

PRODUCT CONFORMITY CERTIFICATE

This is to certify that the

***ProcessMaster 620 Series electromagnetic flowmeter with
FEW/FER/FEP sensors***

Manufactured by:

ABB Engineering (Shanghai) Ltd

NO 4528 Kangxin Highway
Shanghai
China

has been assessed by CSA Group
and for the conditions stated on this certificate complies with:

**Performance Standards and Test Procedures for Continuous Water
Monitoring Equipment, Part 3: Performance standards and test procedures for water
flowmeters, Environment Agency, version 4, March 2020**

The combined performance characteristic (U_c , the expanded uncertainty) are as follows:
ProcessMaster 620 Series with AC power supply is **1.91% (Class 1)**
ProcessMaster 620 Series with DC power supply is **1.20% (Class 1)**

Certification ranges:

FEW sensor DN25 to DN2400
FEP sensor DN10 to DN2400
FER sensor DN40 to DN600

Project No.: 80215029
Certificate No: CSA MC250456/01
Initial certification: 9 September 2025
Certificate issued: 28 October 2025
Renewal date: 8 September 2030



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Approved Site Application

Any potential user should make sure, in consultation with the manufacturer, that the monitoring system is suitable for the intended application. For general guidance on monitoring techniques refer to the Environment Agency guidance available at www.mcerts.net

The product is suitable for use, where it is appropriate, for regulated applications such as abstraction, effluent discharge, ultraviolet disinfection and industrial processing.

The field test was carried out at a field installation between the April and July 2024 in Putian, China.

Basis of Certification

This certification is based on the following test report(s) and on CSA Group’s assessment and ongoing surveillance of the product and the manufacturing process:

- CSA Group report ref. 80215029, incorporating report “Laboratory and Field Test Results”, dated 29th May 2025
- WRc test report, ref. UC18400 V2, dated March 2025

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Product Certified

The ProcessMaster 620 Series electromagnetic flowmeter system comprises the following:

- ProcessMaster FEW620:
 - integral version with FEW621
 - remote version with FET 622 transmitter and FEW622 sensor
Sensor is lined with rubber with no inner reduction
- ProcessMaster FEP620:
 - integral version with FEP621
 - remote version with FET 622 transmitter and FEP622 sensor
Sensor is lined with PTFE, PFA, Linatex, ETFE or rubber with no inner reduction
- ProcessMaster FER620:
 - integral version with FER621
 - remote version with FET 622 transmitter and FER622 sensor
Sensor is lined with rubber and inner conical reduction

(All three variants are available as an 'integral version', where the sensor and the transmitter are one single entity, or a 'remote version' where the sensor is separate from the transmitter.)

This certificate applies to all instruments fitted with software version 01.13.00 onwards.

Models FEW620 and FEP620:

| Model (FEW620) | Model (FEP620) | Meter Size (DN, mm) | Flow rate | | Unit |
|-------------------|-------------------|------------------------|-----------|----------|-------------------|
| | | | Min (Q1) | Max (Q3) | |
| Ü | Ü | 10 | 0.012 | 2.5 | m ³ /h |
| Ü | Ü | 15 | 0.03 | 6.3 | m ³ /h |
| Ü | Ü | 20 | 0.05 | 10 | m ³ /h |
| Ü | Ü | 25 | 0.08 | 16 | m ³ /h |
| Ü | Ü | 32 | 0.13 | 25 | m ³ /h |
| Ü | Ü | 40 | 0.2 | 40 | m ³ /h |
| Ü | Ü | 50 | 0.32 | 63 | m ³ /h |
| Ü | Ü | 65 | 0.5 | 100 | m ³ /h |
| Ü | Ü | 80 | 0.8 | 160 | m ³ /h |
| Ü | Ü | 100 | 1.25 | 250 | m ³ /h |
| Ü | Ü | 125 | 1.25 | 250 | m ³ /h |
| Ü | Ü | 150 | 3.2 | 630 | m ³ /h |
| Ü | Ü | 200 | 5 | 1000 | m ³ /h |
| Ü | Ü | 250 | 8 | 1600 | m ³ /h |
| Ü | Ü | 300 | 12.5 | 2500 | m ³ /h |

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| Model (FEW620) | Model (FEP620) | Meter Size (DN, mm) | Flow rate | | Unit |
|-------------------|-------------------|------------------------|-----------|----------|-------------------|
| | | | Min (Q1) | Max (Q3) | |
| ü | ü | 350 | 20 | 4000 | m ³ /h |
| ü | ü | 400 | 20 | 4000 | m ³ /h |
| ü | ü | 450 | 32 | 6300 | m ³ /h |
| ü | ü | 500 | 32 | 6300 | m ³ /h |
| ü | ü | 600 | 50 | 10,000 | m ³ /h |
| ü | ü | 700 | 100 | 16,000 | m ³ /h |
| ü | ü | 750 | 100 | 16,000 | m ³ /h |
| ü | ü | 762 | 100 | 16,000 | m ³ /h |
| ü | ü | 800 | 100 | 16,000 | m ³ /h |
| ü | ü | 900 | 156 | 25,000 | m ³ /h |
| ü | ü | 1000 | 156 | 25,000 | m ³ /h |
| ü | ü | 1067 | 156 | 25,000 | m ³ /h |
| ü | ü | 1100 | 156 | 25,000 | m ³ /h |
| ü | ü | 1200 | 250 | 40,000 | m ³ /h |
| ü | ü | 1350 | 394 | 63,000 | m ³ /h |
| ü | ü | 1400 | 394 | 63,000 | m ³ /h |
| ü | ü | 1500 | 394 | 63,000 | m ³ /h |
| ü | ü | 1524 | 394 | 63,000 | m ³ /h |
| ü | ü | 1600 | 394 | 63,000 | m ³ /h |
| ü | ü | 1650 | 394 | 63,000 | m ³ /h |
| ü | ü | 1800 | 625 | 100,000 | m ³ /h |
| ü | ü | 1950 | 625 | 100,000 | m ³ /h |
| ü | ü | 2000 | 625 | 100,000 | m ³ /h |
| ü | ü | 2200 | 1000 | 160,000 | m ³ /h |
| ü | ü | 2400 | 1000 | 160,000 | m ³ /h |

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Model FER620:

| Model (FER620) | Meter Size (DN, mm) | Flow rate | | Unit |
|-------------------|------------------------|-----------|----------|-------------------|
| | | Min (Q1) | Max (Q3) | |
| Ü | 40 | 0.063 | 25 | m ³ /h |
| Ü | 50 | 0.1 | 40 | m ³ /h |
| Ü | 65 | 0.16 | 63 | m ³ /h |
| Ü | 80 | 0.25 | 100 | m ³ /h |
| Ü | 100 | 0.4 | 160 | m ³ /h |
| Ü | 125 | 0.4 | 160 | m ³ /h |
| Ü | 150 | 1 | 400 | m ³ /h |
| Ü | 200 | 1.6 | 630 | m ³ /h |
| Ü | 250 | 2.5 | 1,000 | m ³ /h |
| Ü | 300 | 4 | 1,600 | m ³ /h |
| Ü | 350 | 8 | 1,600 | m ³ /h |
| Ü | 400 | 12.5 | 2,500 | m ³ /h |
| Ü | 450 | 12.5 | 2,500 | m ³ /h |
| Ü | 500 | 20 | 4,000 | m ³ /h |
| Ü | 600 | 31.5 | 6,300 | m ³ /h |

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Certified Performance

The instrument was evaluated for use under the following conditions:

Ambient Temperature Range: -20°C to +60°C

Instrument IP rating: Integral mount IP66 /IP67, Remote mount IP66/IP67/IP68 (sensor only)

The instrument meets **MCERTS Class 1** requirements for the combined performance characteristic as specified in Table 6 of the MCERTS performance standard. Details of individual performance characteristics are summarised below:

| Test | Result expressed as % of the certification range | | | | Other results | Class | MCERTS specification |
|---|--|----|----|----|---------------|----------|---|
| | <0.5 | <1 | <2 | <5 | | | |
| LABORATORY TESTS | | | | | | | |
| General requirements/initial checks | | | | | | | |
| Protection against unauthorised access | Password protected unique to the device | | | | | | cl. 3.1.2 |
| Indicative device and/or analogue digital output signal | Verified | | | | | | cl. 3.1.3 |
| Units of measurement | Metric units - LCD display | | | | | | cl. 3.1.6 & 3.1.7 |
| Comparison of output values | Verified - outputs comparable | | | | | | cl. 6.1.4 |
| Warm-up time | | | | | | | |
| AC | 30 secs | | | | | | cl. 6.1.2 - no specification assigned, to be reported |
| DC | 35 secs | | | | | | |
| Combined performance characteristic (Uc) | | | | | | | |
| AC | 1.91 | | | | | 1 | cl. 6.4 - Table 6 - class specific |
| DC | 1.20 | | | | | 1 | |
| Performance tests | | | | | | | |
| Loss of power | Settings retained for all 11 parameters tested | | | | | | cl. 6.3.1 |

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| Test | Result expressed as % of the certification range | | | | Other results | Class | MCERTS specification | |
|-------------------------------------|--|------|------|----|---------------|-------|--------------------------------------|--|
| | <0.5 | <1 | <2 | <5 | | | | |
| Mean error, x | | | | | | | | |
| DN100 - AC | | | | | | | | |
| Test point 1A | -0.44 | | | | | 1 | cl. 6.3.2 - Table 6 - class specific | |
| Test point 2A | | 0.63 | | | | | | |
| Test point 2B | -0.17 | | | | | | | |
| Test point 2 | | 0.96 | | | | | | |
| Test point 3 | | 0.84 | | | | | | |
| Test point 4 | | 0.79 | | | | | | |
| Test point 5 | | 0.74 | | | | | | |
| DN100 - DC | | | | | | | | |
| Test point 1A | | | 1.66 | | | 2 | | |
| Test point 2A | | 0.68 | | | | | | |
| Test point 2B | -0.02 | | | | | | | |
| Test point 2 | | 0.97 | | | | | | |
| Test point 3 | | 0.91 | | | | | | |
| Test point 4 | | 0.71 | | | | | | |
| Test point 5 | | 0.69 | | | | | | |
| Repeatability, U_R | | | | | | | | |
| DN100 - AC | | | | | | | | |
| Test point 1A | | 0.79 | | | | 1 | | |
| Test point 2A | 0.27 | | | | | | | |
| Test point 2B | 0.04 | | | | | | | |
| Test point 2D | 0.10 | | | | | | | |
| Test point 3 | 0.06 | | | | | | | |
| Test point 4 | 0.04 | | | | | | | |
| Test point 5 | 0.13 | | | | | | | |
| DN100 - DC | | | | | | | | |
| Test point 1A | | 0.77 | | | | 1 | | |
| Test point 2A | 0.32 | | | | | | | |
| Test point 2B | 0.14 | | | | | | | |
| Test point 2D | 0.09 | | | | | | | |
| Test point 3 | 0.02 | | | | | | | |
| Test point 4 | 0.08 | | | | | | | |
| Test point 5 | 0.07 | | | | | | | |

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| Test | Result expressed as % of the certification range | | | | Other results | Class | MCERTS specification | |
|---|--|------|------|------|---------------|-------|--|--|
| | <0.5 | <1 | <2 | <5 | | | | |
| Supply voltage, X_v | | | | | | | | |
| AC (100V to 240V) | | | 1.16 | | | 3 | cl. 6.3.3.1 - Table 6 - class specific | |
| DC (22V to 31V) | 0.33 | | | | | 1 | cl. 6.3.3.2 - Table 6 - class specific | |
| Output Impedance, X_o (10 - 600Ω) | | | | | | | | |
| AC | 0.14 | | | | | 1 | cl. 6.3.3 - Table 6 - class specific | |
| DC | 0.36 | | | | | 1 | | |
| Fluid temperature, X_{FT} (4°C to +30°C) | | | | | | | | |
| DC | | 0.58 | | | | 2 | cl. 6.3.5 - Table 6 - class specific | |
| Ambient air temperature, X_T (-20°C to +60°C) | | | | | | | | |
| AC | | 0.66 | | | | 2 | cl. 6.3.6 - Table 6 - class specific | |
| DC | 0.43 | | | | | 1 | | |
| Relative humidity, X_{RH} (>95%, 20°C to 50°C) | | | | | | | | |
| AC | 0.33 | | | | | 1 | cl. 6.3.6 - Table 6 - class specific | |
| DC | 0.13 | | | | | 1 | | |
| Presence of stray currents, X_{sc} | | | | | | | | |
| AC | 0.16 | | | | | 1 | cl. 6.3.9 - Table 6 - class specific | |
| DC | 0.04 | | | | | 1 | | |
| B-directional flow | | | | | | | | |
| <i>Mean error - AC</i> | | | | | | | | |
| TP1A - 0.24 V/s | | | | 2.15 | | | cl. 6.3.14 - no specification assigned, to be reported | |
| TP3 - 9.6 V/s | | 0.64 | | | | | | |
| TP5 - 27.2 V/s | 0.41 | | | | | | | |
| <i>Repeatability - AC</i> | | | | | | | | |
| TP1A - 0.24 V/s | | | 1.67 | | | | | |
| TP3 - 9.6 V/s | 0.07 | | | | | | | |
| TP5 - 27.2 V/s | 0.08 | | | | | | | |
| <i>Mean error - DC</i> | | | | | | | | |
| TP1A - 0.24 V/s | | | 1.28 | | | | | |
| TP3 - 9.6 V/s | | 0.93 | | | | | | |
| TP5 - 27.2 V/s | | 0.68 | | | | | | |
| <i>Repeatability - DC</i> | | | | | | | | |
| TP1A - 0.23 V/s | | 0.94 | | | | | | |
| TP3 - 9.8 V/s | 0.07 | | | | | | | |
| TP5 - 27.3 V/s | 0.02 | | | | | | | |

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| Test | Result expressed as % of the certification range | | | | Other results | Class | MCERTS specification | |
|--|--|-------|----|----|---------------|-------|--|--|
| | <0.5 | <1 | <2 | <5 | | | | |
| Effect of conduit size (SMALL DN100, *MEDIUM 1 (DN300), *LARGE (DN600) (Note 1) | | | | | | | | |
| <i>Mean error</i> | | | | | | | | |
| SMALL TP1A - 0.25 l/s | -0.44 | | | | | | cl. 6.3.17 - no specification assigned, to be reported | |
| SMALL TP2A - 0.88 l/s | | 0.63 | | | | | | |
| SMALL TP2B - 3.57 l/s | -0.17 | | | | | | | |
| SMALL TP2 - 5.70 l/s | | 0.96 | | | | | | |
| SMALL TP3 - 9.6 l/s | | 0.84 | | | | | | |
| SMALL TP4 - 20.7 l/s | | 0.79 | | | | | | |
| SMALL TP5 - 27.3 l/s | | 0.74 | | | | | | |
| MEDIUM 1 TP1 - 1.85 l/s | | -0.86 | | | | | | |
| MEDIUM 1 TP2 - 4.44 l/s | -0.39 | | | | | | | |
| MEDIUM 1 TP3 - 23.4 l/s | -0.15 | | | | | | | |
| MEDIUM 1 TP4 - 88.7 l/s | -0.13 | | | | | | | |
| MEDIUM 1 TP5 - 153.3 l/s | -0.13 | | | | | | | |
| MEDIUM 1 TP6 - 333.8 l/s | -0.17 | | | | | | | |
| LARGE TP1 - 14.6 l/s | -0.12 | | | | | | | |
| LARGE TP2 - 34.9 l/s | -0.02 | | | | | | | |
| LARGE TP3 - 137.7 l/s | -0.07 | | | | | | | |
| LARGE TP4 - 344.6 l/s | -0.20 | | | | | | | |
| <i>Repeatability</i> | | | | | | | | |
| SMALL TP1A - 0.25 l/s | | 0.79 | | | | | | |
| SMALL TP2A - 0.88 l/s | 0.27 | | | | | | | |
| SMALL TP2B - 3.57 l/s | 0.04 | | | | | | | |
| SMALL TP2 - 5.70 l/s | 0.10 | | | | | | | |
| SMALL TP3 - 9.6 l/s | 0.06 | | | | | | | |
| SMALL TP4 - 20.7 l/s | 0.04 | | | | | | | |
| SMALL TP5 - 27.3 l/s | 0.13 | | | | | | | |
| MEDIUM 1 TP1 - 1.85 l/s | 0.11 | | | | | | | |
| MEDIUM 1 TP2 - 4.44 l/s | 0.09 | | | | | | | |
| MEDIUM 1 TP3 - 23.4 l/s | 0.05 | | | | | | | |
| MEDIUM 1 TP4 - 88.7 l/s | 0.04 | | | | | | | |
| MEDIUM 1 TP5 - 153.3 l/s | 0.06 | | | | | | | |
| MEDIUM 1 TP6 - 333.8 l/s | 0.06 | | | | | | | |
| LARGE TP1 - 14.6 l/s | 0.05 | | | | | | | |
| LARGE TP2 - 34.9 l/s | 0.10 | | | | | | | |
| LARGE TP3 - 137.7 l/s | 0.10 | | | | | | | |
| LARGE TP4 - 344.6 l/s | 0.15 | | | | | | | |

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|---|--|----|----|----|---------------|-------|--------------------------|
| | <0.5 | <1 | <2 | <5 | | | |
| Response Time (either increasing or decreasing flow) | | | | | | | cl. 6.3.19 - ≤30 seconds |
| AC | | | | | ≤15 sec | | |
| DC | | | | | ≤15 sec | | |

| Test | Parameter | Result | Class | MCERTS specification |
|-------------------------------------|--------------------------|--------|-------|--------------------------|
| FIELD TESTS | | | | |
| Error under field conditions | Maximum error (%) | 3.02 | 1 | cl. 7.3 - Table 6 |
| | Minimum error (%) | 0.00 | | |
| | Mean error (%) | 0.24 | | |
| | Proportion of errors ≤2% | 95.8% | | |
| | Proportion of errors ≤5% | 100% | | |
| | Proportion of errors ≤8% | 100% | | |
| Up-time (%) | | 95.4% | | cl. 7.4 ≥95% |
| Maintenance | | Note 2 | | cl. 7.5 - to be reported |

Note 1: Tests denoted * carried out by the manufacturer with associated test witnessing.

Note 2: The field test was carried out at a field installation in Putian, China with data acquired from 25th April to the 19th July 2024 with a total scheduled operating time of 122,910 minutes. Maintenance was carried out on 3 occasions for a total time of 94.75 hours. Of the total operating time 122,910 minutes, 5,685 minutes (4.6%) were attributed to power outages (maintenance).

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Description

ProcessMaster 620 series is a range of electromagnetic flowmeters.

- ProcessMaster FER620 has a sensor (FER) with an inner reduction improving immunity to hydraulic disturbances, both upstream and downstream.
The Sensor is available from DN40-600.
- ProcessMaster FEW620 has a sensor (FEW) without any inner reduction.
This full-bore sensor is available from DN25-2400 and equipped with Water/Wastewater industry specific wetted part materials.
- ProcessMaster FEP620 is the Equivalent to FEW620, but for the process industries.
The Sensor (FEP) is available from DN10-2400 and designed to withstand abrasive and corrosive Liquids.

Associated with the ProcessMaster sensor is the 620 series Transmitter.

The ProcessMaster Flowmeter features a SensorMemory Technology for a secure storage of calibration and application specific data and the volumetric flow totals metered.

General Notes

1. This certificate is based upon the equipment tested. The Manufacturer is responsible for ensuring that on-going production complies with the standard(s) and performance criteria defined in this Certificate. The Manufacturer is required to maintain an approved quality management system controlling the manufacture of the certified product. Both the product and the quality management system shall be subject to regular surveillance according to 'Regulations Applicable to the Holders of CSA Certificates'.
2. The design of the product certified is defined in the CSA design schedule for certificate No. CSA MC240456/00.
3. If the certified product is found not to comply, CSA Group should be notified immediately at the address shown on this certificate.
4. The certification marks that can be applied to the product or used in publicity material are defined in 'Regulations Applicable to the Holders of CSA Certificates'.
5. This document remains the property of CSA Group and shall be returned when requested by CSA Group.

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