B&R Enclosures Pty Ltd
ABN 97 007 587 082

B&R Enclosures – Panelboard Series

Statement of Compliance

B&R Enclosures Pty Ltd, located at 51 Stradbroke Street, Heathwood, QLD 4110, hereby declares that our electrical power distribution boards, known as the Panelboard Series, conform to the specifications outlined in AS/NZS 3000:2018, along with pertinent sections of AS/NZS 61439 Part 3 where applicable, when assembled in strict accordance with the 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 61439.3:2016	Low-voltage switchgear and controlgear assemblies – Part 3: Distribution boards intended to be operated by ordinary persons (DBO) (IEC 61439-3, 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
Research and Compliance Officer - Product Development
B&R Enclosures

AS/NZS 61439

Certified System Quality ISO 9001 SAI GLOBAL
Certified System OHS ISO 45001 SAI GLOBAL
Certified System Environment ISO 14001 SAI GLOBAL

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.

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		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. Plus ES 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 960ºC glow-wire Standard. TÜVRheinland report 50233558 006.
	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	N/A	Lifting is verified by test, if required. Generally, this relates to larger switchboards to which lifting means (lugs) have been provided.
	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**	IP33/IP66; Ingress Protection (IP) rating needs to be verified by test or by assessment. SIMTARS report; NE13/0052
3		Clearances	10.4	**Compliant**	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}=6kV).
4		Creepage distances	10.4	**Compliant**	
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**	The Panelboard Series are generally understood to be fitted with equipment making the switchboard not exceed 10kA prospective short-circuit withstand rating. Chassis has been tested independently to 25kA for 0.1s, see TÜV Rheinland report 19301651 003
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**	The Panelboard Series of enclosures are provided as a basic empty enclosure with an MCB chassis provided. Power-frequency type testing has been conducted at U_{imp} 6kV. See TÜV Rheinland report 19301651 001.
	9b	Impulse withstand voltage	10.9.3		
10		Temperature-rise limits	10.1	Designer or Assembler	Temperature-rise can be determined by test or by comparison or by calculation. The Panelboard Series of enclosures are rated to a maximum of 250A and therefore AS/NZS 60890 should be used at a rated diversity factor of no more than 80% (see specification sheet).
11		Short-circuit withstand strength	10.11	**Compliant**	The Panelboard Series are generally understood to be fitted with equipment making the switchboard not exceed 10kA prospective short-circuit withstand rating. Chassis has been tested independently to 25kA for 0.1s, see TÜV Rheinland report 19301651 003.
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)

TUV Rheinland, 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 (Icw) or rated conditional short-circuit current (Icc) 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 (Icp) at the terminals of the incoming circuit of the switchboard.

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Panelboard Series

Specification Sheet

	Econo	Superior	
Degree of Protection (IP code)	IP33	IP66	
Rated operational voltage (U_e)	230/400	230/400	V
Rated voltage (U_n)	415	415	V
Rated insulation voltage (U_i)	440	440	V
Rated impulse withstand voltage (U_{imp})	6	6	kV
Over Voltage category	IV	IV	Distribution cct level
DBO type	B	B	
Power frequency withstand voltage	2	2	kV
Rated current of the ASSEMBLY (I_{nA})	250	250	A
Rated current of a circuit (Inc)	63	63	A
Rated peak withstand current (I_{pk})	52	52	kA
Rated short-time withstand current (I_{cw})	10	10	kA (1s)
Rated conditional short-circuit current (I_{cc})	25	25	kA (0.1s)
Rated frequency (f_n)	50	50	Hz
Pollution degree	3	3	
Mechanical impact protection	IK07	IK10	
Clearance	> 14	> 14	mm
Creepage	> 14	> 14	mm
Protective circuit	< 50	< 50	mΩ
Material thickness	1	1.6	mm
Earthing system	Earth bar on each side equipotential bonded to enclosure		
Neutral system	Neutral bar each side with busbar bridge between left and right bars		

Rated diversity factor (RDF)	outgoing circuits	Assumed loading
	2-3	0.8
	4-5	0.7
	6-9	0.6
	>10	0.5

Important Notices:

- Modifying the panelboard beyond B&R Enclosures' design scope or installation instructions makes the user the 'Assembly Manufacturer' and thereby responsible for compliance to AS/NZS 61439.3.
- Avoid installing the panelboard in areas with volatile/corrosive elements. Consider stainless board for coastal/corrosive settings.
- Assess the environment for extra protection needs, for example potential condensation. If required use a breathing/pressure equalization valve IP/VP12 or consider anti-condensation heaters (as per AS/NZS 3000:2018 section 1.7.2.).