



AS/NZS 61439 Statement of Compliance **Monarch SMB Series**

B&R Enclosures Pty Ltd, 51 Stradbroke Street, Heathwood, QLD 4110, declare that our Monarch IP SMB Series, used as a low voltage (LV) main switchboard assembly, complies with the requirements of AS/NZS 3000:2018 and with associated relevant parts of AS/NZS 61439 as applicable when assembled in accordance with manufacturer's instructions.

These products are manufactured in conformity with following relevant Standards:

AS/NZS 3000:2018	Electrical installations (known as the Wiring Rules)
AS/NZS 61439.1:2016	Low-voltage switchgear and control gear assemblies General rules (IEC 61439-1, Ed. 2.0 (2011), MOD)
AS/NZS 61439.2:2016	Low-voltage switchgear and control gear assemblies Power switchgear and control gear assemblies (IEC 61439-2, Ed. 2.0 (2011), MOD)
AS/NZS 60529	Degrees of protection provided by enclosures (IP Code)

Our products are manufactured within our manufacturing plants to best practice of Quality, Safety and Environmental standards demonstrated through accreditation to:

ISO 9001:2015	Quality management system
ISO 14001:2015	Environmental management system
AS/NZS 4801:2001	Occupational health & safety management system

Barry Walker
B&R Enclosures - Product Manager



The purpose of this document is to assist Installation Assemblers to prepare documentation for Design Verification of switchboards while using B&R supplied enclosures and accessories. This document does not in itself imply complete AS/NZS 61439 compliance.

Monarch SMB Series Design Verification



Characteristic to be verified	Clauses	Status/by	Compliance
1	Strength of material and parts	10.2	
1a	Resistance to corrosion	10.2.2	Compliant The resistance to corrosion was tested using a representative sample. Report; 103687.
1b	Thermal stability	10.2.3.1	N/A This clause refers mainly to plastic enclosures.
1c	Resistance to abnormal heat & fire due to internal electric effects.	10.2.3.2	Compliant All insulating materials supplied have been tested to 960°C glow-wire Standard. Plus ES report; 103863
1d	Resistance to ultra-violet (UV) radiation	10.2.4	Compliant UV ratings refer mainly to plastic enclosures however metal Powder-coat painted enclosures incorporates UV stabilization. AksoNobel report; 20LSR178
1e	Lifting	10.2.5	Compliant Lifting is verified by test, if required. Generally this relates to larger switchboards to which lifting means (lugs) have been provided. Plus ES report; 103687
1f	Mechanical impact	10.2.6	Compliant IK10; Metal enclosure systems have been tested to exceed IK10 (20 Joules).
1g	Marking	10.2.7	Assembler Markings must be verified by test. Tests are performed by rubbing with water and petroleum spirits; generally done by the Switchboard Builder (Assembler).
2	Degree of Protection	10.3	Compliant IP66; Ingress Protection (IP) rating needs to be verified by test or by assessment. Plus ES report; 103687
3	Clearances	10.4	Assembler
4	Creepage distances	10.4	Assembler
Clearance and creepage can only be verified by test. Switchboard Builders (Assembler) must maintain compliance by ensuring correct clearance and creepage distances are maintained at >8mm ($U_{imp}=8kV$) and >16mm ($U_1=1kV$) respectively.			
5	Protection against electric shock and integrity of protective circuits:	10.5	
5a	Effective continuity between the exposed conductive parts of the ASSEMBLY and the protective circuit.	10.5.2	Compliant Equipotential protective earth bonding points are required to be verified by test to less than 0.1ohm. Similar enclosure designs have been tested by Plus ES report; 103687
5b	Short-circuit withstand strength of the protective circuit	10.5.3	Compliant Protective circuit verification can be by test or comparison with a reference design. Plus ES report; 104014.
6	Incorporation of switching devices and components	Assembler	Points 6, 7 and 8 are largely the responsibility of the Switchboard builder (Assembler). It is a requirement that the Assembler follow guidance from the original manufacturer. The advice of original manufacturers such as B&R and switchgear manufacturers, needs to be adhered to. Switchboard Builders need to be aware of the Standard's requirements for these verification points and incorporate these into complete design verification documentation.
7	Internal electrical circuits and connections	Assembler	
8	Terminals for external conductors	Assembler	
9	Dielectric properties:	10.9	
9a	Power-frequency withstand voltage	10.9.2	Compliant Dielectric properties generally need to be tested but Impulse withstand can also be calculated. Plus ES report; 104014.
9b	Impulse withstand voltage	10.9.3	
10	Temperature-rise limits	10.1	Designer or Assembler Temperature-rise can be determined by test, comparison or by calculation. Testing conducted under worst case configuration show that the switchboard can operate at a maximum rated current (I_{nA}) of 490A. B&R cert. CT-22-10002. Alternatively, AS/NZS 60890 may be used by switchboard designers to determine switchboard ratings not exceeding 490A.
11	Short-circuit withstand strength	10.11	Compliant Enclosures with a fault rating greater than 10kA need to be 61Compliant. Verification can be by test or comparison with a reference design. Plus ES report; 104014.
12	Electromagnetic compatibility (EMC)	10.12	Assembler Equipment installed in switchboards shall comply with the immunity requirements of the relevant product or generic EMC standard. The Switchboard builder (assembler) shall obtain from the device and or component manufacturer the specific performance criteria of the equipment based on the acceptance criteria given in the relevant standard.
13	Mechanical operation	10.13	Assembler This verification testing need NOT be done on devices already been type tested according to their relevant product standard. Only if their mechanical operation has been modified does the assembly need to be retested by cycling it 200 times.

Notes

- Switchboard Builders are also recommended to study other requirements of the Standard which are not listed here such as parts of section 8 for Constructional Requirements (check clauses 8.4 and 8.5)
- AUSGRID, Plus ES and SIMTARS are the trademarks of independent NATA certified external laboratories

Definitions

TBD	Either the Assembler needs to conduct these tests or B&R needs to be asked for advice.
Exempt	Switchboards that having a rated short-time withstand current (I_{cw}) or rated conditional short-circuit current (I_{cc}) not exceeding 10kARMS or; Switchboards protected by upstream current-limiting devices with a let-through current not exceeding 17kA with the maximum allowable prospective short-circuit current (I_{cp}) at the terminals of the incoming circuit of the switchboard.



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