

## Pressure Independent Control Series 2-Way Valves and Electronic Valve Actuators



### Description

The 1/2- to 1-1/4-inch Pressure Independent Control Valves have a 5 or 5.5 mm stroke, and work with the SSD Series Electronic Actuators. The 1-1/2 to 2-inch normally open valves have a 15 mm stroke and work with the 599-0361XNX Series Rack and Pinion spring return actuators, and the SAY Series Electronic Actuators. SAY Actuators for 1-1/2- and 2-inch Normally Open Valves can also be set for Normally Closed operation (reverse acting). All actuators require a 24 Volt power supply to provide floating or 0 to 10 Vdc control.

Typical applications include control of hot or chilled water or water-glycol solutions up to 50% in closed loop systems.

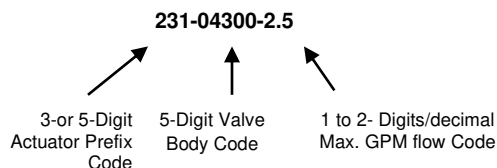
### Features

The Pressure Independent Control Valves include a pressure regulator, a flow limiter, and a control valve in a single device.

All actuators have a direct-coupled installation, manual override and visual position indication.

### Product Numbers

Use the product numbers in the tables to order the valve and the actuator assembled together. The product number consists of a 3- or 5-digit prefix code, a hyphen, a 5-digit code, a hyphen, and a 1 to 2-digit suffix with or without a decimal. The prefix specifies an actuator. The middle code specifies the valve body. The suffix specifies the factory preset maximum GPM flow setting. See Table 2 through Table 10.



### Technical Data

#### Typical Specifications

Flow shall be varied by actuator position. At any given position, flow through the valve shall not vary more than  $\pm 5\%$  due to system pressure fluctuations across the valve in the selected operating range. Valves shall be pressure independent between a differential pressure of 2.3 or 5 PSID (depending on valve size) and 58 PSID. Length of stroke shall be consistent and independent of flow setting.

#### Valve Specifications

|                    |                                                                |
|--------------------|----------------------------------------------------------------|
| Body material:     | Brass (1/2- to 1-1/4-inch)<br>Ductile Iron (1-1/2- and 2-inch) |
| Stem:              | Stainless Steel                                                |
| Line size:         | 1/2-inch to 2-inch<br>(15 mm to 50 mm)                         |
| Action:            | 2-Way                                                          |
| Valve body rating: | ANSI 250                                                       |

#### Close-off pressure/Leakage rate:

|                        |                               |
|------------------------|-------------------------------|
| 1/2- to 1-1/4-inch, NO | 200 psi/ANSI Class IV (0.01%) |
| 1-1/2 and 2-inch NO/NC | 100 psi/ANSI Class IV (0.01%) |
| 1/2- to 1-1/4-inch, NC | 45 psi/ANSI Class IV (0.01%)  |

#### Medium temperature range:

|                      |                              |
|----------------------|------------------------------|
| Flow characteristic: | 34°F to 248°F (1°C to 120°C) |
| Connection:          | Linear                       |
| Rangeability         | NPT threaded<br>$\geq 100:1$ |

#### Actuator Specifications

|                                       |               |
|---------------------------------------|---------------|
| Operating voltage:                    |               |
| SSD81U/SSD81.5U                       | 24 Vac        |
| SSD61U                                | 24 Vac/dc     |
| SSD61.5U                              | 24 Vac        |
| 599-0361XNX                           | 24 Vac/dc     |
| SAY                                   | 24 Vac/dc     |
| Frequency:                            | 60 Hz         |
| Power consumption (normal operation): |               |
| SSD81U                                | 0.8 VA        |
| SSD81.5U                              | 2 VA          |
| SSD61U                                | 2.5 VA        |
| SSD61.5U                              | 2 VA          |
| SAY61.03U                             | 8 VA          |
| SAY81.03U                             | 5 VA          |
| 599-0361XNX                           | $\leq 3.5$ VA |

#### Signal:

|                                  |                           |
|----------------------------------|---------------------------|
| SSD81U, SSD81.5U                 | Floating                  |
| SAY81.03U,<br>599-03616NX        |                           |
| SSD61U, SSD61.5U,<br>599-03617NX | 0 to 10 Vdc               |
| SAY61.03U                        | 0 to 10 Vdc or 4 to 20 mA |

#### Run time (in seconds):

|             | Stroke   |       |
|-------------|----------|-------|
|             | 5/5.5 mm | 15 mm |
| SSD81U      | 150      | —     |
| SSD81.5U    | 125      | —     |
| SSD61U      | 90       | —     |
| SSD61.5U    | 30       | —     |
| SAY         | —        | 30    |
| 599-0361XNX | —        | 60    |

#### Force:

|             |                 |
|-------------|-----------------|
| SSD (NSR)   | >56 lb (250 N)  |
| SSD (SR)    | 67 lb (300 N)   |
| SAY         | 45 lb (200 N)   |
| 599-0361XNX | < 155 lb (622N) |

#### Additional References:

|                        |                  |
|------------------------|------------------|
| Technical Instructions |                  |
| PICV Valves            | 155-774          |
| SSD Actuators          | 155-773          |
| SAY Actuators          | 155-580, 155-581 |
| 599-0361XNX            | A6V11637981      |

#### Agency Certification:

|                   |                                                   |
|-------------------|---------------------------------------------------|
| UL                | Meets UL 873                                      |
| cUL               | Certified to Canadian<br>Standard C22.2 No. 24.93 |
| Mounting Location | NEMA 1 (Interior only)                            |

**Table 1. Valve Body Flow Range.**

| Action          | Valve Body | Line Size, Inch (mm) | GPM Flow Range |
|-----------------|------------|----------------------|----------------|
| Normally Closed | 599-04300  | 1/2 (15)             | 0.3 to 2.7     |
|                 | 599-04301  |                      | 1.0 to 7.5     |
|                 | 599-04302  | 3/4 (20)             | 0.5 to 4.5     |
|                 | 599-04303  |                      | 1.0 to 8.9     |
|                 | 599-04304  | 1 (25)               | 1.0 to 8.9     |
|                 | 599-04305  | 1-1/4 (32)           | 2.5 to 13.2    |
| Normally Open   | 599-04320  | 1/2 (15)             | 0.3 to 1.6     |
|                 | 599-04321  |                      | 1.0 to 5.8     |
|                 | 599-04322  | 3/4 (20)             | 1.3 to 8       |
|                 | 599-04323  | 1 (25)               | 2.6 to 16      |
|                 | 599-04314  | 1-1/4 (32)           | 3 to 18        |
|                 | 599-04315  | 1-1/2 (40)           | 10 to 40       |
|                 | 599-04316  | 2 (50)               | 10 to 50       |

**Table 2. 1/2-Inch 2-Way Normally Open Valve and Actuator Assemblies.**

| Valve Body    | Line Size, Inch (mm) | Factory Preset Max. GPM | Non-Spring Return                                                                  |               | Spring Return                                                                        |                |
|---------------|----------------------|-------------------------|------------------------------------------------------------------------------------|---------------|--------------------------------------------------------------------------------------|----------------|
|               |                      |                         | SSD81U Floating                                                                    | SSD61U 0-10V  | SSD81.5U Floating                                                                    | SSD61.5U 0-10V |
|               |                      |                         |  |               |  |                |
|               |                      |                         | Actuator Prefix Code                                                               |               |                                                                                      |                |
|               |                      |                         | 230                                                                                | 231           | 232                                                                                  | 233            |
| 599-04320-0.5 | 1/2 (15)             | 0.5                     | 230-04320-0.5                                                                      | 231-04320-0.5 | 232-04320-0.5                                                                        | 233-04320-0.5  |
| 599-04320-1   |                      | 1                       | 230-04320-1                                                                        | 231-04320-1   | 232-04320-1                                                                          | 233-04320-1    |
| 599-04321-1   |                      |                         | 230-04321-1                                                                        | 231-04321-1   | 232-04321-1                                                                          | 233-04321-1    |
| 599-04320-1.5 |                      | 1.5                     | 230-04320-1.5                                                                      | 231-04320-1.5 | 232-04320-1.5                                                                        | 233-04320-1.5  |
| 599-04321-1.5 |                      |                         | 230-04321-1.5                                                                      | 231-04321-1.5 | 232-04321-1.5                                                                        | 233-04321-1.5  |
| 599-04321-2   |                      | 2                       | 230-04321-2                                                                        | 231-04321-2   | 232-04321-2                                                                          | 233-04321-2    |
| 599-04321-2.5 |                      | 2.5                     | 230-04321-2.5                                                                      | 231-04321-2.5 | 232-04321-2.5                                                                        | 233-04321-2.5  |
| 599-04321-3   |                      | 3                       | 230-04321-3                                                                        | 231-04321-3   | 232-04321-3                                                                          | 233-04321-3    |
| 599-04321-3.5 |                      | 3.5                     | 230-04321-3.5                                                                      | 231-04321-3.5 | 232-04321-3.5                                                                        | 233-04321-3.5  |
| 599-04321-4   |                      | 4                       | 230-04321-4                                                                        | 231-04321-4   | 232-04321-4                                                                          | 233-04321-4    |
| 599-04321-4.5 |                      | 4.5                     | 230-04321-4.5                                                                      | 231-04321-4.5 | 232-04321-4.5                                                                        | 233-04321-4.5  |
| 599-04321-5   |                      | 5                       | 230-04321-5                                                                        | 231-04321-5   | 232-04321-5                                                                          | 233-04321-5    |
| 599-04321-5.5 |                      | 5.5                     | 230-04321-5.5                                                                      | 231-04321-5.5 | 232-04321-5.5                                                                        | 233-04321-5.5  |

Table 3. 3/4-Inch 2-Way Normally Open Valve and Actuator Assemblies.

| Valve Body    | Line Size, Inch (mm) | Factory Preset Max. GPM | Non-Spring Return                                                                 |               | Spring Return                                                                       |                |
|---------------|----------------------|-------------------------|-----------------------------------------------------------------------------------|---------------|-------------------------------------------------------------------------------------|----------------|
|               |                      |                         | SSD81U Floating                                                                   | SSD61U 0-10V  | SSD81.5U Floating                                                                   | SSD61.5U 0-10V |
|               |                      |                         |  |               |  |                |
|               |                      |                         | Actuator Prefix Code                                                              |               |                                                                                     |                |
|               |                      |                         | 230                                                                               | 231           | 232                                                                                 | 233            |
| 599-04322-2   | 3/4 (20)             | 2                       | 230-04322-2                                                                       | 231-04322-2   | 232-04322-2                                                                         | 233-04322-2    |
| 599-04322-2.5 |                      | 2.5                     | 230-04322-2.5                                                                     | 231-04322-2.5 | 232-04322-2.5                                                                       | 233-04322-2.5  |
| 599-04322-3   |                      | 3                       | 230-04322-3                                                                       | 231-04322-3   | 232-04322-3                                                                         | 233-04322-3    |
| 599-04322-3.5 |                      | 3.5                     | 230-04322-3.5                                                                     | 231-04322-3.5 | 232-04322-3.5                                                                       | 233-04322-3.5  |
| 599-04322-4   |                      | 4                       | 230-04322-4                                                                       | 231-04322-4   | 232-04322-4                                                                         | 233-04322-4    |
| 599-04322-4.5 |                      | 4.5                     | 230-04322-4.5                                                                     | 231-04322-4.5 | 232-04322-4.5                                                                       | 233-04322-4.5  |
| 599-04322-5   |                      | 5                       | 230-04322-5                                                                       | 231-04322-5   | 232-04322-5                                                                         | 233-04322-5    |
| 599-04322-5.5 |                      | 5.5                     | 230-04322-5.5                                                                     | 231-04322-5.5 | 232-04322-5.5                                                                       | 233-0432-5.5   |
| 599-04322-6   |                      | 6                       | 230-04322-6                                                                       | 231-04322-6   | 232-04322-6                                                                         | 233-04322-6    |
| 599-04322-6.5 |                      | 6.5                     | 230-04322-6.5                                                                     | 231-04322-6.5 | 232-04322-6.5                                                                       | 233-04322-6.5  |
| 599-04322-7   |                      | 7                       | 230-04322-7                                                                       | 231-04322-7   | 232-04322-7                                                                         | 233-04322-7    |
| 599-04322-7.5 |                      | 7.5                     | 230-04322-7.5                                                                     | 231-04322-7.5 | 232-04322-7.5                                                                       | 233-04322-7.5  |
| 599-04322-8   |                      | 8                       | 230-04322-8                                                                       | 231-04322-8   | 232-04322-8                                                                         | 233-04322-8    |

Table 4. 1-Inch 2-Way Normally Open Valve and Actuator Assemblies.

| Valve Body   | Line Size, Inch (mm) | Factory Preset Max. GPM | Non-Spring Return                                                                   |              | Spring Return                                                                         |                |
|--------------|----------------------|-------------------------|-------------------------------------------------------------------------------------|--------------|---------------------------------------------------------------------------------------|----------------|
|              |                      |                         | SSD81U Floating                                                                     | SSD61U 0-10V | SSD81.5U Floating                                                                     | SSD61.5U 0-10V |
|              |                      |                         |  |              |  |                |
|              |                      |                         | Actuator Prefix Code                                                                |              |                                                                                       |                |
|              |                      |                         | 230                                                                                 | 231          | 232                                                                                   | 233            |
| 599-04323-4  | 1 (25)               | 4                       | 230-04323-4                                                                         | 231-04323-4  | 232-04323-4                                                                           | 233-04323-4    |
| 599-04323-5  |                      | 5                       | 230-04323-5                                                                         | 231-04323-5  | 232-04323-5                                                                           | 233-04323-5    |
| 599-04323-6  |                      | 6                       | 230-04323-6                                                                         | 231-04323-6  | 232-04323-6                                                                           | 233-04323-6    |
| 599-04323-7  |                      | 7                       | 230-04323-7                                                                         | 231-04323-7  | 232-04323-7                                                                           | 233-04323-7    |
| 599-04323-8  |                      | 8                       | 230-04323-8                                                                         | 231-04323-8  | 232-04323-8                                                                           | 233-04323-8    |
| 599-04323-9  |                      | 9                       | 230-04323-9                                                                         | 231-04323-9  | 232-04323-9                                                                           | 233-04323-9    |
| 599-04323-10 |                      | 10                      | 230-04323-10                                                                        | 231-04323-10 | 232-04323-10                                                                          | 233-04323-10   |
| 599-04323-11 |                      | 11                      | 230-04323-11                                                                        | 231-04323-11 | 232-04323-11                                                                          | 233-04323-11   |
| 599-04323-12 |                      | 12                      | 230-04323-12                                                                        | 231-04323-12 | 232-04323-12                                                                          | 233-04323-12   |
| 599-04323-13 |                      | 13                      | 230-04323-13                                                                        | 231-04323-13 | 232-04323-13                                                                          | 233-04323-13   |
| 599-04323-14 |                      | 14                      | 230-04323-14                                                                        | 231-04323-14 | 232-04323-14                                                                          | 233-04323-14   |
| 599-04323-15 |                      | 15                      | 230-04323-15                                                                        | 231-04323-15 | 232-04323-15                                                                          | 233-04323-15   |
| 599-04323-16 |                      | 16                      | 230-04323-16                                                                        | 231-04323-16 | 232-04323-16                                                                          | 233-04323-16   |

**Table 5. 1-1/4-Inch 2-Way Normally Open Valve and Actuator Assemblies.**

| Valve Body   | Line Size, Inch (mm) | Factory Preset Max. GPM | Non-Spring Return                                                                 |              | Spring Return                                                                       |                |
|--------------|----------------------|-------------------------|-----------------------------------------------------------------------------------|--------------|-------------------------------------------------------------------------------------|----------------|
|              |                      |                         | SSD81U Floating                                                                   | SSD61U 0-10V | SSD81.5U Floating                                                                   | SSD61.5U 0-10V |
|              |                      |                         |  |              |  |                |
|              |                      |                         | Actuator Prefix Code                                                              |              |                                                                                     |                |
|              |                      |                         | 230                                                                               | 231          | 232                                                                                 | 233            |
| 599-04314-9  | 1-1/4 (32)           | 9                       | 230-04314-9                                                                       | 231-04314-9  | 232-04314-9                                                                         | 233-04314-9    |
| 599-04314-10 |                      | 10                      | 230-04314-10                                                                      | 231-04314-10 | 232-04314-10                                                                        | 233-04314-10   |
| 599-04314-11 |                      | 11                      | 230-04314-11                                                                      | 231-04314-11 | 232-04314-11                                                                        | 233-04314-11   |
| 599-04314-12 |                      | 12                      | 230-04314-12                                                                      | 231-04314-12 | 232-04314-12                                                                        | 233-04314-12   |
| 599-04314-13 |                      | 13                      | 230-04314-13                                                                      | 231-04314-13 | 232-04314-13                                                                        | 233-04314-13   |
| 599-04314-14 |                      | 14                      | 230-04314-14                                                                      | 231-04314-14 | 232-04314-14                                                                        | 233-04314-14   |
| 599-04314-15 |                      | 15                      | 230-04314-15                                                                      | 231-04314-15 | 232-04314-15                                                                        | 233-04314-15   |
| 599-04314-16 |                      | 16                      | 230-04314-16                                                                      | 231-04314-16 | 232-04314-16                                                                        | 233-04314-16   |
| 599-04314-17 |                      | 17                      | 230-04314-17                                                                      | 231-04314-17 | 232-04314-17                                                                        | 233-04314-17   |
| 599-04314-18 |                      | 18                      | 230-04314-18                                                                      | 231-04314-18 | 232-04314-18                                                                        | 233-04314-18   |

**Table 6. 1-1/2-Inch and 2-Inch 2-Way Normally Open Valve and Actuator Assemblies.**

| Valve Body   | Line Size, Inch (mm) | Factory Preset Max. GPM | Non-Spring Return                                                                  |                                   | Spring Return                                                                        |                     |
|--------------|----------------------|-------------------------|------------------------------------------------------------------------------------|-----------------------------------|--------------------------------------------------------------------------------------|---------------------|
|              |                      |                         | SAY81.03U Floating                                                                 | SAY61.03U 0 to 10V and 4 to 20 mA | 599-03616NO Floating                                                                 | 599-03617NO 0 – 10V |
|              |                      |                         |  |                                   |  |                     |
|              |                      |                         | Actuator Prefix Code                                                               |                                   |                                                                                      |                     |
|              |                      |                         | 334                                                                                | 335                               | 336NO                                                                                | 337NO               |
| 599-04315-15 | 1-1/2 (40)           | 15                      | 334-04315-15                                                                       | 335-04315-15                      | 336NO-04315-15                                                                       | 337NO-04315-15      |
| 599-04315-20 |                      | 20                      | 334-04315-20                                                                       | 335-04315-20                      | 336NO-04315-20                                                                       | 337NO-04315-20      |
| 599-04315-25 |                      | 25                      | 334-04315-25                                                                       | 335-04315-25                      | 336NO-04315-25                                                                       | 337NO-04315-25      |
| 599-04315-30 |                      | 30                      | 334-04315-30                                                                       | 335-04315-30                      | 336NO-04315-30                                                                       | 337NO-04315-30      |
| 599-04315-35 |                      | 35                      | 334-04315-35                                                                       | 335-04315-35                      | 336NO-04315-35                                                                       | 337NO-04315-35      |
| 599-04315-40 |                      | 40                      | 334-04315-40                                                                       | 335-04315-40                      | 336NO-04315-40                                                                       | 337NO-04315-40      |
| 599-04316-20 | 2 (50)               | 20                      | 334-04316-20                                                                       | 335-04316-20                      | 336NO-04316-20                                                                       | 337NO-04316-20      |
| 599-04316-25 |                      | 25                      | 334-04316-25                                                                       | 335-04316-25                      | 336NO-04316-25                                                                       | 337NO-04316-25      |
| 599-04316-30 |                      | 30                      | 334-04316-30                                                                       | 335-04316-30                      | 336NO-04316-30                                                                       | 337NO-04316-30      |
| 599-04316-35 |                      | 35                      | 334-04316-35                                                                       | 335-04316-35                      | 336NO-04316-35                                                                       | 337NO-04316-35      |
| 599-04316-40 |                      | 40                      | 334-04316-40                                                                       | 335-04316-40                      | 336NO-04316-40                                                                       | 337NO-04316-40      |
| 599-04316-45 |                      | 45                      | 334-04316-45                                                                       | 335-04316-45                      | 336NO-04316-45                                                                       | 337NO-04316-45      |
| 599-04316-50 |                      | 50                      | 334-04316-50                                                                       | 335-04316-50                      | 336NO-04316-50                                                                       | 337NO-04316-50      |

**NOTE:**

See SAY Series Valve Actuators Technical Instructions (155-580 and 155-581) and Installation Instructions (129-583) for reverse-acting (normally closed) operation.

Table 7. 1/2-Inch 2-Way Normally Closed Valve and Actuator Assemblies.

| Valve Body    | Line Size, Inch (mm) | Factory Preset Max. GPM | Non-Spring Return                                                                 |               | Spring Return                                                                       |                |
|---------------|----------------------|-------------------------|-----------------------------------------------------------------------------------|---------------|-------------------------------------------------------------------------------------|----------------|
|               |                      |                         | SSD81U Floating                                                                   | SSD61U 0-10V  | SSD81.5U Floating                                                                   | SSD61.5U 0-10V |
|               |                      |                         |  |               |  |                |
|               |                      |                         | Actuator Prefix Code                                                              |               |                                                                                     |                |
|               |                      |                         | 230                                                                               | 231           | 232                                                                                 | 233            |
| 599-04300-0.5 | 1/2 (15)             | 0.5                     | 230-04300-0.5                                                                     | 231-04300-0.5 | 232-04300-0.5                                                                       | 233-04300-0.5  |
| 599-04300-1   |                      | 1                       | 230-04300-1                                                                       | 231-04300-1   | 232-04300-1                                                                         | 233-04300-1    |
| 599-04300-1.5 |                      | 1.5                     | 230-04300-1.5                                                                     | 231-04300-1.5 | 232-04300-1.5                                                                       | 233-04300-1.5  |
| 599-04300-2   |                      | 2                       | 230-04300-2                                                                       | 231-04300-2   | 232-04300-2                                                                         | 233-04300-2    |
| 599-04300-2.5 |                      | 2.5                     | 230-04300-2.5                                                                     | 231-04300-2.5 | 232-04300-2.5                                                                       | 233-04300-2.5  |
| 599-04301-3   |                      | 3                       | 230-04301-3                                                                       | 231-04301-3   | 232-04301-3                                                                         | 233-04301-3    |
| 599-04301-3.5 |                      | 3.5                     | 230-04301-3.5                                                                     | 231-04301-3.5 | 232-04301-3.5                                                                       | 233-04301-3.5  |
| 599-04301-4   |                      | 4                       | 230-04301-4                                                                       | 231-04301-4   | 232-04301-4                                                                         | 233-04301-4    |
| 599-04301-4.5 |                      | 4.5                     | 230-04301-4.5                                                                     | 231-04301-4.5 | 232-04301-4.5                                                                       | 233-04301-4.5  |
| 599-04301-5   |                      | 5                       | 230-04301-5                                                                       | 231-04301-5   | 232-04301-5                                                                         | 233-04301-5    |
| 599-04301-5.5 |                      | 5.5                     | 230-04301-5.5                                                                     | 231-04301-5.5 | 232-04301-5.5                                                                       | 233-04301-5.5  |
| 599-04301-6   |                      | 6                       | 230-04301-6                                                                       | 231-04301-6   | 232-04301-6                                                                         | 233-04301-6    |
| 599-04301-6.5 |                      | 6.5                     | 230-04301-6.5                                                                     | 231-04301-6.5 | 232-04301-6.5                                                                       | 233-04301-6.5  |
| 599-04301-7   |                      | 7                       | 230-04301-7                                                                       | 231-04301-7   | 232-04301-7                                                                         | 233-04301-7    |
| 599-04301-7.5 |                      | 7.5                     | 230-04301-7.5                                                                     | 231-04301-7.5 | 232-04301-7.5                                                                       | 233-04301-7.5  |

Table 8. 3/4-Inch 2-Way Normally Closed Valve and Actuator Assemblies.

| Valve Body    | Line Size, Inch (mm) | Factory Preset Max. GPM | Non-Spring Return                                                                   |               | Spring Return                                                                         |                |
|---------------|----------------------|-------------------------|-------------------------------------------------------------------------------------|---------------|---------------------------------------------------------------------------------------|----------------|
|               |                      |                         | SSD81U Floating                                                                     | SSD61U 0-10V  | SSD81.5U Floating                                                                     | SSD61.5U 0-10V |
|               |                      |                         |  |               |  |                |
|               |                      |                         | Actuator Prefix Code                                                                |               |                                                                                       |                |
|               |                      |                         | 230                                                                                 | 231           | 232                                                                                   | 233            |
| 599-04302-1   | 3/4 (20)             | 1                       | 230-04302-1                                                                         | 231-04302-1   | 232-04302-1                                                                           | 233-04302-1    |
| 599-04302-1.5 |                      | 1.5                     | 230-04302-1.5                                                                       | 231-04302-1.5 | 232-04302-1.5                                                                         | 233-04302-1.5  |
| 599-04302-2   |                      | 2                       | 230-04302-2                                                                         | 231-04302-2   | 232-04302-2                                                                           | 233-04302-2    |
| 599-04302-2.5 |                      | 2.5                     | 230-04302-2.5                                                                       | 231-04302-2.5 | 232-04302-2.5                                                                         | 233-04302-2.5  |
| 599-04302-3   |                      | 3                       | 230-04302-3                                                                         | 231-04302-3   | 232-04302-3                                                                           | 233-04302-3    |
| 599-04302-3.5 |                      | 3.5                     | 230-04302-3.5                                                                       | 231-04302-3.5 | 232-04302-3.5                                                                         | 233-04302-3.5  |
| 599-04302-4   |                      | 4                       | 230-04302-4                                                                         | 231-04302-4   | 232-04302-4                                                                           | 233-04302-4    |
| 599-04302-4.5 |                      | 4.5                     | 230-04302-4.5                                                                       | 231-04302-4.5 | 232-04302-4.5                                                                         | 233-04302-4.5  |
| 599-04303-5   |                      | 5                       | 230-04303-5                                                                         | 231-04303-5   | 232-04303-5                                                                           | 233-04303-5    |
| 599-04303-5.5 |                      | 5.5                     | 230-04303-5.5                                                                       | 231-04303-5.5 | 232-04303-5.5                                                                         | 233-04303-5.5  |
| 599-04303-6   |                      | 6                       | 230-04303-6                                                                         | 231-04303-6   | 232-04303-6                                                                           | 233-04303-6    |
| 599-04303-6.5 |                      | 6.5                     | 230-04303-6.5                                                                       | 231-04303-6.5 | 232-04303-6.5                                                                         | 233-04303-6.5  |
| 599-04303-7   |                      | 7                       | 230-04303-7                                                                         | 231-04303-7   | 232-04303-7                                                                           | 233-04303-7    |
| 599-04303-7.5 |                      | 7.5                     | 230-04303-7.5                                                                       | 231-04303-7.5 | 232-04303-7.5                                                                         | 233-04303-7.5  |
| 599-04303-8   |                      | 8                       | 230-04303-8                                                                         | 231-04303-8   | 232-04303-8                                                                           | 233-04303-8    |
| 599-04303-8.5 |                      | 8.5                     | 230-04303-8.5                                                                       | 231-04303-8.5 | 232-04303-8.5                                                                         | 233-04303-8.5  |

**Table 9. 1-Inch 2-Way Normally Closed Valve and Actuator Assemblies.**

| Valve Body  | Line Size, Inch (mm) | Factory Preset Max. GPM | Non-Spring Return                                                                 |              | Spring Return                                                                       |                |
|-------------|----------------------|-------------------------|-----------------------------------------------------------------------------------|--------------|-------------------------------------------------------------------------------------|----------------|
|             |                      |                         | SSD81U Floating                                                                   | SSD61U 0-10V | SSD81.5U Floating                                                                   | SSD61.5U 0-10V |
|             |                      |                         |  |              |  |                |
|             |                      |                         | Actuator Prefix Code                                                              |              |                                                                                     |                |
|             |                      | 230                     | 231                                                                               | 232          | 233                                                                                 |                |
| 599-04304-1 | 1 (25)               | 1                       | 230-04304-1                                                                       | 231-04304-1  | 232-04304-1                                                                         | 233-04304-1    |
| 599-04304-2 |                      | 2                       | 230-04304-2                                                                       | 231-04304-2  | 232-04304-2                                                                         | 233-04304-2    |
| 599-04304-3 |                      | 3                       | 230-04304-3                                                                       | 231-04304-3  | 232-04304-3                                                                         | 233-04304-3    |
| 599-04304-4 |                      | 4                       | 230-04304-4                                                                       | 231-04304-4  | 232-04304-4                                                                         | 233-04304-4    |
| 599-04304-5 |                      | 5                       | 230-04304-5                                                                       | 231-04304-5  | 232-04304-5                                                                         | 233-04304-5    |
| 599-04304-6 |                      | 6                       | 230-04304-6                                                                       | 231-04304-6  | 232-04304-6                                                                         | 233-04304-6    |
| 599-04304-7 |                      | 7                       | 230-04304-7                                                                       | 231-04304-7  | 232-04304-7                                                                         | 233-04304-7    |
| 599-04304-8 |                      | 8                       | 230-04304-8                                                                       | 231-04304-8  | 232-04304-8                                                                         | 233-04304-8    |
| 599-04304-9 |                      | 9                       | 230-04304-9                                                                       | 231-04304-9  | 232-04304-9                                                                         | 233-04304-9    |

**Table 10. 1-1/4 Inch 2-Way Normally Closed Valve and Actuator Assemblies.**

| Valve Body   | Line Size, Inch (mm) | Factory Preset Max. GPM | Non-Spring Return                                                                  |              | Spring Return                                                                        |                |
|--------------|----------------------|-------------------------|------------------------------------------------------------------------------------|--------------|--------------------------------------------------------------------------------------|----------------|
|              |                      |                         | SSD81U Floating                                                                    | SSD61U 0-10V | SSD81.5U Floating                                                                    | SSD61.5U 0-10V |
|              |                      |                         |  |              |  |                |
|              |                      |                         | Actuator Prefix Code                                                               |              |                                                                                      |                |
|              |                      |                         | 230                                                                                | 231          | 232                                                                                  | 233            |
| 599-04305-3  | 1-1/4 (32)           | 3                       | 230-04305-3                                                                        | 231-04305-3  | 232-04305-3                                                                          | 233-04305-3    |
| 599-04305-4  |                      | 4                       | 230-04305-4                                                                        | 231-04305-4  | 232-04305-4                                                                          | 233-04305-4    |
| 599-04305-5  |                      | 5                       | 230-04305-5                                                                        | 231-04305-5  | 232-04305-5                                                                          | 233-04305-5    |
| 599-04305-6  |                      | 6                       | 230-04305-6                                                                        | 231-04305-6  | 232-04305-6                                                                          | 233-04305-6    |
| 599-04305-7  |                      | 7                       | 230-04305-7                                                                        | 231-04305-7  | 232-04305-7                                                                          | 233-04305-7    |
| 599-04305-8  |                      | 8                       | 230-04305-8                                                                        | 231-04305-8  | 232-04305-8                                                                          | 233-04305-8    |
| 599-04305-9  |                      | 9                       | 230-04305-9                                                                        | 231-04305-9  | 232-04305-9                                                                          | 233-04305-9    |
| 599-04305-10 |                      | 10                      | 230-04305-10                                                                       | 231-04305-10 | 232-04305-10                                                                         | 233-04305-10   |
| 599-04305-11 |                      | 11                      | 230-04305-11                                                                       | 231-04305-11 | 232-04305-11                                                                         | 233-04305-11   |
| 599-04305-12 |                      | 12                      | 230-04305-12                                                                       | 231-04305-12 | 232-04305-12                                                                         | 233-04305-12   |
| 599-04305-13 |                      | 13                      | 230-04305-13                                                                       | 231-04305-13 | 232-04305-13                                                                         | 233-04305-13   |

**Table 11. 1-1/2-Inch and 2-Inch 2-Way Normally Closed Valve and Actuator Assemblies.**

| Valve Body   | Line Size, Inch (mm) | Factory Preset Max. GPM | Spring Return                                                                      |                     |
|--------------|----------------------|-------------------------|------------------------------------------------------------------------------------|---------------------|
|              |                      |                         | 599-03616NC Floating                                                               | 599-03617NC 0 – 10V |
|              |                      |                         |  |                     |
|              |                      |                         | Actuator Prefix Code                                                               |                     |
|              |                      |                         | 336NC                                                                              | 337NC               |
| 599-04315-15 | 1-1/2 (40)           | 15                      | 336NC-04315-15                                                                     | 337NC-04315-15      |
| 599-04315-20 |                      | 20                      | 336NC-04315-20                                                                     | 337NC-04315-20      |
| 599-04315-25 |                      | 25                      | 336NC-04315-25                                                                     | 337NC-04315-25      |
| 599-04315-30 |                      | 30                      | 336NC-04315-30                                                                     | 337NC-04315-30      |
| 599-04315-35 |                      | 35                      | 336NC-04315-35                                                                     | 337NC-04315-35      |
| 599-04315-40 |                      | 40                      | 336NC-04315-40                                                                     | 337NC-04315-40      |
| 599-04316-20 | 2 (50)               | 20                      | 336NC-04316-20                                                                     | 337NC-04316-20      |
| 599-04316-25 |                      | 25                      | 336NC-04316-25                                                                     | 337NC-04316-25      |
| 599-04316-30 |                      | 30                      | 336NC-04316-30                                                                     | 337NC-04316-30      |
| 599-04316-35 |                      | 35                      | 336NC-04316-35                                                                     | 337NC-04316-35      |
| 599-04316-40 |                      | 40                      | 336NC-04316-40                                                                     | 337NC-04316-40      |
| 599-04316-45 |                      | 45                      | 336NC-04316-45                                                                     | 337NC-04316-45      |
| 599-04316-50 |                      | 50                      | 336NC-04316-50                                                                     | 337NC-04316-50      |

**Disposal**

The actuators are considered electrical and electronic equipment for disposal in terms of the applicable European Directive and may not be disposed of as domestic garbage.

- Dispose of the actuators through channels provided for this purpose.
- Comply with all local and currently applicable laws and regulations.

Do not dispose of valves as household waste.

- Special handling of individual components may be mandated by law or make ecological sense.
- Observe all local and currently applicable laws and regulations.

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