Engineering Specification

Job Name _____ Contractor _____

Job Location _____ Approval _____

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

Approval _____ Representative _____

LEAD FREE*

MasterSeries® LF860

Reduced Pressure Zone Backflow Prevention Assemblies

Size: 2½" - 10"

Model LF860

The FEBCO® MasterSeries® LF860 Reduced Pressure Zone Assembly is specifically designed to protect against possible backpressure and backsiphonage conditions for high hazard (that is, toxic) application in accordance with Local Governing Water Utility Code. This Backflow Prevention Assembly is primarily used on potable drinking water systems where Local Governing Code mandates protection from non-potable water being pumped or siphoned back into the potable water system.

The ductile iron body is fused with ArmorTek™ coating technology to resist corrosion due to microbial induced corrosion (MIC) or exposed metal substrate. The LF860 features Lead Free* construction to comply with low lead installation requirements. The Lead Free* Reduced Pressure Zone Assemblies shall comply with state codes and standards, where applicable, requiring reduced lead content.

Series LF860 is also available with SentryPlus™ Alert technology to detect catastrophic relief valve discharge that could potentially cause flooding, and issue a multi-channel alert (call, email, text) to selected users so they can take action to avoid potentially costly flooding.

Features

- Stainless steel relief valve seat and stainless steel check components for maximum performance and durability
- Inline serviceable assembly
- No special tools required for servicing
- Captured modular spring assembly
- Reversible and replaceable discs
- Field replaceable seats
- Ductile iron valve body design
- Utilizes advanced ArmorTek™ coating technology to resist corrosion of internals
- Modular and repairable pressure differential relief valve
- Clapper check assembly
- Captured O-ring design

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

Specification

The FEBCO MasterSeries LF860 Reduced Pressure Zone Assembly shall be installed on the potable water supply and at each point of cross-connection to protect against possible back-pressure and backsiphonage conditions for high hazard (that is, toxic) applications. The assembly shall consist of a main line valve body composed of a pressure differential relief valve located in a zone between two (2) independently acting approved clapper style check modules with replaceable seats and disc rubbers. Servicing of the pressure differential relief valve and both check modules does not require any special tools; both check modules are accessed through independently top entry covers. This assembly shall be fitted with AWWA Compliant inlet/outlet resilient seated shutoff valves; when used on a Fire-Sprinkler application, the assembly shall be fitted with approved UL/FM inlet/outlet resilient seated shutoff valves and contain four (4) properly located resilient seated test cocks as specified by AWWA Standard C511. The valve body shall utilize a coating system with built in electro-chemical corrosion inhibitor and microbial inhibitor. Flow and pressure loss performance parameters shall meet the requirements of AWWA Standard C511.

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.

NOTICE

Inquire with governing authorities for local installation requirements.

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Options - Suffix

OSY: UL/FM Approved OS&Y gate valves (ANSI/AWWA C515 Compliant)

NRS: Non-rising stem gate valves (ANSI/AWWA C509 Compliant)

LG: Less shutoff valves (This is NOT an APPROVED ASSEMBLY.)

ALERT SentryPlus™ Alert flood detection system

Example Ordering Descriptions

4" LF860-OSY - Valve assembly fitted with OS&Y shutoff valves

4" LF860-NRS - Valve assembly fitted with NRS shutoff valves

Assembly Flow Orientation

Horizontal (2½" – 10") - Approved by FCCCHR-USC, ASSE, cULus, FM, IAPMO, and CSA

Materials

Below is a general materials list of Series LF860. All assemblies sizes 2½" to 10" are similar in materials and construction. Contact your local FEBCO representative if you require further information.

Main Valve Body:	Ductile iron Grade 65-45-12
Relief Valve Body:	Ductile iron Grade 65-45-12
Coating:	Fusion epoxy coated internal and external AWWA C550
Shutoff Valves:	NRS resilient wedge gate valve AWWA C509 (Standard) OSY resilient wedge gate valve AWWA C515 (UL/FM)
Check Seats:	Stainless steel
Relief Valve Seat:	Stainless steel
Disc Holder:	Stainless steel
Elastomer Disc:	Silicone
Spring:	Stainless steel
Clamp:	AWWA C606 (10" only)

Approvals - Standards

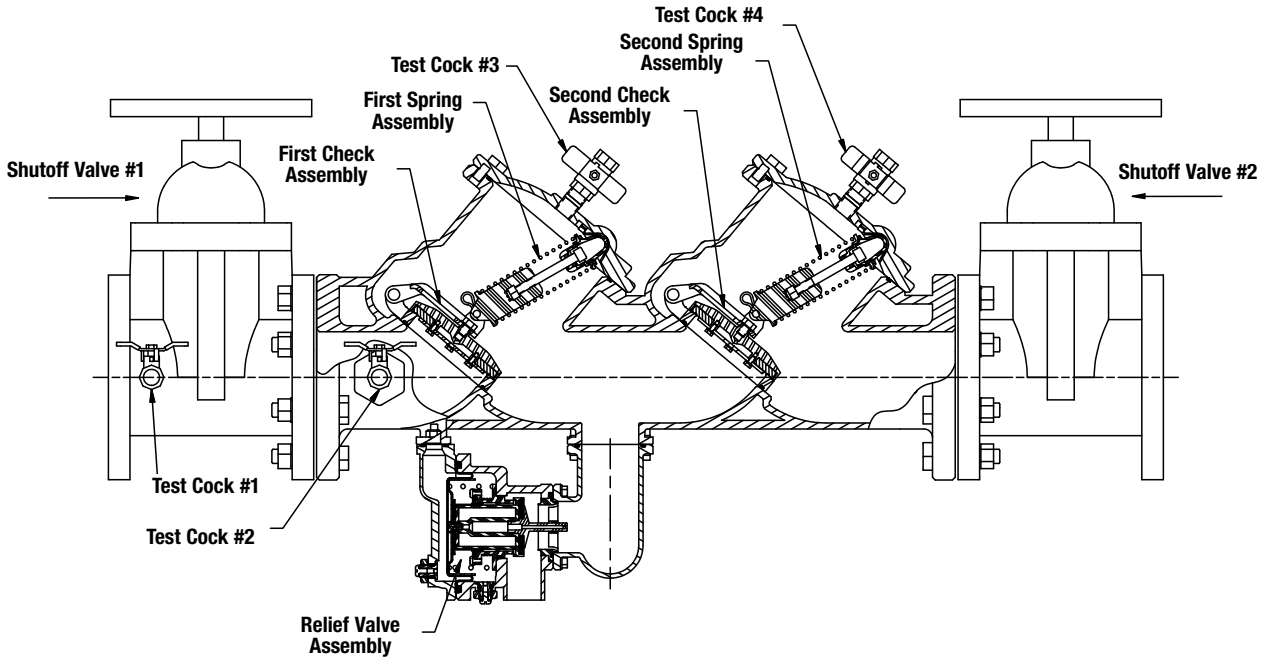
- Approved by the Foundation for Cross-Connection Control and Hydraulic Research at The University of Southern California (FCCCHR-USC)
- ASSE 1013 Listed
- UL Classified** (US & Canada)
- FM Approved**
- IAPMO
- AWWA Standard C511 Compliant
- End Connections: Compliant to ASME B16.1 Class 125 & AWWA Class D Flange

**Assembly configured with UL/FM Approved OS&Y RW gate valves. Less gate valve assemblies are not UL/FM approved configurations.

1013 B64.4

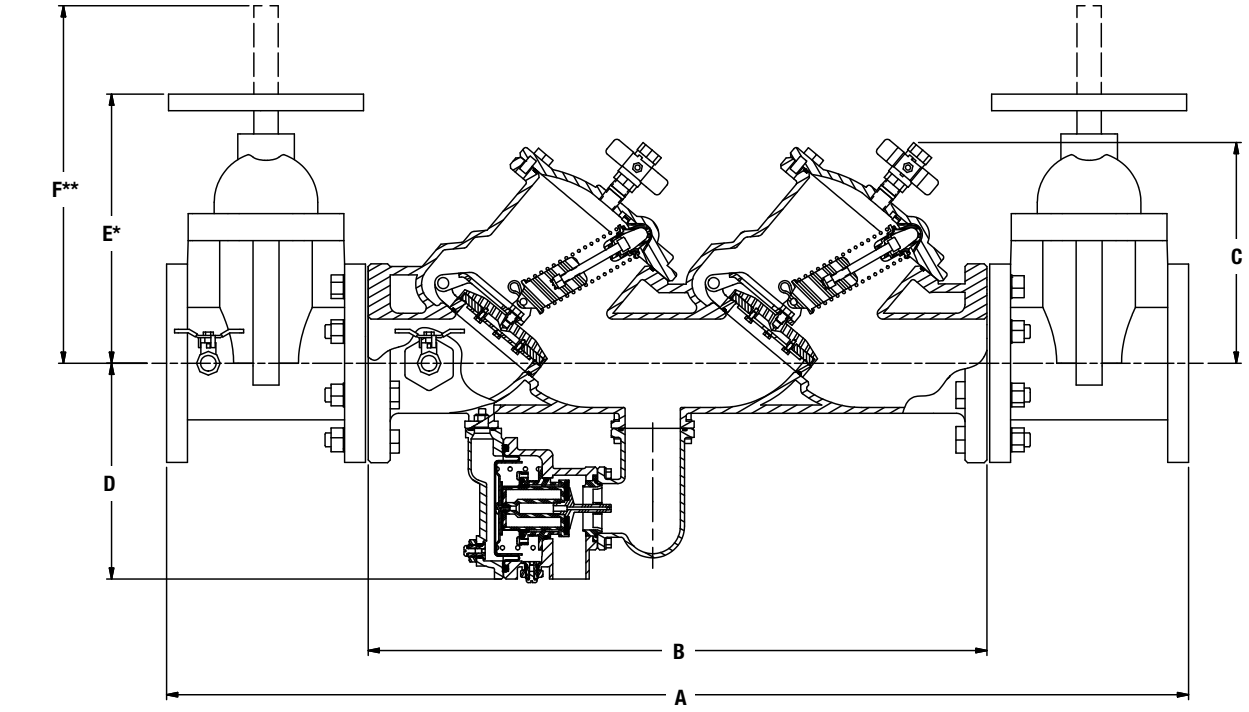
Pressure - Temperature

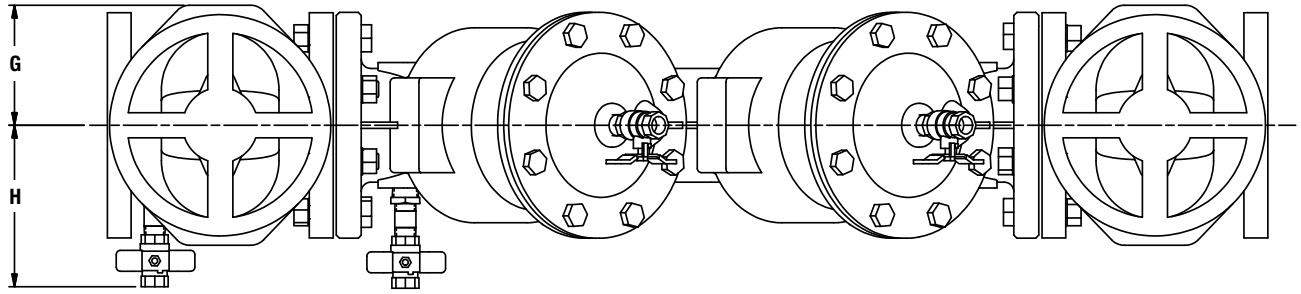
Max. Working Pressure:	175 psi (12.1 bar)
Min. Working Pressure:	20 psi (1.4 bar)
Hydrostatic Test Pressure:	350 psi (24.1 bar)
Hydrostatic Safety Pressure:	700 psi (48.3 bar)
Temperature Range:	33°F - 140°F (0.5°C - 60°C) continuous



Dimensions & Weights

Below are the nominal dimensions and physical weights for Series LF860, sizes 2½" to 10". Allowances must be made for normal manufacturing tolerances. Download installation instructions at watts.com, or contact your local FEBCO representative for more information.





LF860

SIZE	DIMENSIONS																WEIGHT***			
	A		B		C		D		E*		F**		G		H		NRS		OSY	
in.	in.	mm	in.	mm	in.	mm	in.	mm	in.	mm	in.	mm	in.	mm	in.	mm	lb	kg	lb	kg
2½	40¾	1035	25½	648	10	254	10	254	12⅝	321	16⅜	416	4½	114	7⅛	181	250	113	254	115
3	41⅞	1064	25⅝	651	10	254	10	254	12⅞	327	22¼	565	4½	114	7⅜	187	276	125	280	127
4	46¼	1175	28	711	10⅛	257	10⅛	257	14⅜	365	23¼	591	5½	140	8⅛	206	335	152	347	157
6	56	1422	34¾	883	12¾	324	11⅛	283	18⅞	479	30⅛	765	6½	165	9⅞	251	503	228	523	237
8	65	1651	41¾	1061	15⅝	397	12¼	311	23½	597	37¾	959	7	178	11⅛	283	807	366	835	379
10	72⅝	1845	46⅜	1178	15⅝	397	12⅜	314	27½	699	48	1219	9	229	12⅜	314	1205	547	1243	564

* Indicates nominal dimensions with NRS gate valves

** Indicates nominal dimensions with OSY gate valves (full open position)

*** Indicates weight of complete backflow assemblies with specified gate valves

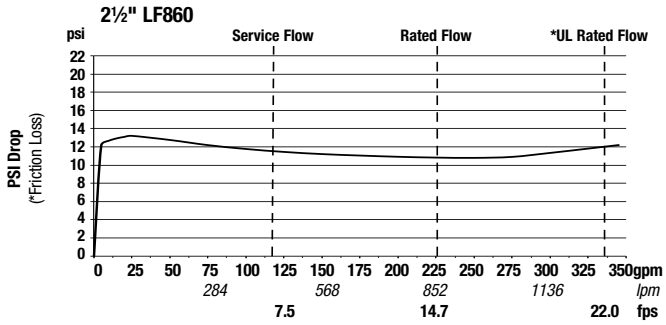
The gap drain is not designed to catch the maximum discharge possible from the relief valve. The installation of the FEBCO air gap with the drain line terminating above a floor drain will handle any normal discharge or nuisance spitting through the relief valve. However, floor drain size may need to 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.

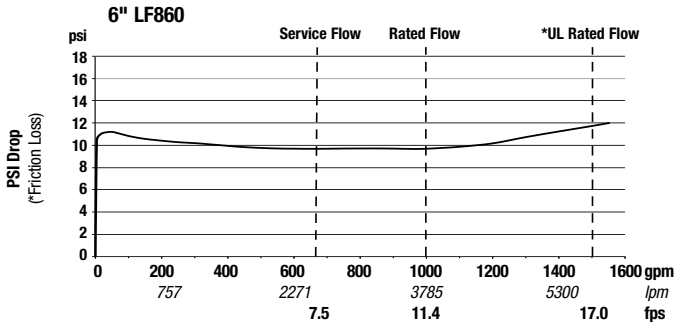
Performance

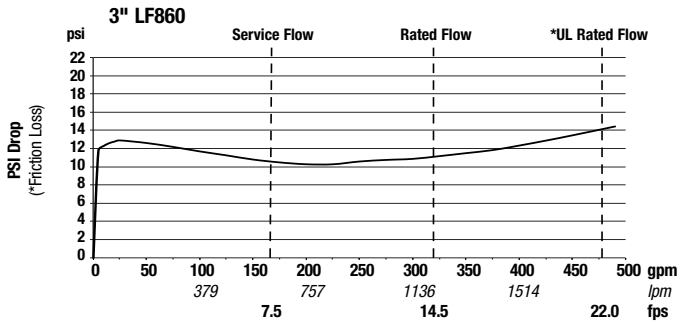
The flow capacity chart identifies valve performance based upon rated water velocity up to 20fps.

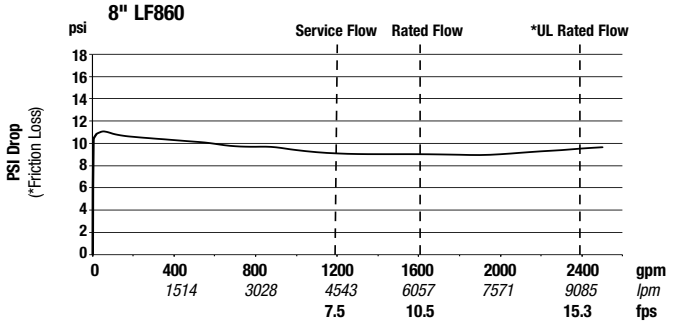
- Maximum service flow rate is determined by maximum rated velocity of 7.5fps.
- AWWA Manual M-22 (Appendix C) recommends that the maximum water velocity in the services be not more than 10fps.
- UL flow rate is determined by typically rated velocity of 15 ft/sec.

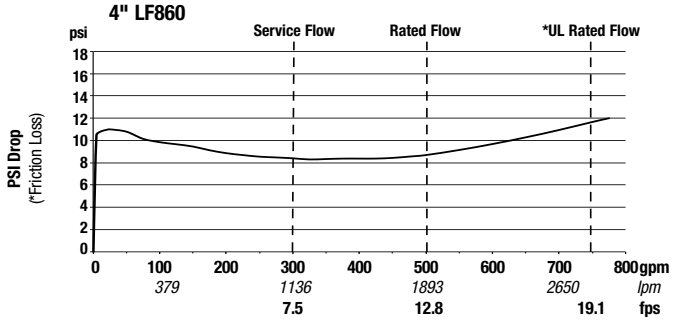
Capacity

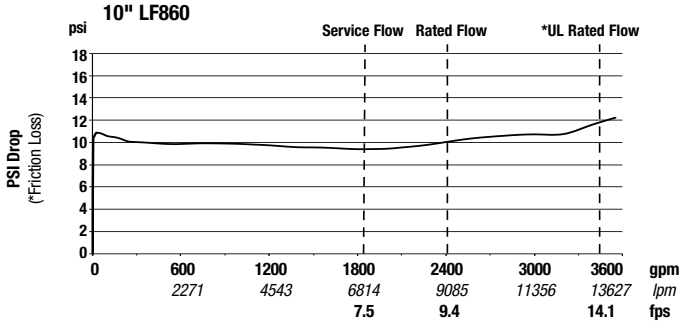












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