# Pattern Approved non-urban Water Meters

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n -urban ember 2020

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## Purpose

In June 2018 the Australian Government and the Murray–Darling Basin states agreed to the [Murray–Darling Basin Compliance Compact](https://www.mdba.gov.au/sites/default/files/pubs/Basin-Compliance-Compact-12-December-2018.pdf) which commits them to actions to strengthen compliance with water management rules in the Basin. The availability and use of water meters that meet the requirements of the relevant Australian Standard is particularly important if the community is to have confidence in water compliance arrangements.

Part three of the Compliance Compact sets out actions related to Metering and Measurement, which include the commitment to publish metering policies and implementation plans addressing meter accuracy, coverage, transmission of data, and a timetable for installation, auditing, and maintenance of the meter fleet. It includes a commitment to report annually on progress.

This document sets out the range of pattern approved meters currently available in Australia and is linked to the requirement of 3.8 of the Compliance Compact:

3.8 The Australian Government and Basin States will work with each other, jurisdictions, testing laboratories, meter manufacturers and industry to set a timetable for delivering a comprehensive range of pattern approved meters.

## What is a pattern approved meter?

The National Measurement Institute of Australia checks non-urban water meters for compliance with the Australian Standard for Non-Urban water meters (AS4747). If the meter passes testing, it is pattern approved as compliant with the requirements for closed conduit meters (NMI-M10); or with the requirements for open channel meters (NMI-M11); or with the requirements of equivalent overseas standards. A pattern approved meter complies with these requirements within the operating ranges specified by the meter manufacturer.

## Schedule 1. Closed conduit meters

### Pattern Approved closed conduit meters

A meter in this category has been tested by an accredited laboratory and met the Australian Pattern Approval requirements (NMI M 10) for Closed Conduit Meters. These meters can be installed within the operating range specified by the meter manufacturer and certified by the National Measurement Institute.

The National Measurement Institute (NMI) maintains the official list of Pattern Approved meters for trade purposes, including for urban and non-urban meters.

The following table describes the *non-urban water meters* which are Pattern Approved by the National Measurement Institute. Using the links marked as *NMI 14/3/XX* in the table, you can download the Pattern Approval certificate documents for each approved meter.

**Table 1 Pattern Approved non-urban water meters**

| Certificate of Approval number | **Meter Model - approved pattern** | **Meter technology** | **Meter Model – approved variants and components** | **Approved Q3 range (m3/h)** | **Approved nominal Sizes (DN)** | **Approved orientation** | **Contacts for technical support from the meter’s supplier** |
| --- | --- | --- | --- | --- | --- | --- | --- |
| [NMI 14/3/21](https://www.industry.gov.au/sites/default/files/nmi/certificates-approval/14-3-21_r6.pd_.pdf) | Krohne  Waterflux 3070 Water Meter | Electromagnetic | Krohne Waterflux 3070 flow sensor  Krohne IFC 070 signal converter  Krohne Waterflux 3070 C | 10 - 6300 | DN25 – DN600 | All | Krohne on  (02) 9426 1700 |
| [NMI 14/3/24](https://www.industry.gov.au/sites/default/files/nmi/certificates-approval/14-3-24_r8.pdf) | Siemens  MAG8000 Water Meter | Electromagnetic | Siemens SITRANS F M MAG8000 signal transmitter  Siemens SITRANS F M MAG5100W flow sensor  Siemens SITRANS F M MAG8000CT signal transmitter  Siemens SITRANS F M MAG8000 Irrigation signal transmitter | 63 - 16000 | DN25 – DN300  DN200 - DN1200 | All  Horizontal only | Siemens on  1300 369 515   industryservice.au@siemens.com |
| [NMI 14/3/29](https://www.industry.gov.au/sites/default/files/nmi/certificates-approval/14-3-29_r3.pd_.pdf) | Arad  Octave Water Meter | Ultrasonic | Arad Octave 2  Arad Octave 2 Hardware version 2.4 | 40 - 1000 | DN40 – DN300 | All | Netafim on  (03) 8331 6516  0484 555 113 |
| [NMI 14/3/30](https://www.industry.gov.au/sites/default/files/nmi/certificates-approval/14-3-30.pdf) | ABB  AquaMaster3 FEV2 Water Meter | Electromagnetic | ABB AquaMaster3 FEV2 flow sensor  ABB AquaMaster3 signal transmitter  ABB WaterMaster signal transmitter | 40 - 1000 | DN40 – DN200 | All | ABB on  1800 222 435 |
| [NMI 14/3/32](https://www.industry.gov.au/sites/default/files/nmi/certificates-approval/14-3-32_r8.pdf) | Aquamonix  (includes Pentair; Tyco & Emflex brands)  I500 Water Meter | Electromagnetic | Aquamonix I500 flow transmitter  Aquamonix IR2060 flow sensor  Aquamonix IR2020 flow sensor  Aquamonix IR2030 flow sensor  Aquamonix IR2030C flow sensor  Aquamonix GM1060 flow sensor | 36 - 10800 | DN50 – DN1500 | Horizontal and Vertical | Aquamonix on  1300 797 246  (02) 8710 4040 |
| [NMI 14/3/34](https://www.industry.gov.au/sites/default/files/nmi/certificates-approval/14-3-34.pdf) | SENSUS  WP-Dynamic Water Meter | Inferential turbine | As per meter model | 25 - 2000 | DN40 – DN400 | Horizontal only | Bermad on  [https://support.bermad.com.au](https://support.bermad.com.au/) |
| [NMI 14/3/36](https://www.industry.gov.au/sites/default/files/nmi/certificates-approval/14-3-36_r5.pdf) | Euromag  MUT 2200 EL Water Meter | Electromagnetic | Euromag MUT 2200 EL flow sensor  Euromag MUT 2500 EL flow sensor  Euromag MC608B indicating flow converter  Euromag MC608R indicating flow converter  Euromag MC608I indicating flow converter  Euromag MC406 and 406A indicating flow converter | 25 - 3600 | DN40 – DN1000 | Horizontal only | Bermad on  [https://support.bermad.com.au](https://support.bermad.com.au/) |
| [NMI 14/3/42](https://www.industry.gov.au/sites/default/files/nmi/certificates-approval/14-3-42_r3.pdf) | Rubicon  Sonaray Pipe Meter | Ultrasonic | Rubicon 74222AD ultrasonic flow tube  Rubicon SolarDrive Board 77264 indicating flow computer  Rubicon flowtube connection type model: 74220AD  Rubicon flowtube connection type model: 74221AD  Rubicon flowtube connection type model: 82175  Rubicon flowtube connection type model: 82176  Rubicon flowtube connection type model: 82177  Rubicon flowtube connection type model: 82188  Rubicon flowtube connection type model: 82189 | 1313 | DN600 | Horizontal Only | Rubicon on  (03) 9832 3000 |
| [NMI 14/3/44](https://www.industry.gov.au/sites/default/files/nmi/certificates-approval/14-3-44_r2.pdf) | ARAD  WSTsb Water Meter | Woltman | As per meter model | 63 - 1000 | DN50 – DN300 | Horizontal only | Netafim on  (03) 8331 6516  0484 555 113 |
| [NMI 14/3/46](https://www.industry.gov.au/sites/default/files/nmi/certificates-approval/14-3-46_r0.pdf) | ABB  AquaMaster4 Water Meter | Electromagnetic | ABB AquaMaster4 model signal transmitter FET4XY |  |  | All | ABB on  1800 222 435 |
|  |  |  | ABB WaterMaster signal transmitter |  |  |  |  |
|  |  |  | ABB electromagnetic flow sensor FEW4XY.R (reduced bore, rubber lined) | 25 - 6300 | DN40 – DN600 |  |  |
|  |  |  | ABB electromagnetic flow sensor FEW4XY.V (virtual full bore, polypropylene lined) | 40 - 16000 | DN40 - DN1200 |  |  |
|  |  |  | ABB electromagnetic flow sensor FEW4XY.F (full bore, polypropylene lined) | 40 - 16000 | DN40 - DN1200 |  |  |
|  |  |  | ABB electromagnetic flow sensor AquaMaster FEV 2 | 40 - 1000 | DN40 - DN200 |  |  |
|  |  |  | ABB WaterMaster electromagnetic flow sensor WaterMaster FEV | 40 - 4000 | DN40 - DN500 |  |  |
|  |  |  | ABB WaterMaster electromagnetic flow sensor WaterMaster FEW | 40 - 4000 | DN40 - DN500 |  |  |
|  |  |  | ABB WaterMaster electromagnetic flow sensor WaterMaster FEF | 40 - 4000 | DN40 - DN500 |  |  |
| [NMI 14/3/49](https://www.industry.gov.au/sites/default/files/nmi/certificates-approval/14-3-49_r1.pdf) | Krohne  Optiflux 2300C Water Meter | Electromagnetic | Krohne IFC 300 signal converter  Krohne Optiflux 2000 flow sensor  Krohne Optiflux 4000 flow sensor  Krohne Optiflux 2300C (compact arrangement)  Krohne Optiflux 4300C (compact arrangement)  Krohne Optiflux 2000F (remote arrangement)  Krohne Optiflux 4000F (remote arrangement) | 16 - 25000 | DN25 – DN1800 | All | Krohne on  (02) 9426 1700 |
| [NMI 14/3/50](https://www.industry.gov.au/sites/default/files/nmi/certificates-approval/14-3-50_r0.pdf) | Siemens  MAG5100W with MAG6000CT Water Meter | Electromagnetic | Siemens SITRANS F M MAG5100W flow sensor  Siemens SITRANS F M MAG6000CT signal transmitter  Siemens SITRANS F M MAG5000CT signal transmitter  Some flow sensor sizes will bear part numbers starting with FDK:083XXX | 63 - 16000 | DN25 – DN300  DN350 – DN2000 | All  Horizontal only | Siemens on  1300 369 515  industryservice.au@siemens.com |
| [NMI 14/3/52](https://www.industry.gov.au/sites/default/files/nmi/certificates-approval/14-3-52_r0.pdf) | ELSTER  Q4000 Water Meter | Electromagnetic | Elster Q4000  Elster Q4000B | 63 - 1000 | DN50 – DN200 | Horizontal only | At Elster Metering Pty Ltd  1800 595 437  NSW: [elsternswsales@honeywell.com](mailto:elsternswsales@honeywell.com)  VIC: [elstervicsales@honeywell.com](mailto:elstervicsales@honeywell.com) |
| [NMI 14/3/53](https://www.industry.gov.au/sites/default/files/nmi/certificates-approval/14-3-53_r1.pd_.pdf) | Endress+Hauser Promag W400 Water Meter | Electromagnetic | Endress+Hauser Promag W400 water meter  Endress+Hauser Promag W flow sensor  Endress+Hauser Promag 400 transmitter | 16 - 6300 | DN25 – DN800 | All | Endress & Hauser on  QLD: (07) 3457 0200  NSW/ACT: (02) 8877 7000  VIC/TAS: (03) 9263 8000  SA/NT: (02) 8877 7050  WA: (08) 6350 2200 |
| [NMI 14/3/54](https://www.industry.gov.au/sites/default/files/nmi/certificates-approval/14-3-54_r1_0.pdf) | Zenner  BIL WPD Water Meter | Woltman | As per meter model | 25 - 1000 | DN50 – DN300 | Horizontal and Vertical  Note: orientation alters the approved flow rate range | HR Products on  1800 486 837  [hrsales@hrproducts.com.au](mailto:hrsales@hrproducts.com.au) |
| [NMI 14/3/57](https://www.industry.gov.au/sites/default/files/nmi/certificates-approval/14-3-57_r0.pdf) | BERMAD  Turbo-IR water meter | Inferential turbine | As per meter model | 35 - 800 | DN50 – DN300 | Horizontal only | Bermad on  [https://support.bermad.com.au](https://support.bermad.com.au/) |
| [NMI 14/3/61](https://www.industry.gov.au/sites/default/files/nmi/certificates-approval/14-3-61_r0.pdf) | Arad  Octave High Flow Water Meter | Ultrasonic | Arad Octave High Flow Water Meter | 160 - 1000 | DN80 - DN200 | All | Netafim on  (03) 8331 6516  0484 555 113 |

### Provisionally approved closed conduit meters

A meter in this category has been tested by an accredited laboratory but it does NOT YET fully meet the Australian Pattern Approval requirements (NMI M 10) for Closed Conduit Meters. These meters may be installed within the operating range specified by the meter manufacturer and the National Measurement Institute will issue additional conditions on the Provisional Approval certificate.

**CAUTION**: Meters in this category may not be accepted as pattern approved meters for the purposes of state and territory metering requirements. When the National Measurement Institute issues an unconditional certificate of compliance, the meters can be accepted.

| Certificate of approval number | Meter Model /  Meter technology | Provisionally Approved sizes (DN = internal pipe diameter in millimetres) | Maximum continuous (Q3) flowrates m3/h |
| --- | --- | --- | --- |
|  |  |  |  |

**Note:** No closed conduit meters currently have provisional pattern approval

## Schedule 2. Open channel meters

### Pattern Approved open channel meters

A meter in this category has been tested by an accredited laboratory and met the Australian Pattern Approval requirements (NMI M 11) for Open Channel Meters. These meters can be installed within the operating range specified by the meter manufacturer and certified by the National Measurement Institute.

| **Certificate of approval number** | **Meter Model /**  **Meter technology** | **Approved sizes (Channel dimensions)** | **Approved maximum continuous (Q3) flowrates m3/h** |
| --- | --- | --- | --- |
| [NMI 14/3/62](https://www.industry.gov.au/sites/default/files/nmi/certificates-approval/14-3-62_r0.pdf) | RUBICON  Slipmeter SM model water meter   1. Slipmeter 79200 SM.600.XXXX 2. Slipmeter 73802 SMA.600.1500L   Approved orientation: Horizontal only | 1. 600 mm x 600 mm x 829 mm 2. 600 mm x 600 mm x 848 mm | 1313 |

### Provisionally approved open channel meters

A meter in this category has been tested by an accredited laboratory but it does NOT YET fully meet the Australian Pattern Approval requirements (NMI M 11) for Open Channel Meters. These meters may be installed within the operating range specified by the meter manufacturer and the National Measurement Institute will issue additional conditions on the Provisional Approval certificate.

**CAUTION:** Meters in this category may not be accepted as pattern approved meters for the purposes of state and territory metering requirements. When the National Measurement Institute issues an unconditional certificate of compliance, the meters can be accepted.

| Certificate of approval number | Meter Model /  Meter technology | Provisionally Approved sizes (Channel dimensions) | Maximum continuous (Q3) flowrates m3/h |
| --- | --- | --- | --- |
|  |  |  |  |

**Note:** No open channel meters currently have provisional pattern approval