# 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 sensorKrohne IFC 070 signal converterKrohne 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 transmitterSiemens SITRANS F M MAG5100W flow sensorSiemens SITRANS F M MAG8000CT signal transmitterSiemens SITRANS F M MAG8000 Irrigation signal transmitter | 63 - 16000 | DN25 – DN300DN200 - DN1200 | AllHorizontal 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) | AradOctave Water Meter | Ultrasonic | Arad Octave 2Arad 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 sensorABB AquaMaster3 signal transmitterABB 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 transmitterAquamonix IR2060 flow sensorAquamonix IR2020 flow sensorAquamonix IR2030 flow sensorAquamonix IR2030C flow sensorAquamonix GM1060 flow sensor | 36 - 10800 | DN50 – DN1500 | Horizontal and Vertical | Aquamonix on1300 797 246(02) 8710 4040 |
| [NMI 14/3/34](https://www.industry.gov.au/sites/default/files/nmi/certificates-approval/14-3-34.pdf) | SENSUSWP-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) | EuromagMUT 2200 EL Water Meter | Electromagnetic | Euromag MUT 2200 EL flow sensorEuromag MUT 2500 EL flow sensorEuromag MC608B indicating flow converterEuromag MC608R indicating flow converterEuromag MC608I indicating flow converterEuromag 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 tubeRubicon SolarDrive Board 77264 indicating flow computerRubicon flowtube connection type model: 74220ADRubicon flowtube connection type model: 74221ADRubicon flowtube connection type model: 82175Rubicon flowtube connection type model: 82176Rubicon flowtube connection type model: 82177Rubicon flowtube connection type model: 82188Rubicon 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 converterKrohne Optiflux 2000 flow sensorKrohne Optiflux 4000 flow sensorKrohne 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 sensorSiemens SITRANS F M MAG6000CT signal transmitterSiemens SITRANS F M MAG5000CT signal transmitterSome flow sensor sizes will bear part numbers starting with FDK:083XXX | 63 - 16000 | DN25 – DN300DN350 – DN2000 | AllHorizontal 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) | ELSTERQ4000 Water Meter | Electromagnetic | Elster Q4000Elster Q4000B | 63 - 1000 | DN50 – DN200 | Horizontal only | At Elster Metering Pty Ltd 1800 595 437NSW: elsternswsales@honeywell.comVIC: 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 meterEndress+Hauser Promag W flow sensorEndress+Hauser Promag 400 transmitter | 16 - 6300 | DN25 – DN800 | All | Endress & Hauser onQLD: (07) 3457 0200NSW/ACT: (02) 8877 7000 VIC/TAS: (03) 9263 8000SA/NT: (02) 8877 7050WA: (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 837hrsales@hrproducts.com.au |
| [NMI 14/3/57](https://www.industry.gov.au/sites/default/files/nmi/certificates-approval/14-3-57_r0.pdf) | BERMADTurbo-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) | RUBICONSlipmeter SM model water meter1. 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