

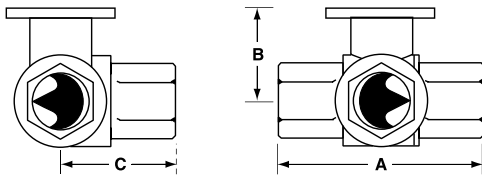
# B3 Series, Three Way, Characterized Control Valve Stainless Steel Ball and Stem



| Technical Data                     |   |
|------------------------------------|---|
| Service                            | chilled or hot water, 60% glycol  |
| Flow characteristic                | A-port equal percentage<br>B-port modified for constant common port flow      |
| Action                             | 90° rotation  |
| Sizes                              | ½", ¾", 1", 1¼", 1½", 2"  |
| Type of end fitting                | NPT female ends   |
| Materials:                         |   |
| Body                               | forged brass, nickel plated   |
| Ball                               | stainless steel   |
| Stem                               | stainless steel   |
| Seats                              | PTFE  |
| Characterizing disc                | Tefzel®   |
| Packing                            | 2 EPDM O-rings, lubricated  |
| Body pressure rating               |   |
| 600 psi                            | ½" - 1"   |
| 400 psi                            | 1¼" - 2"  |
| Media temp. range                  | 0°F to 212°F [-18°C to 100°C]   |
| Close off pressure                 |   |
| 200 psi                            | ½" - 2"   |
| Maximum differential pressure (ΔP) | 30 psi for typical applications   |
| Leakage                            | 0% for A to AB<br><2.0% for B to AB   |
| External leakage                   | according to EN 12266-1:2003  |
| C <sub>v</sub> rating              | A-port: see product chart for values<br>B-port: 70% of A to AB C <sub>v</sub> |

Tefzel® is a registered trademark of DuPont

## Dimensions



3Way Valve-B307-B320

| Valve Body | Valve Nominal Size |         | Dimensions (Inches [mm]) |              |              |
|------------|--------------------|---------|--------------------------|--------------|--------------|
|            | Inches             | DN [mm] | A                        | B            | C            |
| B307-B311  | ½"                 | 15      | 2.41" [61.1]             | 1.39" [35.2] | 1.20" [30.6] |
| B312-B315  | ½"                 | 15      | 2.38" [60.4]             | 1.78" [45.2] | 1.29" [32.8] |
| B317-B320  | ¾"                 | 20      | 2.73" [69.3]             | 1.87" [47.4] | 1.47" [37.3] |
| B322-B325  | 1"                 | 25      | 3.09" [78.4]             | 1.87" [47.4] | 1.59" [40.3] |
| B329-B331  | 1¼"                | 32      | 3.96" [100.6]            | 2.27" [57.7] | 2.14" [54.3] |
| B338-B341  | 1½"                | 40      | 4.39" [111.6]            | 2.51" [63.7] | 2.40" [61.1] |
| B347-B352  | 2"                 | 50      | 4.90" [124.5]            | 2.73" [69.5] | 2.74" [69.7] |

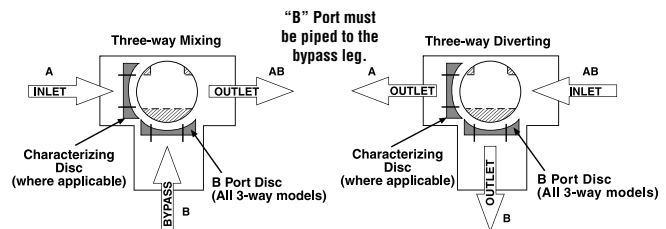
## Application

This valve is typically used in air handling units on heating or cooling coils, and fan coil unit heating or cooling coils. Some other common applications include Unit Ventilators, VAV box re-heat coils and bypass loops. This valve is suitable for use in a hydronic system with variable or constant flow.

| C <sub>v</sub> | Valve Nominal Size |         | Type      | Suitable Actuators |                |                |
|----------------|--------------------|---------|-----------|--------------------|----------------|----------------|
|                | Inches             | DN [mm] | 3-Way NPT | Non-Spring         | Spring         |                |
| 0.3            | ½"                 | 15      | B307      | TR Series          | LR Series      | NR...M4 Series |
| 0.46           | ½"                 | 15      | B308      |                    |                |                |
| 0.8            | ½"                 | 15      | B309      |                    |                |                |
| 1.2            | ½"                 | 15      | B310      |                    |                |                |
| 1.9            | ½"                 | 15      | B311      |                    |                |                |
| 3              | ½"                 | 15      | B312      |                    |                |                |
| 4.7            | ½"                 | 15      | B313      |                    |                |                |
| 10             | ½"                 | 15      | B315*     |                    |                |                |
| 4.7            | ¾"                 | 20      | B317      |                    |                |                |
| 7.4            | ¾"                 | 20      | B318      |                    |                |                |
| 24             | ¾"                 | 20      | B320*     | TF Series          | LF Series      |                |
| 7.4            | 1"                 | 25      | B322      |                    |                |                |
| 10             | 1"                 | 25      | B323      |                    |                |                |
| 30             | 1"                 | 25      | B325*     |                    |                |                |
| 10             | 1¼"                | 32      | B329      |                    |                |                |
| 19             | 1¼"                | 32      | B330      |                    |                |                |
| 25             | 1¼"                | 32      | B331      |                    |                |                |
| 19             | 1½"                | 40      | B338      |                    |                |                |
| 29             | 1½"                | 40      | B339      |                    |                |                |
| 37             | 1½"                | 40      | B340      |                    |                |                |
| 46             | 1½"                | 40      | B341      | AR Series          | AR...M4 Series |                |
| 29             | 2"                 | 50      | B347      |                    |                |                |
| 37             | 2"                 | 50      | B348      |                    |                |                |
| 46             | 2"                 | 50      | B349      |                    |                |                |
| 57             | 2"                 | 50      | B350      |                    |                |                |
| 68             | 2"                 | 50      | B351      |                    |                |                |
| 83             | 2"                 | 50      | B352      |                    |                |                |

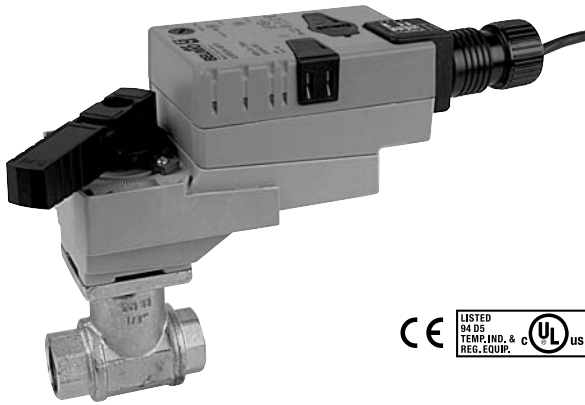
\*Models without characterizing disc

## Flow Patterns



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# LRX24-MFT95 Actuators, 0 to 135 Ω, Proportional



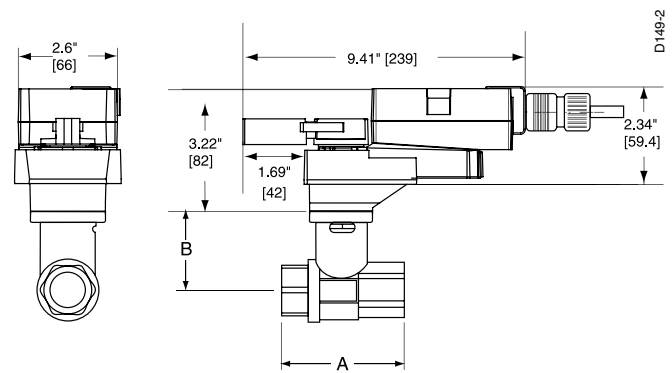
## Models

LRX24-MFT95

| Technical Data        |  |
|-----------------------|--|
| Power supply          | 24 VAC ± 20% 50/60 Hz<br>24 VDC ± 10%  |
| Power consumption     | running 2 W<br>holding 1.2 W   |
| Transformer sizing    | 5 VA (Class 2 power source)  |
| Electrical connection | ½" conduit connector<br>18 GA plenum rated cable<br>3 ft [1m], 10 ft [3m], 16 ft [5m]  |
| Overload protection   | electronic throughout 0 to 95° rotation  |
| Operating range WRB   | 0 to 135 Ω Honeywell Electronic Series 90, 0 to 135 Ω input  |
| Feedback output U     | 2 to 10 VDC, 0.5mA max   |
| Input impedance       | 100 kΩ (0.1 mW)  |
| Angle of rotation     | 90°, adjustable with mechanical stop<br>electronically variable  |
| Direction of rotation | reversible with ↻/↻ switch   |
| Position indication   | handle   |
| Manual override       | external push button   |
| Running time          | 150 seconds (default)<br>variable (35 to 150 seconds)  |
| Humidity              | 5 to 95% RH non-condensing<br>(EN 60730-1)   |
| Ambient temperature   | -22°F to 122°F [-30°C to 50°C]   |
| Storage temperature   | -40°F to 176°F [-40°C to 80°C]   |
| Housing               | NEMA 2/IP54  |
| Housing material      | UL94-5VA   |
| Agency listings†      | cULus according to UL 60730-1A/-2-14,<br>CAN/CSA E60730-1:02, CE according to<br>2004/108/EC and 2006/95/EC for line voltage<br>and/or -S versions |
| Noise level           | <35 dB(A)  |
| Quality standard      | ISO 9001   |

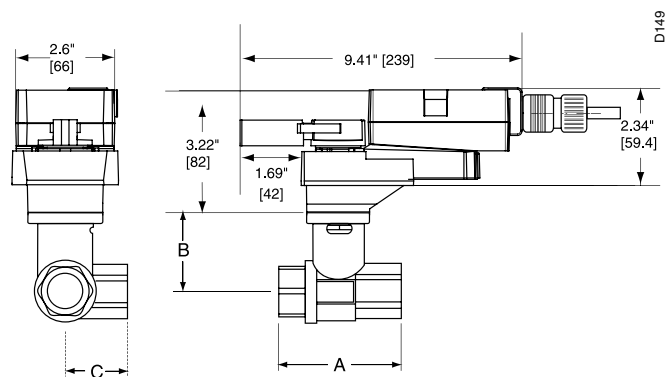
†Rated Impulse Voltage 800V, Type of action 1, Control Pollution Degree 3.

## Dimensions with 2-Way Valve



| Valve Body | Valve Nominal Size |         | Dimensions (Inches [mm]) |              |
|------------|--------------------|---------|--------------------------|--------------|
|            | Inches             | DN [mm] | A                        | B            |
| B207-B211  | ½"                 | 15      | 2.41" [61.1]             | 1.39" [35.2] |
| B212-B215  | ½"                 | 15      | 2.38" [60.4]             | 1.78" [45.2] |
| B217-B220  | ¾"                 | 20      | 2.73" [69.3]             | 1.87" [47.4] |
| B222-B225  | 1"                 | 25      | 3.09" [78.4]             | 1.87" [47.4] |
| B229-B230  | 1¼"                | 32      | 3.72" [94.6]             | 1.87" [47.4] |

## Dimensions with 3-Way Valve



| Valve Body | Valve Nominal Size |         | Dimensions (Inches [mm]) |              |              |
|------------|--------------------|---------|--------------------------|--------------|--------------|
|            | Inches             | DN [mm] | A                        | B            | C            |
| B307-B311  | ½"                 | 15      | 2.41" [61.1]             | 1.39" [35.2] | 1.20" [30.6] |
| B312-B315  | ½"                 | 15      | 2.38" [60.4]             | 1.78" [45.2] | 1.29" [32.8] |
| B317-B320  | ¾"                 | 20      | 2.73" [69.3]             | 1.87" [47.4] | 1.47" [37.3] |
| B322-B325  | 1"                 | 25      | 3.09" [78.4]             | 1.87" [47.4] | 1.59" [40.3] |

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### Wiring Diagrams

#### INSTALLATION NOTES

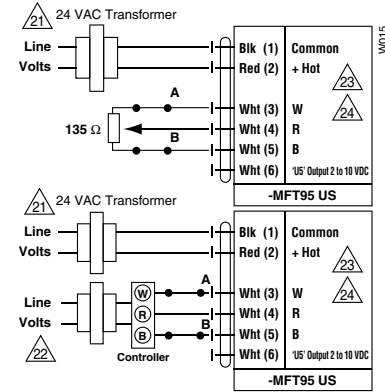
- 21 Provide overload protection and disconnect as required.
- 22 Actuators and controller must have separate transformers.
- 23 Consult controller instruction data for more detailed information.
- 24 Resistor value depends on the type of controller and the number of actuators. No resistor is used for one actuator. Honeywell® resistor kits may also be used.
- 25 To reverse control rotation, use the reversing switch.2524232221

**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.

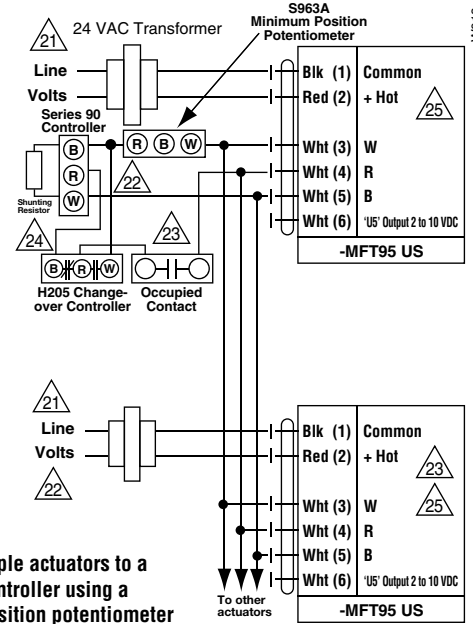
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| Switch A | Switch B | Damper Position |
|----------|----------|-----------------|
|          |          | Damper Open     |
|          |          | Damper Closed   |

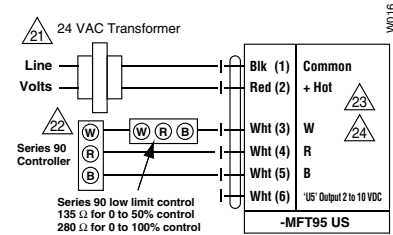
The direction of rotation switch is set so that the fail safe position and the position of the damper is closed with no signal at wire R.



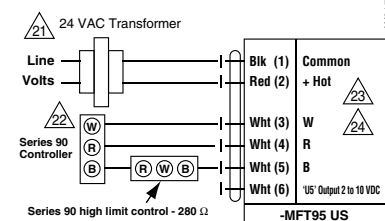
Override



Wiring multiple actuators to a Series 90 controller using a minimum position potentiometer



Low Limit Control



High Limit Control