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 chassis.

Scope: MSC250 MCB chassis only – see list of part numbers in Annex A

Trademark	Schneider Electric
Board type	N/A
Chassis type	MSC250
Ratings	U_e = 415Vac

Design Verification Guidelines to AS/NZS 61439.1:2016

Clause	Description	Performance	Test report	Reference design details
10.2.2	Resistance to corrosion	Severity A	Report #30V-19-0467-TRP-10550312-2 issued on 24/03/2020 (PZC-781) – Sev A	Test performed on various enclosure sheet metals and metal parts
10.2.3.1	Thermal Stability	N/A	N/A	Responsibility of assembly manufacturers
10.2.3.2	Resistance to abnormal heat and fire	Pass	Report #AU21CJDL 001 issued on 11/03/2021 (PZC-893) Report #60405147 002 issued on 27/08/2020 (PZC-1114)	Test performed on MSC250 t-off caps and busbar insulation
10.2.4	Resistance to UV radiation	N/A	N/A	Responsibility of assembly manufacturers
10.2.5	Lifting	N/A	N/A	Responsibility of assembly manufacturers
10.2.6	Mechanical impact	N/A	N/A	Responsibility of assembly manufacturers
10.2.7	Marking	N/A	N/A	Responsibility of assembly manufacturers
10.3	Degree of protection of enclosures	N/A	N/A	Responsibility of assembly manufacturers
10.4	Clearances and Creepage	Pass Minimum clearance = 11.50mm Minimum creepage = 44.23mm	Report #NYL021 – MSC18 Chassis Range issued on 14/05/2021 (PZC-797)	MSC250 chassis
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	N/A	N/A	Responsibility of assembly manufacturers
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

Rev.	Date	Initials	Comments
1.0	13/5/21	SL	Release
1.1	24/6/21	SL	UPDT Annex A
1.2	19/8/21	SL	UPDT CL8.101

10.9.2	Power-frequency withstand voltage	U_i = 690V	Report #100201 issued on 03/07/1996 (PZC-827)	Test performed on MSC250 chassis
10.9.3	Impulse withstand voltage	U_{imp} = 6kV	N/A	Exempted as clearance is more than 8.25mm.
10.10	Temperature rise limits	I_{nA} = 250A (**INS250**) Inc outgoing = 31.25A (**iC60N** 63A) Loading factor of outgoing circuits = 0.50	Report #60412250 008 issued on 07/01/2021 (PZC-813) Full assembly test	Assembly size (WxHxD): 580 x **1000** x 210 Enclosure type: ME IP rating: **IP66** Incoming circuit: INS250 Outgoing circuits: 8x iC60N 63A Chassis: MSC250 24 Pole
		I_{nA} = 250A (**INS250**) Inc outgoing = 83.3A (**C120N** 125A) Loading factor of outgoing circuits = 0.67	Report #60412250 009 issued on 07/01/2021 (PZC-814) Full assembly test	Assembly size (WxHxD): 580 x **1200** x 210 Enclosure type: ME IP rating: **IP66** Incoming circuit: INS250 Outgoing circuits: 3 x C120N 125A Chassis: MSC250 18 Pole
		I_{nA} = 180A (**NSX250**) Inc outgoing = 80A (**C120N** 125A) Loading factor of outgoing circuits = 0.64	Report #60412250 010 issued on 07/01/2021 (PZC-815) Full assembly test	Assembly size (WxHxD): 580 x **1200** x 210 Enclosure type: ME IP rating: **IP66** Incoming circuit: NSX250 Outgoing circuits: 2 x C120N 125A + 1 x C120N 125A spill Chassis: MSC250 18 Pole
10.11	Short circuit withstand strength	I_{cw} = 25kA @0.1s and 10kA @1s for chassis only Tested according to AS 3439.1-1993+A1 and AS 3439-3-1995 CL 8.2.3.2.5	Report #100201 issued on 03/07/1996 (PZC-827)	I_{cw} Design MSC250 2.0mm busbar chassis
		I_{cc} = 10kA Tested according to AS 3439.1-1993+A1 and AS 3439-3-1995 CL 8.2.3.2.5	Report #100201 issued on 03/07/1996 (PZC-827)	I_{cc} Design Outgoing circuits: iC60 25A Chassis: MSC250
10.12	EMC	N/A	N/A	Responsibility of assembly manufacturers
10.13	Mechanical operation	N/A	N/A	Responsibility of assembly manufacturers

Design Verification Guidelines to AS/NZS 61439.2:2016

8.101	Form of Separation	2bi and 4aih	Report #AU217GSI 001 issued on 02/08/2021 (PZC-1196)	Polycarbonate or equivalent cover should be used on incomer connections to reach IPXXB 2bi achieved with line side terminal shields / IPXXB covers on the outgoing MCCBs 4aih with line side covers on main isolator and load side terminal shield covers on outgoing circuits

Subject to correct installation, maintenance and use conforming to their intended purposes inline 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.

ANNEX A: List of part numbers

Reference	Description
C125123	MSC27 CHASSIS 3PH 250A 12P
C125123TF	MSC27 CHASSIS 3PH 250A 12P TOP FEED
C125183	MSC27 CHASSIS 3PH 250A 18P
C125183BF	MSC27 CHASSIS 3PH 250A 18P BOTTOM FEED
C125183TF	MSC27 CHASSIS 3PH 250A 18P TOP FEED
C125243	MSC27 CHASSIS 3PH 250A 18P
C125303	MSC27 CHASSIS 3-phase 250A 30P
C125363	MSC27 CHASSIS 3-phase 250A 36P
C125363BF	MSC27 CHASSIS 3-phase 250A 36P BOTTOM FEED
C125363TF	MSC27 CHASSIS 3PH 250A 36P
C125423	MSC27 CHASSIS 3-phase 250A 42P
C125423BF	MSC27 CHASSIS 3-phase 250A 42P BOTTOM FEED
C125423TF	MSC27 CHASSIS 3PH 250A 42P TOP FEED
C125483	MSC27 CHASSIS 3-phase 250A 48P
C125483BF	MSC27 CHASSIS 3-phase 250A 48P BOTTOM FEED
C125603	MSC27 CHASSIS 3-phase 250A 60P
C125603BF	MSC27 CHASSIS 3-phase 250A 60P BOTTOM FEED
C125603TF	MSC27 CHASSIS 3PH 250A 60P
C125723	MSC27 CHASSIS 3-phase 250A 72P
C125723BF	MSC27 CHASSIS 3-phase 250A 72P BOTTOM FEED
C3251083	MSC18 CHASSIS 3PH 250A 108P
C3251083BF	MSC18 CHASSIS 3PH 250A 108P BOTTOM FEED
C3251083TF	MSC18 CHASSIS 3PH 250A 108P TOP FEED
C325123	MSC18 CHASSIS 3PH 250A 12 POL
C325123AUX91	MSC AUX9 CHASSIS 1PiC60 3PH 250A 12P
C325123AUX93	MSC AUX9 CHASSIS 3PiC60 3PH 250A 12P
C325123BF	MSC18 CHASSIS 3PH 250A 12P BOTTOM FEED ONLY
C325123TF	MSC18 CHASSIS 3PH 250A 12P TOP FED
C3251641	MSC18 CHASSIS 3PH+N 250A 16P
C325183	MSC18 CHASSIS 3PH 250A 18 POL
C325183AUX91	MSC AUX9 CHASSIS 1PiC60 3PH 250A 18P
C325183AUX93	MSC AUX9 CHASSIS 3PiC60 3PH 250A 18P
C325243	MSC18 CHASSIS 3PH 250A 24 POL
C325243AUX91	MSC AUX9 CHASSIS 1PiC60 3PH 250A 24P
C325243AUX93	MSC AUX9 CHASSIS 3PiC60 3PH 250A 24P
C325243BF	MSC18 CHASSIS 3PH 250A 24P BOTTOM FEED ONLY
C325243NF	MSC18 CHASSIS 3PH 250A 24P NO FEED

C3252441	MSC18 CHASSIS 3PH+N 250A 24P
C325303	MSC18 CHASSIS 3PH 250A 30 POL
C325303AUX93	MSC AUX9 CHASSIS 3PiC60 3PH 250A 30P
C325303TF	MSC18 CHASSIS 3PH 250A 30P TOP FED
C3253241	MSC18 CHASSIS 3PH+N 250A 32P
C325363	MSC18 CHASSIS 3PH 250A 36 POL
C325363AUX93	MSC AUX9 CHASSIS 3PiC60 3PH 250A 36P
C3254041	MSC18 CHASSIS 3PH+N 250A 40P
C325423	MSC18 CHASSIS 3PH 250A 42 POL
C325423AUX91	MSC AUX9 CHASSIS 1PiC60 3PH 250A 42P
C325423AUX93	MSC AUX9 CHASSIS 3PiC60 3PH 250A 42P
C325483	MSC18 CHASSIS 3PH 250A 48 POL
C325483AUX91	MSC AUX9 CHASSIS 1PiC60 3PH 250A 48P
C325483AUX93	MSC AUX9 CHASSIS 3PiC60 3PH 250A 48P
C325483TF	MSC18 CHASSIS 3PH 250A 48P TOP FED
C3254841	MSC18 CHASSIS 3PH+N 250A 48P
C3255641	MSC18 CHASSIS 3PH+N 250A 56P
C325603	MSC18 CHASSIS 3PH 250A 60 POL
C325603AUX91	MSC AUX9 CHASSIS 1PiC60 3PH 250A 60P
C325603AUX93	MSC AUX9 CHASSIS 3PiC60 3PH 250A 60P
C325603TF	MSC18 CHASSIS 3 PHASE 250A 60P TOP FED
C3256441	MSC18 CHASSIS 3PH+N 250A 64P
C3256441BF	MSC18 CHASSIS 3PH+N 250A 64P BOTTOM FEED
C3256441TF	MSC18 CHASSIS 3PH+N 250A 64P TOP FEED
C325723	MSC18 CHASSIS 3PH 250A 72 POL
C325723AUX91	MSC AUX9 CHASSIS 1PiC60 3PH 250A 72P
C325723AUX93	MSC AUX9 CHASSIS 3PiC60 3PH 250A 72P
C325723BF	MSC18 CHASSIS 3PH 250A 72P BOTTOM FEED ONLY
C3257241	MSC18 CHASSIS 3PH+N 250A 72P
C3257241TF	MSC18 CHASSIS 3PH+N 250A 72P TOP FEED
C325843	MSC18 CHASSIS 3PH 250A 84 POL
C325843AUX93	MSC AUX9 CHASSIS 3PiC60 3PH 250A 84P
C325843BF	MSC18 CHASSIS 3PH 250A 84P BOTTOM FEED
C325963	MSC18 CHASSIS 3PH 250A 96P
C325963BF	MSC18 CHASSIS 3PH 250A 96P BOTTOM FEED ONLY
C3DC163	MSC18 CHASSIS DC 2PH 250A 16P
C3DC163BF	MSC18 CHASSIS DC 2PH 250A 16P BOTTOM FEED
C3DC163TF	MSC18 CHASSIS DC 2PH 250A 16P TOP FEED
C3DC203	MSC18 CHASSIS DC 2PH 250A 20P
C3DC243	MSC18 CHASSIS DC 2PH 250A 24P
C3DC323TF	MSC18 CHASSIS DC 2PH 250A 32P TOP FED

C3DC363	MSC18 CHASSIS DC 2PH 250A 36P
C3DC403	MSC18 CHASSIS DC 250A 40P
C3DC403BF	MSC18 CHASSIS DC 2PH 250A 40P BOTTOM FEED
C3DC483	MSC18 CHASSIS DC 2PH 250A 48P
C3DC603TF	MSC18 CHASSIS DC 2PH 250A 60P
CD25124N	MSC18 CHASSIS DPN VIGI 250A 12P
CD25204N	MSC18 CHASSIS DPN VIGI 250A 20P
CD25244N	MSC18 CHASSIS DPN VIGI 250A 24P
CD25244NTF	MSC18 CHASSIS 3*(1PH+N) 250A 24P TOP FED
CD25324N	MSC18 CHASSIS DPN VIGI 250A 32P
CD25362N	MSC18 CHASSIS 3*(1PH+N) 250A 36P
CD25364N	MSC18 CHASSIS DPN VIGI 250A 36P
CD25482N	MSC18 CHASSIS 3*(1PH+N) 250A 48P
CD25484N	MSC18 CHASSIS DPN VIGI 250A 48P
CD25724N	MSC18 CHASSIS DPN VIGI 250A 72P
CD25844N	MSC18 CHASSIS 3*(1PH+N) 250A 84P
CD25884N	MSC18 CHASSIS 3*(1PH+N) 250A 88P
CH25123	MSC18/27 CHASSIS HYBRID 3PH 250A 12P
CH25123BF	MSC18/27 CHASSIS HYBRID 3PH 250A 12P BOTTOM FEED
CH25123TF	MSC18/27 CHASSIS HYBRID 3PH 250A 12P TOP FEED ONLY
CH25183	MSC18/27 CHASSIS HYBRID 3PH 250A 18P
CH25183BF	MSC18/27 CHASSIS HYBRID 3PH 250A 18P BOTTOM FEED
CH25183TF	MSC18/27 CHASSIS HYBRID 3PH 250A 18P TOP FEED
CH25243	MSC18/27 CHASSIS HYBRID 3PH 250A 24P
CH25243BF	MSC18/27 CHASSIS HYBRID 3PH 250A 24P BOTTOM FEED
CH25243TF	MSC18/27 CHASSIS HYBRID 3PH 250A 24P TOP FEED ONLY
CH25303BF	MSC18/27 CHASSIS HYBRID 3PH 250A 30P BOTTOM FEED
CH25363	MSC18/27 CHASSIS HYBRID 3PH 250A 36P
CH25363BF	MSC18/27 CHASSIS HYBRID 3PH 250A 36P BOTTOM FEED
CH25363TF	MSC18/27 CHASSIS HYBRID 3PH 250A 36P TOP FEED
CH25423	MSC18/27 CHASSIS HYBRID 3PH 250A 42P
CH25483	MSC18/27 CHASSIS HYBRID 3PH 250A 48P
CH25483BF	MSC18/27 CHASSIS HYBRID 3PH 250A 48P BOTTOM FEED
CH25603	MSC18/27 CHASSIS HYBRID 3PH 250A 60P
CH25603BF	MSC18/27 CHASSIS HYBRID 3PH 250A 60P BOTTOM FEED
CH25723TF	MSC18/27 CHASSIS HYBRID 3PH 250A 60P