

Engineering Specification

Job Name _____

Contractor _____

Job Location _____

Approval _____

Engineer _____

Contractor's P.O. No. _____

Approval _____

Representative _____

Series 860 Small

Reduced Pressure Zone Assemblies

1/2" – 2"

⚠ WARNING

It is illegal to use this product in any plumbing system providing water for human consumption, such as drinking or dishwashing, in the United States. Before installing standard material product, consult your local water authority, building and plumbing codes.

FEBCO Series 860 Small Reduced Pressure Zone assemblies are for use in health-hazard applications. The series helps protect drinking water supplies from dangerous cross-connections in accordance with national plumbing codes and water authority requirements for non-potable service applications such as irrigation, fire line, or industrial processing.

The series includes a flood sensor to detect excessive water discharges from the relief valve. The sensor is installed on the assembly exterior and does not alter assembly functions or certifications. The sensor relays a signal that triggers notification to facility personnel for corrective action, thus limiting flooding and costly damage.

NOTICE

An add-on connection kit is required to activate the flood sensor. Without the connection kit, the sensor is a passive component that has no communication with any other device. (For more information download RP/IS-F-860S.)

Features

- Standard assembly with ball valves or union end ball valves
- Available in small diameter sizes (1/2" to 2")
- Sensor on the relief valve for flood detection
- Flood alerts feature activated with add-on sensor connection kit, compatible with BMS and cellular communication



860-QT-RP-FS

NOTICE

Use of the flood sensor does not replace the need to comply with all required instructions, codes, and regulations related to installation, operation, and maintenance of this product, including the need to provide proper drainage in the event of a discharge.

Watts® is not responsible for the failure of alerts due to connectivity or power issues.

NOTICE

The information contained herein is not intended to replace the full product installation and safety information available or the experience of a trained product installer. You are required to thoroughly read all installation instructions and product safety information before beginning the installation of this product.

Inquire with governing authorities for local installation requirements.

Specification

The FEBCO Series 860 Reduced Pressure Zone backflow preventer assembly shall consist of two independently operating, spring-loaded check valves with a pressure differential relief valve located between the two checks. The pressure drop across the first check valve shall be approximately 7.0 psid with no flow. The relief valve shall consist of a hydraulically balanced diaphragm with the high pressure side hydraulically connected to the upstream pressure zone. The relief valve shall remain closed during normal operation. The low pressure side of the diaphragm shall be spring loaded to force the relief valve to open when the pressure drop between the first check and the diaphragm is reduced to approximately 3.0 psid. The mainline valve body and caps including relief valve body and cover shall be bronze. The assembly shall be rated to 175 psi (12.1 bar) water working pressure and water temperature range from 32°F to 140°F (0°C – 60°C). The assembly shall meet the requirements of the USC Foundation of Cross-connection Control and Hydraulic Research. A complete assembly shall include two shutoff valves and four test cocks. . End connections shall include NPT ANSI/ASME B1.20.1. The assembly shall be FEBCO Series 860, and shall include a sensor on the relief valve for flood detection.

Pressure – Temperature

| | |
|------------------------|-----------------------------|
| Max. Working Pressure | 175 psi (12.1 bar) |
| Hydrostatic Test Press | 350 psi (24.1 bar) |
| Temperature Range | 32°F to 140°F (0°C to 60°C) |

Materials

| | |
|------------|-----------------|
| Valve Body | Bronze |
| Elastomers | Silicone |
| Springs | Stainless steel |

Model/Option

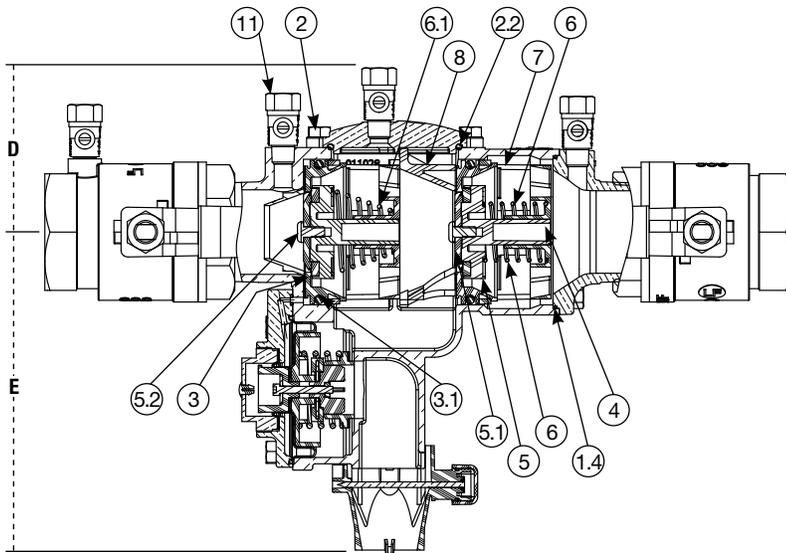
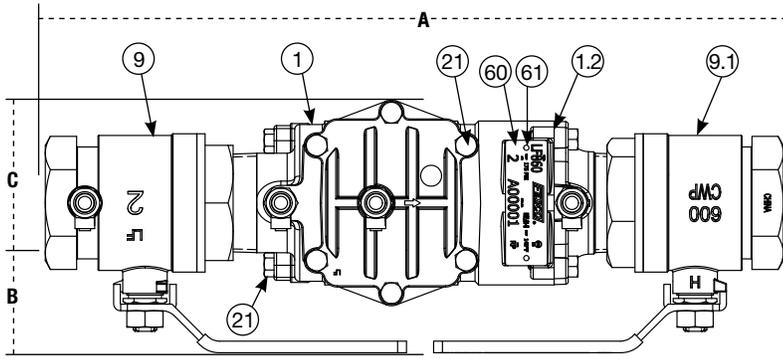
| | |
|----|------------------------|
| FS | Flood detection sensor |
|----|------------------------|

Approvals – Standards

ANSI/AWWA Conformance (C511)

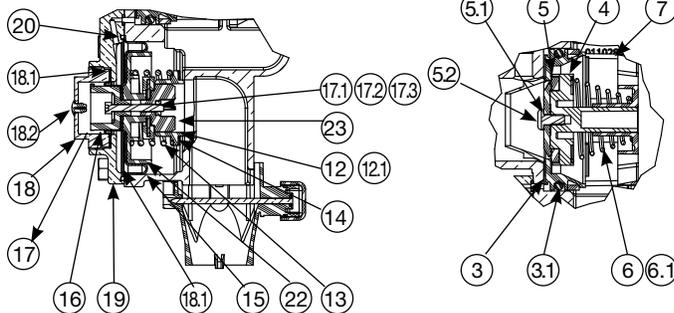
Approved by the Foundation for Cross-Connection Control and Hydraulic Research at the University of Southern California





Relief Valve Assembly

Check Assembly



| ITEM | DESCRIPTION | MATERIALS |
|------|----------------------|--------------------|
| 1 | Body | Bronze |
| 1.2 | Tailpiece | Bronze |
| 1.4 | O-Ring | Silicone |
| 2 | Cover | Bronze |
| 2.2 | O-Ring | Silicone |
| 3 | Seat | Noryl® |
| 3.1 | O-Ring | Silicone |
| 4 | Poppet | Noryl® |
| 5 | Seat Disc | Silicone Rubber |
| 5.1 | Disc Retainer | Noryl® |
| 5.2 | Rnd HD Screw | Phillips, 18-8 SS |
| 6 | Spring | SS |
| 6.1 | Spring | SS |
| 7 | Guide | Noryl® |
| 8 | Retainer Spacer | Noryl® |
| 9 | Ball Valve | Bronze |
| 9.1 | Ball Valve | Bronze |
| 11 | Test Cock | Bronze |
| 12 | Seat Ring-RV | Noryl® |
| 12.1 | Gasket Ring-RV | Silicone Rubber |
| 13 | Spring-RV | SS |
| 14 | Seat Disc-RV | Silicone Rubber/SS |
| 15 | Diaphragm-RV | Rubber/Fabric |
| 16 | Outer Diaphragm-RV | Rubber/Fabric |
| 17 | Small Piston-RV | Noryl® |
| 17.1 | Rnd HD Screw | Phillips, 18-8 SS |
| 17.2 | Washer | 18-8 SS |
| 17.3 | Hex Nut | 18-8 SS |
| 18 | Cylinder-RV | Brass |
| 18.1 | Slip Ring-Cylinder | Acetal |
| 18.2 | Slide (Plug) | Nylon |
| 19 | Cover-RV | Bronze |
| 20 | O-Ring | Silicone |
| 21 | Hex HD Capscrew | 18-8 SS |
| 22 | Large Piston-RV | Noryl® |
| 23 | Guide-RV | Noryl® |
| 60 | Identification Plate | Brass |
| 61 | Drive Screw Stick | SS |

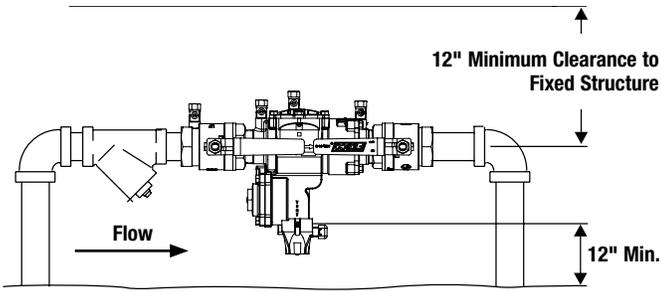
Dimensions – Weights

Call customer service if you need assistance with technical details.

| SIZE | DIMENSIONS | | | | | | | | | | WEIGHT | |
|------|------------|--------|--------|-------|--------|-------|--------|--------|--------|--------|--------|------|
| | A | | B | | C | | D | | E | | lb | kg |
| ½ | in. 10 | mm 254 | in. 1½ | mm 38 | in. 1½ | mm 38 | in. 3½ | mm 79 | in. 3½ | mm 89 | 5.6 | 2.5 |
| ¾ | in. 10¾ | mm 273 | in. 1½ | mm 38 | in. 1½ | mm 38 | in. 3½ | mm 79 | in. 3½ | mm 89 | 5.8 | 2.6 |
| 1 | in. 12½ | mm 318 | in. 1¾ | mm 48 | in. 1½ | mm 41 | in. 3¾ | mm 86 | in. 3¾ | mm 92 | 9.2 | 4.2 |
| 1¼ | in. 15⅞ | mm 403 | in. 3 | mm 76 | in. 2½ | mm 64 | in. 4¼ | mm 108 | in. 7½ | mm 194 | 20.3 | 9.2 |
| 1½ | in. 16¾ | mm 416 | in. 3 | mm 76 | in. 2½ | mm 64 | in. 4¼ | mm 108 | in. 7½ | mm 194 | 20.7 | 9.4 |
| 2 | in. 17¾ | mm 448 | in. 3½ | mm 89 | in. 2½ | mm 64 | in. 4¼ | mm 108 | in. 7½ | mm 194 | 24.9 | 11.3 |

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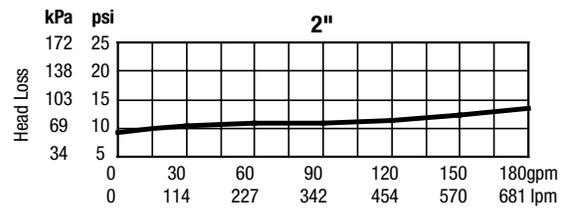
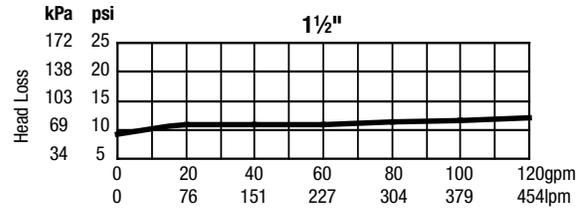
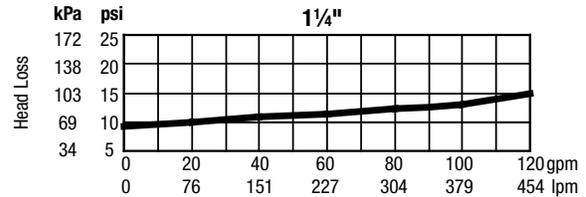
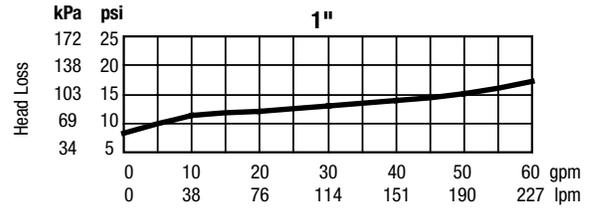
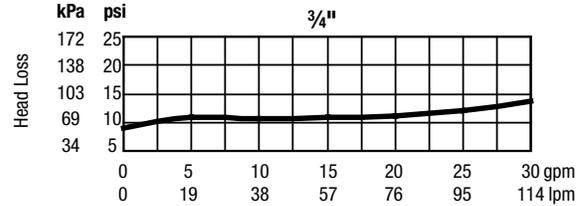
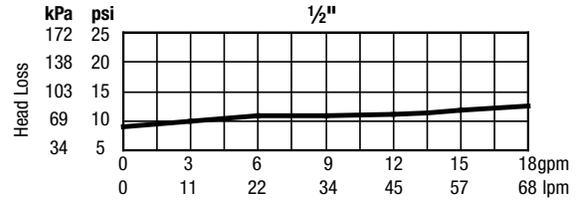
Typical Installation



NOTICE

The gap drain is not designed to catch the maximum discharge possible from the relief valve. The installation of a FEBCO air gap with the drain line terminating above a floor drain handles any normal discharge or nuisance spitting through the relief valve. However, floor drain size may need to be designed to prevent water damage caused by a catastrophic failure condition. Do not reduce the size of the drain line from the air gap fitting.

Capacity



A WATTS Brand

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 Canada: Tel: T: (888) 208-8927 • F: (888) 479-2887 • FEBCOonline.ca
 Latin America: (52) 55-4122-0138 • FEBCOonline.com

