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APPROVAL REPORT

STYLE 3528 OMEGA XP MONITORS

Prepared for:

Akron Brass Company
343 Venture Blvd.
P.O. Box 86
Wooster, Ohio 44691

Project: 3030786
Class: 1421
Date of Approval: May 29, 2008

Authorized by:

Richard B. Dunne, Manager – Hydraulics Group

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from

Akron Brass Company
343 Venture Blvd.
P.O. Box 86
Wooster, Ohio 44691

I INTRODUCTION

1.1 Akron Brass Company requested FM Approval of their Style 3528 Omega XP Monitor Assembly.

1.2 This Report is limited to the examination of the monitor in accordance with the standard listed below as described in Section 1.4 of this Report.

1.3 This report may be freely reproduced only in its entirety and without modification.

1.4 Standards

Title	Class Number	Date
Monitor Assembly	1421	June 2007

1.5 **Listing:** The monitor assembly will appear in the Monitors section of Chapter 2, Hydrants and Hose, of the Fire Protection FM Approval Guide, as follows.

Akron Brass Co, 343 Venture Blvd. Box 86, Wooster OH 44691

Product	Construction Material	Service Pressure (psi)	Inlet	Outlet	Range of Motion
Style 3528 Omega XP	Brass	200	3 in. or 4 in. Class 150 flange	2-1/2 in. NH	Horizontal = 360° Vertical = -45° to +90°

II DESCRIPTION

Style 3528 Omega XP monitor assembly is intended for use as fixed mounted monitor. It is constructed of brass and is available with optional base attachments of 3 or 4 in. (76 or 102 mm), ASME/ANSI B16.5 Class 150 lb (68 kg) flanges and is for use with 2-1/2 inch (65 mm) nominal inlet sized master stream nozzles. The horizontal range of motion is 360 degrees and the vertical range of motion is 45 degrees below horizontal and 90 degrees above horizontal.

III EXAMINATIONS AND TESTS

3.1 The Style 3528 Omega XP monitor assembly described in this report was examined and tested at FM Approvals, located in West Glocester, Rhode Island.

3.2 The appropriate drawings and information have been submitted, examined and found to satisfy FM Approval requirements.

3.3 The following examination, environmental, and operational tests were conducted in order to satisfy FM Approvals' requirements for functionality and reliability. The tested samples were considered to be representative of the product line and were examined, tested, and compared to the manufacturer's drawings. All data remains on file at FM Approvals, along with other documents and correspondence applicable to this program.

3.4 Hydrostatic Proof-Pressure

One Style 3528 Omega XP monitor assembly was subjected to a Hydrostatic Proof-Pressure test in accordance with Class 1421, Section 4.2. The sample was hydrostatically pressurized to 500 psi (35 bar) for ten minutes. No ruptures, leaks, or other physical damage was visible on the sample. The sample was then hydrostatically pressurized to 850 psi (59 bar) for one minute. No ruptures, leaks, or other physical damage was visible on the sample. The results were considered satisfactory.

3.5 Operation and Freedom of Movement

One Style 3528 Omega XP monitor assembly was subjected to an Operational and Freedom of Movement test in accordance with Class 1421, Section 4.3.

The monitor assembly was hydrostatically pressurized to 500 psi (35 bar). While subjected to this pressure, the sample was operated in both the horizontal and vertical planes. The monitor assembly operated freely with no binding. The results were considered satisfactory.

Additionally, the sample was operated in both the horizontal and vertical planes while subjected to flowing conditions of 100 psi (7 bar) pressure. The monitor assembly operated freely with no binding. The results were considered satisfactory.

3.6 Pressure Versus Flow Rate

The pressure differential between the monitor inlet and outlet of the Style 3528 Omega XP monitor assembly was measured at various flow rates, in accordance with Class 1421, Section 4.4. Results are shown below.

Table 3.6 – Pressure Versus Flow Rate

Flow Rate gpm (Lpm)	Pressure Differential psi (bar)
100 (380)	0.65 (0.045)
200 (760)	2.31 (0.15)
300 (1135)	5.09 (0.35)
400 (1515)	9.22 (0.64)
500 (1895)	14.11 (0.98)
600 (2270)	20.30 (1.40)
700 (2650)	27.55 (1.90)

3.7 Weatherability

One Style 3528 Omega XP monitor assembly was subjected to the Weatherability test, in accordance with Class 1421, Section 4.5. The sample was exposed to an ambient temperature of -40 °F (-40 °C) for a period of 24 hours. Subsequent to the exposure period, the sample was visually inspected for damage, tested for proper function of the adjustments and controls, and subjected to a hydrostatic proof-pressure test in accordance with Class 1421, Section 4.2. No damage was observed and the monitor assembly operated freely following the exposure period. The results were considered satisfactory.

3.8 High Temperature Exposure

One Style 3528 Omega XP monitor assembly was subjected to a high temperature exposure test, in accordance with Class 1421, Section 4.6. The assembly was exposed to an ambient temperature of 135 °F (57 °C) for a period of 24 hours. The sample was then visually inspected for damage, tested for proper function of the adjustments and controls, and subjected to a hydrostatic proof-pressure test in accordance with Class 1421, Section 4.2. No damage was observed and the monitor assembly operated freely following the exposure period. The results were considered satisfactory.

3.9 Durability

One Style 3528 Omega XP monitor assembly was subjected to a Durability test, in accordance with Class 1421, Section 4.7. The monitor was subjected to 500 cycles of operation throughout its full range of motion in the horizontal and vertical planes. Subsequent to the cycle period, the sample was visually inspected for damage, tested for proper function of the adjustments and controls, and subjected to a hydrostatic proof-pressure test in accordance with Class 1421, Section 4.2. No damage was observed and the monitor assembly operated freely following the cycle period. The results were considered satisfactory.

3.10 Corrosion – Salt Spray

One Style 3528 Omega XP monitor assembly was subjected to a salt spray corrosion test, in accordance with Class 1421, Section 4.8. The sample was exposed to the standard salt spray test as specified by ASTM B117, using a 20 percent salt solution, for a period of 240 hours. Following the exposure period and a drying period of two days, a visual inspection was conducted. The inspection indicated no severe deterioration or impending component failure. Additionally, the monitor operated freely, with no binding, following the exposure period. The test results were considered satisfactory.

IV MARKINGS

The monitor assembly are permanently marked with the following information:

- Name or trademark of manufacturer.
- Model designation.
- Nominal size.
- Rated working pressure.
- FM Approval mark.

V REMARKS

Installations shall comply with the latest edition the manufacturer's instruction manual.

VI FACILITIES AND PROCEDURES AUDIT

6.1 The monitor assembly described in this report is FM Approved only when manufactured at the following location:

Akron Brass Company
343 Venture Blvd.
Wooster, Ohio 44691

6.2 The manufacturing facility is currently included in FM Approval's Facilities and Procedures Audit program. The addition of the product, examined within this Report, represents no change to manufacturing or quality control procedures.

VII MANUFACTURER'S RESPONSIBILITIES

7.1 Documentation considered critical to this Approval is on file at FM Approvals and listed in Section VIII of this report. No changes of any nature shall be implemented unless notice of the proposed change has been provided to, and written authorization obtained from, FM Approvals. The Approved Product Revision Report, Form 797, must be forwarded to FM Approvals as notice of proposed changes.

7.2 As part of the Approval requirements, FM Approvals requires assurance that subsequent equipment produced will present the same quality and reliability as the specified samples examined. The manufacturer shall maintain a Quality Assurance program, which includes as a minimum: incoming, in process, and final inspection and testing, equipment calibration, and drawing change control.

7.3 Akron Brass Company must subject 100 percent of production monitor assemblies to a pressure of 500 psi (35 bar) for one minute. Ruptures, leakage, or noticeable distortions must not occur. While subjected to this pressure, the monitor assembly must be operated in both the horizontal and vertical planes. The monitor assembly must operate freely with no binding.

VIII DOCUMENTATION

The following documents describe the Style 3528 Omega XP monitor assembly and are on file under PI 3030786.

Drawing Number	Revision	Title
B44030	05	Assembly Omega XP
D44032	02	Inlet Base Mach Omega XP
B21033	03	Handle Knob Swing Out Valve
D44034	02	Gooseneck Mach Omega XP
D44036	01	Outlet Elbow Mach Omega XP
D44159	01	Inlet Base 3" Mach Omega XP
A31702	01	Swivel Plug Stream Master
B44037	01	Brake Shoe Omega XP
B44038	00	Brake Shaft Omega XP
B44039	00	ID Plate Omega XP
B44098	00	Handle Brass Pipe Omega XP

IX CONCLUSION

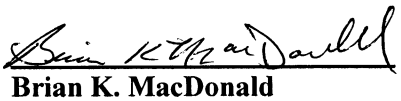
The monitor assembly described in this report meets FM Approvals' requirements. Since a duly signed Master Agreement is on file for Akron Brass Company Approval is effective the date of this report.

EXAMINATION AND TESTING BY: **Robert Ilewicz, FM Approvals**
John Normington, FM Approvals

PROJECT DATA RECORD: **P.I. 3030786**

REPORT BY: **REPORT REVIEWED BY:**

Angèle Morcos
Engineer
Hydraulics Group



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