MV CURRENT TRANSFORMER

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** Shall be the Process Owner and is the person assigned authority and responsibility for managing the whole process, end-to-end, which may extend across more than one division and/or functions, in order to deliver agreed business results.*

*** Frequency period is dependent upon circumstances– maximum is 5 years from last issue, review, or revision whichever is the latest. If left blank, the default shall be 1 year unless otherwise specified.*

Revision Control		
Revision	**Date**	**Description**
0	28/11/2025	First Issue

STAKEHOLDERS *The following positions shall be consulted if an update or review is required:*	
Senior Manager – Engineering & Project Services	Senior Manager – Asset Services
Senior Manager – Energy Planning	Senior Manager – System Operations
Head of People and Safety	Senior Manager – Project Delivery

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1. Scope

This Specification sets out the technical (electrical and mechanical) requirements for the performance, testing and supply of medium voltage, current transformers for the distribution system only.

Approval in terms of this specification shall be obtained by one or a combination of the following:

a) Successful completion of the appropriate tests required by this specification by an independent and accredited test authority.

b) Provision of test certificates from an independent and accredited test authority based upon an alternative specification, with test requirements at least equivalent to this specification.

Note: Verification of accreditation of the test authority shall be provided by NATA (National Association of Testing Authorities) accredited test house or by a test house possessing accreditation from a NATA MRA (Mutual Recognition Agreement) partner.

Tenderers must state any non-compliance with the specification in any tender submission and any alternative offers must be submitted in full and separately from any main offer.

2. Normative References

2.1 Standards

2.1.1 Horizon Power Standards

[1]. *Horizon Power Environmental Conditions*, standard number HPC-9EJ-01-0001-2013, available at http://horizonpower.com.au/contractors-suppliers/contractors/manuals-and-standards/ under the 'Standards' heading.

[2]. *Technical Rules HPC-9DJ-01-0001-2012, available at* http://horizonpower.com.au/contractors-suppliers/contractors/manuals-and-standards/*under the 'Technical Rules' heading.*

2.1.2 Australian Standards

The following standards are available at http://www.interlekinform.com.

[3]. *AS 1627.0: 1997 (R2017), Metal finishing – Preparation and pre-treatment of surfaces – Method selection guide*

[4]. *AS/NZS 2312.1: 2014 (Amd 1: 2017), Guide to the protection of structural steel against atmospheric corrosion by the use of protective coatings – Paint coatings*

[5]. *AS/NZS 4680: 2025, Hot dip galvanised (zinc) coatings on fabricated ferrous articles*

[6]. *AS IEC 60060.1: 2018, High-voltage test techniques – Part 1: General definitions and test requirements*

[7]. *AS/NZS 60529: 2025, Degrees of protection provided by enclosures (IP Code)*

[8]. *AS/NZS IEC 60812: 2020, Failure modes and effects analysis (FMEA and FMECA)*

[9]. *AS 61869.1: 2024, Instrument transformers – Part 1: General requirements*

[10]. *AS 61869.2: 2021 (Amd 1: 2022), Instrument transformers – Part 2: Additional requirements for current transformers*

[11]. *AS 62271.1: 2019, High voltage switchgear and controlgear – Common specifications*

[12]. *AS 62271.201: 2019, High-voltage switchgear and controlgear – Part 201: AC solid-insulation enclosed switchgear for rated voltages above 1 kV and up to and including 52 kV*

[13]. *AS 62271.301: 2022, High voltage switchgear and control gear – Dimensional standardisation of terminals*

[14]. *SA TS 60815.1: 2020, Selection and dimensioning of high-voltage insulators intended for use in polluted conditions*

2.1.3 International Standards

The following standards are available at http://www.interlekinform.com.

No standards used.

2.1.4 Compliance With Standards

Various Standards are referenced in this Specification. The Standards have reference to the year they were published. If over the life of the Tender the Standards change, the Vendor is required to conform to the new edition of the Standard.

Unless otherwise specified herein, the Equipment shall be designed, manufactured and type and routine tested in accordance with the referenced Australian Standards, including all amendments. Where there is no Australian Standard equivalent, International Standards or Codes as defined in this specification shall be used. The specified documents contain provisions that, through reference in the text, constitute requirements of this Specification. At the time of publication of this Specification, the editions indicated were valid. Information on currently valid national and international standards may be obtained from the Australian Standards website – http://www.interlekinform.com.

2.2 Definitions and Abbreviations

For the purposes of this specification, definitions shall apply as in the relevant Australian Standards (AS 61869.1 [9] and AS 61869.2 [10]) with the addition of a few general definitions listed below in alphabetical order.

***CT*:** Current Transformer

***Equipment*:** Medium Voltage Instrument Current Transformer

MR: Multi-ratio cores of Current Transformer

TBC: To Be Confirmed see Schedule A in Appendix C.

3. Requirements

3.1 General

The *Equipment* specified in this instruction is to be used for electrical metering (including power quality and telemetry) and protection of power transformers, outdoor busbars, overhead lines, cables, or any other power system assets generally used in a distribution network.

Standard Horizon Power Current Transformers and descriptions are listed in Appendix C.

The *Equipment* offered that is found on inspection not to conform to this Specification shall be replaced by the Vendor at no cost to Horizon Power.

3.2 Environmental Conditions

The performance of the *Equipment* must meet the requirements set out in Section 4.1 of the *Horizon Power Environmental Conditions [1].*

3.3 Technical Requirements

Horizon Power shall only make use of **22 kV and 33 kV *Equipment*** on its **distribution networks**. This *Equipment* shall be suitable for indoor and outdoor use.

1) Indoor *Equipment:*
   - may be mounted within steel cubicles or form part of cable termination and must as a minimum meet AS 62271.1 [11] and AS 62271.201 [12].
   - should contain at least one (1) multi-ratio (MR) core or two (2) fixed ratio protection/metering cores.
2) Outdoor *Equipment*:
   - may be mounted on steel or any other structure with acceptable insulation meeting AS 61869.1 [9].
   - should contain at least four (4) multi-ratio cores, two (2) protection and two (2) metering.

The technical performance of the *Equipment* must as a minimum meet AS 61869.1 [9] and AS 61869.2 [10].

3.3.1 Electrical Requirements

The *Equipment* shall be suitable for use on the 11 kV, 22 kV and 33 kV 3-phase 50 Hz distribution systems. The *Equipment* must be suitable for operation under the defined operating conditions and must meet the performance requirements as set out in the table below:

Table 1 – Electrical Requirements

Description		22 kV	33 kV
Maximum system voltage (U_m)	kV	24	36
Lightning impulse withstand (indoor)	kV_{Peak}	125	170
Lightning impulse withstand (outdoor)	kV_{Peak}	150	200
Power frequency withstand (60 $_{sec.}$)	$kV_{r.m.s.}$	50	70
Rated short-time withstand current	$kA_{r.m.s.}$	25	25
Rated short-time withstand time	s	3	3
Rated dynamic current (I_{dyn})	kA	62.5	40
Primary terminal continuous thermal current (I_{cth})	A	1250 / 2000[1]	1250
Sec. winding nominal current (I_{sr})	A	1	
Sec. winding continuous thermal current	%	200	
Sec. measurement and protection windings		MR/Fixed	
Measurement core class and burden		0.2S/5 VA	
Measurement core security factor		5	
Protection core class		TBC	
P class core accuracy		TBC	
P class core accuracy limit factor (ALF)		TBC	
P class core rated output	VA	TBC	

[1] See *Technical Rules HPC-9DJ-01-0001-2012 Table A13.2 [2]*

Note: Replacement of existing MV CT's may require that the protection class and values match the existing MV CT. Item 4.12 to 4.15 in the Technical Schedule's A column provided in Appendix C to be altered to suit.

3.3.2 Mechanical Requirements

The design and manufacturing process must confirm, that the performance characteristics of the *Equipment* is not affected by changes in the ambient conditions, such as temperature or humidity, and meet forces presented during fault and environmental conditions (see Section 3.2 Environmental Conditions paying particular attention to the wind region category). The Vendor shall submit the detailed design, materials used and manufacturing process of the *Equipment*.

The *Equipment* shall be suitable for use under the following conditions as set out in the table below:

Table 2 – Mechanical Requirements for Outdoor

Description		22 kV	33 kV
CT design type		Top core	
Insulator type		Porcelain	
Primary terminal material		Aluminium	
Creepage (≥31 mm/kV)	mm	≥744	≥1116
Secondary terminal box - Outdoor	IP	54	54
Dielectric dissipation factor (Tan δ) terminal (oil type)		Yes	

Table 3 – Mechanical Requirements for Indoor

Description	22 kV	33 kV
Insulator type	Resin	
Minimum insulation class	E	
Primary terminal material	Copper (tinned)	

3.3.3 Mounting Requirements

The *Equipment* shall be supplied fully assembled and ready for mounting. All metal work shall meet AS 1627 [3] having no burrs or sharp edges.

For outdoor applications, 4 holding down bolt holes arrange with a maximum square 400 mm by 400 mm, diameter of the holes being a minimum of M18.

Note: Manufacturer is to provide an adapter plate if *Equipment's* base dimensions are different to the required parameters.

The Vendor shall submit complete detail and drawings of the pedestal mounting assembly.

3.3.4 Primary Terminals

The *Equipment* shall be provided with suitable terminals to connect to the line/busbar and earth in concordance with AS 62271.301 [13]. The terminals on the line side shall be (tin-plated) copper or aluminium and on the earth side, shall be of stainless-steel grade 316 and shall be supplied with all required nuts, bolts and washers.

For outdoor applications, the line terminals shall be 2 or 4 Ø14 mm holes NEMA pad with the hole spread 50 x 50 mm, and the earth terminal shall be 14 mm holes or M12 bolt/stud.

The Vendor shall submit complete details and drawings of the line and earth terminals.

All ferrous nuts, bolts, washers and clamps used for any purpose other than for current carrying shall be hot dip galvanised.

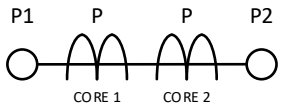
All bolts, washers and clamps attached to current carrying parts shall be manufactured from stainless steel grade 304, and all nuts shall be from stainless steel grade 316.

All bolts and clamps, which may be required to carry an electrical current, shall be fitted with stainless steel spring washers.

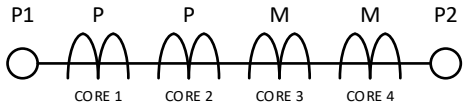
3.4 Core Arrangements

The core arrangements and polarity relative to the primary are shown below:

1) Two-core arrangement



2) Four-core arrangement



P – Protection Core

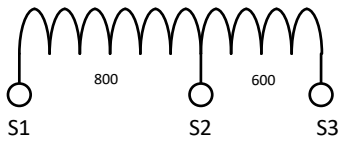
M – Metering Core

3.5 Core Tapping Requirements

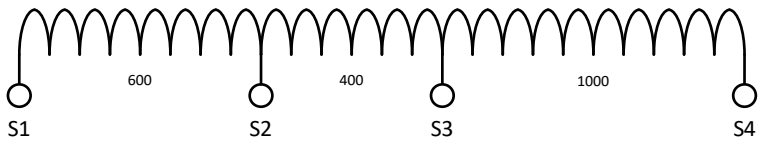
The core tapping requirements are shown below:

Multi-ratio (MR) cores to be tapped as follows:

1) 1400/1



2) 2000/1



3.6 Secondary Terminals

All terminals shall be M6 and shall be fitted with a nut, spring washer and washer.

3.6.1 Terminal Box (Outdoor Option)

The secondary terminals for an outdoor application shall be housed in a terminal box rated to IP 54 in concordance with AS/NZS 60529 [7].

The terminal box shall be fitted with an internal M6 earth stud, and a conductive removable gland plate shall be provided with a M32 pre-punched, spot-welded knock-out (suitable for a 20 mm size mechanical gland). The removable gland plate shall be inherently non-corrosive and shall not be coated, so that it will remain conductive.

3.7 Lifting Facilities

All Outdoor *Equipment* shall be provided with suitable lifting lugs. Lifting instructions shall be fitted to the outside of the CT tank showing slinging method and centre of gravity. The label shall be etched on stainless-steel.

3.8 Insulating Oil and Containment System

All *Equipment* that has its insulating system sealed from the atmosphere shall allow for expansion with the use of stainless-steel bellows and shall incorporate in their design facilities to monitor the condition of the *Equipment*. The facilities shall include pressure release/explosion venting and oil level indication as a minimum. Moisture in the insulating system shall be less than 0.5%.

3.8.1 Oil Sampling Valve

An oil sampling valve shall be fitted at the bottom of the oil containment tank.

3.8.2 Oil Level Indication

An oil level indicator shall be fitted on the oil containment tank. The oil level indicator is to be clearly visible from ground level without the aid of optical devices and be suitably marked to indicate the correct level at 20 ˚C, 40 ˚C and 60 ˚C.

3.9 Painting and Galvanising

All painting and galvanising shall conform to AS/NZS 2312.1 [4] and AS/NZS 4680 [5] respectively. The galvanising coating shall be smooth, clean and of uniform thickness, free from defects.

3.10 Rating Plate

Equipment shall be provided with a rating plate incorporating details in accordance with clause 6.13 of AS 61869.2 [10]. These details shall be stamped on laser etched stainless steel plate and attached to each tank. The details shall be clearly visible and preferably marked on the housing. The marking shall be permanent, weatherproof and corrosion proof.

The following minimum information shall be provided:

1) Manufacturer's name or trademark, type, and identification;
2) Type designation and arrangement;
3) Serial number and year of manufacture;
4) Rated primary current and short time thermal current;
5) Rated frequency;
6) Rated insulation level;
7) Creepage distance (optional);
8) Secondary winding details, ratio, rated output and corresponding accuracy class;
9) Temperature range (optional);
10) Oil type (if applicable)
11) Total weight & oil weight (if applicable)
12) Standard edition (year); and
13) On *Equipment* with more than one secondary winding, the use of each winding and its corresponding terminals.

4. Packaging Requirements

The *Equipment* shall be suitably packaged, such that it is "fit for use" at any location in Horizon Power's operational area and specifically include all accessories needed. Packaging shall be capable of preventing damage whilst in storage and during transit to remote locations. The Vendor is required to nominate standard pack quantities and standard packs shall be clearly marked with the following information:

1) Manufacturer's name;
2) Manufacturer's part reference number;
3) Batch Number;
4) Horizon Power Order Number;
5) *Equipment* description (voltage rating); and
6) Package weight.

Very strong consideration shall be given to appropriate packaging provided with any *Equipment* offered under this specification, with respects to satisfying the "fit for use" criteria mentioned above.

The combined height of the pallet and *Equipment* of a standard pack shall not exceed 1,050 mm.

Each shipment shall be provided with box labels stating the part, stock, and contract number as well as the routine test reports.

Each package is to have an identifying bar code and number which identifies as a minimum the:

- Manufacturer's part number;
- Manufacturer;
- Factory of manufacture; and
- Month and year of manufacture.

Note: The Vendor is required to identify the cost of providing bar coding as specified in this Section separately from the other cost requirements of this specification.

5. Storage

The *Equipment* shall be capable of being stored without deterioration within the temperature range of -10 °C to +45 °C for no less than 24 months.

6. Reliability

Vendors shall provide information on the reliability of the *Equipment* and the performance of the materials offered over an operational life of 50 years under the specified field of application and conditions of service.

Information provided shall evidence the claimed reliability and performance for the *Equipment* offered, including details on Failure Mode and Effect Analysis, carried out in accordance with AS/NZS IEC 60812 [8]. Failure modes should be described; taking cantilever mechanical failure as an example, the failure may be excessive deflection, or brittle fracture. Electrical failure may be material damage such as puncture, polymer degradation, carbonisation, loss of hydrophobicity, etc.

Vendors may offer their standard *Equipment* but any variation to the foregoing standards must be clearly stated in writing at the time of the proposal. The products offered in the standing offer should be equal to or better in quality and performance than the existing items as listed under this Specification.

7. Safety

Material Safety Data Sheets (MSDS) applicable for each different *Equipment* or chemical ingredient in the *Equipment* which is considered harmful to personnel or environment in any manner, shall be supplied with the Proposal.

8. Environmental Considerations

Vendors are required to provide information on the environmental soundness of the design and the materials used in the manufacture of the items offered. In addition, provide a detailed outline of the steps that have been put in place to fulfil any obligations that may be required pursuant to the *Waste Avoidance and Resource Recovery Act 2007* and any amendments. In particular:

a) Management of waste reduction;

b) The use of re-usable packing; and

c) Extended producer responsibility for the safe disposal of materials at the end of their life.

9. Tests

9.1 Test Requirements

The Vendor shall prior to first delivery, complete the design, type, routine, sample and special tests and inspections as required by the relevant Australian or IEC standard.

The passing of such tests does not prejudice the right of Horizon Power to reject the *Equipment* or fitting if it does not comply with this Specification when installed.

Note: A condition of acceptance on imported products shall be completed to perform landing routine and sample tests completed in Australia on each batch imported. In these cases, each batch must obtain a passed landing test in order that the batch acceptance will be reflected on an acceptance list.

9.2 Test Certificates

At the time of submitting the offer on the tender, single copies of test certificates, in English, shall be provided and shall be clearly marked and contain a reference number. If all the required test certificates are not submitted the tender will be rated incomplete and may not be considered.

Electronic copies of type test certificates shall be arranged in the order set out in this Specification and shall be marked clearly with the identifier and description in the contents Section. Any extra test certificates shall be marked with "extra tests" and kept separate from the required test certificates.

All tests required by the relevant Australian or International standards shall be carried out. Test certificates shall be submitted in electronic format and shall be in Adobe Acrobat (.pdf) format.

9.3 Type Test

The tests are intended to verify the main characteristics and suitability of the design, dimensions, materials, and method of manufacture (technology).

Certified type test results shall be submitted with the Proposal, these type tests shall include those outlined in AS 61869.1 [9] and AS 61869.2 [10]. The Vendor shall, in their evaluation submission, state which tests the *Equipment* have passed.

Table 4 – Type Tests

Description	Standard
	AS 61869-1 & AS 61869-2 (Clause/s)
Temperature-rise tests	-1/-2 (7.2.2)
Impulse voltage test on primary terminals	-1/-2 (7.2.3)
Wet test [2]	-1 (7.2.4)
Electromagnetic Compatibility tests	-1 (7.2.5)
Accuracy tests	-2 (7.2.6)
Verification of the degree of protection by enclosure	-1 (7.2.7)
Enclosure tightness test at ambient temperature	-1 (7.2.8)

[2] The test shall be performed in accordance with AS IEC 60060.1 [6]

Description	Standard
Pressure test for enclosure	-1 (7.2.9)
Short-time current test	-2 (7.2.201)

9.4 Routine Test

Routine tests are intended to eliminate defective units and shall be carried out during the manufacturing process. Routine tests shall be carried out on every *Equipment* and should not consist of visual examination only, these routine tests shall include those outlined in AS 61869.1 [9] and AS 61869.2 [10].

The Vendor shall supply duly certified copies of the routine tests performed on the *Equipment* to Horizon Power, either prior to or upon delivery.

Table 5 – Routine Tests

Description	Standard
	AS 61869-1 & AS 61869-2 (Clause/s)
Power-frequency voltage withstand on primary terminals	-1 (7.3.1)
Partial discharge measurement	-1 (7.3.2)
Power-frequency voltage withstand between sections	-1 (7.3.3)
Power-frequency voltage withstand on secondary terminals	-1 (7.3.4)
Test for accuracy	-2 (7.3.5)
Verification of terminal markings	-1 (7.3.6)
Enclosure tightness test at ambient temperature	-1 (7.3.7)
Pressure test for enclosure	-1 (7.2.9)
Determination of the secondary winding resistance	-2 (7.3.201)
Determination of the secondary loop time constant	-2 (7.3.202)
Test for rated knee point E.M.F. and exciting current	-2 (7.3.203)

Description	Standard
Inter-turn overvoltage test	-2 (7.3.204)
Visual Inspection	“Manufacturer’s Standard”

10. Documentation and Samples

10.1 Documentation to be provided with Proposals

Submitted proposals shall provide all documentation and information as requested in this specification, including any further relevant information on the *Equipment* offered. The proposal must be complete in all respects. Failure to comply may cause the proposal to be considered incomplete and hence informal.

The Vendor shall provide an electronic version of all documents in Adobe Acrobat (.pdf) format containing the information detailed below with their offer:

- Any non-compliance of the Specification shall be detailed in the Technical Deviation schedule;
- All information provided in Technical Requirements shall be in English and measurement units shall be in metric units;
- Material Safety Data Sheets;
- CAD drawings (Micro station preferred DGN format) of all *Equipment* showing all critical dimensions;
- *Equipment* data sheets showing the weight, material type, protective coatings, mechanical & electrical properties (Combined Load Charts shall be included);
- Installation instructions included in the packaging; and
- A copy of the Vendor’s current Quality Assurance accreditation and category.

Should the preferred Vendor submit drawings for approval by Horizon Power, this will in no way exonerate it from being responsible for the correct and proper function of the *Equipment*.

10.2 Service History

Vendors shall state:

- Other Australian electricity supply authorities who have a service history of the items offered; and
- Contact details of those supply authorities who can verify the service performance claimed.

10.3 Training Materials

Training material in the form of drawings, instructions and/or audio-visuals must be provided for the items accepted under the offer.

Vendors shall state the availability of training materials which could include but is not limited to the following topics:

- Handling and storage;
- Application (particularly in areas of heavy coastal pollution);
- Installation;
- Maintenance;
- Environmental performance;
- Electrical performance;
- Mechanical performance;
- Disposal at the end of service life; and
- Production process and testing.

APPENDIX A. REVISION INFORMATION

(Informative) Horizon Power has endeavoured to provide standards of the highest quality and would appreciate notification of errors or queries.

Each Standard makes use of its own comment sheet which is maintained throughout the life of the standard, which lists all comments made by stakeholders regarding the standard.

A comment sheet found in **DM# 48906390**, can be used to record any errors or queries found in or pertaining to this standard. This comment sheet will be referred to each time the standard is updated.

Date	Rev No.	Notes
28/11/2025	0	First Issue

APPENDIX B. QUALITY ASSURANCE (TO BE COMPLETED BY STORES)

DOCUMENT NUMBER	HPC-8DJ-07-0010-2025		**QUALITY ASSURANCE**	**DM NUMBER**	
DEVICE DESCRIPTION	**LABEL MATERIAL NO.**		**MV CT PURCHASE**	**ASSET OWNER**	
	ASSET ID/ STOCK NO				
MANUFACTURER		**DIMENSION**			

ITEM	OPERATION/EQUIPMENT/FACILITY	DOCUMENT REF.	WHO CHECKS	INITIAL	DATE/ TIME	QUALITY ASSURANCE CRITERIA	PASS Y/N	COMMENTS
1	LABELLING							
1.1	Name of Manufacturer					*******		
1.2	Manufacturer's part reference number					*******		
1.3	Horizon Power Order Number					*******		
1.4	Horizon Power Stock Number					*******		
1.5	Current Transformer description					*******		
1.6	Package Weight					*******		
2	CONTENTS							
2.1	Installation Instructions					Clear, Legible and in English		

ITEM	OPERATION/EQUIPMENT/FACILITY	DOCUMENT REF.	WHO CHECKS	INITIAL	DATE/ TIME	QUALITY ASSURANCE CRITERIA	PASS Y/N	COMMENTS
2.2	Bill of Materials					Clear, Legible and in English		
2.3	Material Safety Data Sheets (if required)					Clear, Legible and in English of all materials		
2.4	Accessories (if required)					As per Bill of Materials		
2.5	Test and Inspection Reports					As per Standards referenced in the specification.		
3	PACKAGING							
3.1	Suitably stacked and secured on pallet					Packages suitably packed and prevented from coming loose		
3.2	Physical damage					Packages do not show puncture marks or other signs of damage		
3.3	Current Transformer/s in suitable packaging					Strong enough to prevent mechanical damage		
3.4	Packaging clearly labelled					Each package easily identifiable		
3.5	Items Individually Marked					Items clearly designated and marked		

SYMBOLS AND ABBREVIATIONS								
H = HOLD POINT	S = SUPERVISOR							
W = WITNESS POINT	T = TECHNICIAN, EL = ELECTRICIAN	REVISION						
V = VERIFICATION POINT	E = ENGINEER	DATE						
S/C = SUBCONTRACTOR	PM = PROJECT MANAGER	APPROVED BY						

APPENDIX C. SCHEDULES A & B ENQUIRY DOCUMENT

C.1. TECHNICAL SCHEDULES

Completion of the listed schedules below by the Vendor shall indicate the product offered is fully compliant with the nominated Clauses in this specification. All information provided shall be in English and measurement units shall be in metric units.

Any deviation from the specification shall be listed on the "Technical Deviation Schedule C", provided in Appendix D with motivation to Horizon Power for consideration and written approval.

C.2. TECHNICAL REQUIREMENTS

Schedule A: Purchaser's specific requirements.

Schedule B: Particulars of *Equipment* to be supplied.

C.2.1. TECHNICAL SCHEDULES A & B FOR 22 KV CURRENT TRANSFORMERS

	SPECIFICATION ENQUIRY	**HPC-8DJ-07-0010-2025**
	VENDOR'S NAME	
	DATE	

TECHNICAL SCHEDULES A & B

ITEM 1.1: 22 kV Current Transformer Outdoor – 2 Core

SCHEDULE A: Horizon Power's specific requirements
SCHEDULE B: Particulars of *Equipment* to be supplied (to be completed by Vendor)

Item	Sub-clause	Description		Schedule A	Schedule B
1.		Manufacturer/ Vendor of Current Transformer		xxxxxx	
2.		Manufacturer's/ Vendor's catalogue number		xxxxxx	
3.		Manufacturer's/ Vendor's drawing number		xxxxxx	
4.	3.3.1	Electrical Requirements			
4.1		Max. system voltage (U_m)	kV	24	
4.2		Lightning impulse withstand	kV_{Peak}	150	
4.3		Power frequency withstand (60 sec.)	$kV_{r.m.s.}$	125	
4.4		System frequency	Hz	50	
4.5		Rated short time withstand current (I_{th})	$kA_{r.m.s.}$	25	
4.6		Rated short time withstand time	s	3	
4.7		Rated dynamic current (I_{dyn})	kA	62.5	

Item	Sub-clause	Description		Schedule A	Schedule B
4.8		Primary terminal continuous thermal current (I_{cth})	A	1250/2000	
4.9		Sec. winding nominal current (I_{sr})	A	1	
4.10		Secondary winding continuous thermal current	%	200	
4.11		Secondary protection windings		MR-1400 or MR-2000	
4.12		Protection core class			
4.13		P class core accuracy			
4.14		P class core accuracy limit factor (ALF)			
4.15		P class core rated output	VA		
5.	3.3.2	Mechanical Requirements			
5.1		CT design type		Top Core	
5.2		Insulator type		Porcelain	
5.3		Minimum creepage distance	mm	≥744	
5.4		Static withstand load	N	≥2500	
5.5		Dynamic withstand load	N	*****	
5.6		Weight	kg	*****	
5.7		Primary terminals		Aluminium	
5.8		Secondary terminal box		IP54	
5.9		Secondary terminals		M6 studs	

TECHNICAL SCHEDULES A & B
ITEM 1.2: 22 kV Current Transformer Outdoor – 4 Core

SCHEDULE A: Horizon Power's specific requirements
SCHEDULE B: Particulars of *Equipment* to be supplied (to be completed by Vendor)

Item	Sub-clause	Description	Schedule A	Schedule B
1.		Manufacturer/ Vendor of Current Transformer	xxxxxx	

Item	Sub-clause	Description	Schedule A	Schedule B
2.		Manufacturer's/ Vendor's catalogue number	xxxxxx	
3.		Manufacturer's/ Vendor's drawing number	xxxxxx	
4.	3.3.1	Electrical Requirements		
4.1		Max. system voltage (U_m) kV	24	
4.2		Lightning impulse withstand kV_{Peak}	150	
4.3		Power frequency withstand (60 sec.) $kV_{r.m.s.}$	125	
4.4		System frequency Hz	50	
4.5		Rated short time withstand current (I_{th}) $kA_{r.m.s.}$	25	
4.6		Rated short time withstand time s	3	
4.7		Rated dynamic current (I_{dyn}) kA	62.5	
4.8		Primary terminal continuous thermal current (Icth) A	1250/2000	
4.9		Sec. winding nominal current (Isr) A	1	
4.10		Secondary winding continuous thermal current %	200	
4.11		Secondary measurement windings	MR-1400 or MR-2000	
4.12		Measurement core class and burden	0.2S/5˚VA	
4.13		Measurement core security factor	5	
4.14		Secondary protection windings	MR-1400 or MR-2000	
4.15		Protection core class		
4.16		P class core accuracy		
4.17		P class core accuracy limit factor (ALF)		
4.18		P class core rated output VA		
5.	3.3.2	Mechanical Requirements		
5.1		CT design type	Top Core	
5.2		Insulator type	Porcelain	
5.3		Minimum creepage distance mm	≥744	

Item	Sub-clause	Description		Schedule A	Schedule B
5.4		Static withstand load	N	≥2500	
5.5		Dynamic withstand load	N	*****	
5.6		Weight	kg	*****	
5.7		Primary terminals		Aluminium	
5.8		Secondary terminal box		IP54	
5.9		Secondary terminals		M6 studs	

TECHNICAL SCHEDULES A & B
ITEM 1.3: 22 kV Current Transformer Indoor – 2 Core

SCHEDULE A: Horizon Power's specific requirements
SCHEDULE B: Particulars of *Equipment* to be supplied (to be completed by Vendor)

Item	Sub-clause	Description		Schedule A	Schedule B
1.		Manufacturer/ Vendor of Current Transformer		xxxxxx	
2.		Manufacturer's/ Vendor's catalogue number		xxxxxx	
3.		Manufacturer's/ Vendor's drawing number		xxxxxx	
4.	3.3.1	Electrical Requirements			
4.1		Max. system voltage (U_m)	kV	24	
4.2		Lightning impulse withstand	kV_{Peak}	150	
4.3		Power frequency withstand (60 sec.)	$kV_{r.m.s.}$	125	
4.4		System frequency	Hz	50	
4.5		Rated short time withstand current (I_{th})	$kA_{r.m.s.}$	25	
4.6		Rated short time withstand time	s	3	
4.7		Rated dynamic current (I_{dyn})	kA	62.5	
4.8		Primary terminal continuous thermal current (Icth)	A	1250/2000	
4.9		Sec. winding nominal current (Isr)	A	1	

Item	Sub-clause	Description	Schedule A	Schedule B
4.10		Secondary winding continuous thermal current %	200	
4.11		Secondary protection windings	MR-1400 or MR-2000	
4.12		Protection core class		
4.13		P class core accuracy		
4.14		P class core accuracy limit factor (ALF)		
4.15		P class core rated output VA		
5.	3.3.2	Mechanical Requirements		
5.1		Insulator type	Resin	
5.2		Minimum creepage distance mm	E	
5.3		Weight kg	*****	
5.4		Primary terminals	Copper (tinned)	
5.5		Secondary terminals	M6 studs	

C.2.2. TECHNICAL SCHEDULES A & B FOR 33 KV CURRENT TRANSFORMERS

	SPECIFICATION ENQUIRY	**HPC-8DJ-07-0010-2025**
	VENDOR'S NAME	
	DATE	

TECHNICAL SCHEDULES A & B

ITEM 2.1: 33 kV Current Transformer Outdoor – 2 Core

SCHEDULE A: Horizon Power's specific requirements
SCHEDULE B: Particulars of *Equipment* to be supplied (to be completed by Vendor)

Item	Sub-clause	Description	Schedule A	Schedule B
1.		Manufacturer/ Vendor of Current Transformer	xxxxxx	
2.		Manufacturer's/ Vendor's catalogue number	xxxxxx	
3.		Manufacturer's/ Vendor's drawing number	xxxxxx	
4.	3.3.1	Electrical Requirements		
4.1		Max. system voltage (U_m) kV	36	

Item	Sub-clause	Description		Schedule A	Schedule B
4.2		Lightning impulse withstand	kV_{Peak}	200	
4.3		Power frequency withstand (60 sec.)	$kV_{r.m.s.}$	170	
4.4		System frequency	Hz	50	
4.5		Rated short time withstand current (I_{th})	$kA_{r.m.s.}$	25	
4.6		Rated short time withstand time	s	3	
4.7		Rated dynamic current (I_{dyn})	kA	40	
4.8		Primary terminal continuous thermal current (Icth)	A	1250	
4.9		Sec. winding nominal current (Isr)	A	1	
4.10		Secondary winding continuous thermal current	%	200	
4.11		Secondary protection windings		MR-1400	
4.12		Protection core class			
4.13		P class core accuracy			
4.14		P class core accuracy limit factor (ALF)			
4.15		P class core rated output	VA		
5.	3.3.2	Mechanical Requirements			
5.1		CT design type		Top Core	
5.2		Insulator type		Porcelain	
5.3		Minimum creepage distance	mm	≥1116	
5.4		Static withstand load	N	≥2500	
5.5		Dynamic withstand load	N	*****	
5.6		Weight	kg	*****	
5.7		Primary terminals		Aluminium	
5.8		Secondary terminal box		IP54	
5.9		Secondary terminals		M6 studs	

TECHNICAL SCHEDULES A & B
ITEM 2.2: 33 kV Current Transformer Outdoor – 4 Core

SCHEDULE A: Horizon Power's specific requirements
SCHEDULE B: Particulars of *Equipment* to be supplied (to be completed by Vendor)

Item	Sub-clause	Description		Schedule A	Schedule B
1.		Manufacturer/ Vendor of Current Transformer		xxxxxx	
2.		Manufacturer's/ Vendor's catalogue number		xxxxxx	
3.		Manufacturer's/ Vendor's drawing number		xxxxxx	
4.	3.3.1	Electrical Requirements			
4.1		Max. system voltage (U_m)	kV	36	
4.2		Lightning impulse withstand	kV_{Peak}	200	
4.3		Power frequency withstand (60 $_{sec.}$)	$kV_{r.m.s.}$	170	
4.4		System frequency	Hz	50	
4.5		Rated short time withstand current (I_{th})	$kA_{r.m.s.}$	25	
4.6		Rated short time withstand time	s	3	
4.7		Rated dynamic current (I_{dyn})	kA	40	
4.8		Primary terminal continuous thermal current (Icth)	A	1250	
4.9		Sec. winding nominal current (Isr)	A	1	
4.10		Secondary winding continuous thermal current	%	200	
4.11		Secondary measurement windings		MR-1400/1	
4.12		Measurement core class and burden		0.2S/5˚VA	
4.13		Measurement core security factor		5	
4.14		Secondary protection windings		MR-1400/1	
4.15		Protection core class			
4.16		P class core accuracy			
4.17		P class core accuracy limit factor (ALF)			

Item	Sub-clause	Description		Schedule A	Schedule B
4.18		P class core rated output	VA		
5.	3.3.2	Mechanical Requirements			
5.1		CT design type		Top Core	
5.2		Insulator type		Porcelain	
5.3		Minimum creepage distance	mm	≥1116	
5.4		Static withstand load	N	≥2500	
5.5		Dynamic withstand load	N	*****	
5.6		Weight	kg	*****	
5.7		Primary terminals		Aluminium	
5.8		Secondary terminal box		IP54	
5.9		Secondary terminals		M6 studs	

TECHNICAL SCHEDULES A & B
ITEM 2.3: 33 kV Current Transformer Indoor – 2 Core

SCHEDULE A: Horizon Power's specific requirements
SCHEDULE B: Particulars of *Equipment* to be supplied (to be completed by Vendor)

Item	Sub-clause	Description		Schedule A	Schedule B
1.		Manufacturer/ Vendor of Current Transformer		xxxxxx	
2.		Manufacturer's/ Vendor's catalogue number		xxxxxx	
3.		Manufacturer's/ Vendor's drawing number		xxxxxx	
4.	3.3.1	Electrical Requirements			
4.1		Max. system voltage (U_m)	kV	36	
4.2		Lightning impulse withstand	kV_{Peak}	200	
4.3		Power frequency withstand (60 $_{sec.}$)	$kV_{r.m.s.}$	170	
4.4		System frequency	Hz	50	
4.5		Rated short time withstand current (I_{th})	$kA_{r.m.s.}$	25	

Item	Sub-clause	Description		Schedule A	Schedule B
4.6		Rated short time withstand time	s	3	
4.7		Rated dynamic current (I_{dyn})	kA	40	
4.8		Primary terminal continuous thermal current (Icth)	A	1250	
4.9		Sec. winding nominal current (Isr)	A	1	
4.10		Secondary winding continuous thermal current	%	200	
4.11		Secondary protection windings		1400/1	
4.12		Protection core class			
4.13		P class core accuracy			
4.14		P class core accuracy limit factor (ALF)			
4.15		P class core rated output	VA		
5.	3.3.2	Mechanical Requirements			
5.1		Insulator type		Resin	
5.2		Minimum insulation class		E	
5.3		Weight	kg	*****	
5.4		Primary terminals		Copper (tinned)	
5.5		Secondary terminals		M6 studs	

APPENDIX D. TECHNICAL SCHEDULE C: COMPLIANCE DOCUMENT

The Vendor shall indicate below whether this offer is fully compliant with the nominated clause in this Specification. A YES shall ONLY be indicated if the offer is 100% compliant with the relevant Clause. If NO is indicated and supporting documents are submitted, then mark the ATT box with the attachment number. Details of departure shall be provided in Schedule D Appendix E.

CLAUSE NUMBER		YES	NO	ATT.
3	Requirements			
3.1	General	☐	☐	
3.2	Environmental Conditions	☐	☐	
3.3	Technical Requirements			
3.3.1	*Electrical Requirements*	☐	☐	
3.3.2	*Mechanical Requirements*	☐	☐	
3.3.3	*Mounting Requirements*	☐	☐	
3.3.4	*Primary Terminals*	☐	☐	
3.4	Core Arrangements	☐	☐	
3.5	Core Tapping Requirements	☐	☐	
3.6	Secondary Terminals	☐	☐	
3.6.1	Terminal Box (Outdoor Option)	☐	☐	
3.7	Lifting Facilities	☐	☐	
3.8	Insulating Oil and Containment System	☐	☐	
3.8.1	*Oil Sampling Valve*	☐	☐	
3.8.2	*Oil Level Indication*	☐	☐	
3.9	Painting and Galvanising	☐	☐	
3.10	Rating Plate	☐	☐	
4	Packaging Requirements	☐	☐	
5	Storage	☐	☐	
6	Reliability	☐	☐	
7	Safety	☐	☐	
8	Environmental Considerations	☐	☐	
9	Tests			
9.1	Test Requirements	☐	☐	
9.2	Test Certificates	☐	☐	

CLAUSE NUMBER		YES	NO	ATT.
9.3	Type Tests	☐	☐	
9.4	Routine Tests	☐	☐	
10	Documentation and Samples			
10.1	Documentation to be provided with Proposals	☐	☐	
10.2	Service History	☐	☐	
10.3	Training Materials	☐	☐	

APPENDIX E. SCHEDULE D: DEPARTURES FROM TECHNICAL SPECIFICATION

The Vendor shall nominate the Clause and describe the departure:

CLAUSE NO.	DEPARTURE