

## Engineering Specification

Job Name \_\_\_\_\_

Contractor \_\_\_\_\_

Job Location \_\_\_\_\_

Approval \_\_\_\_\_

Engineer \_\_\_\_\_

Contractor's P.O. No. \_\_\_\_\_

Approval \_\_\_\_\_

Representative \_\_\_\_\_

# LEAD FREE\*

## MasterSeries® LF886W/WZ

### Reduced Pressure Zone Detector Backflow Prevention Assemblies (Type-II)

Size: 4" - 10"

The FEBCO® MasterSeries® LF886W/WZ Reduced Pressure Zone Detector Assembly is specifically designed to provide drop-in replacement of competitor's valves in either the N-pattern (LF870W) or Z-Pattern (LF870WZ) orientation. It protects against possible backpressure and backsiphonage conditions for high hazard (that is, toxic) application in accordance with Local Governing Water Utility Codes. This Backflow Assembly is primarily used on potable drinking water systems where Local Governing Codes mandate protection from non-potable quality water being pumped or siphoned back into the potable water system.

The ductile iron body is fused with ArmorTek™ technology to resist corrosion due to microbial induced corrosion (MIC) or exposed metal substrate. The LF886W/WZ features Lead Free construction to comply with low lead installation requirements. The Lead Free Reduced Pressure Zone Detector Assemblies shall comply with state codes and standards, where applicable, requiring reduced lead content.

#### Features

##### Main Valve:

- Stainless steel relief valve seat and stainless steel check components for maximum performance and durability
- Longer gate-to-gate length for drop-in replacement of longer valves
- 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

##### Auxiliary Bypass:

- Compact bypass design; remains in main valve assembly profile
- Inline serviceable ¾" check assembly
- No special tools required for servicing
- Field replaceable seat and disc
- Detect potential underground water leaks
- Detect unauthorized water usage



Model LF886W-OSY

#### Specification

The FEBCO MasterSeries LF886W/WZ Reduced Pressure Zone Detector Assembly shall be installed on the potable water supply and at each point of cross-connection to protect against possible backpressure and backsiphonage conditions for high hazard (that is, toxic) applications. The assembly shall consist of a main line valve body composed of two (2) independently acting approved clapper style check modules with replaceable seats and disc rubbers. Servicing of both check modules does not require any special tools and are accessed through independent top entry covers. This 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 auxiliary bypass line contains a ½" x ¾" Water Meter that complies with ANSI/AWWA Standard C700 coupled with an approved check assembly compliant to AWWA Standard C511. The bypass line is designed to detect leaks or unauthorized water usage of the water system while protecting against possible backpressure and backsiphonage conditions for high hazard (i.e., toxic) applications. The valve body shall utilize a coating system with built in electrochemical 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.

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

FEBCO product specifications in U.S. customary units and metric are approximate and are provided for reference only. For precise measurements, please contact FEBCO Technical Service. FEBCO reserves the right to change or modify product design, construction, specifications, or materials without prior notice and without incurring any obligation to make such changes and modifications on FEBCO products previously or subsequently sold.



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## Options - Suffix

- OSY: UL/FM Approved OS&Y gate valves (ANSI/AWWA C515 Compliant)
- CFM: Totalizing cubic ft/min 5/8"x 3/4" water meter (ANSI/AWWA C700 Compliant)
- GPM: Totalizing gal/min 5/8"x 3/4" water meter (ANSI/AWWA C700 Compliant)
- LG: Less shutoff valves (This is NOT an APPROVED ASSEMBLY.)

### Example Ordering Description

- 4" LF886W-OSY-GPM - Valve assembly fitted with OS&Y shutoff valves and gallons per minute water meter
- 4" LF886WZ-SOSY-CFM - Valve assembly fitted with OS&Y shutoff valves and cubic feet per minute water meter

### Available Components

- Wye Strainer: FDA Approved (ASME B16.1 Class 125 & AWWA Class D Flange)

## Materials

- 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 C550-90
- Shutoff Valves: 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

## Approvals – Standards

- Foundation for Cross-Connection Control and Hydraulic Research at The University of Southern California (FCCCHR-USC)
- ASSE 1047
- UL Classified\*\* (US & Canada)
- FM Approved\*\*
- IAPMO/cUPC



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

## Assembly Flow Orientation

Horizontal (N-Pattern 4" – 10") - Approved by FCCCHR-USC, ASSE, cULus, FM, IAPMO/cUPC

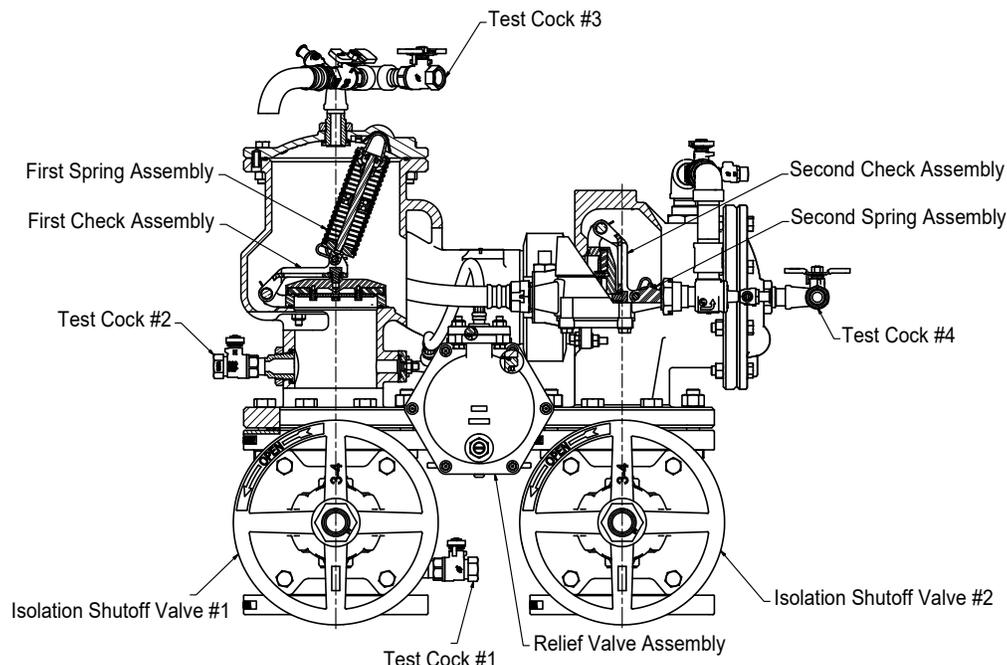
Vertical Up (Z-Pattern 4" – 10") - Approved by FCCCHR-USC, ASSE, cULus, FM, IAPMO/cUPC

## Standards

- AWWA Standard C511 Compliant
- End Connections: Compliant to ASME B16.1 Class 125 & AWWA Class D Flange

## Pressure - Temperature

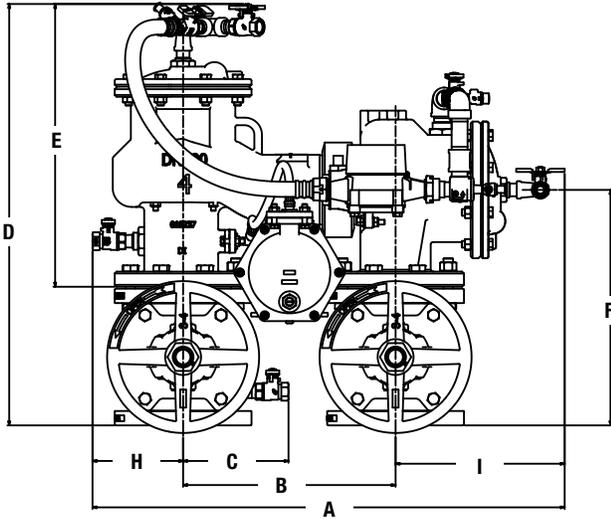
Max. Working Pressure:	175 psi (12.1 bar)
Min. Working Pressure:	20 psi (1.4 bar)
Hydrostatic Test Pressure:	350 psi (24.1 bar)
Hydrostatic Safety Pressure:	700 psi (48.3 bar)
Temperature Range:	33°F-140°F (0.5°C- 60°C) continuous



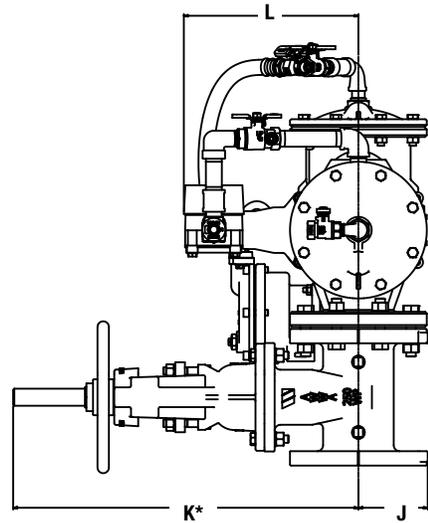
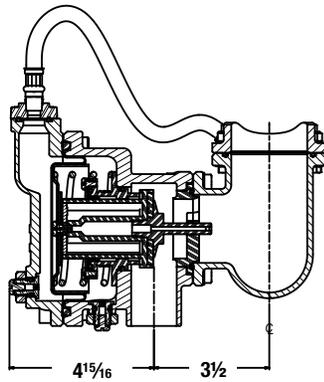
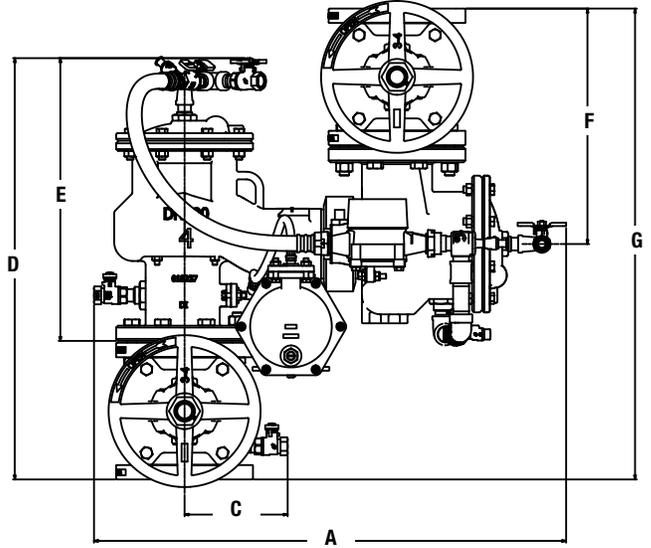
## Dimensions & Weights

Below are the nominal dimensions and physical weights for Model LF886W/WZ, sizes 4" to 10". Allowances must be made for normal manufacturing tolerances. Download installation instructions at [watts.com](http://watts.com), or contact your local FEBCO representative for more information.

Model LF886W Standard Orientation (N-Pattern)



Model LF886WZ Vertical Orientation (Z-Pattern)



### MODEL LF886W/WZ ASSEMBLIES

SIZE	DIMENSIONS														WEIGHT**															
	A (W)		A (Z)		B (W)		B (Z)		C	D	E	F	G	H	I	J	K*	L	OSY											
in.	in.	mm	in.	mm	in.	mm	in.	mm	in.	mm	in.	mm	in.	mm	in.	mm	in.	mm	in.	mm	lb	kg								
4	32 <sup>3</sup> / <sub>16</sub>	818	32 <sup>13</sup> / <sub>16</sub>	833	18 <sup>5</sup> / <sub>16</sub>	465	18 <sup>5</sup> / <sub>16</sub>	481	7	178	27 <sup>3</sup> / <sub>4</sub>	705	18 <sup>3</sup> / <sub>4</sub>	476	15 <sup>1</sup> / <sub>2</sub>	394	31	787	6	152	11 <sup>1</sup> / <sub>8</sub>	283	4 <sup>1</sup> / <sub>2</sub>	114	23 <sup>3</sup> / <sub>4</sub>	591	13	330	342	155
6	34 <sup>15</sup> / <sub>16</sub>	887	37 <sup>1</sup> / <sub>4</sub>	946	18 <sup>11</sup> / <sub>16</sub>	475	21	533	8	203	32 <sup>3</sup> / <sub>4</sub>	831	22 <sup>1</sup> / <sub>8</sub>	562	18 <sup>5</sup> / <sub>8</sub>	473	37 <sup>1</sup> / <sub>4</sub>	946	7 <sup>1</sup> / <sub>4</sub>	184	12 <sup>1</sup> / <sub>2</sub>	316	5 <sup>1</sup> / <sub>2</sub>	140	30 <sup>1</sup> / <sub>8</sub>	765	13	330	530	240
8	48	1219	49 <sup>9</sup> / <sub>16</sub>	1253	29	737	30 <sup>9</sup> / <sub>16</sub>	770	9 <sup>1</sup> / <sub>4</sub>	235	36 <sup>3</sup> / <sub>4</sub>	933	25 <sup>1</sup> / <sub>8</sub>	638	20 <sup>3</sup> / <sub>4</sub>	527	41 <sup>1</sup> / <sub>2</sub>	1054	8 <sup>1</sup> / <sub>2</sub>	216	14	356	6 <sup>3</sup> / <sub>4</sub>	172	37 <sup>3</sup> / <sub>4</sub>	959	14 <sup>1</sup> / <sub>2</sub>	368	846	384
10	50 <sup>1</sup> / <sub>16</sub>	1272	51 <sup>3</sup> / <sub>8</sub>	1304	29	737	30 <sup>9</sup> / <sub>16</sub>	533	10 <sup>1</sup> / <sub>4</sub>	264	41 <sup>3</sup> / <sub>16</sub>	1047	28 <sup>1</sup> / <sub>8</sub>	714	23 <sup>11</sup> / <sub>16</sub>	601	47 <sup>5</sup> / <sub>16</sub>	1202	9 <sup>5</sup> / <sub>8</sub>	244	15 <sup>11</sup> / <sub>16</sub>	398	8	203	45 <sup>3</sup> / <sub>4</sub>	1162	13 <sup>3</sup> / <sub>8</sub>	333	1363	618

#### Notes:

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

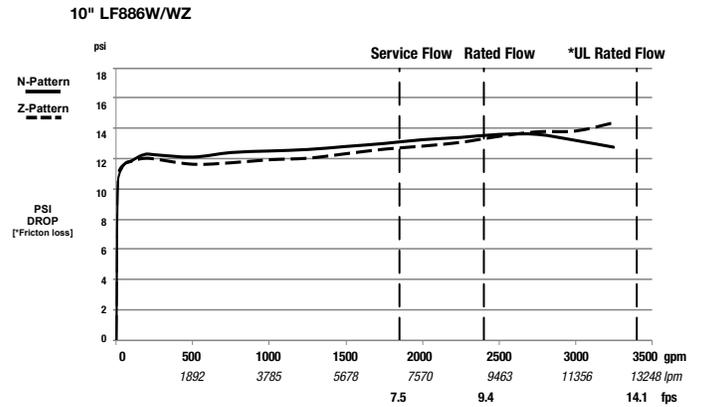
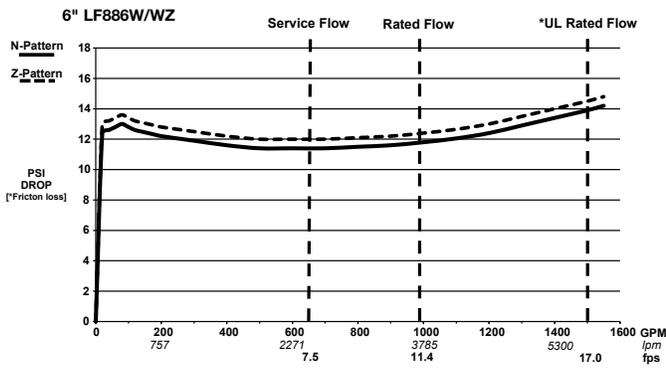
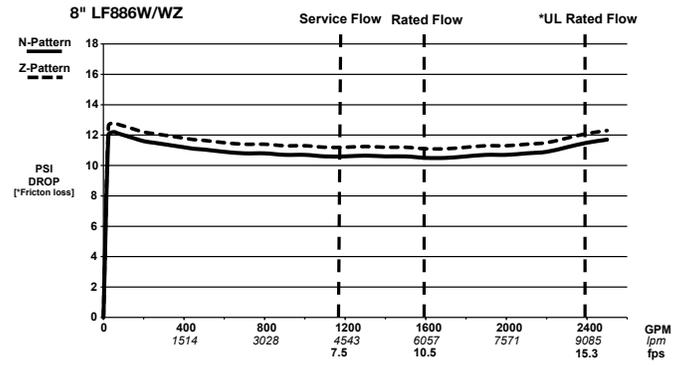
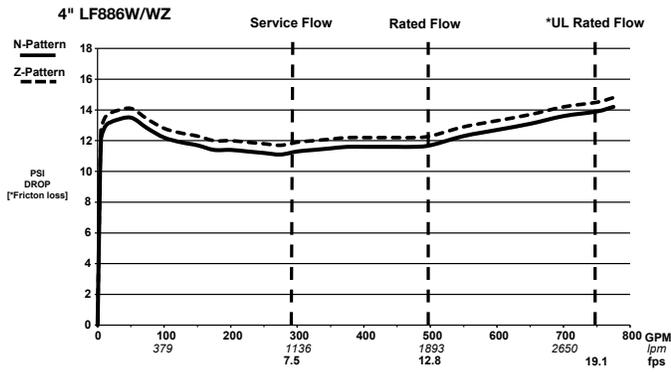
\*\* Indicates weight of complete backflow assemblies with specified gate valves

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.



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