Design Verification Guidelines

This document assists assembly manufacturers to carry out their design verification process in accordance with AS/NZS 61439 series when using Schneider Electric's MB/MD enclosure with Schneider Electric's chassis.

Scope: **MB/MD Distribution Board with SAU250 Encapsulated Chassis**

Trademark	Schneider Electric
Enclosure type	MB/MD Enclosure
Chassis type	SAU250 Encapsulated Chassis
Ratings	U_e = 415V a.c. / 500V d.c.

Design Verification Guidelines to AS/NZS 61439.1:2016

Clause	Description	Performance	Test report	Reference design details
10.2.2	Resistance to corrosion	MB - Severity A MD - Severity B	Report #30V-19-0467-TRP-10550312-2 issued on 24/03/2020 (PZC-781) – Sev A Report #N-1020-0346-02 issued on 02/02/2021 (PZC-873) – Sev B Report #N-0420-0129 R2 issued on 13/01/2021 (PZC-780) – Sev B	Test performed on enclosure sheet metal and other metal parts.
10.2.3.1	Thermal Stability	N/A	N/A	N/A. Enclosure not made of insulating materials.
10.2.3.2	Resistance to abnormal heat and fire	Pass	Report #60405147 001 issued on 27/08/2020 (PZC-792) Report #50153987 001 issued on 27/06/2020 (PZC-790)	Test performed on conductor supports, insulating material and T-off boots.
10.2.4	Resistance to UV radiation	Pass	Report #21LSR012 issued on 09/04/2021 (PZC-967) Report #0812DULDuralloy_922 issued on 12/08/2021 (PZC-1211)	Test performed on Interpon 610 Bright White, Interpon 610 Storm Grey N42 and Orange X15
10.2.5	Lifting	Pass	Report #61439_PZC-891 issued on 12/03/2021 (PZC-891)	Test performed on MB board (2100mm height) loaded at 163kg
10.2.6	Mechanical impact	N/A	N/A	Mechanical impact rating not declared.
10.2.7	Marking	N/A	N/A	Responsibility of assembly manufacturers

10.3	Degree of protection of enclosures	MB - IP42 MD - IP56	Report #30E-21-0014-TRP-6826176-0 issued on 11/02/2021 (PZC-871) Report #19300832 001 issued on 14/05/2013 (PZC-793)	MB type and MD type
10.4	Clearances and Creepage	Pass Clearance - 7.37mm Creepage - 10.00mm	Report #NYL003 - SAU250 Chassis Range issued on 26/10/2020 (PZC-798)	SAU250 chassis (18mm and 27mm)
10.5.2	Effective continuity between the exposed conductive parts of assembly and protective circuit	N/A	N/A	Responsibility of assembly manufacturers
10.5.3	Short circuit withstand strength of the protective circuit	Refer 10.11		
10.6	Incorporation of switching devices and components	N/A	N/A	Responsibility of assembly manufacturers
10.7	Internal electrical circuits and connections	N/A	N/A	Responsibility of assembly manufacturers
10.8	Terminals for external conductors	N/A	N/A	Responsibility of assembly manufacturers
10.9.2	Power-frequency withstand voltage	U_i = 500V a.c./d.c.	Report #19301109 004 issued on 08/07/2014 (PZC-803)	Test performed on SAU250 chassis 36 Pole with INS250 and iC60.
10.9.3	Impulse withstand voltage	U_{imp} = 6kV	Report #19301109 004 issued on 08/07/2014 (PZC-803)	Test performed on SAU250 chassis 36pole with INS250 and iC60 MCB.
10.10	Temperature rise limits	I_{nA} = **250A** Loading factor of outgoing circuit = **0.6** (Acti9 iC60 MCB and RCBO range up to 50A)	Report #SCHN 13122023.1 issued on 16/01/2024 Full assembly test	Assembly size (WxHxD): 580 x **1200** x 200 mm Enclosure type: ME IP66 Incoming circuit: INS250 Chassis: SAU250 36 Pole (18mm) Outgoing circuits: 7 x iC60H 3P 50A RCBO, 1 x iC60H 3P 50A MCB
		I_{nA} = **250A** Loading factor of outgoing circuit = **0.48** (Acti9 iC60 MCB range up to 63A)	Report #60412250 001 issued on 16/12/2020 (PZC-817) Full assembly test	Assembly size (WxHxD): 580 x **1000** x 200 Enclosure type: MB IP42 Incoming circuit: INS250 Chassis: SAU250 24 Pole (18mm) Outgoing circuits: 8x iC60N 3P 63A
		I_{nA} = **240A** Loading factor of outgoing circuit = **0.64** (Acti9 C120 MCB range up to 125A)	Report #60412250 003 issued on 16/12/2020 (PZC-819) Full assembly test	Assembly size (WxHxD): 580 x **1000** x 200 Enclosure type: ME IP66 Incoming circuit: INS250 Chassis: SAU250 18 Pole **(27mm)** Outgoing circuits: 3x C120N 125A
		Provided for verification by *Comparison with a Reference Design*		

Rev.	Date	Initials	Comments
1.0	13/5/21	SL	Release
1.1	19/8/21	SL	Update CL10.2.4
E	18/6/24	AM	Full update

10.11	Short circuit withstand strength	I_{cc} = 25kA conditional to upstream NSX100, NSX160 or NSX250 MCCB	Report #19301109 002 issued on 08/07/2014 (PZC-828)	Upstream Protection: NSX250B Incoming circuit: INS250 Chassis: SAU250 36 Pole
10.12	EMC	Environment B	N/A	Subject to proper wiring/installation of components. SE components fulfill EMC clause as per their relevant standards and has shared all wiring instructions. Refer Annexure J.10.12
10.13	Mechanical operation	Pass	Report #61439_PZC-890 issued on 10/03/2021 (PZC-890)	Test performed on handles, locks and hinges.

Design Verification Guidelines to AS/NZS 61439.2:2016

Clause	Description	Performance	Test report	Reference design details
8.101	Form of Separation	2b and 4ah	Report #AU217GSI 001 issued on 02/08/2021 (PZC-1196)	4ah achieved with line side IPXXB shrouds on main isolator.

Subject to correct installation, maintenance and use conforming to their intended purposes in line with the supplier's instructions, according to applicable local regulations and standards where they are installed.

This document is not a substitute for assembly manufacturers' design verification for the final completed assembly.