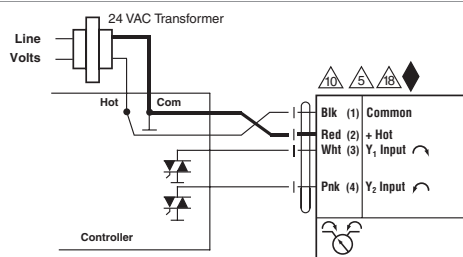
On/Off



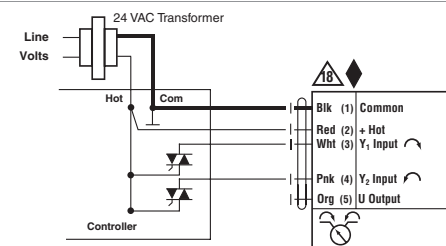
Floating Point



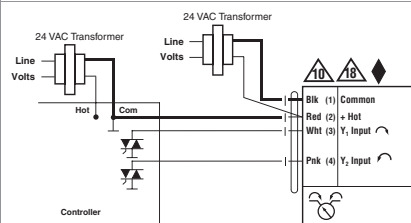
VDC / 4 to 20 mA (Master Slave)



Triac Sink

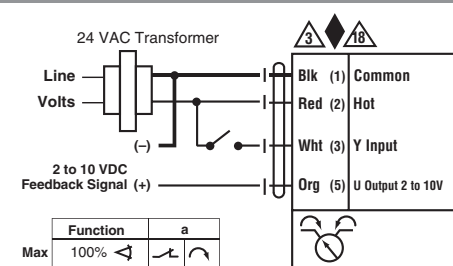


Triac Source

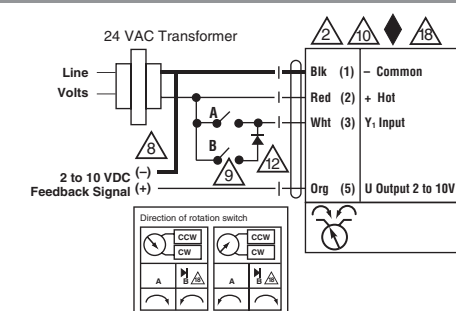


Triac Sink with Separate Transformer

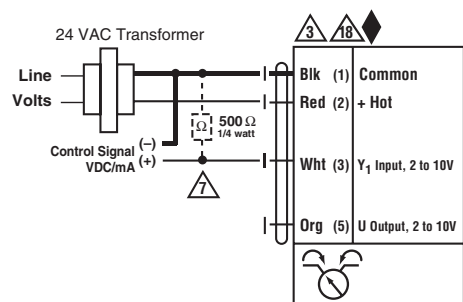
Electronic Fail-Safe Actuator with MFT



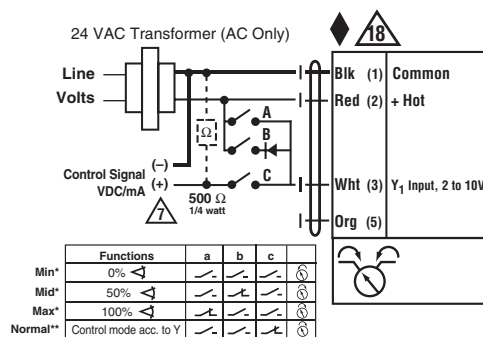
On/Off



Floating Point



VDC / 4 to 20 mA



Override Control Min, Mid, Max Postions

Notes:

- ◆ Meets cULus requirements without the need of an electrical ground connection
- Ⓐ 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 24 VDC.
- 5 Only connect common to neg. (-) leg of control circuits.
- 7 A 500 Ω resistor converts the 4 to 20 mA control signal to 2 to 10 VDC.
- 8 Control signal may be pulsed from either the Hot (Source) or Common (Sink) 24 VAC line.
- 9 Contact closures A & B also can be triacs. A & B should both be closed for the triac source and open for triac sink.
- 10 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.
- 12 IN4004 or IN4007 diode. (IN4007 supplied, Belimo Part number 40155)
- 18 Actuators with plenum rated cable do not have numbers on wires; use color codes instead.

BRN
Brown
Marron
Brun
Marrom

BLU
Blue
Azul
Bleu
Azul

ORG
Orange
Anaranjado
Orange
Alaranjado

PNK
Pink
Rosado
Rosa
Cor-de-ros

WHT
White
Bianco
Blanc
Branco

RED
Red
Rojo
Rouge
Vermelho

BLK
Black
Negro
Noir
Preto

Power-Off Position

FC	FO
A – AB = 0%	A – AB = 100%

On/Off

24V AC/DC

FC	FO
A – AB = 0%	A – AB = 100%

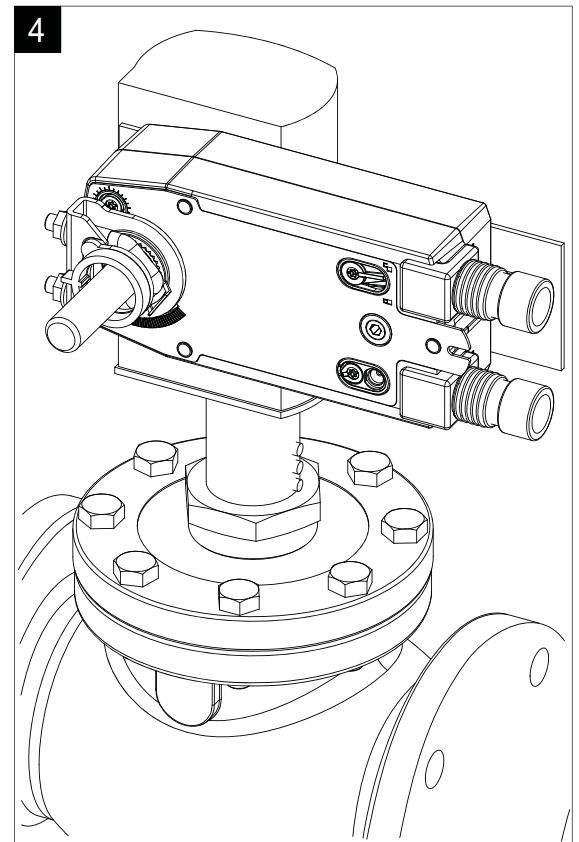
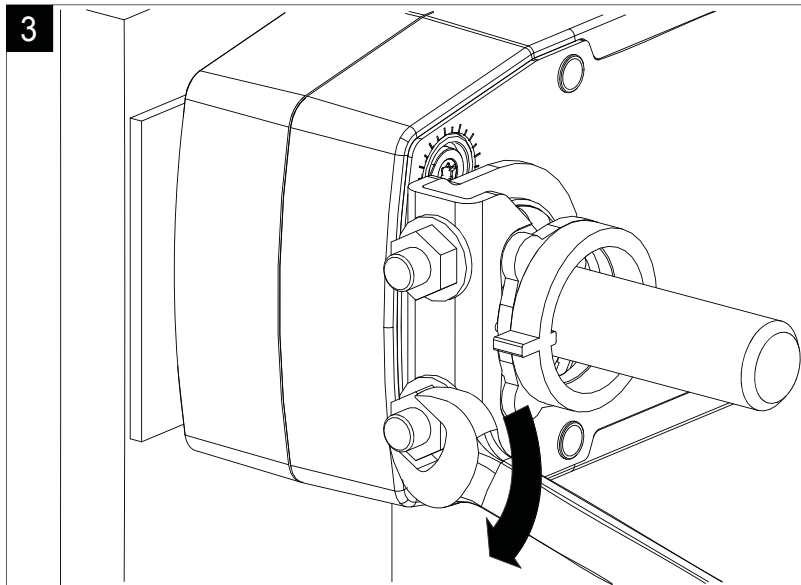
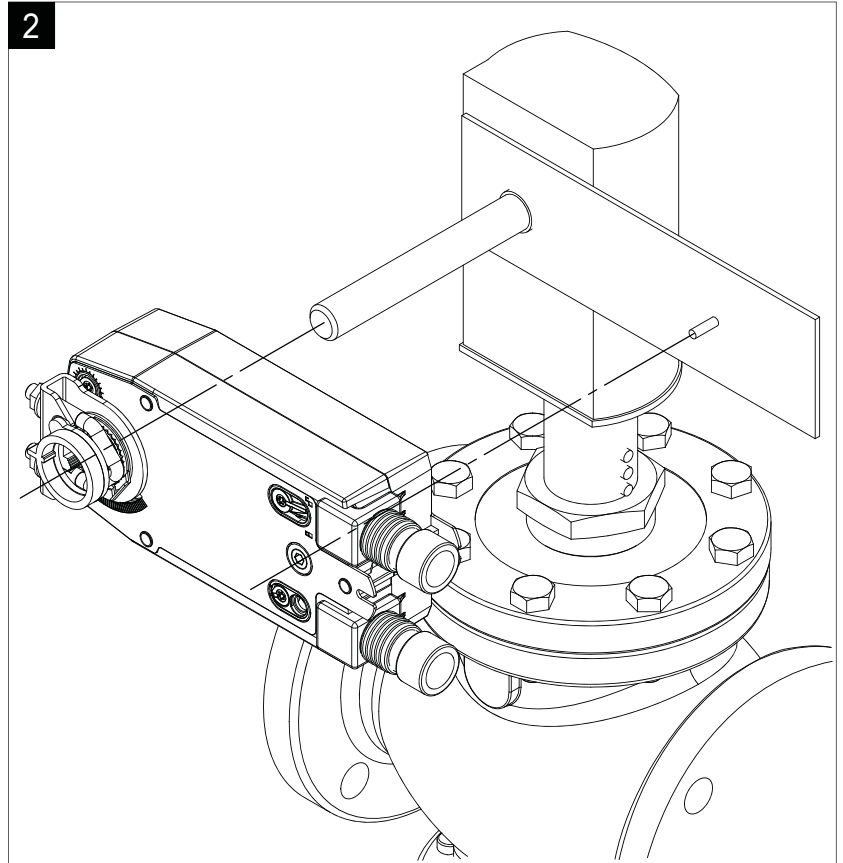
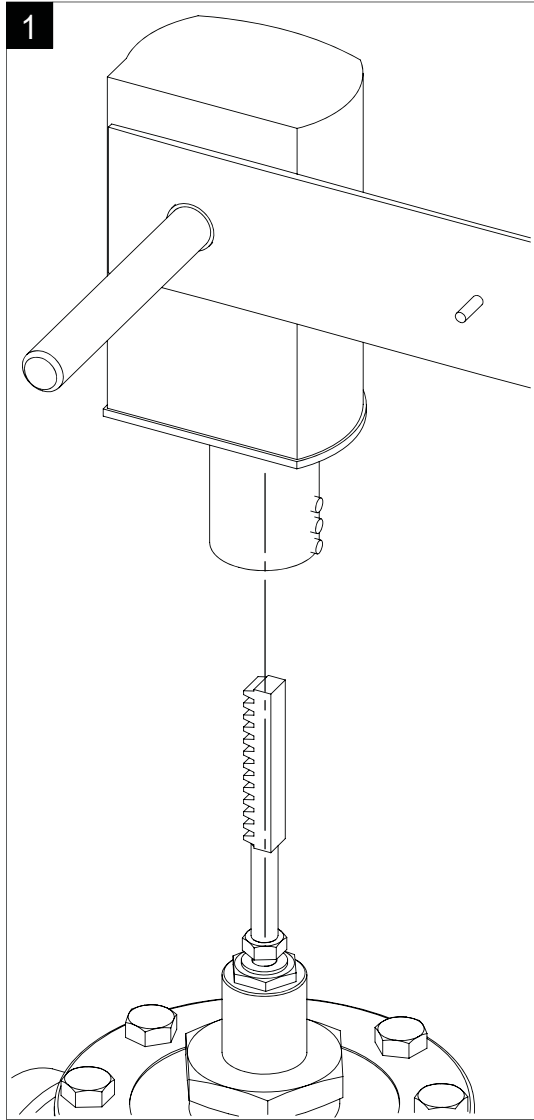
-SR/-MFT

24V AC/DC

		FC	FO
		A – AB = 0%	A – AB = 100%
3 a (Y1)	4 b (Y2)		

Floating Point

24V AC/DC



G6/G7 Globe Valves with Single Mount AFX Actuators

Wiring Diagrams



Spring Return Actuator with On/Off, Floating Point and -SR

24 VAC Transformer

Line Volts

Blk (1) Common

Red (2) + Hot

Function a

Max 100%

On/Off

120 VAC
230 VAC

Line Volts

Wht N

Blk H

Wht (1) Neutral

Blk (2) Hot

Function a

Max 100%

24 VAC up to 240 VAC

24 VAC Transformer

Line Volts

Blk (1) Common

Red (2) + Hot

Control Signal VDC/mA

2 to 10 VDC

Feedback Signal

Actuator Wire Number Color

AF24-SR US 5 Wht

AF24-SR-S US 5 Org

VDC / 4 to 20 mA

Spring Return Actuator with MFT

24 VAC Transformer

Line Volts

Hot

Com

Blk (1) Common

Red (2) + Hot

Wht (3) Y₁ Input

Pnk (4) Y₂ Input

Org (5) U Output 2 to 10 V

Controller

Triac Sink

24 VAC Transformer

Line Volts

Hot

Com

Blk (1) Common

Red (2) + Hot

Wht (3) Y₁ Input

Pnk (4) Y₂ Input

Org (5) U Output 2 to 10 V

Controller

Triac Source

24 VAC Transformer

Line Volts

Hot

Com

Blk (1) Common

Red (2) + Hot

Wht (3) Y₁ Input

Pnk (4) Y₂ Input

Org (5) U Output 2 to 10 V

Controller

Triac Sink with Separate Transformer

24 VAC Transformer

Line Volts

Blk (1) Common

Red (2) Hot

Wht (3) Y Input

Pnk (4) Y₂ Input

Org (5) U Output

Position Feedback VDC

Function a

Max 100%

On/Off

24 VAC Transformer

Line Volts

Blk (1) Common -

Red (2) Hot +

Wht (3) Y₁ Input

Pnk (4) Y₂ Input

Org (5) U Output 2 to 10 V

2 to 10 VDC Feedback Signal

Functions a b c

Min* 0%

Mid* 50%

Max* 100%

Normal** Control mode acc. to Y

Floating Point

24 VAC Transformer (AC only)

Line Volts

Blk (1) Common

Red (2) + Hot

Wht (3) Y Input

Pnk (4) Y₂ Input

Org (5) U Output

Position Feedback VDC

PWM

24 VAC Transformer

Line Volts

Blk (1) Common

Red (2) + Hot

Wht (3) Y₁ Input, 2 to 10V

Pnk (4) Y₂ Input

Org (5) U Output, 2 to 10V

Control Signal VDC/mA

2 to 10 VDC Feedback Signal

Actuator Wire Number Color

AF24-MFT US 5 Org

VDC / 4 to 20 mA

24 VAC Transformer (AC Only)

Line Volts

Blk (1) Common

Red (2) + Hot

Wht (3) Y₁ Input, 2 to 10V

Pnk (4) Y₂ Input

Org (5) U Output

Control Signal 2-10 VDC or 4 to 20 mA

500 Ω 1/4 watt

Functions a b c

Min* 0%

Mid* 50%

Max* 100%

Normal** Control mode acc. to Y

Override Control Min, Mid, Max Postions

Notes:

- Meets cULus requirements without the need of an electrical ground connection
- 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 24 VDC.
- Only connect common to neg. (-) leg of control circuits.
- A 500 Ω resistor converts the 4 to 20 mA control signal to 2 to 10 VDC.
- Control signal may be pulsed from either the Hot (Source) or Common (Sink) 24 VAC line.
- Contact closures A & B also can be triacs. A & B should both be closed for the triac source and open for triac sink.
- 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.
- Actuators may be connected in parallel if not mechanically mounted to the same shaft. Power consumption and input impedance must be observed.
- Actuators with plenum rated cable do not have numbers on wires; use color codes instead.
- All 120 VAC, 230 VAC, and UP actuators use appliance rated cables.
- UP models use "L" instead of "H" on #2 wire.

Auxiliary Switches

S1

S2 NC

S3 NO

S4

S5 NC

S6 NO

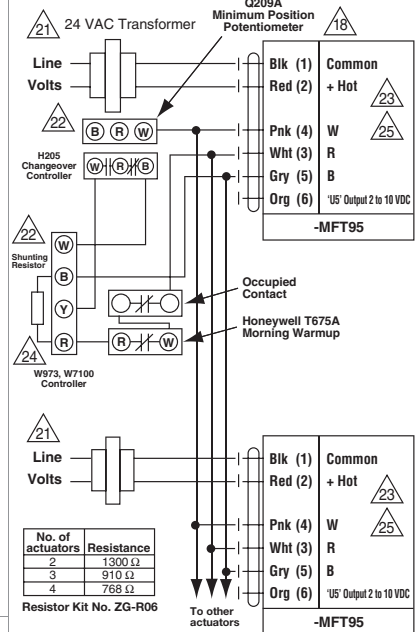
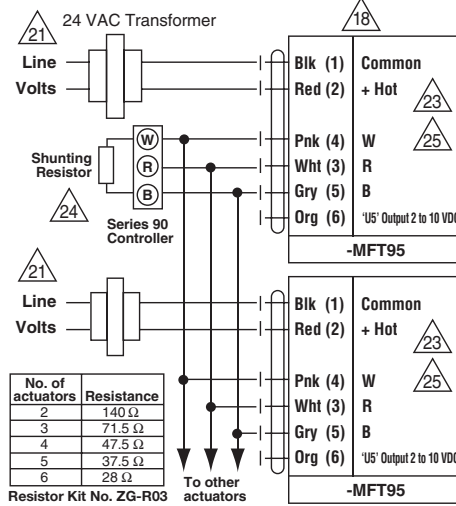
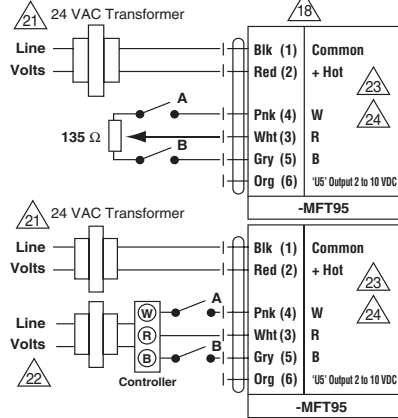
10°

10° to 90°

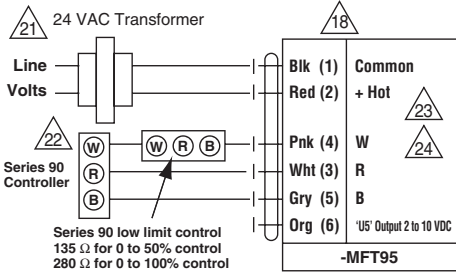
MFT95

Switch A	Switch B	Damper Position
		Damper Open
		Damper Closed

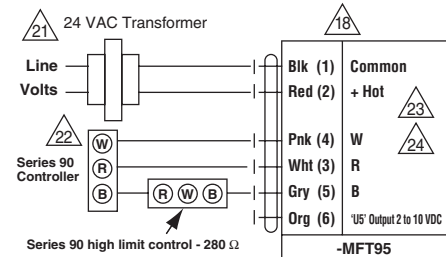
The direction of rotation switch is set so that the fail safe position and the position of the damper is closed with no signal at wire R.



Override

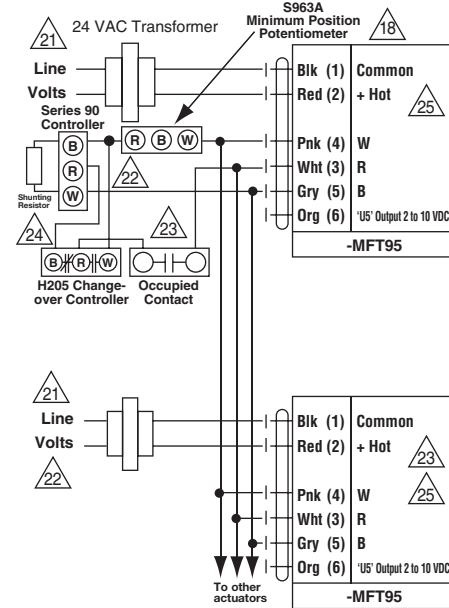


Low Limit Control



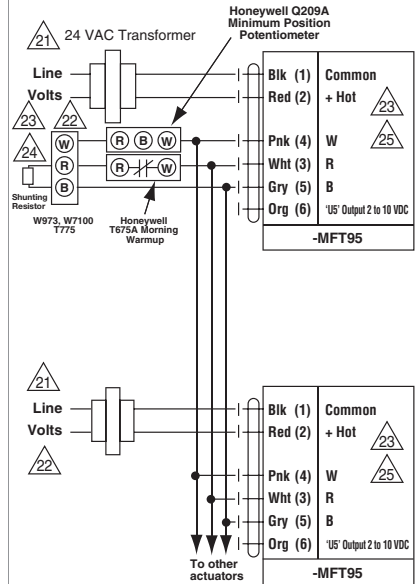
High Limit Control

Wiring multiple actuators to a Series 90 Controller



Wiring Multiple Actuators to a Series 90 Controller using Minimum Position Potentiometer

Used with the W973 and W7100 controllers

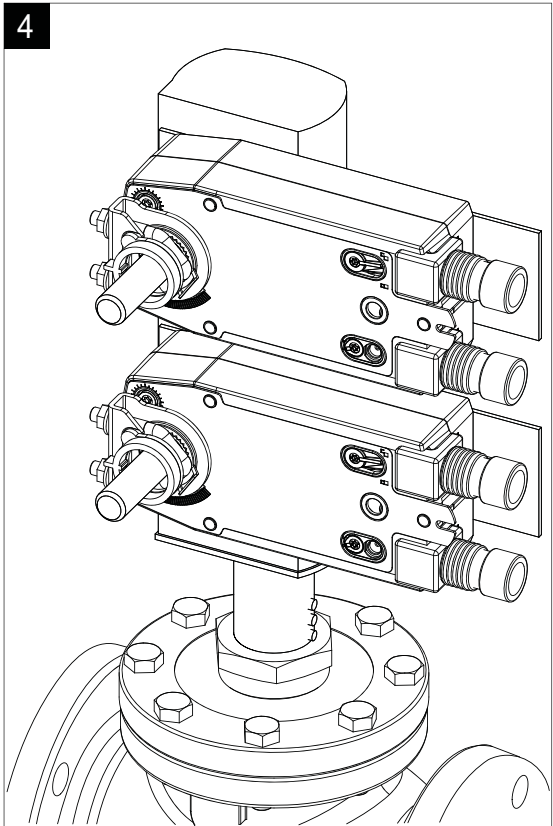
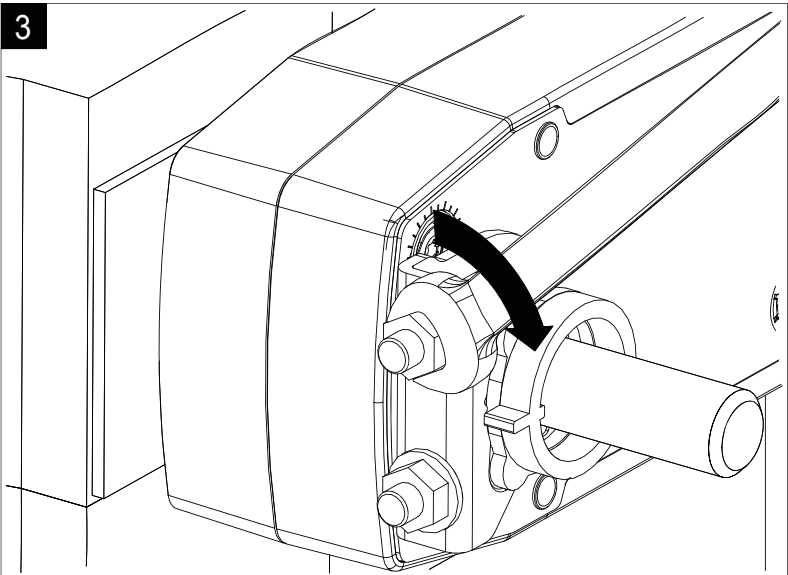
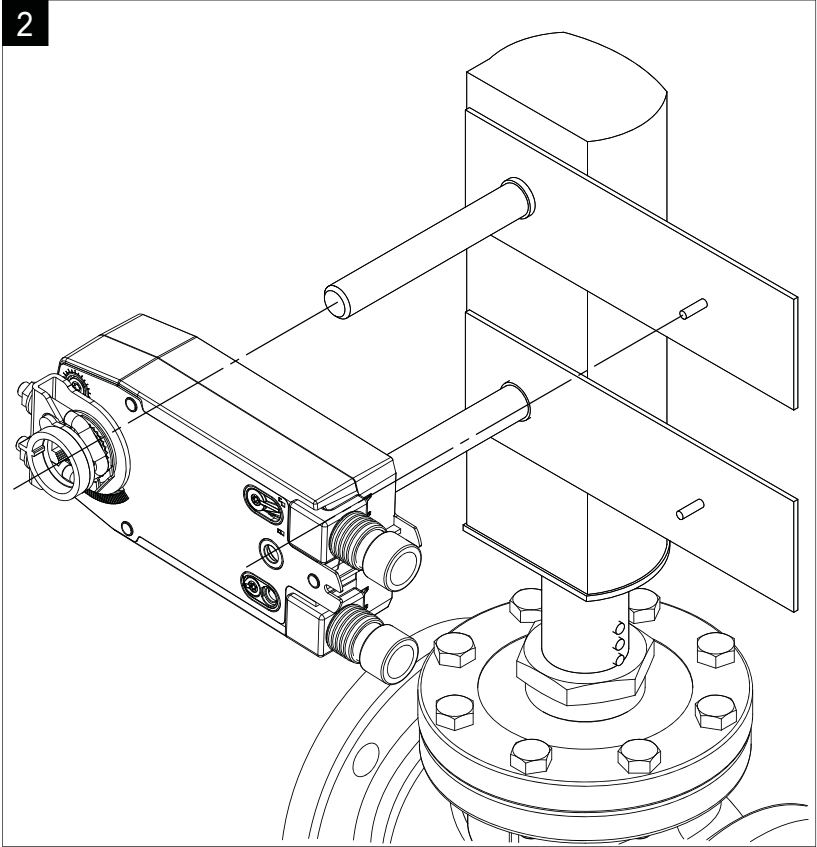
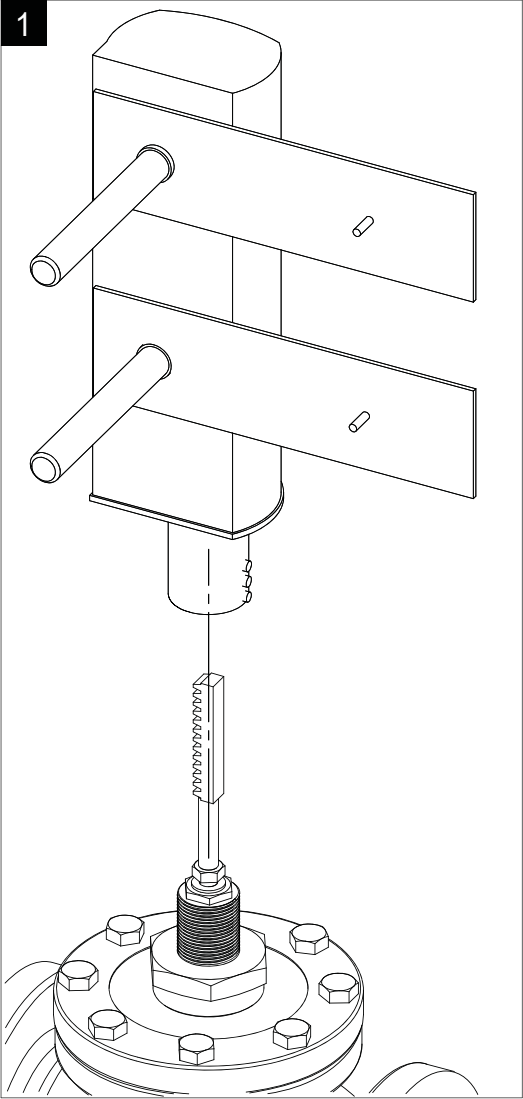


Typical Wiring Diagrams for Multiple Actuators used with the W973, W7100 and T775 controllers

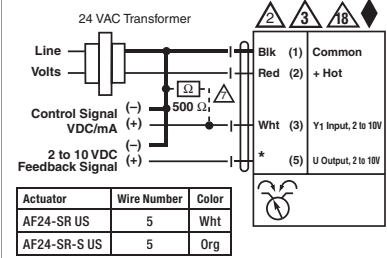
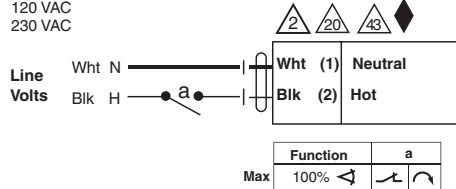
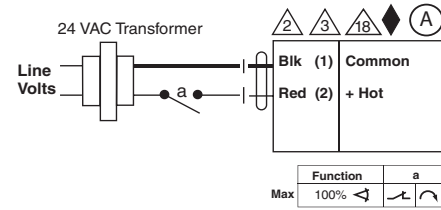
Notes:

- Actuators with plenum rated cable do not have numbers on wires; use color codes instead.
- Provide overload protection and disconnect as required.
- Actuators and controller must have separate transformers.
- Consult controller instruction data for more detailed information.
- Resistor value depend on the type of controller and the number of actuators. No resistor required for one actuator. Honeywell® resistor kits may be used.
- To reverse control rotation, use the reversing switch.

Slave	Slave	Esclavo	Esclavo	Esclavo
Master	Master	Amo	Maitre	Mestre
BRN	Brown	Marron	Brun	Marron
BLU	Blue	Azul	Bleu	Azul
GRY	Gray	Gris	Gris	Cincento
ORG	Orange	Anaranjado	Orange	Alaranjado
PNK	Pink	Rosado	Rosa	Cor-de ros
WHT	White	Blanco	Blanc	Branco
RED	Red	Rouge	Rouge	Vermelho
BLK	Black	Negro	Noir	Preto



Spring Return Actuator with On/Off, Floating Point and -SR

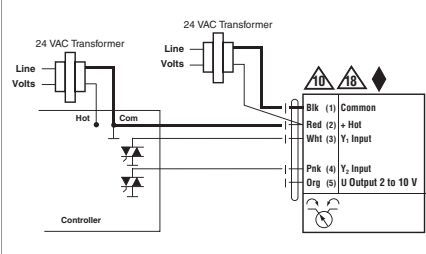
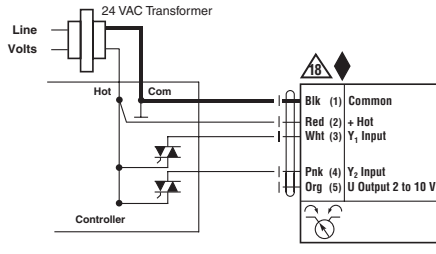
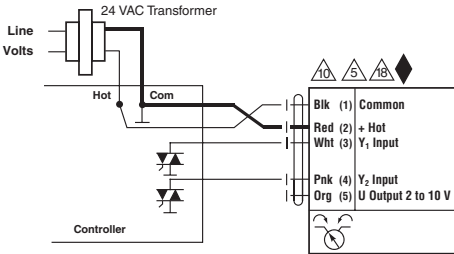


On/Off

24 VAC up to 240 VAC

VDC / 4 to 20 mA

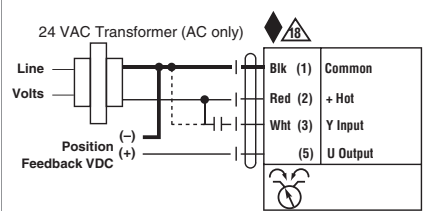
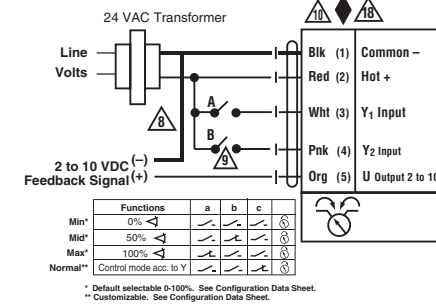
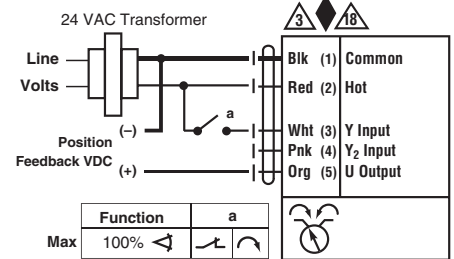
Spring Return Actuator with MFT



Triac Sink

Triac Source

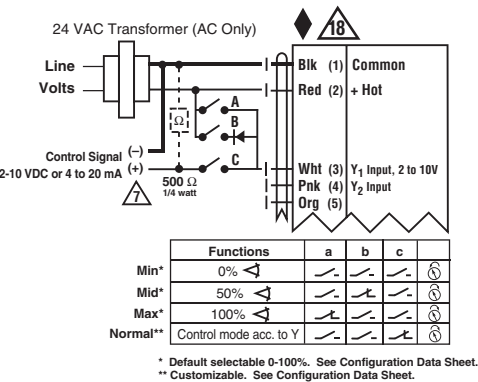
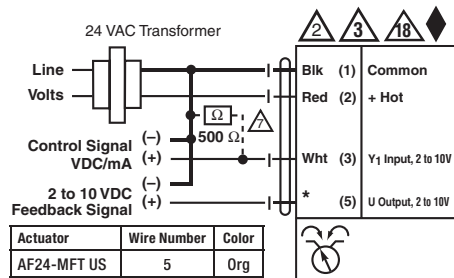
Triac Sink with Separate Transformer



On/Off

Floating Point

PWM

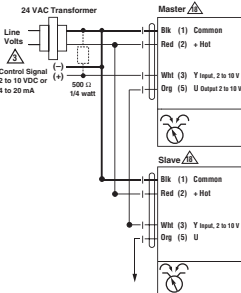
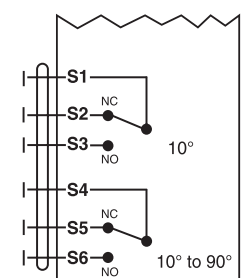


Notes:

- Meets cULus requirements without the need of an electrical ground connection
- 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 24 VDC.
- Only connect common to neg. (-) leg of control circuits.
- A 500 Ω resistor converts the 4 to 20 mA control signal to 2 to 10 VDC.
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- Actuators with plenum rated cable do not have numbers on wires; use color codes instead.
- All 120 VAC, 230 VAC, and UP actuators use appliance rated cables.
- UP models use "L" instead of "H" on #2 wire.

VDC / 4 to 20 mA

Override Control Min, Mid, Max Postions



Auxiliary Switches

VDC / 4 to 20 mA (Master/Slave)

GRN
Green
Verde
Vert
Verde

ORG
Orange
Anaranjado
Orange
Alaranjado

PNK
Pink
Rosado
Rosa
Cor-de ros

WHT
White
Blanco
Blanc
Branco

RED
Red
Rojo
Rouge
Vermelho

BLK
Black
Negro
Noir
Preto

Belimo worldwide: www.belimo.com

BELIMO Americas

USA Locations, 33 Turner Road, Danbury, CT 06810

Tel. 800-543-9038, Fax 800-228-8283, marketing@us.belimo.com

1049 Fortunato Loop, Sparks, NV 89436

Tel. 800-987-9042, Fax 800-987-8875, marketing@us.belimo.com

Canada Locations, 5845 Kennedy Road, Mississauga, Ontario L4Z 2G3

Tel. 866-805-7089, Fax 905-712-3124, marketing@us.belimo.com

Latin America and the Caribbean Customer Service

Tel. 203-791-8396, Fax 203-791-9139, marketing@us.belimo.com

Belimo Brasil Comércio de Automação Ltda.

Tel: 55 11 3643-5656, Fax: 55 11 3643 5657, atendimentoaocliente@br.belimo.com.

