

NMI14/3/24 MAG5100W with MAG8000 Transmitter

The NMI/14/3/24 are self-contained meters for the measurement of water flow in a full pipe.

The following requirements do not replace the Siemens Sitrans MAG 5100W Operating Instructions, the Siemens Sitrans MAG 8000 Operating Instructions, or the National Measurement Institute Certificate of Approval NMI 14/3/24. The certificate and operating instructions are essential for the successful operation and maintenance of this device and must always be used.

However, for use of this meter under this module of the standard the following requirements must be met, as a minimum, and have been formulated from recommendations/advice in manufacturer literature and where required with input from the manufacturer.

Requirements to be confirmed by validation type	
Post-installation (new or replacement meter)	Section 2.0, Section 3.0, Section 4.0, and Section 6.0
Ongoing (revalidation) or Faulty meter (maintenance)	Section 2.0, Section 3.0, Section 4.0, Section 5.0, and Section 6.0

1.0 Key terms

Term	Definition
MAG5100W	The flow sensor which generates an electromagnetic field which the water passes through.
MAG8000	The transmitter/logger/brains of the device which operates a magnetic field in the MAG5100W (flow sensor), interprets the signal from the sensor and calculates the volume of water passing through the meter. This term includes the MAG8000CT.
NMI14/3/24	A self-contained water meter with a MAG8000 (including the MAG8000CT) transmitter and the MAG5100W (flow sensor).

2.0 Installation

The meter has several options available for power supply. Internal battery, externally mounted battery, or external power supply.

Where an external power supply is used to power the device, an internal battery backup must be used.

3.0 Configuration

Alarms for the following faults must be activated (switched on).

Alarm	Description
Insulation	An insulation fault with the coil current and the electrodes reading each other.
Coil current	An error in the coil e.g., the coils have been disconnected.
Amplifier overload	Instability in the electrode circuit e.g., the electrode(s) have been disconnected.
Checksum	Checksum test shows corrupted or invalid data. May indicate a failed printed circuit board or a damaged/defective transmitter.
Lower power / low battery	Battery capacity is below pre-set threshold.

4.0 Output

Where the department requires meter health as an output from the meter:

Where not already incorporated into the NMI14/3/24, a serial communication module must be added to the meter. To have a validation certificate issued, where the meter:

- is installed after this document came into effect - it must have a serial communication module installed as part of validation post-installation
- was installed prior to the effect of this document - it must have a serial communication module installed as part of the next process of validation for the meter.

The serial communication module provides serial output (allows the notification of alarms e.g., low battery) from the meter for interface with third party transmission devices.

Where the department requires pulse output only:

The NMI14/3/24 must have the pulse output connection in place, which registers a pulse each time a set volume of water passes through the meter. To have a validation certificate issued, where the meter:

- is installed after this document came into effect - it must have the pulse output connection in place and configured as part of the process of validation, post-installation
- was installed prior to the effect of this document - it must have a pulse output connection in place and configured as part of the process of ongoing validation (revalidation) of the meter.

The pulse output connection allows the meter to interface with third party transmission devices.

5.0 Maintenance

Where an internal battery is used to power the device:

- The internal battery must be replaced at a 5-year interval, irrespective of remaining battery life.

When an internal battery is replaced:

- A new Silica gel bag must be added on top of the battery pack, with the old bag disposed of.
- A new O-ring must be used, with the old O-ring disposed of. Smear O-ring with acid-free lubricating gel.
- Reset battery operating time and remaining capacity.

Where an external battery is used to power the device:

- The external battery must be replaced at a 10-year interval, irrespective of remaining battery life.

When an external battery is replaced:

- Reset battery operating time and remaining capacity.

Where an external power supply is used to power the device:

- The backup battery must be replaced at a 5-year interval, irrespective of remaining battery life.