



## AS/NZS 61439 Statement of Compliance **Universal NI Series**

B&R Enclosures Pty Ltd, 51 Stradbroke Street, Heathwood, QLD 4110, declare that our Universal NI Series of enclosures, comply with the requirements of AS/NZS 3000:2018 and with associated relevant AS/NZS 61439 as applicable when assembled in accordance with manufacturer's instructions.

These products are manufactured in conformity with following relevant Standards:

<b>AS/NZS 3000:2018</b>	Electrical installations (known as the Wiring Rules)
<b>AS/NZS 61439.1:2016</b>	Low-voltage switchgear and control gear assemblies' General rules (IEC 61439-1, Ed. 2.0 (2011), MOD)
<b>AS/NZS 61439.2:2016</b>	Low-voltage switchgear and control gear assemblies Power switchgear and control gear assemblies (IEC 61439-2, Ed. 2.0 (2011), MOD)
<b>AS/NZS 60529</b>	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:

<b>ISO 9001:2015</b>	Quality management system
<b>ISO 14001:2015</b>	Environmental management system
<b>ISO 45001:2018</b>	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.

## Universal NI Design Verification



Characteristic to be verified	Clauses	Status/by	Compliance
<b>1</b> Strength of material and parts	10.2		
<b>1a</b> Resistance to corrosion	10.2.2	<b>Compliant</b>	The Universal NI Series of enclosures are made from steel and stainless steel and as such exceed standards requirements. Comparative testing done, Plus ES report; 103687.
<b>1b</b> Thermal stability	10.2.3.1	N/A	This clause refers mainly to plastic enclosures.
<b>1c</b> Resistance to abnormal heat & fire due to internal electric effects.	10.2.3.2	<b>Compliant</b>	All insulating materials supplied have been tested to 960°C glow-wire Standard. Plus ES report; 103863
<b>1d</b> Resistance to ultra-violet (UV) radiation	10.2.4	<b>Compliant</b>	UV ratings refer mainly to plastic enclosures however metal Powder-coat painted enclosures incorporates UV stabilization. AksoNobel report; 20LSR178
<b>1e</b> Lifting	10.2.5	<b>Compliant</b>	Lifting is verified by test, <u>if required</u> . Generally this relates to larger switchboards to which lifting means (lugs) have been provided.
<b>1f</b> Mechanical impact	10.2.6	<b>Compliant</b>	IK10; Metal enclosure systems have been tested to exceed IK10 (20 Joules).
<b>1g</b> 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).
<b>2</b> Degree of Protection	10.3	<b>Compliant</b>	IP66; Ingress Protection (IP) rating needs to be verified by test or by assessment. SIMTARS report; NE05/0077
<b>3</b> Clearances	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
<b>4</b> Creepage distances	10.4	Assembler	
<b>5</b> Protection against electric shock and integrity of protective circuits:	10.5		
<b>5a</b> Effective continuity between the exposed conductive parts of the ASSEMBLY and the protective circuit.	10.5.2	<b>Compliant</b>	Equipotential protective earth bonding points are required to be verified by test to less than 0.1ohm
<b>5b</b> Short-circuit withstand strength of the protective circuit	10.5.3	Exempt	The Universal NI Series are generally understood to be fitted with equipment making the switchboard not exceed 10kA prospective short-circuit withstand rating ( $I_{cp}$ ).
<b>6</b> 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.
<b>7</b> Internal electrical circuits and connections		Assembler	
<b>8</b> Terminals for external conductors		Assembler	
<b>9</b> Dielectric properties:	10.9		
<b>9a</b> Power-frequency withstand voltage	10.9.2	TBD	The Universal NI Series of enclosures are provided as a basic empty enclosure and as such dielectric property verification has not been possible as internal configurations are not known. Dielectric properties need to be verified by Impulse withstand testing or by assessment, reference clearances and creepages..
<b>9b</b> Impulse withstand voltage	10.9.3		
<b>10</b> Temperature-rise limits	10.1	Designer or Assembler	Temperature-rise can be determined by test or by comparison or by calculation. Temperature rise methods provided in AS/NZS 60890 can be used for switchboards not exceeding 1600A rating. The Universal NI Series of enclosures are rated to not exceed 630A and therefore AS/NZS 60890 should be used by the Designer.
<b>11</b> Short-circuit withstand strength	10.11	TBD	The Universal NI Series are generally understood to be fitted with equipment making the switchboard not exceed 10kA prospective short-circuit withstand rating ( $I_{cp}$ ).
<b>12</b> 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.
<b>13</b> 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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