

WOM-4 Automatic Water-Oscillating Monitor

Description

The ANSUL[®] WOM-4 automatic water-oscillating monitor is a master stream device for fixed locations and is designed for use with water or foam. The sweep is pre-set at installation to cover the hazard area and is also field adjustable.

The water flowing through the device powers the monitor to oscillate up to 165° horizontally. This eliminates the need for wiring or hydraulic controls. Elevation is pre-set by use of a handwheel worm gear drive.

Water fog, straight bore, or air-aspirating nozzles may be used with the WOM-4 1,750 gpm (3,785 Lpm) capacity monitor. Automatic nozzles should not be used. For more information, see the following data sheets:

- Air Aspirating Foam Nozzle AFN-2 (Form No. F-86187-2)
- Master Stream Monitor Nozzles (Form No. F-8586-5)
- Self-Educting Master Foam Nozzles (Form No. F-99132-05)

Features

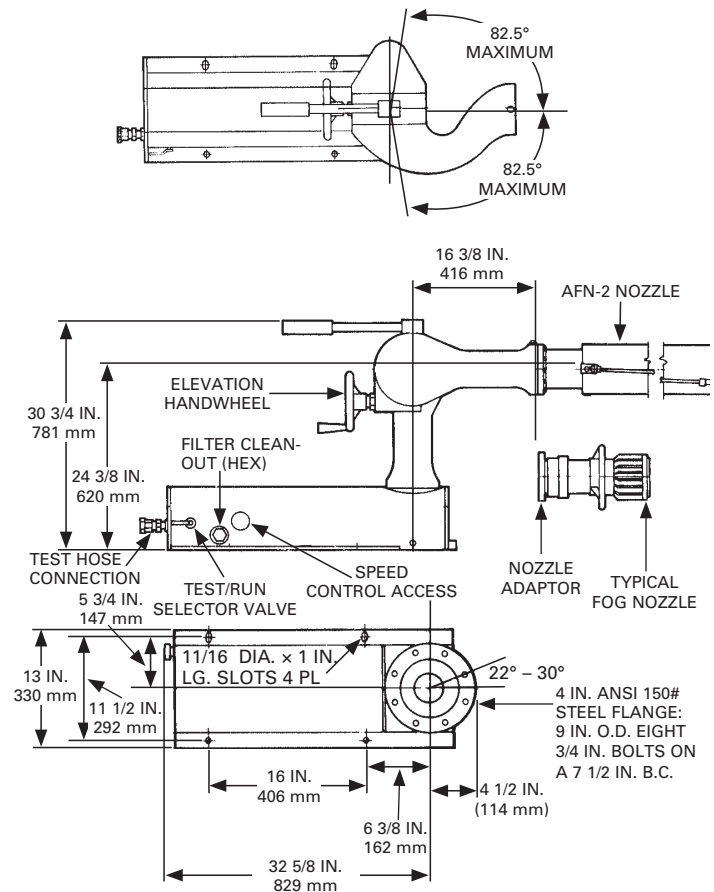
The WOM-4 automatic water-oscillating monitor has the following features:

- Elevation lock is easily set to any angle with the handwheel
- Externally accessible controls including the test connection, selector valve, speed control valve, and in-line filter
- Quick winterization is easy with no need for the readjustment of end stops, breaking of plumbing, or use of glycol pumps
- Simple functionality of the manual override reduces training requirements
- Simple automatic valve circuit uses only one four-way water valve
- Reliable chain drive is fully accessible by an easily removable cover
- All working parts are made or plated with corrosion-resistant materials

Specifications and Materials

The WOM-4 automatic water-oscillating monitor is operated by a reciprocating, water-powered piston and cylinder. A small flow of water that by-passes the monitor inlet through a four-way valve drives the cylinder. A stroke adjustment nut at each end of a threaded rod actuates the toggle action four-way valve. This automatically reverses the cylinder at each end of the stroke. A stainless roller chain is attached to the cylinder heads and engages a sprocket on the monitor base. This converts the reciprocating cylinder motion to the oscillating motion.

Detailed Dimensions



001241

Inlet

- Type: Eight hole aluminum flange
- Size: 4 in. (102 mm)
- Weight: 150 lb (69 kg)

Discharge

- Special flanged connection for AFN-2 nozzle
- NH nozzle adaptor is required for master stream nozzles

Vertical Range Setting

The vertical range setting is 24° below horizontal to 90° above horizontal.

Arc of Oscillation

The arc of oscillation is 0° through to 165°. When used with a dispersed pattern, a 165° monitor sweep results in 180° coverage. A dispersed pattern with a reduced range is required to meet foam application rates. The stock setting is 82.5° to either side of front center. The arc sweep is field adjustable in 7.5° increments throughout 360°.

Specifications and Materials (Continued)

Weight

The weight is 130 lb (59 kg) without a nozzle.

Operating Pressure

The maximum operating pressure is 10.34 bar (150 psi).

Material Used

- Waterway: A-356-T6 anodized aluminum
- Chain: Stainless steel
- Tube fittings, cylinder heads, valves, and piston: Brass
- Rigid tubings: Stainless steel
- Flex tubing: Nylon
- Rod: Stainless steel and hard chrome plated
- Finish on chassis and covers: Enamel over primer
- Fasteners: Stainless steel
- Cylinder: Oriented fiberglass in epoxy matrix with non-corrosive, lubricating, isophthalic polyester lining
- Seals: BunaN and Teflon
- Swivels: Anodized aluminum
- Ball: Stainless steel
- Working steel parts - plated with bright zinc

Mounting

Direct to 4 in. (102 mm) 150 lb (68 kg) raised face flange. If plumbing is not adequate to support the monitor, four holes for 5/8 in. (16 mm) diameter bolts are provided in the chassis for mounting. A stand is available for floor mounting.

Test connection

Externally accessible 3/4 in. – 11 1/2 TPI NHT (garden hose) brass female swivel fitting with screen.

Speed Control

Externally accessible brass needle valve.

"Run-Test" Selector

Externally accessible 3-way brass body ball valve with stainless steel ball and Teflon seats with provision for security seal in "run" position.

Filter

Brass body and cap with reusable 90 micron sintered bronze element. The cap is externally accessible for standard cleaning.

Note: A 30 in.² (19,355 mm²) self-cleaning, 25 micron stainless steel strainer is optional.

Freeze Protectable

Freeze protectable without the use of tools, glycol pumping devices, adjustment of end stops, or breaking of plumbing.

Manual Operation

Possible use of selector valve and removal of ring pin.

Nozzle

ANSUL model AFN-2 air aspirating foam nozzle or adapter with non-aspirated master stream nozzles for water and Aqueous Film Forming Foam (AFFF) use.

Application

- Aircraft Hangars
- Fueling Areas
- Helipads
- Refineries
- Tank Farms
- Docks
- Railroad Yards
- Chemical Processes
- Lumber Mills
- Coal Storage
- Paper Mills
- Dust Abatement
- Satellite Facilities
- Exposure Protection

Ordering Information

When ordering WOM-4 automatic water-oscillating monitor, use the following information:

<u>Part Number</u>	<u>Model</u>	<u>Approximate Shipping Weight</u>	
		<u>lb</u>	<u>(kg)</u>
402675	WOM-4	150	(68.0)
400987	Support Stand	70	(31.7)

Adaptors

<u>Part Number</u>	<u>Description</u>
73743	WOM-4 Flange × 2 1/2 NH Aluminum
415794	WOM-4 Flange × 2 1/2 NH Brass
431039	WOM-4 Flange × 3 1/2 NH Brass

Oscillating Monitor Nozzle Data

To determine the maximum arc of oscillation and achieve a specific foam application rate (gpm/ft²) given a known nozzle flow rate and range, use the following formula:

$$\text{Formula: } X^\circ = \frac{F (360^\circ)}{(R)^2 (\pi)(A)}$$

Where: X = Maximum arc of oscillation in degrees

R = Nozzle range in ft

π = 3.1416

F = Nozzle flow rate in gpm

A = Application rate in gpm/ft²

Example: Given –

- Nozzle flow rate of 1,250 gpm at 100 psi, (330 gpm at 6.9 bar)
- Desired nozzle range of 125 ft (1,500 m)
- Desired application rate of 0.1 gpm/ft² (AFFF)

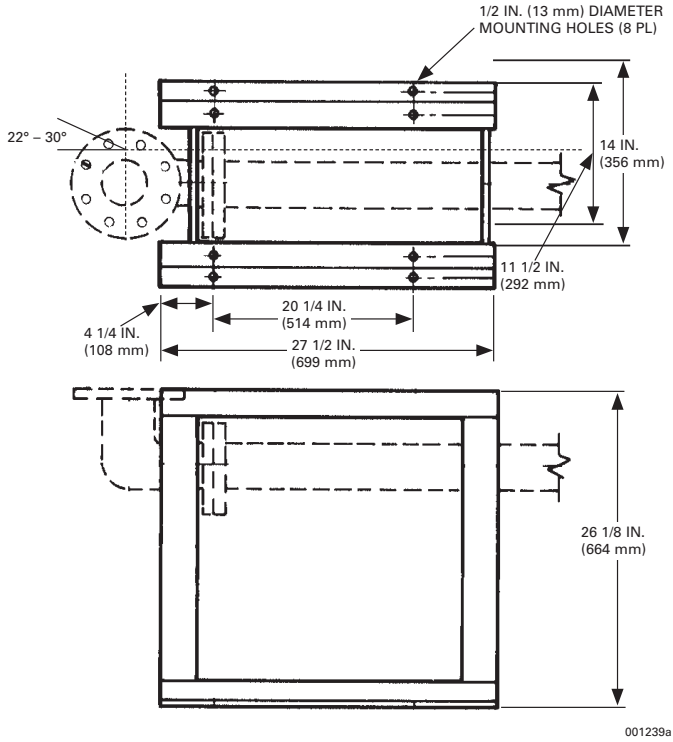
What is the maximum arc of oscillation allowable?

$$X^\circ = \frac{F (360^\circ)}{(R)^2 (\pi)(A)}$$

$$X^\circ = \frac{(1,250)(360)}{(125)^2 (3.1416)(0.1)}$$

$$X^\circ = 92^\circ$$

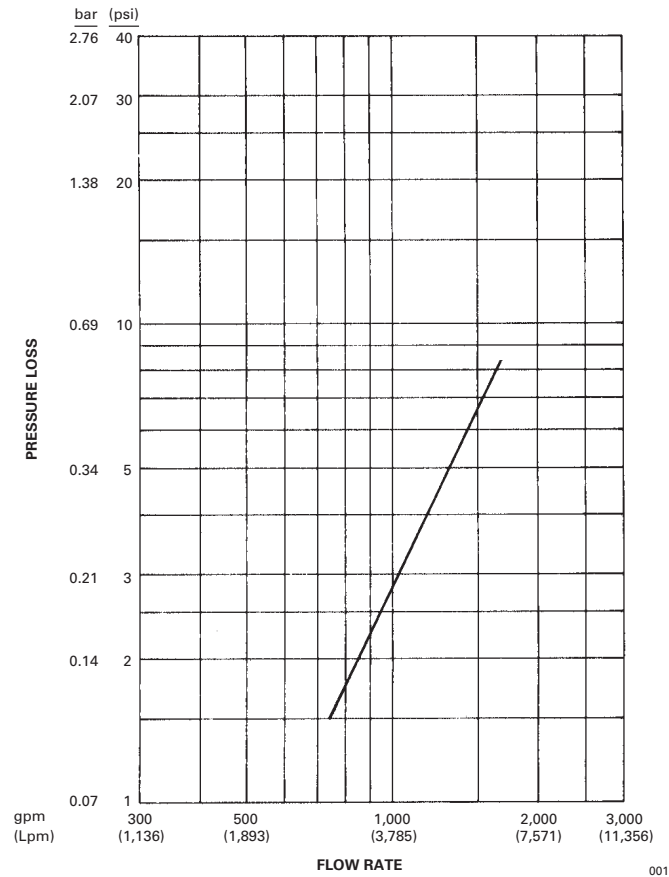
Optional Support Stand



Note: Pipes and flanges are not supplied by ANSUL.

Friction Loss vs Flow Rate

4 1/4 in. Waterway, 4 in. Flange, and 4 in. Outlet



Note: The converted values in this document are provided for dimensional reference only and do not reflect an actual measurement.

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