

Australian Standard[®]

Meters for non-urban water supply

**Part 5: Installation and commissioning
of closed conduit meters fully charged**

STANDARDS
Australia



This Australian Standard® was prepared by Committee CE-024, Measurement of Water Flow in Open Channels and Closed Conduits. It was approved on behalf of the Council of Standards Australia on 9 January 2013.
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The following are represented on Committee CE-024:

- Australian Industry Group
 - Australian Water Association
 - Department of Environment and Resource Management, Qld
 - Institute of Instrumentation, Control and Automation Australia
 - Irrigation Australia
 - National Farmers Federation
 - National Irrigators Council
 - National Measurement Institute
 - University of South Australia
 - Water Services Association of Australia
-

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PREFACE

This Standard was prepared by the Standards Australia Committee CE-024, Measurement of Water Flow in Open Channels and Closed Conduits, to supersede ATS 4747.5—2008, *Meters for non-urban water supply, Part 5: Installation and commissioning of closed conduit meters fully charged*.

This Standard is based on ISO 4064-2, *Measurement of water flow in fully charged closed conduits—Meters for cold potable water and hot water, Part 2: Installation requirements*.

The objective of the 4747 series of Standards is to provide requirements for the installation and commissioning of irrigation and non-urban water meters to meet the requirements of the National Water Initiative, Clause 88.

NMI M10-1, *Meters Intended for the Metering of Water in Full Flowing Pipes, Part 1: Metrological and Technical Requirements*, specifies the metrological and technical requirements for pattern approval and verification of water meters, for compliance with the National Measurement Regulations.

This document is part of a series of Standards covering the metering of non-urban water supply, as follows:

AS

4747	Meters for non-urban water supply
4747.1	Part 1: Glossary of terms
4747.2	Part 2: Technical requirements for closed conduit meters fully charged
4747.3	Part 3: Technical requirements for open channel meters
4747.5	Part 5: Installation and commissioning of closed conduits meters fully charged (this Standard)
4747.6	Part 6: Installation and commissioning of open channel meters
4747.8	Part 8: In-service compliance for non-urban water meters

The above documents were originally released as Australian Technical Specifications for a period of over two years. Following review and consideration of industry feedback, they have been revised and released as Standards.

Significant changes to the series include the following:

- (a) The method of handling meters that are beyond the limit of what can be practicably pattern-approved has been revised, which applies to AS 4747.2 and AS 4747.3.
- (b) Overlap with the National Measurement Institute (NMI) documents has also been removed, and the NMI documents are to be read in conjunction with the above Standards.

The terms 'normative' and 'informative' have been used in this Standard to define the application of the appendix to which they apply. A 'normative' appendix is an integral part of a Standard. An 'informative' appendix is for information and guidance only.

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STANDARDS AUSTRALIA

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SECTION 1 SCOPE AND GENERAL

1.1 SCOPE

This Standard sets out requirements for the installation of meters complying with NMI M 10-1 and AS 4747.2 for use in non-urban, closed conduit applications.

Two types of meter installations are covered in this Standard, as follows:

- (a) A 'self-contained unit'—a meter that defines its own geometry, is able to be pattern-approved as a complete water meter, calibrated upon assembly and supplied by a single supplier.
- (b) A 'modular metering system'—a device or group of instruments (which may be supplied as a pattern-approved metering system) that does not define the installation geometry and requires configuration after installation.

NOTE: The requirements for these types of meters to demonstrate compliance with this Standard, and hence with the National Framework are set out in AS 4747.2.

This Standard applies to meters that are—

- (i) self-contained or modular and capable of continuously determining, within the accuracy limits, the volume of water that has flowed through them; and
- (ii) continuously updating the volume on a cumulative basis.

NOTE: In this Standard a meter installation is considered to include—

- (a) the meter, its indicating device and all ancillary equipment; and
- (b) the upstream and downstream pipe or emplacement that may have a material effect on the meter unit.

This Standard applies to meters that operate under the following conditions:

- (A) Closed conduit under full flow.
- (B) Pressure range minimum 0.03 MPa to a value specified by the manufacturer. As a minimum, insertion or clamp-on meters will have the same working pressure range as the pipes they are designed to operate in.
- (C) Working water temperature range of 0.1°C to 30°C. The maximum admissible temperature is 50°C, which is the limiting condition for the meter.
- (D) Ambient air temperature range of -5°C to 55°C.
- (E) Ambient humidity range of 0% to 100% except for the remote indicating devices where the range is 0% to 93%.

1.2 APPLICATION

This Standard is intended to be used to meet the Australian National Water Initiative for metering non-urban water.

Meters that do not comply with Section 4 of AS 4747.2 shall comply with this Standard.