

# STATIC BALANCE VALVE / THREADED

## STATIC BALANCE VALVE

The balance valve is designed for heat transfer devices and units. By preventing a flow above the flow rate for heat transfer, the valve, which makes the system much more reliable, balanced and healthy operation, allows the temperatures to reach comfort conditions.

If the heat transfer device or units accepts the flow above the designed flow at the heating and cooling systems, it can increase the cost as a result of unstable operation. In order to prevent all this, you can choose balance valve which will provide the cheapest temperature for all units of heating and cooling systems.

### Specification

- High sealing
- Compact layout
- Environmentally friendly
- In accordance with EN-12266-1
- Flanges to EN1092-2 Standards
- These valves are equal percentage performance y type globe valves with adjustable throttle disc.
- The double regulating feature allows the valve opening to be adjusted with a 3 mm Allen outline.
- Valve operation is performed by position indicator or by hand wheel with recordable setting position.

### Application Areas

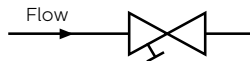
- Industrial cold and hot water plants
- Heating systems
- Industrial technologies
- Cooling and Ventilation installations



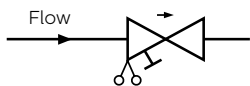
|                |        |
|----------------|--------|
| Body           | Bronze |
| Cover and Disc | Brass  |
| Disc Surface   | PTFE   |
| Stem           | Brass  |
| Gasket         | EPDM   |
| Max. Pressure  | 25 Bar |
| Max. Temp.     | 120°   |

### Installation

Valve to a pipeline of the same nominal size. Where possible, it must be installed in the current direction

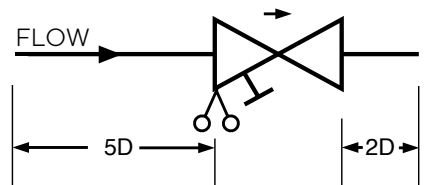


The valve must be mounted on a pipe of the same nominal size. The minimum requirements of the installation must also be consider.



### Installation Layout

Note: To ensure flow measurement accuracy, the pipelines on the inlet and outlet side must be straight and have a diameter of 5 diameters at the inlet and 2 diameters at the outlet.



If it is located at the outlet of pipe, the pipe length between the pump outlet and the valve inlet must be at least 10 diameters.

|                |             |      |      |
|----------------|-------------|------|------|
| Temp. °C       | -10 ile 100 | 110  | 120  |
| Pressure (bar) | 25          | 23.4 | 21.8 |

|                |             |
|----------------|-------------|
| Temp. °C       | -10 ile 100 |
| Pressure (bar) | 16          |

|                |             |      |
|----------------|-------------|------|
| Temp. °C       | -10 ile 100 | 120  |
| Pressure (bar) | 16          | 13.5 |

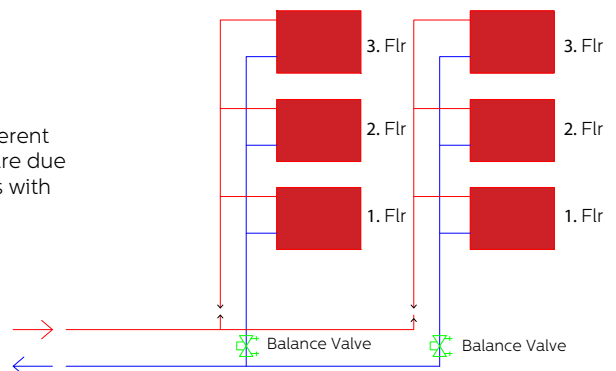
### Threaded

The pressure values are determined by the interpolation method.

### Balanced System

In a system where there is no balance valve, the various resistances between different branch lines cause the flow rate to be distributed incorrectly. These differences are due to the use of different lengths and layout, or, most simply the use of column lines with different capacity requirements.

### Column Line Static Balancing Valve Application Example >>



### End Connections

It is suitable for threaded connection in steel pipes or copper pipes according to BS EN 1057.

**Note:** When using the compression adapters, the maximum pressure according to BS EN 1254/2 should not exceed 16 bar. The compression connection should be manually tightened at the beginning and then tightened along the following recommendation. It can be applied in plastic, glass, ceramic tanks and pipes.

|        |        |        |        |        |        |
|--------|--------|--------|--------|--------|--------|
| 15 mm  | 22 mm  | 28 mm  | 35 mm  | 42 mm  | 54 mm  |
| 1 turn | 1 turn | 1 turn | ¾ turn | ¾ turn | ¾ turn |

### Flow Direction

There is an arrow on the valve body to indicate the flow direction.

### Pressure Test Valves

#### Connection

The threaded connection materials must not be allowed to liquidated surface into the hole. The tightening torque of the clamping nut for the compression connections to the copper pipe should not be large enough to cause the pipe to be crushed.

#### Pipe Fitting

When the copper pipe is cut by roller cutters, burns must be removed and brought to the size of pipe before fitting the device. If these procedures cannot be met, flow measurement may fail.

#### Valve Adjustment Indicator

Valves fully open or closed position comes with 4 full turns of the handwheel. The microset handwheel shows the valve setting with the numbers shown on the outside and inside windows. The digit in the outer window shows a turn of ten. Example: 3.15 shows a return valve setting.



#### Adjustment

The flow adjustment is done by adjusting the valve until the required flow is achieved. The microset handwheel will show the final setting of the valve.

The flow regulation is performed by adjusting the valve setting until the required flow rate derived from the measured signal along the pressure test valves is obtained. The microset handwheel will display the last valve setting. Flow diagrams are available on request for all valve sizes.

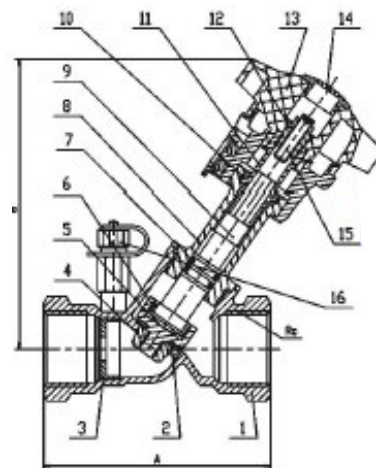
#### Protection Setting

Valve adjustment to the desired flow rate can be maintained as follows.

1. Remove the hand wheel cover.
  2. Use the Allen wrench to tighten the center screw until it stops.
  3. Reinstall the handwheel cover.
- The set and closed set value of the valve can be changed again.

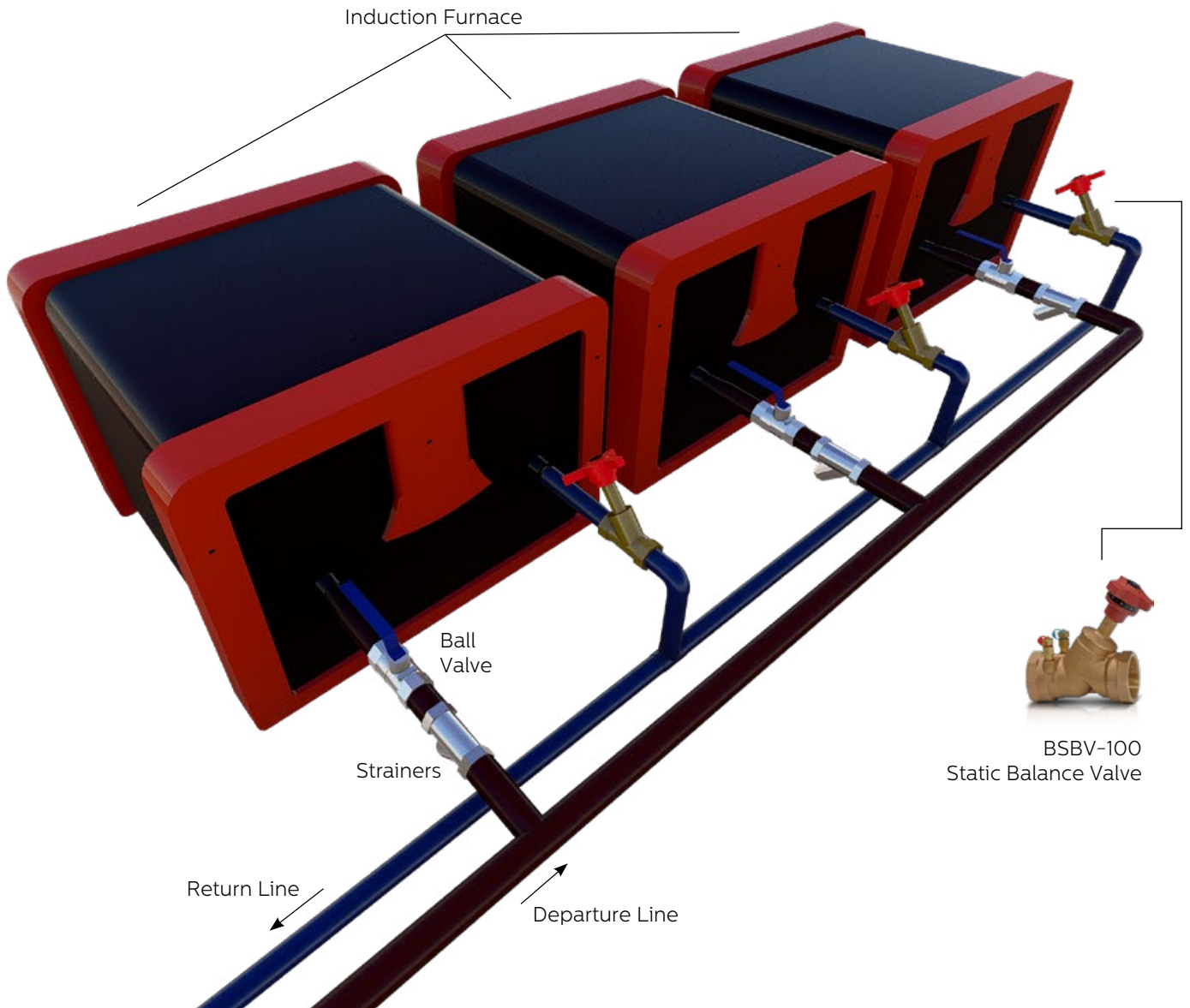
#### Material List

| No | Part List        | Material            | Dim.      |
|----|------------------|---------------------|-----------|
| 1  | Body             | Bronze CC491K       | ALL       |
| 2  | Disc Surface     | P.T.F.E             | 1" - 2"   |
| 2  | Disc Surface     | DZR Brass CW602N    | ½" - ¾"   |
| 3  | Orifice Plate    | DZR Brass CW602N    | ALL       |
| 4  | Gasket           | DZR Brass CW602N    | ALL       |
| 5  | Disc             | DZR Brass CW602N    | ALL       |
| 6  | Disc Holder Ring | DZR Brass CW602N    | ALL       |
| 7  | O-Ring           | N.B.R               | ALL       |
| 8  | Cover            | DZR Brass CW602N    | ½" - 1 ¾" |
| 8  | Cover            | Bronze CC491K       | 1 ½" - 2" |
| 9  | Stem             | DZR Brass CW602N    | ALL       |
| 10 | Retaining Ring   | Stainless Steel 304 | ALL       |
| 11 | Handle           | Brass CW617N        | ALL       |
| 12 | Screw            | Brass CW617N        | ALL       |
| 13 | Handwheel        | PA                  | ALL       |
| 14 | Cover            | PA                  | ALL       |
| 15 | Screw            | Stainless Steel 304 | ALL       |
| v  | Test Point       | DZR Brass CW602N    | ALL       |



#### Dimensions

| DN | INCH | A   | B   | Flow(kv) | Kvs  |
|----|------|-----|-----|----------|------|
| 15 | ½"   | 87  | 105 | 1.72     | 2.2  |
| 20 | ¾"   | 96  | 106 | 2.97     | 4.6  |
| 25 | 1"   | 100 | 127 | 4.75     | 8.5  |
| 32 | 1¼"  | 114 | 128 | 10.25    | 16.7 |
| 40 | 1½"  | 125 | 143 | 16.83    | 26.1 |
| 50 | 2"   | 146 | 144 | 27.26    | 43.2 |



**Note:** It prevents the flow above the required cycle for heat transfer and ensures a more reliable, balanced and healthy operation of the system. It can be adjusted manually by the manual adjustable throttle disc on it.

It is useful to put it on the return line for efficiency.

## Flow Measurement Charts

**Diameter: 15mm**

| No | Adj. Indicator-Bar | Flow-m <sup>3</sup> /h | Pressure Lost-Bar |
|----|--------------------|------------------------|-------------------|
| 1  | 4.0                | 1.91                   | 1.232             |
| 2  |                    | 1.72                   | 0.995             |
| 3  |                    | 1.56                   | 0.826             |
| 4  | 3.5                | 1.72                   | 1.207             |
| 5  |                    | 1.57                   | 0.999             |
| 6  |                    | 1.42                   | 0.837             |
| 7  | 3.0                | 1.31                   | 1.214             |
| 8  |                    | 1.18                   | 0.994             |
| 9  |                    | 1.08                   | 0.837             |
| 10 | 2.5                | 0.88                   | 1.212             |
| 11 |                    | 0.80                   | 0.985             |
| 12 |                    | 0.71                   | 0.786             |
| 13 | 2.0                | 0.67                   | 1.214             |
| 14 |                    | 0.60                   | 0.980             |
| 15 |                    | 0.56                   | 0.845             |
| 16 | 1.5                | 0.50                   | 1.198             |
| 17 |                    | 0.45                   | 0.995             |
| 18 |                    | 0.41                   | 0.823             |
| 19 | 1.0                | 0.32                   | 1.206             |
| 20 |                    | 0.28                   | 0.970             |
| 21 |                    | 0.26                   | 0.811             |
| 22 | 0.5                | 0.19                   | 1.227             |
| 23 |                    | 0.17                   | 0.103             |
| 24 |                    | 0.15                   | 0.802             |

## Flow Measurement Charts

**Diameter: 20mm**

| No | Adj. Indicator-Bar | Flow-m <sup>3</sup> /h | Pressure Lost-Bar |
|----|--------------------|------------------------|-------------------|
| 1  | 4.0                | 3.28                   | 1.214             |
| 2  |                    | 2.94                   | 0.98              |
| 3  |                    | 2.67                   | 0.810             |
| 4  | 3.5                | 2.98                   | 1.206             |
| 5  |                    | 2.72                   | 0.994             |
| 6  |                    | 2.43                   | 0.792             |
| 7  | 3.0                | 2.31                   | 1.181             |
| 8  |                    | 2.17                   | 1.025             |
| 9  |                    | 1.92                   | 0.816             |
| 10 | 2.5                | 1.52                   | 1.119             |
| 11 |                    | 1.43                   | 1.042             |
| 12 |                    | 1.24                   | 0.781             |
| 13 | 2.0                | 0.85                   | 1.173             |
| 14 |                    | 0.77                   | 0.980             |
| 15 |                    | 0.69                   | 0.080             |
| 16 | 1.5                | 0.45                   | 1.221             |
| 17 |                    | 0.41                   | 0.996             |
| 18 |                    | 0.37                   | 0.791             |
| 19 | 1.0                | 0.29                   | 1.177             |
| 20 |                    | 0.26                   | 1.030             |
| 21 |                    | 0.23                   | 0.772             |
| 22 | 0.5                | 0.17                   | 1.203             |
| 23 |                    | 0.15                   | 0.975             |
| 24 |                    | 0.13                   | 0.830             |

## Flow Measurement Charts

**Diameter: 25mm**

| No | Adj. Indicator-Bar | Flow-m <sup>3</sup> /h | Pressure Lost-Bar |
|----|--------------------|------------------------|-------------------|
| 1  | 4.0                | 5.25                   | 1.223             |
| 2  |                    | 4.70                   | 0.976             |
| 3  |                    | 4.31                   | 0.825             |
| 4  | 3.5                | 4.41                   | 1.222             |
| 5  |                    | 3.95                   | 1.005             |
| 6  |                    | 3.49                   | 0.792             |
| 7  | 3.0                | 3.06                   | 1.206             |
| 8  |                    | 2.80                   | 1.025             |
| 9  |                    | 2.51                   | 0.816             |
| 10 | 2.5                | 2.11                   | 1.118             |
| 11 |                    | 1.98                   | 1.027             |
| 12 |                    | 1.77                   | 0.835             |
| 13 | 2.0                | 1.75                   | 1.229             |
| 14 |                    | 1.60                   | 1.016             |
| 15 |                    | 1.43                   | 0.805             |
| 16 | 1.5                | 1.32                   | 1.205             |
| 17 |                    | 1.21                   | 1.023             |
| 18 |                    | 1.05                   | 0.778             |
| 19 | 1.0                | 0.87                   | 1.238             |
| 20 |                    | 0.78                   | 1.004             |
| 21 |                    | 0.72                   | 0.831             |
| 22 | 0.5                | 0.45                   | 1.203             |
| 23 |                    | 0.40                   | 1.032             |
| 24 |                    | 0.36                   | 0.804             |

## Flow Measurement Charts

**Diameter:** 32mm

| No | Adj. Indicator-Bar | Flow-m <sup>3</sup> /h | Pressure Lost-Bar |
|----|--------------------|------------------------|-------------------|
| 1  | 4.0                | 11.15                  | 1.193             |
| 2  |                    | 10.28                  | 1.003             |
| 3  |                    | 9.15                   | 0.793             |
| 4  | 3.5                | 8.56                   | 0.798             |
| 5  |                    | 9.60                   | 0.997             |
| 6  |                    | 10.6                   | 1.198             |
| 7  | 3.0                | 9.43                   | 1.204             |
| 8  |                    | 8.65                   | 1.021             |
| 9  |                    | 7.74                   | 0.818             |
| 10 | 2.5                | 7.10                   | 1.201             |
| 11 |                    | 6.50                   | 1.023             |
| 12 |                    | 5.76                   | 0.799             |
| 13 | 2.0                | 4.06                   | 1.216             |
| 14 |                    | 3.70                   | 1.002             |
| 15 |                    | 3.29                   | 0.813             |
| 16 | 1.5                | 2.24                   | 1.193             |
| 17 |                    | 2.08                   | 1.026             |
| 18 |                    | 1.86                   | 0.837             |
| 19 | 1.0                | 1.54                   | 1.222             |
| 20 |                    | 1.42                   | 1.028             |
| 21 |                    | 1.23                   | 0.785             |
| 22 | 0.5                | 0.72                   | 1.218             |
| 23 |                    | 0.65                   | 1.073             |
| 24 |                    | 0.57                   | 0.774             |

## Flow Measurement Charts

**Diameter:** 40mm

| No | Adj. Indicator-Bar | Flow-m <sup>3</sup> /h | Pressure Lost-Bar |
|----|--------------------|------------------------|-------------------|
| 1  | 4.0                | 15.10                  | 0.800             |
| 2  |                    | 16.91                  | 1.001             |
| 3  |                    | 18.41                  | 1.214             |
| 4  | 3.5                | 16.87                  | 1.201             |
| 5  |                    | 15.54                  | 0.986             |
| 6  |                    | 13.65                  | 0.790             |
| 7  | 3.0                | 14.61                  | 1.204             |
| 8  |                    | 13.28                  | 0.999             |
| 9  |                    | 11.94                  | 0.799             |
| 10 | 2.5                | 10.08                  | 1.198             |
| 11 |                    | 9.29                   | 1.023             |
| 12 |                    | 8.22                   | 0.812             |
| 13 | 2.0                | 5.53                   | 1.201             |
| 14 |                    | 5.07                   | 1.007             |
| 15 |                    | 4.49                   | 0.803             |
| 16 | 1.5                | 3.10                   | 1.235             |
| 17 |                    | 2.70                   | 1.001             |
| 18 |                    | 2.53                   | 0.818             |
| 19 | 1.0                | 2.16                   | 1.228             |
| 20 |                    | 1.96                   | 1.003             |
| 21 |                    | 1.75                   | 0.803             |
| 22 | 0.5                | 1.02                   | 1.203             |
| 23 |                    | 0.93                   | 1.003             |
| 24 |                    | 0.83                   | 0.812             |



## Flow Measurement Charts

Diameter : 50mm

| No | Adj. Indicator-Bar | Flow-m <sup>3</sup> /h | Pressure Lost-Bar |
|----|--------------------|------------------------|-------------------|
| 1  | 4.0                | 29.83                  | 1.203             |
| 2  |                    | 27.24                  | 0.993             |
| 3  |                    | 24.35                  | 0.798             |
| 4  | 3.5                | 26.49                  | 1.172             |
| 5  |                    | 24.18                  | 0.971             |
| 6  |                    | 21.72                  | 0.787             |
| 7  | 3.0                | 22.83                  | 1.206             |
| 8  |                    | 20.58                  | 0.989             |
| 9  |                    | 18.33                  | 0.796             |
| 10 | 2.5                | 16.36                  | 1.210             |
| 11 |                    | 14.86                  | 0.994             |
| 12 |                    | 13.32                  | 0.800             |
| 13 | 2.0                | 9.07                   | 1.207             |
| 14 |                    | 8.23                   | 1.0018            |
| 15 |                    | 7.27                   | 0.787             |
| 16 | 1.5                | 4.88                   | 1.222             |
| 17 |                    | 4.43                   | 1.023             |
| 18 |                    | 3.97                   | 0.815             |
| 19 | 1.0                | 3.32                   | 1.200             |
| 20 |                    | 3.06                   | 1.021             |
| 21 |                    | 2.69                   | 0.788             |
| 22 | 0.5                | 1.87                   | 1.204             |
| 23 |                    | 1.73                   | 1.037             |
| 24 |                    | 1.63                   | 0.791             |



### HEAD OFFICE - FACTORY

Atatürk Sanayi Bölgesi Hadımköy Mahallesi Mustafa İnan Caddesi No: 44 Arnavutköy - İSTANBUL  
 Tel: +90 212 771 01 45 (pbx) | Fax: +90 212 771 47 27  
 info@ayvaz.com | www.ayvaz.com

#### Cona Caserta/Italy

Tel: +39 0823 187 3988  
 rmolaro@ayvaz.com

#### Ayvaz Germany Viernheim/Germany

Tel: +49 62046014399  
 germany@ayvaz.com

#### Ayvaz Ukraine Kiev/Ukraine

Tel: +380 44 390 57 57  
 info@ayvaz.com.ua

#### Tricorr Warsaw/Poland

Tel: +48 530 030 810  
 +48 533 603 335  
 tricorr@tricorr.eu

#### Ayvaz Azerbaijan Baku/Azerbaijan

Tel: +99 (455) 579-84-32  
 ahayatov@ayvaz.com

#### Ayvaz Egypt Cairo/Egypt

Tel: +20 122 819 78 29  
 andrew.eid@ayvaz.com

#### Ayvaz Gulf Dubai/U.A.E

Tel: +971 563550822  
 +971 501306871  
 mideast@ayvaz.com

#### Ayvaz China Ningbo/China

Tel: +86 152 5830 7361  
 msahin@ayvaz.com

#### Ayvaz Kazakhstan LLP Almaty/Kazakhstan

Tel: +7 (727) 327 97 57  
 info\_kz@ayvaz.com

#### Ayvaz N Ispirih/Bulgaria

Tel: +359 8431 27 32  
 office@ayvaz-n.eu

#### Ayvaz Serbia Belgrade/Serbia

Tel: +381 61 658 70 52  
 yakbiyik@ayvaz.com

#### Ayvaz Vietnam HCMC/Vietnam

Tel: +84 89 8508345

#### Ayvaz Americas Rhode Island/USA

Tel: +1 401 737 8380  
 americas@ayvaz.com