CalMaster2
Field and software tools
Measurement made easy
The world's first battery- and mains-powered in situ flow verification system

Flow meter industry's first Predictive Diagnostic System
• Advance warning of system failure crashes

Designed to work with both battery- and mains-powered flowmeters
• MagMaster Water Waste
• MagMaster Process
• MagMaster LoFlo
• AquaMaster
• AquaMaster Explorer

Instant on-site results
• Results displayed as tests are performed

Advanced helpline and customer support
• Web registration
• Fingerprint downloads

Battery-operated
• 100 tests before download
• Ideal for remote applications

Backwards compatibility with all existing ABB flowmeter systems
• Designed to work with the complete range of flowmeters

2 versions available
• CheckMaster validation tool
• CalMaster2 verification tool
History
For over a decade CalMaster has been the solution to demands for in situ calibration verification and certification – a world first from ABB that enables calibration verification without the need to remove the sensor.

The ABB CalMaster MagMaster verification system has been used with great success in the global water industry, saving water utilities vast sums of money in expensive repair maintenance plans.

CalMaster has also been used to verify, in situ, existing MagMasters giving an error of ±1 % of original calibration certificate.

Introduction
CalMaster2 is a suite of stand-alone field verification tools for use with ABB’s range of electronic flow meters, that enables users to test the integrity of flow meter systems. The verification consists of a large number of separate test routines. A report is displayed of each test as it verifies the condition and performance of the flow meter under test.

There is no need to carry a laptop computer on site as up to 100 verifications can be stored and then downloaded after the site visit.

A CalMaster2 record is produced once further analysis of the test results has taken place. Each CalMaster2 is returned to the factory each year for a renewal of its recalibration certification.

There are two levels of functionality:
• CheckMaster field-validation tool
  CheckMaster consists of:
  – CheckMaster verification tool
  – CalMaster2 IRIS Software
  CheckMaster displays the results of each test during the testing sequence. At the end of each test, a record is stored locally within the CheckMaster (up to 100 test results can be stored).
  The stored test results can be uploaded and a service report generated.

• CalMaster2 verification tool and enhanced CalMaster2 IRIS software
  CalMaster2 consists of:
  – CalMaster2 verification tool
  – Enhanced CalMaster2 IRIS software
  CalMaster2 displays the results of each test during the testing sequence. At the end of each test, a record is stored locally within the CalMaster2 (up to 100 test results can be stored).
  Once CalMaster2 is connected to a PC that is running the CalMaster2 software, the stored test results can be uploaded and processed.
  Enhanced CalMaster2 IRIS software enables the printing of service reports. Certification is to within 1 % of factory calibration for fingerprinted flow meters or 2 % for non-fingerprinted flow meters.
  Predictive diagnostics are also provided to show early warning of a possible system failure, enabling maintenance engineers to anticipate problems and take planned remedial action in advance.
Ease of operation
The ease of operation of CalMaster2 is of real benefit to the user. Once verification is complete, the CalMaster2 can be plugged into a PC or laptop (communications leads are provided) and CalMaster2 software then provides a list of verifications and the status of each flow meter.

The CalMaster2 is very easy to operate. It has a user-friendly Windows-based software package that enables all verification results to be evaluated and a certificate to be printed when required.

Condition Monitoring
A major benefit of CalMaster2 is that it can also be used as a diagnostic and condition-monitoring tool. It stores all the measured values automatically and generates a log for easy long-term trend analysis.

Detailed observation can give early warning of a possible system failure, enabling maintenance engineers to anticipate problems and take planned remedial action in advance.

Specification
Verification accuracy
CheckMaster
Field-validation tool for producing conformance reports
CalMaster2
±1 % of complete system with all ABB Magmeters that have been fingerprinted at calibration

Power supply:
Internal rechargeable battery with up to six hours continuous operation

Protection
IP65

Temperature range:
0 to 50 °C (32 to 122 °F)

Dimensions
Dimensions in mm (in.)

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CheckMaster supply pack
Includes:
- CheckMaster Field-validation tool
- CalMaster2 IRIS software CD ROM
- Instruction Manual
- Mains-operated battery charger
- Connection leads (all interconnection cables for quick and easy connection to all variants of MagMaster and AquaMaster)
- 5 MagMaster VKE adaptor PCBs

CalMaster2 supply pack
Includes:
- CalMaster2
- CalMaster2 IRIS software CD ROM
- Instruction Manual
- Mains-operated battery charger
- Connection leads (all interconnection cables for quick and easy connection to all variants of MagMaster and AquaMaster)
- 5 MagMaster VKE adaptor PCBs

Spares
AquaMaster communications leads
(red and yellow numeric sleeves):
- Connection lead 1
  WEBC0221
- WEBC2000 for RS232 serial communications
  WEC2000

AquaMaster Explorer leads
(red numeric sleeves):
- AquaMaster transmitter connection lead 2
  WEBC0222
- AquaMaster transmitter connection lead 3
  WEBC0223

MagMaster Leads
(yellow numeric sleeves):
- MagMaster connection lead 2
  WEBC0212
- MagMaster connection lead 3
  WEBC0213
- AquaMaster transmitter connection lead 2
  WEBC0211

AquaMaster MIL connector leads
(green numeric sleeves):
- AquaMaster MIL sensor cable
  WEBC0233
- AquaMaster 19-way output cable
  WEBC0213
- AquaMaster 7-way output cable
  WEBC0234

MagMaster VKE adaptor PCB
WADX0089
Mains-operated battery charger
WEBC0204
In-car battery charger lead
WEBC0205
CalMaster2 CD ROM
WAHX0200
CalMaster2 manual
IM/VCM2
AquaMaster MIL upgrade kit
WEBC0206
## Ordering information

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