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CATALOG KỸ THUẬT · JOHNSON CONTROLS

## Van cầu điều khiển VGA7000

van cầu inox nổi ren 2 ngã, 3 ngã · DN15–DN50

VGA7000 Johnson Controls – van cầu điều khiển inox nổi ren DN15–DN50, Kvs 0,63–40, 2 ngã và 3 ngã, dùng bộ truyền động VAP cho AHU, bộ trao đổi nhiệt.

Mã: VGA7000 · Hãng: Johnson Controls · Hotline: 093 797 2339

[dlk.com.vn/vga7000-johnson-controls-van-cau-dieu-khien.html](http://dlk.com.vn/vga7000-johnson-controls-van-cau-dieu-khien.html)



[www.dlk.com.vn](http://www.dlk.com.vn)

# VGA7000 Series Threaded Globe Valves & Actuators

## Features

- DN15 to DN50 available
- Kvs 0.63 to 40m<sup>3</sup>/h
- High-grade Stainless Steel for Valve body and stem
- Standard threaded connection of ISO7-1 Rp
- Fitted with VAP-B with various  $\Delta P$  available for different applications



## Technical Data

|                       |                                                                               |
|-----------------------|-------------------------------------------------------------------------------|
| Rated pressure        | PN16                                                                          |
| Threaded connection   | ISO7-1 Rp                                                                     |
| Media                 | Water, glycol solutions (<50%)                                                |
| Temperature range     | -10~120°C                                                                     |
| Valve Characteristics | DN20~25 equal percentage at full range                                        |
|                       | DN15, DN32~50 equal percentage at 0~40%, modified equal percentage at 40~100% |
|                       | For 3-Way bypass port, Linear at all sizes and opening                        |
| Leakage rage          | ≤0.01% of Kvs                                                                 |
| Rangibility           | >50:1                                                                         |

Note: When media temperature is below 2°C, a stem heater is required. Please order "VGA-H1" .

## Material

|                   |                                                                  |
|-------------------|------------------------------------------------------------------|
| Valve body        | Stainless steel                                                  |
| Valve trim        | Stainless steel                                                  |
| Valve stem        | Stainless steel                                                  |
| Sealing structure | V model sealing gland + stainless steel spring self-compensation |
| Stem sealing      | PTFE+VITON                                                       |

## Model List

| Size | 2-way     | 3-way<br>mixing/diverting | Stroke (mm) | Kvs (m <sup>3</sup> /h)<br>at control port | Kvs (m <sup>3</sup> /h)<br>at bypass port (for 3-way only) |
|------|-----------|---------------------------|-------------|--------------------------------------------|------------------------------------------------------------|
| DN15 | VGA7201AC | VGA7803AC                 | 10          | 0.63                                       | 0.63                                                       |
|      | VGA7201AD | VGA7803AD                 | 10          | 1                                          | 1                                                          |
|      | VGA7201AE | VGA7803AE                 | 10          | 1.6                                        | 1.6                                                        |
|      | VGA7201AF | VGA7803AF                 | 10          | 2.5                                        | 2.5                                                        |
|      | VGA7201AG | VGA7803AG                 | 10          | 4                                          | 4                                                          |
| DN20 | VGA7201BL | VGA7803BL                 | 10          | 6.3                                        | 6.3                                                        |
| DN25 | VGA7201CN | VGA7803CN                 | 15          | 10                                         | 10                                                         |
| DN32 | VGA7201DP | VGA7803DP                 | 20          | 16                                         | 16                                                         |
| DN40 | VGA7201ER | VGA7803ER                 | 20          | 25                                         | 25                                                         |
| DN50 | VGA7201FS | VGA7803FS                 | 20          | 40                                         | 40                                                         |

Note: 3-way mixing and diverting share same valve body, flow direction is indicated on nameplate

# Globe Valve & Actuator

## Selection Table

|                                                                                                                                                                                |      |           |                                                                                                |                                               |
|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|------|-----------|------------------------------------------------------------------------------------------------|-----------------------------------------------|
| <div>VGA7000 DN15-DN50<br/>2 Way Globe Valves with<br/>Electrical Actuators</div> <div></div> |      |           | Non Spring Return                                                                              |                                               |
|                                                                                                                                                                                |      |           |                                                                                                |                                               |
|                                                                                                                                                                                |      |           | VAP600S                                                                                        | VAP1000S                                      |
|                                                                                                                                                                                |      |           | <div></div> |                                               |
|                                                                                                                                                                                |      |           | Floating<br>0 (2) to 10 VDC<br>0 (4) to 20 mA                                                  | Floating<br>0 (2) to 10 VDC<br>0 (4) to 20 mA |
| Position Feedback                                                                                                                                                              |      |           |                                                                                                |                                               |
| 0(2) to 10 VDC or 0(4) to 20 mA                                                                                                                                                |      |           | ■                                                                                              | ■                                             |
| Power Requirement                                                                                                                                                              |      |           |                                                                                                |                                               |
| 24 VAC /VDC                                                                                                                                                                    |      |           | ■                                                                                              | ■                                             |
| 220 VAC +/-15% 50/60 Hz                                                                                                                                                        |      |           |                                                                                                |                                               |
| Electrical Connections                                                                                                                                                         |      |           |                                                                                                |                                               |
| Screw terminal                                                                                                                                                                 |      |           | ■                                                                                              | ■                                             |
| DN                                                                                                                                                                             | Kvs  | 2-way     | Close-off Pressure (kPa)                                                                       |                                               |
| DN15                                                                                                                                                                           | 0.63 | VGA7201AC | 1300                                                                                           | 1600                                          |
| DN15                                                                                                                                                                           | 1    | VGA7201AD | 1300                                                                                           | 1600                                          |
| DN15                                                                                                                                                                           | 1.6  | VGA7201AE | 1300                                                                                           | 1600                                          |
| DN15                                                                                                                                                                           | 2.5  | VGA7201AF | 1300                                                                                           | 1600                                          |
| DN15                                                                                                                                                                           | 4    | VGA7201AG | 1300                                                                                           | 1600                                          |
| DN20                                                                                                                                                                           | 6.3  | VGA7201BL | 1300                                                                                           | 1600                                          |
| DN25                                                                                                                                                                           | 10   | VGA7201CN | 850                                                                                            | 1300                                          |
| DN32                                                                                                                                                                           | 16   | VGA7201DP | 550                                                                                            | 900                                           |
| DN40                                                                                                                                                                           | 25   | VGA7201ER | 350                                                                                            | 600                                           |
| DN50                                                                                                                                                                           | 40   | VGA7201FS | 240                                                                                            | 400                                           |
|                                                                                                                                                                                |      |           | VAP600S-24-B                                                                                   | VAP1000S-24-B                                 |

Bold numbers for close-off pressure indicate preferred value for HVAC application

## VGA7000 DN15-DN50 3 Way Globe Valves with Electrical Actuators



### Non Spring Return

VAP600S

VAP1000S



Floating  
0 (2) to 10 VDC  
0 (4) to 20 mA

Floating  
0 (2) to 10 VDC  
0 (4) to 20 mA

### Position Feedback

0(2) to 10 VDC or 0(4) to 20 mA



### Power Requirement

24 VAC /VDC



220 VAC+/-15% 50/60 Hz

### Electrical Connections

Screw terminal

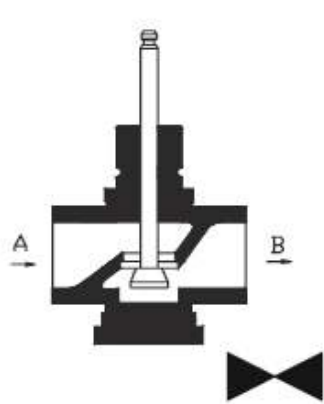


| DN   | Kvs  | 3-way     | Close-off Pressure (kPa) |            |               |            |
|------|------|-----------|--------------------------|------------|---------------|------------|
|      |      |           | Mixing                   | Diverting  | Mixing        | Diverting  |
| DN15 | 0.63 | VGA7803AC | <b>1300</b>              | <b>650</b> | 1600          | 800        |
| DN15 | 1    | VGA7803AD | <b>1300</b>              | <b>650</b> | 1600          | 800        |
| DN15 | 1.6  | VGA7803AE | <b>1300</b>              | <b>650</b> | 1600          | 800        |
| DN15 | 2.5  | VGA7803AF | <b>1300</b>              | <b>650</b> | 1600          | 800        |
| DN15 | 4    | VGA7803AG | <b>1300</b>              | <b>650</b> | 1600          | 800        |
| DN20 | 6.3  | VGA7803BL | <b>1300</b>              | <b>650</b> | 1600          | 800        |
| DN25 | 10   | VGA7803CN | <b>850</b>               | <b>425</b> | 1300          | 650        |
| DN32 | 16   | VGA7803DP | <b>550</b>               | <b>275</b> | 900           | 450        |
| DN40 | 25   | VGA7803ER | 350                      | 175        | <b>600</b>    | <b>300</b> |
| DN50 | 40   | VGA7803FS | 240                      | 120        | <b>400</b>    | <b>200</b> |
|      |      |           | VAP600S-24-B             |            | VAP1000S-24-B |            |

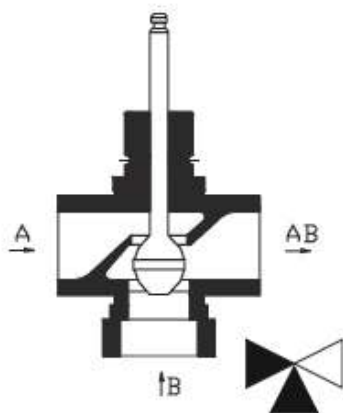
Bold numbers for close-off pressure indicate preferred value for HVAC application

# Globe Valve & Actuator

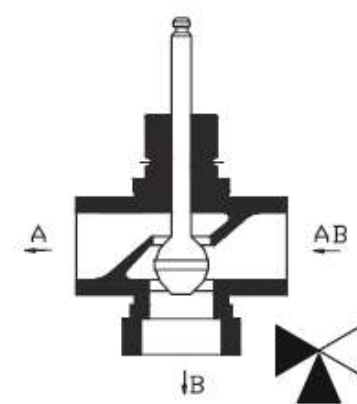
## Mechanical Design



DN15-DN50 2-way



DN15-DN50 3-way mixing

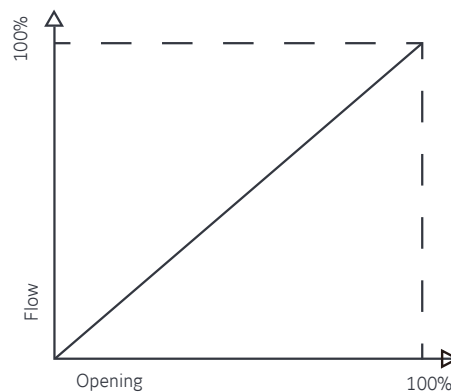
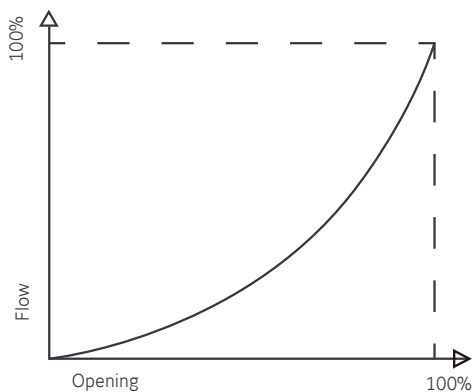


DN15-DN50 3-way diverting

## Flow Characteristic

A - AB: DN20~DN25, Equal percentage  
DN15, DN32~50, Equal percentage at 0-40%,  
while modified equal percentage at 40-100%;

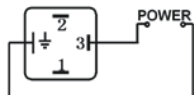
B - AB: Linear



## Accessory (Stem Heater)



VGA-H1 Stem Heater

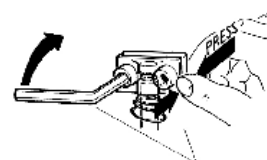
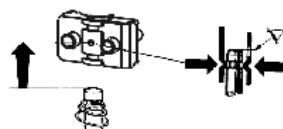


Wiring Diagram

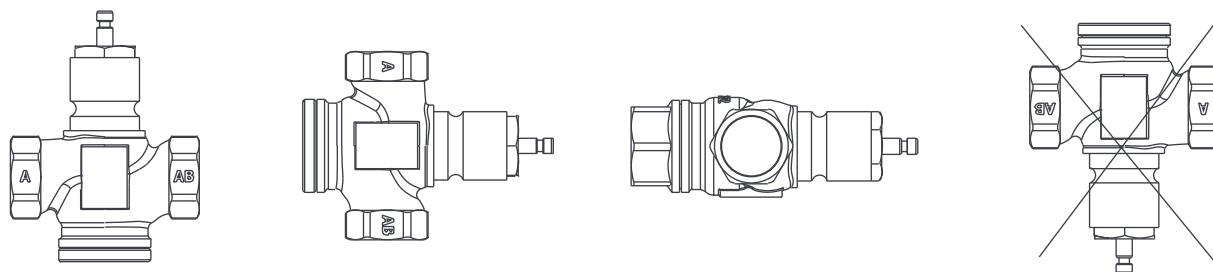
| Model  | Stroke | Power Supply | Power Consumption | Heating Temperature |
|--------|--------|--------------|-------------------|---------------------|
| VGA-H1 | ≤20mm  | 24VAC/DC     | 15w               | 80-120°C            |



Note: the side with "24V 15W" shall be placed to face down



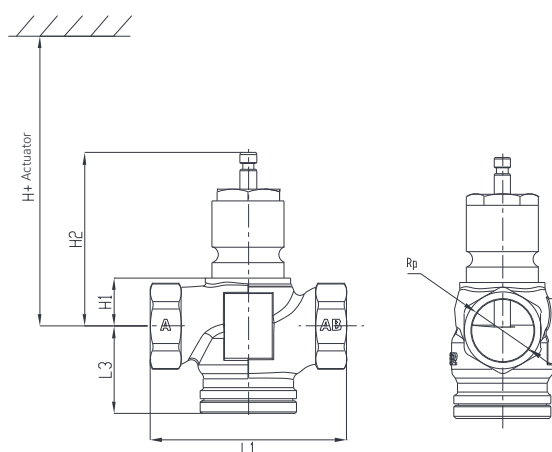
## Installation



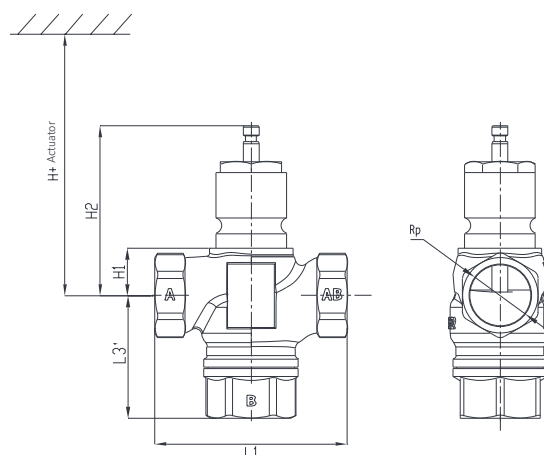
- The valves are to be installed by skilled personnel and in strict accordance with the installation instructions and local regulations. Johnson Controls assumes no responsibility for damages or injuries resulting from non-compliance with installation instructions or standard good practice when mounting, operating or maintaining the valve, even if not explicitly mentioned herein.
- The valve and the pipes must be free of dirt, welding beads, etc.
- The valves are designed for a fluid temperature range, flow direction, as well as for a maximum pressure, as shown in this installation instruction.
- There should be no mechanical tension in the pipe work when the valve is fitted.

## Dimensions

VGA72xx 2-way Valve



VGA78xx 3-way Valve



| DN | Rp     | L1 mm | L3 mm 2-way | L3 mm 3-way | H1 mm | H2 mm | Weight kg 2-way | Weight kg 3-way | H-1 mm | H-2 mm |
|----|--------|-------|-------------|-------------|-------|-------|-----------------|-----------------|--------|--------|
| 15 | 1/2"   | 75    | 38          | 53          | 20    | 97    | 1               | 1.1             | 275    | 275    |
| 20 | 3/4"   | 80    | 38          | 55          | 20    | 97    | 1.2             | 1.2             | 275    | 275    |
| 25 | 1"     | 105   | 43          | 60          | 26    | 103   | 1.6             | 1.6             | 281    | 281    |
| 32 | 1-1/4" | 120   | 52.5        | 76          | 29.5  | 106   | 2               | 2.1             | 285    | 285    |
| 40 | 1-1/2" | 130   | 53          | 79          | 36    | 113   | 2.5             | 2.6             | 291    | 291    |
| 50 | 2"     | 150   | 68          | 92          | 51    | 128   | 3.8             | 3.8             | 306    | 306    |

Note: H-1: for 600N(VAP600S) actuator; H-2: for 1000N(VAP1000S) actuator



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