Engineering Specification

Job Name _____ Contractor _____

Job Location _____ Approval _____

Engineer _____ Contractor's P.O. No. _____

Approval _____ Representative _____

LEAD FREE*

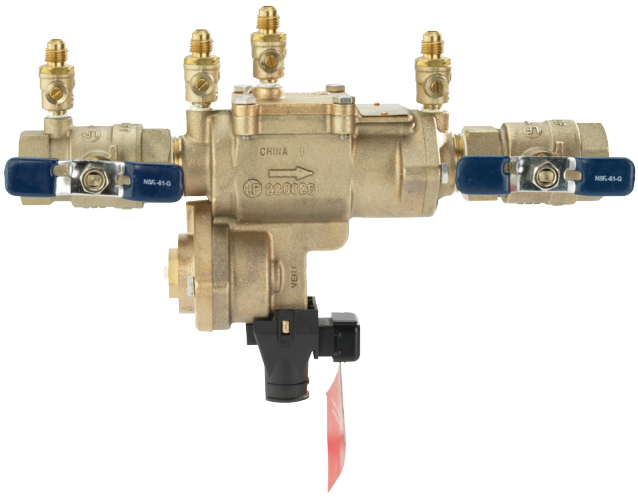
Series LF860 Small

Reduced Pressure Zone Assemblies

½" – 2"

FEBCO Series LF860 Small Reduced Pressure Zone assemblies are designed for use in health-hazard applications. The series features Lead Free* construction to comply with Lead Free* installation requirements. Primarily used on potable drinking water systems where code mandates protection from backpressure and backsiphonage conditions. Suited for applications in industrial plants, hospitals, morgues, mortuaries, chemical plants, irrigation systems, boiler feed, and water lines.

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.



LF860-FS

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

- Potable water protection against cross-connection contamination of high hazard (toxic) fluids in water services
- Inline serviceable assembly requiring no special tools
- Sensor on relief valve for flood detection
- Flood alerts feature activated with add-on sensor connection kit, compatible with BMS and cellular communication
- Black painted model option for theft deterrence

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.

*The wetted surface of this product contacted by consumable water contains less than 0.25% of lead by weight.

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Specification

FEBCO Series LF860 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 Lead Free* cast copper silicon alloy. The assembly shall be rated to 175 psi (12.1 bar) water working pressure and water temperature range from 32ºF to 140ºF (0ºC to 60ºC). 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 Lead Free* Reduced Pressure Zone assemblies shall comply with state codes and standards, where applicable, requiring reduced lead content. The assembly shall be FEBCO Series LF860, and shall include a sensor on the relief valve for flood detection.

Pressure – Temperature

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

Materials

Valve Body	Lead Free* cast copper silicon alloy
Elastomers	Silicone
Springs	Stainless steel

Model/Option

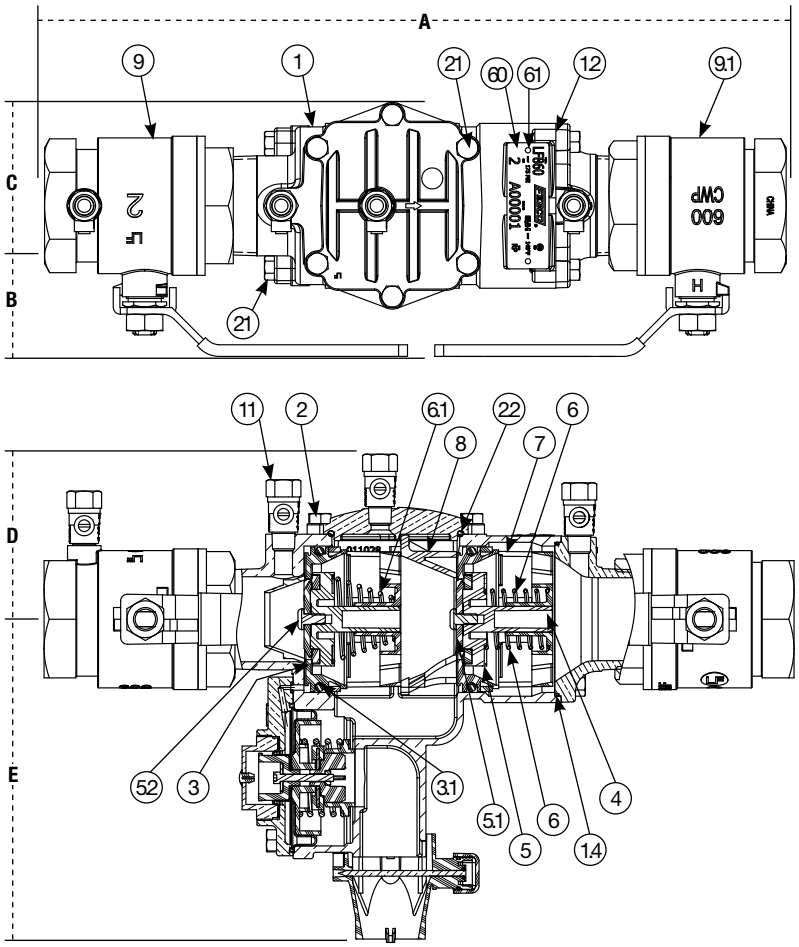
FS	Flood detection sensor
LF860	Standard Assembly with Ball Valves
LF860U	Standard Assembly with Union Ball Valves

Approvals – Standards

ANSI/AWWA Conformance (C511)

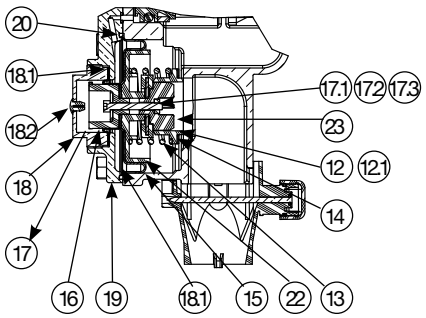
Approved by the Foundation for Cross-Connection Control and Hydraulic Research at the University of Southern California

ASSE 1013 B64.4 NSF Certified to NSF/ANSI 61-G

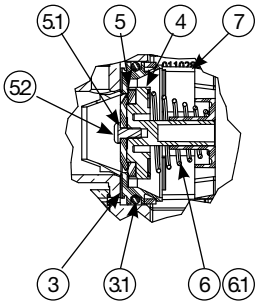


ITEM	DESCRIPTION	MATERIALS
1	Body	Lead Free* Cast Copper Silicon Alloy
1.2	Tailpiece	Lead Free* Cast Copper Silicon Alloy
1.4	O-Ring	Silicone
2	Cover	Lead Free* Cast Copper Silicon Alloy
2.2	O-Ring	Silicone
3	Seat	Noryl®
3.1	O-Ring	Silicone
4	Poppet	Noryl®
5	Seat Disc	Silicone Rubber
5.1	Disc Retainer	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 (w/tap)	Lead Free* Cast Copper Silicon Alloy
9.1	Ball Valve	Lead Free* Cast Copper Silicon Alloy
11	Test Cock	Lead Free* Cast Copper Silicon Alloy
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	Lead Free* Cast Copper Silicon Alloy
18.1	Slip Ring-Cylinder	Acetal
18.2	Slide (Plug)	Nylon
19	Cover-RV	Lead Free* Cast Copper Silicon Alloy
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

Relief Valve Assembly



Check Assembly



Dimensions – Weights

Call customer service if you need assistance with technical details.

SIZE	DIMENSIONS										WEIGHT	
	A		B		C		D		E			
in.	*in.*	*mm*	*in.*	*mm*	*in.*	*mm*	*in.*	*mm*	*in.*	*mm*	*lb*	*kg*
½	10	254	1½	38	1½	38	3⅛	79	3½	89	5.6	2.5
¾	10¾	273	1½	38	1½	38	3⅛	79	3½	89	5.8	2.6
1	12½	318	1⅞	48	1⅝	41	3⅜	86	3⅝	92	9.2	4.2
1¼	15⅞	403	3	76	2½	64	4¼	108	7⅝	194	20.3	9.2
1½	16⅜	416	3	76	2½	64	4¼	108	7⅝	194	20.7	9.4
2	17⅝	448	3½	89	2½	64	4¼	108	7⅝	194	24.9	11.3

Note: Dimensions are nominal. Allowances must be made for normal manufacturing tolerances.

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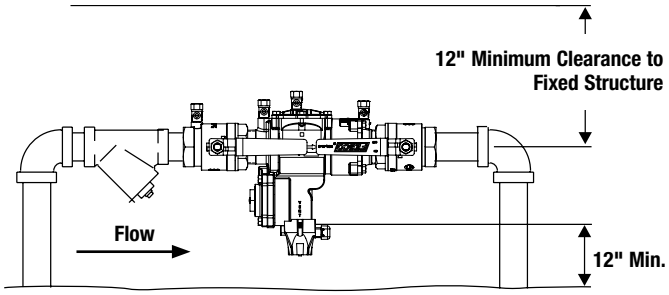
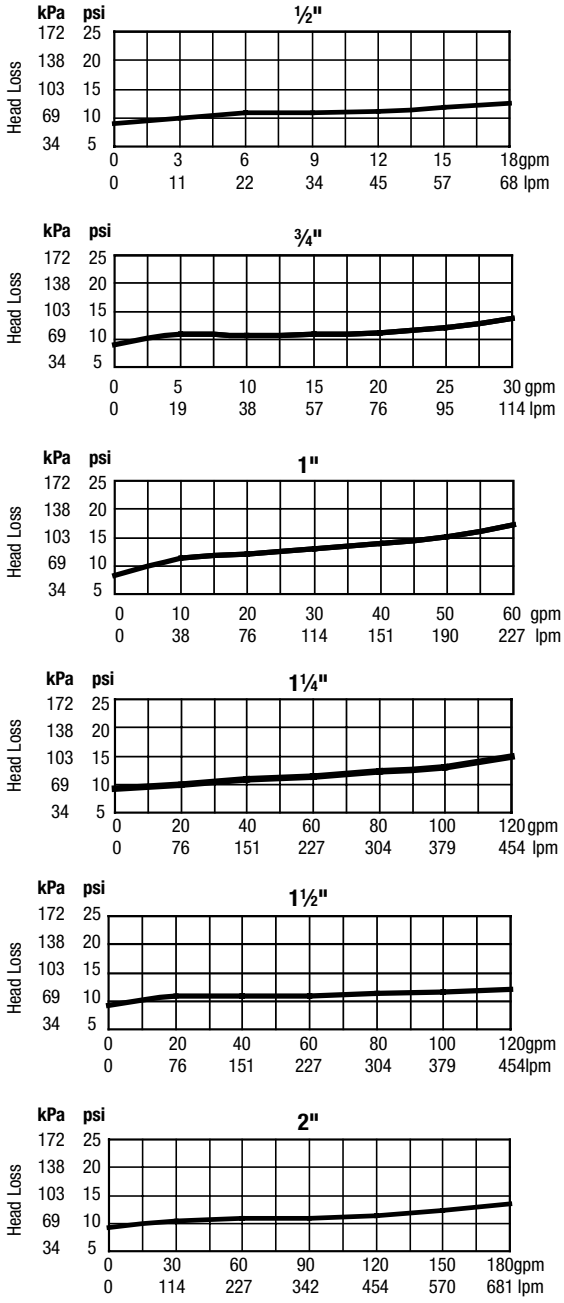
Typical Installation



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



FEBCO®

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