

Engineering Specification

Job Name _____

Contractor _____

Job Location _____

Approval _____

Engineer _____

Contractor's P.O. No. _____

Approval _____

Representative _____

Series 800M4FR

Freeze-Resistant Pressure Vacuum Breaker

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.

⚠ WARNING

Freeze sensor solely provides alerts about a possible freeze event and cannot prevent a freeze event from occurring. User action is required to prevent freeze conditions from causing product and/or property damage.

Series 800M4FR prevents backsiphonage of contaminated water under continuous pressure into the potable water supply. Its superior design protects the valve body and internal components during sudden freeze conditions. Water inside the PVB freezes from the outside inward. As the ice forms and expands, causing a buildup of pressure, the 800M4FR relieves the pressure through a unique relief valve built into the plastic float.

The series includes a freeze sensor for use with SentryPlus Alert® technology to monitor temperature and alert facility personnel when freeze conditions can cause damage to equipment. (The sensor is installed on the assembly exterior and does not alter assembly functions or certifications.)

NOTICE

An add-on connection kit (sold separately) is required to activate the freeze 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-800M4.)

NOTICE

Use of the freeze 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 protection against a freeze event.

Watts is not responsible for the failure of alerts due to connectivity issues, power outages, or improper installation.



800M4FR with Freeze Sensor

Features

- Built-in relief valve relieves pressure caused by ice formation
- Replaceable plastic seat
- Easy maintenance of internal parts
- O-ring bonnet seal for less possibility of fouling
- Silicone seat disc for durability
- Test cocks positioned for easy testing and winterization
- Compact space saving design
- Standardly equipped with tee handle quarter turn ball valve shutoff (sizes 1/2" to 1") and with lever handles (sizes 1 1/4" to 2")
- No special tools required for servicing
- Bronze body for durability
- Available freeze sensor connection kit to activate a monitoring system that trigger alerts for low and freezing temperatures
 - Built-in Wi-Fi function to communicate freeze alerts directly to the user, eliminating the need for a third-party controller
 - Included standalone sensor to provide flexibility in locating a measuring tool at or near any water-carrying outdoor installation vulnerable to freezing conditions
 - Switched output relay to augment BMS or irrigation management systems with reinforced control of sprinkler systems

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

An antisiphon pressure vacuum breaker shall be installed where indicated on the plans to prevent the backsiphonage of contaminated water. This assembly shall not be used where a backpressure condition can develop. The assembly shall incorporate an acetal bonnet with silicone rubber O-ring seal and silicone rubber seat disc. The valve shall have replaceable seats. Check assembly shall be guided over its full stroke by 'V' notch guides.

The assembly shall include an internal, built-in relief valve designed to protect the internal components and the backflow body from freezing. The relief valve shall be repeatable, automatically reseating when the pressure within the valve is below the set point of the freeze relief valve.

The assembly shall meet the requirements of ANSI/ASSE Standard 1020.

The valve shall be a Watts Series 800M4FR, and shall include a freeze sensor.

Model/Option

Prefix:

U Union connections, sizes ¾" to 1"

Suffix:

FZ Freeze sensor

QC Quick-Connect adapters

SH Stainless steel ball valve handles

Materials

Springs Stainless steel

Bonnet Celcon®

Vent Disc Silicone rubber

Disc Holder Float Polypropylene

Check Valve Disc Silicone rubber

Check Valve Seat Noryl® plastic

Body Bronze

Pressure - Temperature

Temperature Range: 33°F to 140°F (1°C to 60°C)

Maximum Working Pressure: 150 psi (10.3 bar)

Standards

ANSI, IAPMO, USC Manual Section 10

Approvals



IAPMO

Approved by the Foundation for Cross-Connection Control and Hydraulic Research at the University of Southern California, Manual Section 10.

QC models are not ASSE 1020 approved.

Installation

This valve is designed for installation in a continuous pressure potable water supply system 12" above the highest point of the downstream piping. The valve must be installed with the supply connected to the bottom and in a vertical position. Allow adequate space for periodic inspection, servicing, or testing. Do not install the valve in an area where freezing or spillage can cause damage.

Test cocks are positioned at the lowest point of the valve for winterization draining. The device is reusable with the relief valve designed to automatically re-seat. It does not discharge through the relief valve during normal operation. (The built-in relief valve is not designed to provide freeze protection for the entire irrigation system.) Adequate drainage/freeze protection must be provided in cold weather applications. Pressure at 1.5 psi (0.10 bar) must be exerted against the float spring to seal the float and air inlet. Do not undersize supply and discharge piping.

NOTICE

Vacuum breakers are not designed, tested, or approved to protect against backpressure backflow or water hammer shock. For protection against backpressure backflow, install Watts 909/009 Reduced Pressure Zone backflow preventer. For protection against water hammer shock, install a Watts Series 15 Water Hammer Arrestor using good plumbing practice.

Insulated Enclosure

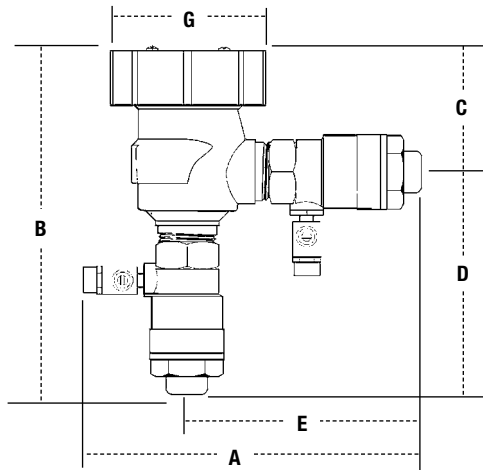
WattsBox Insulated Enclosure can be used for additional freeze protection. For more information, refer to ES-WB at watts.com.

Celcon is a registered trademark of Celanese Corporation.

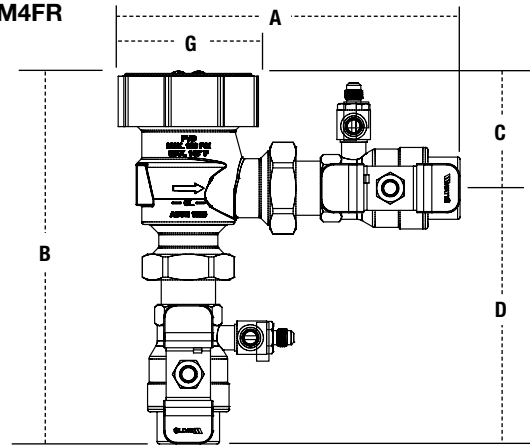
Noryl is a registered trademark of SHPP Global Technologies B.V.

Dimensions – Weights

800M4FR



U800M4FR



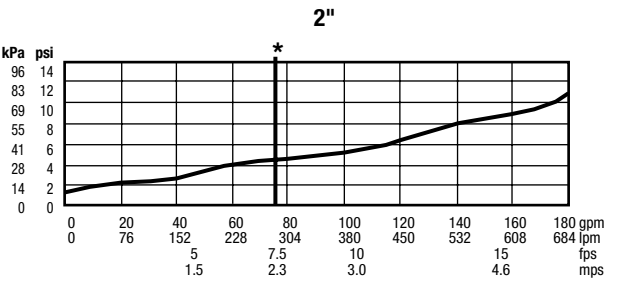
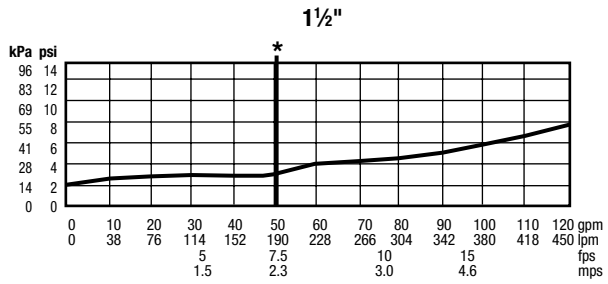
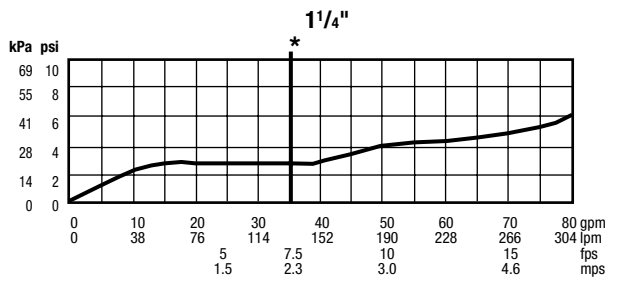
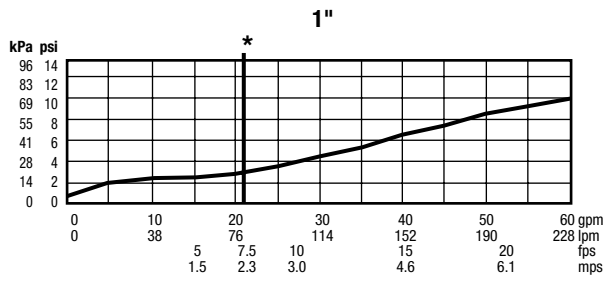
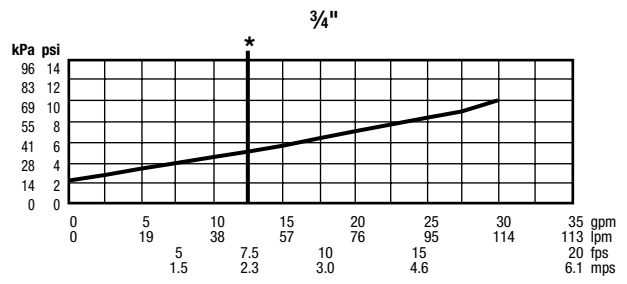
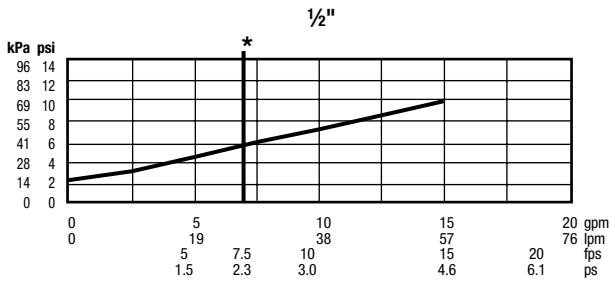
Call customer service if you need assistance with technical details.

MODEL	SIZE	DIMENSIONS										WEIGHT			
		A		B		C		D		E		G		lb	kg
	in.	in.	mm	in.	mm	in.	mm	in.	mm	in.	mm	in.	mm		
800M4FR	1/2	6 1/8	156	6 1/4	159	2 9/16	65	3 11/16	94	3 7/8	98	2 1/4	57	4	1.8
800M4FR	3/4	6 1/2	165	6 1/2	165	2 9/16	65	3 15/16	100	4 1/8	105	2 1/4	57	4	1.8
800M4FR	1	7 1/2	191	7 1/2	191	2 3/4	70	4 3/4	121	4 7/8	124	3 7/16	87	6	2.7
800M4FR	1 1/4	8 7/8	225	9	229	3 1/4	83	5 3/4	146	6 1/8	156	5	127	11	5.0
800M4FR	1 1/2	9 1/4	235	9 1/2	241	3 1/4	83	6 1/4	159	6 3/8	162	5	127	14	6.3
800M4FR	2	10 5/8	270	9 5/8	245	3 1/4	83	6 3/8	162	7	178	5	127	19	8.6
U800M4FR	3/4	6 3/8	163	7 9/16	192	2 1/8	55	5 7/16	138	-	-	2 1/4	57	4	1.8
U800M4FR	1	8 5/16	211	9	229	2 13/16	71	6 3/16	158	-	-	3 3/16	87	6	2.7
800M4FRQC	1/2	7 7/8	199	8	203	2 13/16	71	5 7/16	138	5 5/8	144	3 3/16	87	4.5	2.0
800M4FRQC	3/4	8 1/2	216	8 1/2	216	2 13/16	71	5 11/16	144	6 1/8	156	3 3/16	87	4.7	2.1
800M4FRQC	1	9 1/2	241	9 1/2	241	2 13/16	71	6 3/4	171	6 7/8	175	3 7/16	87	6.6	3.0

Capacity

As compiled from documented Foundation for Cross-Connection Control and Hydraulic Research at the University of Southern California lab tests.

*Typical maximum flow rate (7.5 ft/s)



USA: T: (978) 689-6066 • Watts.com
 Canada: T: (888) 208-8927 • Watts.ca
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