

OPERATION MANUAL

074

Naturally Aspirated
Radiation Shield
074-9800 Rev B



POWERED BY ACOEM

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Met One Instruments, Inc. is now part of the Acoem international group of companies.

Met One Instruments has been designing and manufacturing class-leading meteorological, ambient air sensing, and air quality monitoring instrumentation since its inception in 1989. Its line of robust industrial-grade meteorological equipment, air particulate monitoring equipment, and indoor air quality monitoring systems have set the standard for the industry. Headquartered in Grants Pass, OR, Met One Instruments, Inc. is fueled by a dedicated expert team who is diligently working to advance the technology required to ensure continued improvements in human and environmental health now and for generations to come.

Acoem is committed to helping organizations and public authorities find the right balance between progress and preservation — safeguarding businesses and assets and maximizing opportunities while conserving the planet's resources. Headquartered in Limonest, France, Acoem delivers unrivaled inter-operable AI-powered sensors and ecosystems that empower our customers to make enlightened decisions based on accurate and timely information.

In 2021, Acoem acquired Met One Instruments, marking a pivotal moment when two industry leaders in the air quality monitoring sectors converged — creating a single, stronger and more future-focused provider of holistic environmental monitoring solutions. Now, Met One Instruments Powered by Acoem has opened new possibilities through an extensive offering of class leading, multi-parameter environmental monitoring and industrial reliability solutions. These integrated measurement systems, technologies, and services deliver comprehensive solutions for a range of applications, including environmental research, regulatory compliance, and industrial safety and hygiene.

For more information about Met One Instruments Powered by Acoem, please visit: metone.com

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1 INTRODUCTION

1.1 About This Manual

This document is organized with the most important information toward the front of the manual. All users should read and understand the sections on setup, operation, and maintenance. Toward the back are sections that provide in-depth information on subjects such as diagnostics and accessories. These sections should be consulted as needed.

This manual is periodically revised for maximum accuracy and to incorporate new features or updates. User feedback is welcome. Electronic versions of this manual are available upon request.

1.2 Technical Service

Should support still be required after consulting the printed documentation, contact one of the expert Met One Instruments, Inc. Technical Service representatives during normal business hours of 7:00 a.m. to 4:00 p.m. Pacific Standard Time, Monday through Friday. Product warranty information is available at <https://metone.com/met-one-warranty/>. In addition, technical information and service bulletins are often posted on our website. Please contact us and obtain a Return Authorization (RA) number before sending any equipment back to the factory. This allows us to track and schedule service work and to expedite customer service.

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Please have the instrument serial number available when contacting the manufacturer. On most models manufactured by Met One Instruments, it will be located on a silver product label on the unit, and also printed on the calibration certificate. The serial number will begin with a letter and be followed by a unique five-digit number such as U15915.

1.3 074 Naturally Aspirated Solar Radiation Shield



Figure 1-1 Solar Radiation Shield Model 074

The Model 074 is a naturally aspirated solar radiation shield designed to be used with an attached sensor, sold separately. The sensor is shielded by a series of white concentric plates, which allow air flow to pass through the shield while blocking direct solar rays. This shielding minimizes the effects of solar and terrestrial radiation and improves the measurement accuracy of meteorological sensors.

1.4 Model 074 Specifications

PARAMETER	SPECIFICATION
Mounting:	U-bolt to either vertical or horizontal pipe 3/4 IPS (1.05" OD) to 1.5 IPS (1.90" OD)
Dimensions:	7 inches diameter, 8 inches height (less sensor)
Weight:	2 pounds (less sensor)
Material	Plates: Painted plastic Mounting Arm: Powder coated aluminum

Specifications may be subject to change without notice.

2 SITE SELECTION and POSITIONING CRITERIA

The installation site of the 074 should be chosen by following all local requirements and EPA guidelines as closely as possible. Contact the local EPA representative with any questions.

3 SETUP

Use the following information to correctly assemble, configure, and deploy the 074. Installation of the 074 should ideally be performed by personnel familiar with environmental monitoring equipment. There are no special precautions or handling concerns except for the normal level of care required for handling scientific equipment. Refer to the instructions and diagrams on the following pages.

3.1 Unpacking

Unpack the radiation shield and accessories and compare them to the packing list to make sure all items are present.

Any damage incurred to the equipment during shipping is the responsibility of the carrier. If any damage to the shipment is noticed before unpacking, **a claim must be filed with the commercial carrier immediately**. Follow any special unpacking instructions provided by the carrier as all items are carefully removed from the containers and each component inspected. It is recommended to document and photograph all damaged packages and items before, during, and after unpacking them. Contact Met One Instruments (see section 1.2 of this manual) to arrange for any replacement items needed.

The normal instrument configuration is supplied with the following standard accessories:

074 includes

- One (1) U-Bolt Mounting Kit (part number 9104-1)
 - One (1) U-Bolt, ¼-20, SST
 - Two (2) ¼ SST Flat Washer
 - Two (2) ¼ SST Split Lock Washer
 - Two (2) ¼-20 SST Hex Nut
- One (1) Operating Manual

Please keep all of the special shipping items (box, foam packing material, etc.) used to ship the 074. They should be re-used if the 074 is to be transported (changing site locations, returning to the factory, etc.). Contact Met One Instruments (see section 1.2 of this manual) for replacement packing materials if necessary.

3.2 Installation

The 074 radiation shield should arrive fully assembled and ready to install with the accompanying mounting hardware contained in a separate bag. The shield is designed for easy setup and deployment, allowing it to be used for either permanent long-term sampling at a fixed site or for portable sampling in temporary applications. The built-in mounting plate allows for convenient installation on either a vertical or horizontal mounting pole.



Figure 3-1 074 Mounting Options

To deploy the shield, simply position the mounting plate of the 074 on the mounting pole, and then insert the U-bolt through the appropriate holes in the plate. The mounting pole should be pinched between the mounting plate of the shield and the U-bend in the bolt as shown in Figure 3-1. Use the provided nuts and washers to secure the shield in place.

For sensor installation, refer to the individual sensor’s manual. If purchased as part of a large system, the sensor may be pre-installed at the factory.

4 MAINTENANCE

The 074 is designed to be easy to maintain with minimal upkeep. To maintain proper reflectivity, the shield should be inspected at least annually. Any dirt or debris build up should be thoroughly cleaned to keep the shield plates as white as possible. Harsh or dirty environments may require more frequent cleaning to maintain the integrity of the shield.