

667M Series

Diaphragm Actuator

Sizes 30-70

The 667M Series is a reverse-acting, spring-opposed diaphragm actuators providing 3" (76 mm) of maximum travel. Although typical pressure ranges are 3 to 15 psi (0, 21 to 1,03 bar) or 6 to 30 psi (0,41 to 2,07 bar), additional pressure ranges are available upon request. The 667M Actuator is used for automatic operation of control valves, effective in applications where throttling or on/off service is required.

The actuator positions the valve plug in the valve in direct response to the varying loading pressure on the actuator diaphragm. When the signal pressure increases to the lower diaphragm casing, the actuator stem is forced upward, compressing the spring. When the signal pressure is reduced, the spring moves the actuator stem in the downward direction. If the signal pressure should fail, the spring will force the stem downward, providing "fail-closed action" for "push down to close" valves.



667M Actuator

SPECIFICATIONS

Refer to the Specifications Table for the 667M Actuator, and to the nameplate on your actuator for settings specific to your equipment.

It is important not to exceed the Maximum Diaphragm Pressure as listed in the Specifications Table when the actuator is set at less than full travel. If this pressure is exceeded before the travel stop comes in contact with the upper diaphragm plate, the maximum allowable valve stem load may be exceeded.

The Maximum Excess Diaphragm Pressure as listed in the Specifications Table is the pressure that can be added when the actuator is set at full travel. The sum of the pressure which is required to fully stroke the valve and the excess pressure added when the actuator is against the stop must not exceed the "Maximum Diaphragm Casing Pressure" as outlined in the Specifications Table.



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667M SERIES DIAPHRAGM ACTUATOR

SPECIFICATIONS (CONT'D)

| Specification | | Actuator Size | | | | | | | | |
|--|------------|---------------|--------|---------|---------|---------|--------|--------|--------|-----|
| | | 30 | 34 | 40 | 45 | 46 | 50 | 60 | 70 | |
| Nominal Effective Area | Sq. In. | 46 | 69 | 69 | 105 | 156 | 105 | 156 | 220 | |
| | Sq. cm | 297 | 445 | 445 | 677 | 1006 | 677 | 1006 | 1419 | |
| Yoke Boss Size Diameter | In. | 2-1/8 | 2-1/8 | 2-13/16 | 2-13/16 | 2-13/16 | 3-9/16 | 3-9/16 | 3-9/16 | |
| | mm | 54 | 54 | 71 | 71 | 71 | 90 | 90 | 90 | |
| Valve Stem Size | In. | 3/8 | 3/8 | 1/2 | 1/2 | 1/2 | 3/4 | 3/4 | 3/4 | |
| | mm. | 9.5 | 9.5 | 12.7 | 12.7 | 12.7 | 19.1 | 19.1 | 19.1 | |
| Max. Allowable Output Thrust | Lbs | 2300 | 2300 | 2700 | 5650 | 7550 | 5650 | 6800 | 8800 | |
| | N | 10,230 | 10,230 | 12,010 | 25,131 | 33,582 | 25,131 | 30,246 | 39,142 | |
| Maximum Travel ² | Standard | In. | 3/4 | 3/4 | 1-1/2 | 2 | 2 | 2 | 2 | 3 |
| | | mm | 19 | 19 | 38 | 51 | 51 | 51 | 51 | 76 |
| | Top-Loaded | In. | --- | 3/4 | --- | 3/4 | --- | --- | 1-1/8 | --- |
| | | mm | --- | 19 | --- | 19 | --- | --- | 29 | --- |
| Max. Diaphragm Pressure to Stroke Actuator | Psig | 40 | 45 | 45 | 50 | 45 | 50 | 45 | 40 | |
| | Bar | 2.8 | 3.1 | 3.1 | 3.4 | 3.1 | 3.4 | 3.1 | 2.8 | |
| Max. Excess Diaphragm Pressure | Psig | 70 | 45 | 45 | 30 | 15 | 30 | 15 | 15 | |
| | Bar | 4.8 | 3.1 | 3.1 | 2.1 | 1.0 | 2.1 | 1.0 | 1.0 | |
| Max. Diaphragm Case Pressure ¹ | Psig | 110 | 90 | 90 | 65 | 55 | 65 | 55 | 55 | |
| | Bar | 7.6 | 6.2 | 6.2 | 4.5 | 3.8 | 4.5 | 3.8 | 3.8 | |
| Approximate Weight | Lb | 40 | 60 | 56 | 95 | 125 | 97 | 125 | 254 | |
| | Kg | 18 | 27 | 25 | 43 | 57 | 44 | 57 | 115 | |

1. Maximum diaphragm casing pressure must not be exceeded, and must not produce a force on the actuator stem greater than the maximum allowable actuator output thrust or the maximum allowable valve stem load.

2. Actuator travel may be less than the value specified after being connected to the valve.