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**National
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Variations to NMI M 13

Active-energy electricity meters (a.c.)

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Preface

NMI M 13-1 specifies a pathway for the pattern approval of electricity meters.

Under clause 1.2 of NMI M 13-1: ‘The National Measurement Institute reserves the right to vary or interpret requirements if it is deemed appropriate to support new or different technologies or applications.’

Variations made to NMI M 13-1 that could be applicable to multiple patterns of electricity meters are specified in this document.

Contents

Prefacei

Contentsi

1 Impulse voltage test for robustness..... 1

 1.1 Variation..... 1

 1.2 Rationale..... 1

1 Impulse voltage test for robustness

1.1 Variation

The 'Impulse voltage test for robustness' is not applicable for indoor meters.

For any pattern of electricity meter approved under this variation, the Certificate of Approval will state that the pattern was not assessed against the Impulse voltage test for robustness, in accordance with this document.

1.2 Rationale

NMI M 13 is based on a suite of Australian Standards dated 2017 or 2018. Since publication of NMI M 13, new editions of the Australian Standards have been published (2023 editions).

The 2017 edition of AS 62052.31 is a modified adoption of IEC 62052-31 (2015). One of the modifications is the addition of an 'Impulse test for robustness'. As drafted, this test applies to all meters. However, a note under the test states the intent is to verify the robustness of the metering equipment against the typical environmental (higher lightning risk) and operation (open conductor) conditions of the Australian public electricity network.

In 2023, Standards Australia published an updated edition of AS 62052.11, based on IEC 62052-11 (2020). The 'Impulse test for robustness' was relocated to this 'part 11' of the standard, and modified to be explicit that it is not applicable to indoor meters.

2 Initial start-up of the meter

2.1 Variation

Initial start-up time for the meter shall not be more than 10 s (varied from 5 s), except for multi-function meters.

The initial start-up time for multi-function meters shall not be more than 60 s.

For any pattern of electricity meter approved under this variation, the Certificate of Approval will state this is a variation and specify the initial start-up time.

2.2 Rationale

NMI M 13 is based on a suite of Australian Standards dated 2017 or 2018. Since publication of NMI M 13, new editions of the Australian Standards have been published (2023 editions).

The 2023 edition of AS 62052.11 changes the limit for the initial start-up time from 5 s for all meters, to 10 s generally, and 60 s for multi-function meters. These changes are similar to changes made in the 2022 editions of IEC standards that the Australian Standards are based on.

The rationale for the extension in start-up time is extended functionality and complexity of embedded firmware, particularly for multi-function meters.