

AME 685 actuator and VF3 large 3-way valve

An unbeatable combination with unique flexibility for your cooling applications

Extended range of VF3 large 3-way valve DN 200, 250, 300 with AME 685 actuator.



Extended range

VF3 large – best in
class rangeability
and leakage rate,
combined with a
smarter actuator.

The perfect combination

One actuator for modulation and 3 point control
One valve for mixing and diverting applications

VF3 Large – extended range for improved flexibility

To enable more flexibility for your cooling applications Danfoss has extended the range of 3-way valves from DN 200 to **DN 300**. With precision engineering we have developed a valve that has only **0.01% Kvs leakage** and 50:1 control ratio and is perfectly suited for both mixing and diverting applications. The new range is covering flows from 630 m³/h to 1350 m³/h.

AME 685 – one actuator for all your needs

AME 685 is a stronger and faster actuator with possibility to modify its static characteristic according to systems needs, **5000N force and selectable speed**. Equipped with automatic modification of dynamic characteristic the actuator is able to prevent system temperature oscillations. AC/DC power supply and current/voltage input/output possibility is enabling unique flexibility in all applications.



Easy installation

VF3 large valve

- One valve can be used in mixing and diverting applications
- 360° mounting possibility that enables flexibility in installation

AME 685 actuator

- LED indication for clear operational status
- Manual operation can be mechanical and/or electrical
- External reset button in case of trouble shooting
- Service cover access ensuring simple and fast wiring in tight spaces
- Thermic and overload protection for safety reasons
- AC/DC power supply



Easy commissioning

VF3 large valve

- Fast and simple mounting process of actuator to the valve
- Replaceable stuffing box

AME 685 actuator

- Automatic calibration at start up
- I/U control input, I/U output enables flexibility for controller
- Selectable speed and position indication
- Direct and inverse operation
- Modulation actuator can be wired as 3 point
- Integrated external switches already on the actuator
- Pulse or continues output signal on 4 and 5 terminals



Accurate control

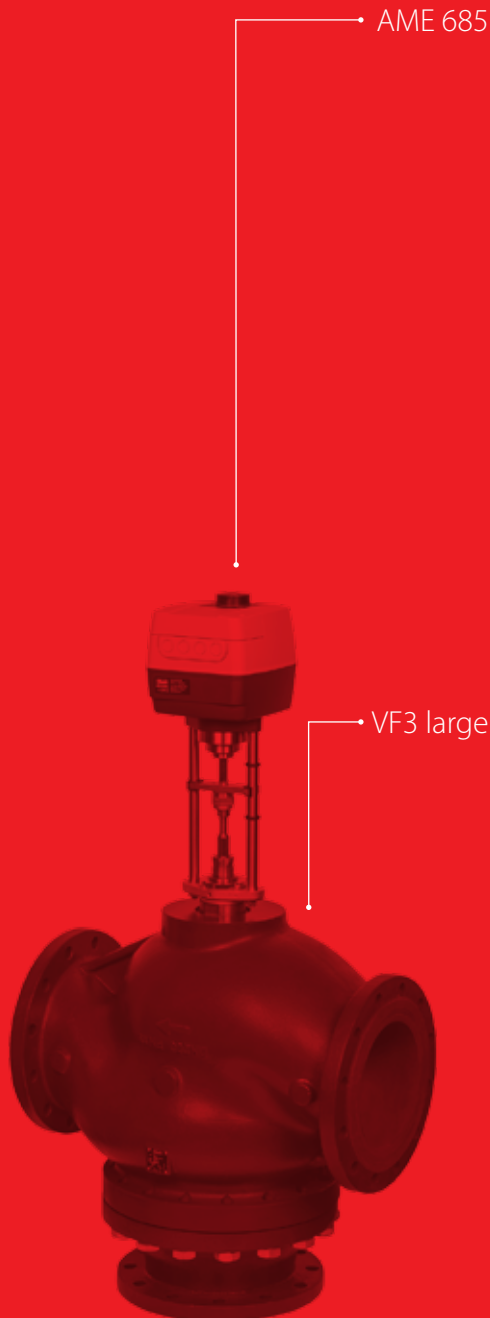
VF3 large valve

- More than 50:1 control ratio on the valve
- Leakage on A-AB and B-AB is 0,01% of Kvs

AME 685 actuator

- Manual modification of actuator static characteristic with internal potentiometer to ensure proper system response
- Automatic modification of actuator dynamic characteristic with advanced adaptive algorithm to prevent system oscillations
- Adjustable stroke limitation to increase valves authority if the valve is used as 2-way (port B is closed)
- Precise regulation and fast response on control signal

Technical data:



| | | |
|--|------|---|
| Power supply | V | 24 or 230; +10 ... -15 %; AC or DC |
| Power consumption | VA | 35 (24 V) 50 (230 V) |
| Frequency | Hz | 50/60 |
| Control input Y | V | 0-10 (2-10) [Ri = 40 kΩ] |
| | mA | 0-20 (4-20) [Ri = 500 Ω] |
| | | 3-point (wiring auto-detection) |
| Control output X | V | 0-10 (2-10) [Ri = 10 kΩ] |
| | mA | 0-20 (4-20) [Ri = 510 Ω] |
| Closing force | N | 5000 |
| Max. stroke | mm | 80 |
| Speed (selectable) | s/mm | 2.7 or 6 |
| Max. medium temperature | | 200 |
| Ambient temperature | °C | 0 ... +55 |
| Storage and transport temperature | | -40 ... +70 (storing for 3 days) |
| Humidity | | 5-95 % |
| Protection class | | II |
| Grade of enclosure | | IP 54 |
| Weight | kg | 7.5 |
| Manual operation | | Electrical and mechanical |
| Power failure response | | Stem remains in last position |
| Marking in accordance with the standards | | Low Voltage Directive 2006/95/EEC EMC Directive 2004/108/EEC |
| Ordering code numbers | | 082G3500 (24V AC/DC) – 082G3501 (230V AC/DC) |

| | | | | |
|------------------------|------|---|-----------------|-----------------|
| Nominal diameter | DN | 200 | 250 | 300 |
| kVS value | m³/h | 630 | 1000 | 1350 |
| Stroke | mm | 57 | | 73 |
| Control range | | >50:1 | | |
| Control characteristic | | LOG: port A-AB; LIN: port B-AB | | |
| Cavitation factor z | | ≥0,45 | | |
| Leakage | A-AB | ≤ 0,01 % of kVS | | |
| | B-AB | | | |
| Nominal pressure | PN | 16 | | |
| Max. closing pressure | | for VF3 (mixing applications) | | |
| AME 685 (5000 N) | | 1.5 | 1.2 | 0.8 |
| AME 855 (15000N) | | 5.0 | 4.0 | 2.5 |
| Max. closing pressure | | for VF3 (diverting applications) | | |
| AME 685 (5000 N) | | 1.2 | 1.0 | 0.5 |
| AME 855 (15000N) | | 4.0 | 3.5 | 2.0 |
| Medium | | Circulation water/glycolic water up to 50 % | | |
| Medium pH | | Min. 7, Max. 10 | | |
| Medium temperature | °C | 2 (-10) ... 130 | | |
| Connections | | Flange PN 16 acc. to EN 1092-2 | | |
| Ordering code numbers | | 065B4200 | 065B4250 | 065B4300 |

AME 685 will be in 2016
also available for below
valve portfolio in HVAC
and DH applications:



AB-QM
DN 150-250



VFM 2
DN 65-250



VF 2
DN 125-150



VF 3
DN 125-300



VFS 2
DN 65-100



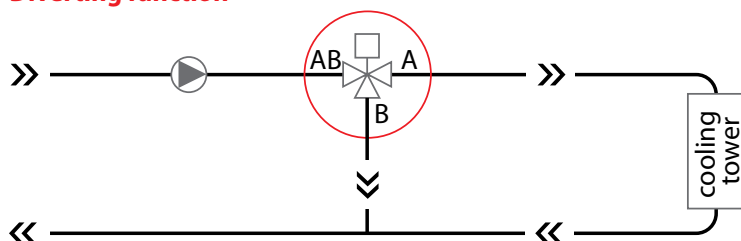
AF-QM
DN 150-250

For detailed technical specifications, see data sheets

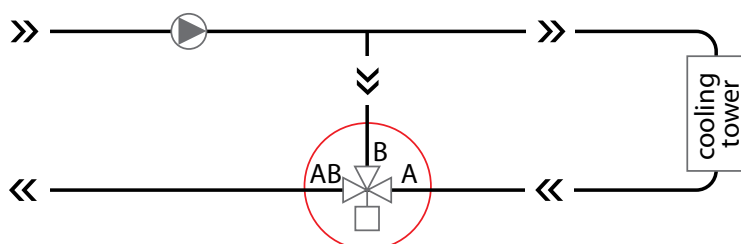
One valve

for mixing and diverting applications

Diverting function



Mixing function



AME 685
actuator

VF3 large
3-way valve

For more application examples see MCV leaflet

Danfoss Design Support Center

A free service to help with selection and sizing

Assistance

We suggest appropriate solutions for given applications, executing part of a designers job related to sizing and optimizing Danfoss products, and assistance in dimensioning other devices in the system (pumps, chillers, etc...)

Verification

We are checking if our products are appropriately sized and fitted in the application, for finished or half-finished designs.

Conversion

In existing designs changing conventional products for Danfoss products.

Optimization

We help with choosing the optimal combination of Danfoss products to ensure energy efficiency. We will also include a rough calculation of energy savings potential.

Contact designsupportcenter@danfoss.com

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