Ergon Energy Corporation Limited

Technical Specification for Low Voltage Fuse Links

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Contents

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1. Purpose and Scope

This specification sets out the technical requirements for the manufacture, supply and delivery of low voltage fuse-links suitable for use with service cut-outs and fuse-switch units on overhead and underground electricity distribution systems.

Items covered by this technical specification are listed in the **Appendix A.1** attached.

2. References

2.1 Applicable Standards

The fuse-links shall be designed, manufactured and tested in accordance with the relevant parts of the following standards and all amendments issued from time to time except where varied by this specification.

Should inconsistencies be identified between standards and/or this specification, the Supplier shall immediately refer such inconsistencies to the Corporation for resolution.

STANDARD	TITLE
AS 1856	Electroplated coatings - silver
AS4169	Electroplated coatings – tin and tin alloys
AS / NZS 60269	**Low voltage fuses**
AS/NZS ISO:9001	Quality Management Systems – model for quality assurance in design, development, production, installation and servicing

3. Drawings

3.1 Drawings by the Purchaser

There are no drawings attached to this specification.

3.2 Drawings by the Tenderer

The tenderers are required to submit fully dimensioned drawings of the fuses offered with the tender documentation.

4. Service Conditions

The fuse-links may be exposed to the following environmental conditions:

Ambient Temperatures	45^{o} summer day time -5^{o} winter night time
Solar Radiation Level	1100 watts per square metre with high ultraviolet content
Precipitation	Tropical summer storms with gust wind speeds above 160km/h, and an annual rainfall in excess of

	1500 mm
Humidity	Extended periods of relative humidity in excess of 90% R.H.
Atmospheric Classifications	Areas of coastal salt spray and/or industrial pollution with equivalent salt deposit densities in the range 2.0 - 3.0 g/m^2.

5. Design and Construction

Design and construction performance parameters are detailed in this section.

5.1 General

The fuses shall comply with the requirements of the Australian Standards of the AS/NZS 60269 series and shall have the following characteristics in particular.

Utilisation category: Type 'gG' (fuse-links with a full-range breaking capacity for general application).

Rated current: As per item descriptions in **Appendix A.1.**

The required minimum breaking capacity for different fuse groupings will be specified below. If, due to historical and or manufacturing reasons, or due to conflict in meeting other fuse-link characteristic requirements in this technical specification, such minimum rated breaking capacity cannot be achieved for a particular fuse-link type then Tenderers are encouraged to submit their highest rated breaking capacity alternative offer for that item/ fuse type including full details of the item/s.

The current- time characteristics of the fuses offered shall be included in the tender. (Also refer Clause 6).

Fuse elements shall be of pure silver. Should any other material be used, evidence to indicate that deterioration will not occur in the long term shall be offered.

All metallic components of the fuse shall be resistant to corrosive influences that may occur in normal use.

All components of the fuse shall be sufficiently resistant to mechanical stresses that may occur in normal use as well as abnormal heat and fire.

Markings shall be provided on the fuses as required under the Clause 6.2 of AS/NZS60269.1.

5.2 Cylindrical Ended Type Fuse-links (Group A)

Rated voltage: Minimum of 415V.

Rated breaking shall be not less than 50kA.

Maximum rated power dissipation levels shall not be greater than the values given in Section III, Table M of AS/NZS60269.2.1. Fuses with dimensions 57mm x 22.2mm

diameter shall have a power dissipation of 6W or less to accommodate existing fuse holders.

Time-current characteristics shall comply with the Section III, sub-clause 5.6 of AS/NZS 60269.2.1.

I^2t characteristics shall comply with Section III, sub-clause 7.7 of AS/NZS 60269.2.1.

Dimensions in accordance with Section III, Figure 1(III*) of AS/NZS 60269.2.1 and as detailed in **Appendix A.1**.

5.3 Cylindrical Ended Type Fuse-links (Group B)

Rated voltage:

- Minimum of 240V for rated currents up to and equal to 45A
- Minimum of 415V for rated currents up to and equal to 100A

Rated breaking capacity shall be 31.5kA for the 415V fuse links and 20kA for the 240V fuse links.

Maximum rated power dissipation levels shall be in accordance with the Figures 17 and 18 of Section 11B of AS/NZS 60269.3.1

Time-current characteristics shall comply with the Section IIB, sub-clause 5.6 of AS/NZS 60269.3.1.

I^2t characteristics of the fuses offered shall be provided with the tender documentation in (MS Office) Excel format).

Dimensions in accordance with Section IIB, Figure 17 and 18 of AS/NZS 60269.3.1 and as detailed in **Appendix A.1**.

5.4 Bolted Connection Type Fuse-links (Group C)

Rated voltage: Minimum of 415V.

Maximum rated power dissipation levels shall not be greater than the values given in Section II, Figure 1(II*) of AS/NZS60269.2.1

Rated breaking capacity of not less than 80kA at the rated voltage.

Time-current characteristics shall comply with Section II, sub-clause 5.6 of AS/NZS 60269.2.1.

I^2t characteristics of the fuses offered shall be provided with the tender documentation in (MS Office) Excel format).

Dimensions in accordance with Section II, Figure 1(II*) of AS/NZS 60269.2.1 and as detailed in **Appendix A.1**.

5.5 Clip-In Staggered Offset Blade Contact Type Fuse-links (Group D)

Rated voltage: Minimum of 415V.

Maximum rated power dissipation levels shall not be greater than the values given in Section IV, Figure 1(IV) of AS/NZS60269.2.1.

Rated breaking capacity shall not less than 50kA and 80kA for fuse sizes E1and F1 respectively in accordance with Section IV sub-clause 5.7.2 of AS/NZS 60269.2.1

Time-current characteristics shall comply with the Section IV, sub-clause 5.6 of AS/NZS 60269.2.1.

I^2t characteristics shall comply with Section IV, sub-clause 7.7 of AS/NZS 60269.2.1.

Dimensions in accordance with Section IV, Figure 1(IV) of AS/NZS 60269.2.1.

5.6 Blade Contact (DIN) Type Fuse-links (Group E)

Rated voltage: Minimum of 500V.

Rated breaking capacity shall be not less than 80kA

Maximum rated power dissipation levels shall not be greater than the values given in Section I, Figure 1(I*) of AS/NZS60269.2.1.

Time-current characteristics shall comply with the Section I, sub-clause 5.6 of AS/NZS 60269.2.1

I^2t characteristics shall comply with Section I, sub-clause 7.7 of AS/NZS 60269.2.1

Dimensions in accordance with Section I, Figure 1(I) of AS/NZS 60269.2.1

6. Performance and Testing

6.1 Testing

Fuses offered shall be tested in accordance with Section 8 of AS/NZS 60269.1. Copies of the Type Test Certificates confirming the following fuse characteristics for each item offered shall be supplied with the tender.

- Time-current characteristics plotted on a scaled drawing or a transparency having the same scales as used in Figure 1 of AS/NZS 60269.1 Manufacturing tolerances applicable to the above curves shall also be stated.

- I2t characteristics (for arcing and operating), Cut-off characteristics and Power dissipation characteristics of the fuses offered shall be submitted with the tender in (MS Office) Excel format.

The successful Tenderer shall provide the routine and batch test certificates if requested by the Purchaser during the contract period.

Preference will be given to fuses having the certifications of ASTA or any other recognised international testing authority.

7. Risk Assessment

There is no requirement for manufacturer provided safety risk assessments for the items covered in this specification.

8. Quality Assurance

8.1 Purchasers Policy

It is the Purchaser's policy to procure goods, equipment and services from sources that demonstrate the ability to supply quality products.

8.2 Documentary Evidence

Tenderers are required to submit documentary evidence that the design and manufacture of the fuses offered is in accordance with AS/NZS/ISO 9001.

This documentation shall include the Capability Statement associated with the Quality System Certification.

9. Samples

9.1 Production Samples

When requested, production samples of each item shall be submitted with the offer.

10. Packaging and Marking

10.1 General

All items are to be supplied separately packaged in robust cardboard boxes.

These boxes shall allow for access (by Ergon Energy acceptance personnel) so that the fuses may be easily removed for inspection and then be easily repacked and sealed for holding in store.

10.2 Marking

Each packaged lot shall be marked with the following information:

Manufacturer's Name and Identification Number
ERGON Energy's Item Identification Number
Item Description
Pack Size
Pack Weight

10.3 Quarantine

Should any timber packaging be supplied from overseas manufacturers, then it is mandatory that all conditions and inspections required by the Australian Quarantine Act be met and that all these costs be included in the offered price.

11. Service History

Potential first time Suppliers to the Purchaser shall state:

- The period of service achieved by items offered within Australian service conditions;
- Australian electricity supply authorities who have a service history of the items offered;
- Contact names and phone numbers of relevant employees of those supply authorities who can verify the service performance claimed.

12. Reliability

12.1 Service Life

Comments on the reliability and performance of the items offered, for a service life of 35 years under the specified system and environmental conditions, shall be submitted with the offer.

12.2 Evidence in Support of Reliability

Such comments shall include evidence in support of the reliability and performance claimed including information of Failure Mode and Effect Analysis.

13. Training

There is no requirement for training associated with this specification.

14. Environmental Considerations

Suppliers are required to comment on the environmental soundness of the design and the materials used in the manufacture of the items offered. In particular, comments should address such issues as recyclability and disposal at end of service life and also disposal of packaging material.

15. Information to be Provided

15.1 Specific Technical Requirements

Attachment 1 is a schedule of the technical details that suppliers are required to complete and return with their offer.

15.2 Checklist of Supporting Documentation

Attachment 2 is a checklist of supporting technical documentation that suppliers are required to complete and return with their offer.

15.3 Documentation to be supplied during the course of the Contract

Test certificates as required in **Clause 6**.

16. Appendix A.1 – Items List

ITEM No.	I.I.No	DESCRIPTION
CYLINDRICAL ENDED TYPE FUSE-LINKS: GROUP A (Dimensions shown are "Length" x "End Cap Diameter")		
A1	0408818	FUSE LINK 45 Amp 415V AC HRC Cartridge PK Type (or equivalent) 50.8mm x 14.3mm Dia (AS/NZS 60269.2.1 Section III)
A2	2404894	FUSE LINK 55 Amp 415V AC HRC Cartridge PK Type (or equivalent) 50.8mm x 14.3mm Dia (AS/NZS 60269.2.1 Section III)
A3	2406258	FUSE LINK 45 Amp 415V AC HRC Cartridge UK Type (or equivalent) 50.8mm x 16.7mm Dia
A4	0408869	FUSE LINK 63 Amp 415V AC HRC Cartridge UK Type (or equivalent) 50.8mm x 16.7mm Dia
A5	2406250	FUSE LINK 20 Amp 415V AC HRC Cartridge VK Type (or equivalent) 57mm x 22.2mm Dia (AS/NZS 60269.2.1 Section III)
A6	0124002	FUSE LINK 32 Amp 415V AC HRC Cartridge VK Type (or equivalent) 57mm x 22.2mm Dia (scm) (AS/NZS 60269.2.1 Section III)
A7	0124007	FUSE LINK 45 Amp 415V AC HRC Cartridge VK Type (or equivalent) 57mm x 22.2mm Dia (AS/NZS 60269.2.1 Section III)
A8	0124015	FUSE LINK 60 Amp 415V AC HRC Cartridge VK Type (or equivalent) 57mm x 22.2mm Dia (scm) (AS/NZS 60269.2.1 Section III)
A9	0408931	FUSE LINK 80 Amp 415V AC HRC Cartridge VK Type (or equivalent) 57mm x 22.2mm Dia (scm) (AS/NZS 60269.2.1 Section III)
A10	0408939	FUSE LINK 100 Amp 415V AC HRC Cartridge VK Type (or equivalent) 57mm x 22.2mm Dia (scm) (AS/NZS 60269.2.1 Section III)
A11	0408907	FUSE LINK 60 Amp 415V AC HRC Cartridge XK Type (or equivalent) 76.2mm x 20.6mm Dia
A12	0408915	FUSE LINK 80 Amp 415V AC HRC Cartridge XK Type (or equivalent) 76.2mm x 20.6mm Dia
A13	0408923	FUSE LINK 100 Amp 415V AC HRC Cartridge XK Type (or equivalent) 76.2mm x 20.6mm Dia
A14	2406248	FUSE LINK 2 Amp 415V AC HRC Cartridge 10G Type (Modular) (or equivalent) 38mm x 10.3mm Dia (AS/NZS 60269.2.1 Section III)
A15	0104730	FUSE LINK 4 Amp 415V AC HRC Cartridge 10G Type (Modular) (or equivalent) 38mm x 10.3mm Dia (AS/NZS 60269.2.1 Section III)
A16	2400578	FUSE LINK 6 Amp 415V AC HRC Cartridge 10G Type (Modular) (or equivalent) 38mm x 10.3mm Dia (AS/NZS 60269.2.1 Section III)
A17	1011106	FUSE LINK 10Amp 415V AC HRC Cartridge Type 10G (Modular) (or equivalent) 38mmX10.3mm Dia (AS/NZS 60269.2.1 Section III)

ITEM No.	I.I.No	DESCRIPTION
CYLINDRICAL ENDED TYPE FUSE-LINKS: GROUP A (Dimensions shown are "Length" x "End Cap Diameter")		
A18	2400579	FUSE LINK 16 Amp 415V AC HRC Cartridge 10G Type (Modular) (or equivalent) 38mm x 10.3mm Dia (AS/NZS 60269.2.1 Section III)
A19	2403148	FUSE LINK 2 Amp 415V AC HRC Cartridge Size O (8AB) (or equivalent) 25.4mm x 6.35mm Dia
A20	2403149	FUSE LINK 5 Amp 415V AC HRC Cartridge Size O (8AB) (or equivalent) 25.4mm x 6.35mm Dia
A21	2404490	FUSE LINK 10 Amp 415V AC suits Street Light Lanterns (Bluepoint BP10F) (or equivalent)

17. Appendix A.1 – Items List… (Cont'd)

ITEM No.	I.I.No	DESCRIPTION
CYLINDRICAL ENDED TYPE FUSE-LINKS: GROUP B (Dimensions shown are "Length" x "End Cap Diameter")		
B1	0408877	FUSE LINK 45 Amp 240V AC HRC Cartridge OK Type (or equivalent) 35mm x 16.7mm Dia (AS/NZS 60269.3.1 Section IIB Id)
B2	2403150	FUSE LINK 5 Amp 240V AC HRC Cartridge SK Type (or equivalent) 29mm x 12.7mm Dia (AS/NZS 60269.3.1 Section IIB Size Ic)
B3	2406257	FUSE LINK 8 Amp 240V AC HRC Cartridge SK Type (or equivalent) 29mm x 12.7mm Dia (AS/NZS 60269.3.1 Section IIB Size Ic)
B4	0408745	FUSE LINK 10 Amp 240V AC HRC Cartridge SK Type (or equivalent) 29mm x 12.7mm Dia (AS/NZS 60269.3.1 Section IIB Size Ic)
B5	2403151	FUSE LINK 16 Amp 240V AC HRC Cartridge SK Type (or equivalent) 29mm x 12.7mm Dia (AS/NZS 60269.3.1 Section IIB Size Ic)
B6	0408761	FUSE LINK 20 Amp 240V AC HRC Cartridge SK Type (or equivalent) 29mm x 12.7mm Dia (AS/NZS 60269.3.1 Section IIB Size Ic)
B7	0408788	FUSE LINK 32 Amp 240V AC HRC Cartridge SK Type (or equivalent) 29mm x 12.7mm Dia (AS/NZS 60269.3.1 Section IIB Size Ic)
B8	0408790	FUSE LINK 45 Amp 240V AC HRC Cartridge SK Type (or equivalent) 29mm x 12.7mm Dia (AS/NZS 60269.3.1 Section IIB Size Ic)
B9	0124228	FUSE LINK 100 Amp 415V AC HRC Cartridge UK Type (or equivalent) 56mm x 30mm Dia (AS/NZS 60269.3.1 Section IIB Size IIb)
B10	0124201	FUSE LINK 80 Amp 415V AC HRC Cartridge YK Type (or equivalent) 57mm x 30.2mm Dia (AS/NZS 60269.3.1 Section IIB Size IIb)

18. Appendix A.1 – Items List… (Cont'd)

ITEM No.	I.I.No	DESCRIPTION
19. BOLTED CONNECTION TYPE FUSE-LINKS: GROUP C **(Dimensions shown are "Fixing Centres")**		
C1	2404904	FUSE LINK 250 Amp 415V AC HRC Cartridge JH Type (or equivalent) 2 Hole Bolt-in Slotted Centre Tags 76mm Fixing Centres Wedge Type Carrier
C2	2400636	FUSE LINK 160 Amp 415V AC HRC Cartridge JP Type (or equivalent) 2 Hole Bolt-in Slotted Centre Tags 82mm Fixing Centres Wedge Type Carrier
C3	0425909	FUSE LINK 200 Amp 415V AC HRC Cartridge JP Type (or equivalent) 2 Hole Bolt-in Slotted Centre Tags 82mm Fixing Centres Wedge Type Carrier
C4	2400637	FUSE LINK 250 Amp 415V AC HRC Cartridge JP Type (or equivalent) 2 Hole Bolt-in Slotted Centre Tags 82mm Fixing Centres Wedge Type Carrier
C5	2400638	FUSE LINK 315 Amp 415V AC HRC Cartridge JP Type (or equivalent) 2 Hole Bolt-in Slotted Centre Tags 82mm Fixing Centres Wedge Type Carrier
C6	2400641	FUSE LINK 400 Amp 415V AC HRC Cartridge JP Type (or equivalent) 2 Hole Bolt-in Slotted Centre Tags 82mm Fixing Centres Wedge Type Carrier
C7	2400628	FUSE LINK 100 Amp 415V AC HRC Cartridge JS Type (or equivalent) 2 Hole Bolt-in Slotted Centre Tags 92mm Fixing Centres Wedge Type Carrier
C8	0124538	FUSE LINK 250 Amp 415V AC HRC Cartridge JS Type (or equivalent) 2 Hole Bolt-in Slotted Centre Tags 92mm Fixing Centres Wedge Type Carrier
C9	0124554	FUSE LINK 400 Amp 415V AC HRC Cartridge JS Type (or equivalent) 2 Hole Bolt-in Slotted Centre Tags 92mm Fixing Centres Wedge Type Carrier
C10	2410447	FUSE LINK 50 Amp 415V AC HRC Cartridge OTC Type (or equivalent) 2 Hole Bolt in Centre Tags 111mm Fixing Centres (For Outdoor Use) (AS/NZS 60269.2.1 Section II Size B1)
C11	2404892	FUSE LINK 80 Amp 415V AC HRC Cartridge OTC Type (or equivalent) 2 Hole Bolt in Centre Tags 111mm Fixing Centres (For Outdoor Use) (AS/NZS 60269.2.1 Section II Size B1)
C12	2404893	FUSE LINK 100 Amp 415V AC HRC Cartridge OTC Type (or equivalent) 2 Hole Bolt in Centre Tags 111mm Fixing Centres (For Outdoor Use) (AS/NZS 60269.2.1 Section II Size B1)
C13	0611029	FUSE LINK 125 Amp 415V AC HRC Cartridge OTF Type (or equivalent) 2 Hole Bolt in Centre Tags 111mm Fixing Centres (For Outdoor Use) (AS/NZS 60269.2.1 Section II Size B2)

ITEM No.	I.I.No	DESCRIPTION
19. BOLTED CONNECTION TYPE FUSE-LINKS: GROUP C **(Dimensions shown are "Fixing Centres")**		
C14	0611037	FUSE LINK 160 Amp 415V AC HRC Cartridge OTF Type (or equivalent) 2 Hole Bolt in Centre Tags 111mm Fixing Centres (For Outdoor Use) (AS/NZS 60269.2.1 Section II Size B2)
C15	0611045	FUSE LINK 200 Amp 415V AC HRC Cartridge OTF Type (or equivalent) 2 Hole Bolt in Centre Tags 111mm Fixing Centres (For Outdoor Use) (AS/NZS 60269.2.1 Section II Size B2)
C16	0611053	FUSE LINK 250 Amp 415V AC HRC Cartridge OTKF Type (or equivalent) 2 Hole Bolt in Centre Tags 111mm Fixing Centres (For Outdoor Use) (AS/NZS 60269.2.1 Section II Size B3)
C17	0611061	FUSE LINK 315 Amp 415V AC HRC Cartridge OTKF Type (or equivalent) 2 Hole Bolt in Centre Tags 111mm Fixing Centres (For Outdoor Use) (AS/NZS 60269.2.1 Section II Size B3)
C18	0611088	FUSE LINK 355 Amp 415V AC HRC Cartridge OTMF Type (or equivalent) 2 Hole Bolt in Centre Tags 111mm Fixing Centres (For Outdoor Use) (AS/NZS 60269.2.1 Section II Size B4)
C19	0611096	FUSE LINK 400 Amp 415V AC HRC Cartridge OTMF Type (or equivalent) 2 Hole Bolt in Centre Tags 111mm Fixing Centres (For Outdoor Use) (AS/NZS 60269.2.1 Section II Size B4)
C20	0611169	FUSE LINK 355 Amp 415V AC HRC Cartridge OTM Type (or equivalent) 4 Hole Bolt in Centre Tags 133/184mm Fixing Centres (For Outdoor Use) (AS/NZS 60269.2.1 Section II Size C1)
C21	2406255	FUSE LINK 400 Amp 415V AC HRC Cartridge OTM Type (or equivalent) 4 Hole Bolt in Centre Tags 133/184mm Fixing Centres (For Outdoor Use) (AS/NZS 60269.2.1 Section II Size C1)
C22	0611207	FUSE LINK 710 Amp 415V AC HRC Cartridge OTLM Type (or equivalent) 4 Hole Bolt in Centre Tags 133/184mm Fixing Centres (Alternative Bussman GF710WP) (For Outdoor Use) (AS/NZS 60269.2.1 Section II Size C3)
C23	0611193	FUSE LINK 500 Amp 415V AC HRC Cartridge OTTM Type (or equivalent) 4 Hole Bolt in Centre Tags 133/184mm Fixing Centres (For Outdoor Use) (AS/NZS 60269.2.1 Section II Size C2)
C24	2404896	FUSE LINK 630 Amp 415V AC HRC Cartridge OTTM Type (or equivalent) 4 Hole Bolt in Centre Tags 133/184mm Fixing Centres (For Outdoor Use) (AS/NZS 60269.2.1 Section II Size C2)
C25	2404131	FUSE LINK 125 Amp 415V AC HRC Cartridge OTKM Type (or equivalent) 2 Hole Bolt in Centre Tags 111mm Fixing Centres (For Outdoor Use)
C26	2400634	FUSE LINK 250 Amp 415V AC HRC Cartridge OTKM Type (or equivalent) 2 Hole Bolt in Centre Tags 111mm Fixing Centres (For Outdoor Use)
C27	2404134	FUSE LINK 315 Amp 415V AC HRC Cartridge OTKM Type (or equivalent) 2 Hole Bolt in Centre Tags 111mm Fixing Centres (For Outdoor Use)

ITEM No.	I.I.No	DESCRIPTION
19. BOLTED CONNECTION TYPE FUSE-LINKS: GROUP C (Dimensions shown are "Fixing Centres")		
C28	1011339	FUSE LINK 6 Amp 415V AC HRC Cartridge NIT Type (or equivalent) 2 Hole Bolt in Offset Tags 44.5mm Fixing Centres (AS/NZS 60269.2.1 Section II Size A1)
C29	1011347	FUSE LINK 10 Amp 415V AC HRC Cartridge NIT Type (or equivalent) 2 Hole Bolt in Offset Tags 44.5mm Fixing Centres (AS/NZS 60269.2.1 Section II Size A1)
C30	1011371	FUSE LINK 20 Amp 415V AC HRC Cartridge NIT Type (or equivalent) 2 Hole Bolt in Offset Tags 44.5mm Fixing Centres (AS/NZS 60269.2.1 Section II Size A1)
C31	2404899	FUSE LINK 4 Amp 415V AC HRC Cartridge TIA Type (or equivalent) 2 Hole Bolt in Offset Tags 73mm Fixing Centres (AS/NZS 60269.2.1 Section II Size A2)
C32	1011525	FUSE LINK 16 Amp 415V AC HRC Cartridge TIA Type (or equivalent) 2 Hole Bolt in Offset Tags 73mm Fixing Centres (AS/NZS 60269.2.1 Section II Size A2)
C33	2404898	FUSE LINK 35 Amp 415V AC HRC Cartridge TIS Type (or equivalent) 2 Hole Bolt in Offset Tags 73mm Fixing Centres (AS/NZS 60269.2.1 Section II Size A3)
C34	2404902	FUSE LINK 63 Amp 415V AC HRC Cartridge TIS Type (or equivalent) 2 Hole Bolt in Offset Tags 73mm Fixing Centres (AS/NZS 60269.2.1 Section II Size A3)
C35	2406259	FUSE LINK 200 Amp 415V AC HRC Cartridge TFP Type (or equivalent) 2 Hole Bolt in Offset Tags 94mm Fixing Centres

APPENDIX A.1 - ITEMS LIST

ITEM No.	I.I.No	DESCRIPTION
CLIP-IN STAGGERED OFFSET BLADE CONTACT TYPE FUSE-LINKS: GROUP D (Dimensions shown are "Overall Length")		
D1	1011118	FUSE LINK 2 Amp 415V AC HRC Cartridge NS Type (or equivalent) Clip-in Offset Staggered Tags 62mm Long (AS/NZS 60269.2.1 Section IV Size F1)
D2	1011126	FUSE LINK 4 Amp 415V AC HRC Cartridge NS Type (or equivalent) Clip-in Offset Staggered Tags 62mm Long (AS/NZS 60269.2.1 Section IV Size F1)
D3	1011134	FUSE LINK 6 Amp 415V AC HRC Cartridge NS Type (or equivalent) Clip-in Offset Staggered Tags 62mm Long (AS/NZS 60269.2.1 Section IV Size F1)
D4	1011142	FUSE LINK 10 Amp 415V AC HRC Cartridge NS Type (or equivalent) Clip-in Offset Staggered Tags 62mm Long (AS/NZS 60269.2.1 Section IV Size F1)
D5	1011169	FUSE LINK 16 Amp 415V AC HRC Cartridge NS Type (or equivalent) Clip-in Offset Staggered Tags 62mm Long (AS/NZS 60269.2.1 Section IV Size F1)
D6	1011177	FUSE LINK 20 Amp 415V AC HRC Cartridge NS Type (or equivalent) Clip-in Offset Staggered Tags 62mm Long (AS/NZS 60269.2.1 Section IV Size F1)

APPENDIX A.1 - ITEMS LIST

ITEM No.	I.I.No	DESCRIPTION
BLADE CONTACT (DIN) TYPE FUSE-LINKS: GROUP E (Sizes shown are "00, 1, 2, 3, and 4")		
E1	2404911	FUSE LINK 35 Amp 500V AC HRC DIN Type (or equivalent) Size 00 (AS/NZS 60269.2.1 Section I Size 00)
E2	0621148	FUSE LINK 63 Amp 500V AC HRC DIN Type (or equivalent) Size 00 (AS/NZS 60269.2.1 Section I Size 00)
E3	0621156	FUSE LINK 80 Amp 500V AC HRC DIN Type (or equivalent) Size 00 (AS/NZS 60269.2.1 Section I Size 00)
E4	2404909	FUSE LINK 100 Amp 500V AC HRC DIN Type (or equivalent) Size 00 (AS/NZS 60269.2.1 Section I Size 00)
E5	0621164	FUSE LINK 125 Amp 500V AC HRC DIN Type (or equivalent) Size 00 Low Watts Loss (AS/NZS 60269.2.1 Section I Size 00)
E6	0621172	FUSE LINK 160 Amp 500V AC HRC DIN Type (or equivalent) Size 00 Low Watts Loss (AS/NZS 60269.2.1 Section I Size 00)
E7	0104604	FUSE LINK 50 Amp 500V AC HRC DIN Type (or equivalent) Size 1 (AS/NZS 60269.2.1 Section I Size 1)
E8	0621199	FUSE LINK 63 Amp 500V AC HRC DIN Type (or equivalent) Size 1 (AS/NZS 60269.2.1 Section I Size 1)
E9	0140819	FUSE LINK 80 Amp 500V AC HRC DIN Type (or equivalent) Size 1 (AS/NZS 60269.2.1 Section I Size 1)
E10	0140827	FUSE LINK 100 Amp 500V AC HRC DIN Type (or equivalent) Size 1 (AS/NZS 60269.2.1 Section I Size 1)
E11	0140835	FUSE LINK 125 Amp 500V AC HRC DIN Type (or equivalent) Size 1 (AS/NZS 60269.2.1 Section I Size 1)
E12	0140843	FUSE LINK 160 Amp 500V AC HRC DIN Type (or equivalent) Size 1 (AS/NZS 60269.2.1 Section I Size 1)
E13	0140851	FUSE LINK 200 Amp 500V AC HRC DIN Type (or equivalent) Size 1 (AS/NZS 60269.2.1 Section I Size 1)
E14	0140878	FUSE LINK 250 Amp 500V AC HRC DIN Type (or equivalent) Size 1 (AS/NZS 60269.2.1 Section I Size 1)
E15	2403164	FUSE LINK 100 Amp 500V AC HRC DIN Type (or equivalent) Size 2 (AS/NZS 60269.2.1 Section I Size 2)
E16	2403168	FUSE LINK 125 Amp 500V AC HRC DIN Type (or equivalent) Size 2 (AS/NZS 60269.2.1 Section I Size 2)
E17	0140884	FUSE LINK 200 Amp 500V AC HRC DIN Type (or equivalent) Size 2 (AS/NZS 60269.2.1 Section I Size 2)
E18	2406252	FUSE LINK 250 Amp 500V AC HRC DIN Type (or equivalent) Size 2 (AS/NZS 60269.2.1 Section I Size 2)
E19	0140886	FUSE LINK 315 Amp 500V AC HRC DIN Type (or equivalent) Size 2 (AS/NZS 60269.2.1 Section I Size 2)
E20	0140894	FUSE LINK 355 Amp 500V AC HRC DIN Type (or equivalent) Size 2 (AS/NZS 60269.2.1 Section I Size 2)

ITEM No.	I.I.No	DESCRIPTION
BLADE CONTACT (DIN) TYPE FUSE-LINKS: GROUP E (Sizes shown are "00, 1, 2, 3, and 4")		
E21	0140908	FUSE LINK 400 Amp 500V AC HRC DIN Type (or equivalent) Size 2 (AS/NZS 60269.2.1 Section I Size 2)
E22	0140916	FUSE LINK 500 Amp 500V AC HRC DIN Type (or equivalent) Size 3 (AS/NZS 60269.2.1 Section I Size 3)
E23	0621208	FUSE LINK 630 Amp 500V AC HRC DIN Type (or equivalent) Size 3 (AS/NZS 60269.2.1 Section I Size 3)

20. Attachment 1 – Technical Details

20.1 GROUP A – Cylindrical Ended Type

The Tenderers shall complete this schedule and shall guarantee the particulars as set out for each item offered:

The tenders that do not include the required information may not be considered and the Purchaser is under no obligation to request such information before evaluating the tenders

		Specified Requirement	Guaranteed Value
Tender Item Number:			
Tender Item description:			
Ergon I.I.Number:			
Manufacturer's Name and Address:			
Country of Manufacture:			
Manufacturer's Drawing Number.			
Manufacturer's Type Test Certificate Number:			
Rated Voltage:	(V)	Min. of 415V	
Rated Current:	(A)		
Breaking Capacity:	(kA)		
Conventional Non-fusing Current:	(x Rated Current)		
Conventional Fusing Current:	(x Rated Current)		

21. Attachment 1 – Technical Details…(Cont'd)

21.1 GROUP A – Cylindrical Ended Type

		Specified Requirement	Guaranteed Value
Conventional Time:	(Hours)	Table 2 in AS/NZS 60269.2.1	
Category of Duty:			
Power dissipation at rated Current:	(W)		
DC Resistance measured at no load at a stated ambient temp:	(Ohms @ ^{0}C)		
Has the fuse been fully tested to AS/NZS 60269.1 (or equivalent) by an accredited testing authority:		Yes/No	
Name of Testing Authority:			
Overall Length:	(mm)		
Diameter of End Caps:	(mm)		
Length of End Caps:	(mm)		
Barrel Length:	(mm)		
Barrel Diameter:	(mm)		
Barrel Material:	(mm)		
End Cap corrosion Protection:			
Fuse Element Material:		Refer to sub-clause 5.1	
Weight of Fuse:	(kg)		
Weight per Crate:	(kg)		
Number of Fuses per Crate:			

SIGNATURE OF TENDERER: _____

22. Attachment 1 – Technical Details…(Cont'd)

22.1 GROUP B – Cylindrical Ended Type

		Specified Requirement	Guaranteed Value
Tender Item Number:			
Tender Item description:			
Ergon I.I.Number:			
Manufacturer's Name and Address:			
Country of Manufacture:			
Manufacturer's Drawing Number.			
Manufacturer's Type Test Certificate Number:			
Rated Voltage:	(V)	Refer to sub-clause 5.3	
Rated Current:	(A)		
Breaking Capacity:	(kA)		
Conventional Non-fusing Current:	(x Rated Current)		
Conventional Fusing Current:	(x Rated Current)		
Conventional Time:	(Hours)	Table 2 in AS/NZS 60269.2.1	
Category of Duty:			
Power dissipation at rated current:	(W)	Figure 17 of Section IIB in AS/NZS 60269.3.1	
DC Resistance measured at no load at a stated ambient temp:	(Ohms @ ^{0}C)		

ATTACHMENT 1 TECHNICAL DETAILS (CONT'D)

GROUP B – CYLINDRICAL ENDED TYPE

		Specified Requirement	Guaranteed Value
Has the fuse been fully tested to AS/NZS 60269.1 (or equivalent) by an accredited testing authority:		Yes/No	
Name of Testing Authority:			
Overall Length:	(mm)	Figure 17 of Section IIB in AS/NZS 60269.3.1	
Diameter of End Caps:	(mm)	Figure 17 of Section IIB in AS/NZS 60269.3.1	
Length of End Caps:	(mm)	Figure 17 of Section IIB in AS/NZS 60269.3.1	
Barrel Length:	(mm)	Figure 17 of Section IIB in AS/NZS 60269.3.1	
Barrel Diameter:	(mm)	Figure 17 of Section IIB in AS/NZS 60269.3.1	
Barrel Material:	(mm)		
End Cap corrosion Protection:			
Fuse Element Material:		Refer to sub-clause 5.1	
Weight of Fuse:	(kg)		
Weight per Crate:	(kg)		
Number of Fuses per Crate:			

SIGNATURE OF TENDERER: _____

23. Attachment 1 – Technical Details… (Cont'd)

23.1 GROUP C – Bolted Connection Type

		Specified Requirement	Guaranteed Value
Tender Item Number:			
Tender Item description:			
Ergon I.I.Number:			
Manufacturer's Name and Address:			
Country of Manufacture:			
Manufacturer's Drawing Number.			
Manufacturer's Type Test Certificate Number:			
Rated Voltage:	(V)	Min. of 415V	
Rated Current:	(A)		
Breaking Capacity:	(kA)		
Conventional Non-fusing Current:	(x Rated Current)		
Conventional Fusing Current:	(x Rated Current)		
Conventional Time:	(Hours)	Table 2 in AS/NZS 60269.2.1	
Category of Duty:			
Power dissipation at rated current:	(W)		
DC Resistance measured at no load at a stated ambient temperature:	(Ohms @ ^{0}C)		

ATTACHMENT 1 - TECHNICAL DETAILS (CONT'D)

GROUP C – BOLTED CONNECTION TYPE

		Specified Requirement	Guaranteed Value
Has the fuse been fully tested to AS/NZS 60269.1 (or equivalent) by an accredited testing authority:		Yes/No	
Name of Testing Authority:			
Overall Length:	(mm)		
Fixing Centres:	(mm)		
Length of Tags:	(mm)		
Width of Tags:	(mm)		
Height of Tags:	(mm)		
Diameter of End Caps:	(mm)		
Diameter "a" of Elongated Fixing Holes:	(mm)		
Diameter "b" of Elongated Fixing Holes:	(mm)		
Barrel Length:	(mm)		
Barrel Diameter:	(mm)		
Barrel Material:			
End Cap / Tag corrosion Protection:			
Fuse Element Material:		Refer to sub-clause 5.1	
Weight of Fuse:	(kg)		
Weight per Crate:	(kg)		
Number of Fuses per Crate:			

SIGNATURE OF TENDERER: _____

24. Attachment 1 – Technical Details…(Cont'd)

24.1 GROUP D – Clip in Staggered Offset Blade Contact Type

		Specified Requirement	Guaranteed Value
Tender Item Number:			
Tender Item description:			
Ergon I.I.Number:			
Manufacturer's Name and Address:			
Country of Manufacture:			
Manufacturer's Drawing Number.			
Manufacturer's Type Test Certificate Number:			
Rated Voltage:	(V)	Min. of 415V	
Rated Current:	(A)		
Breaking Capacity:	(kA)		
Conventional Non-fusing Current:	(x Rated Current)		
Conventional Fusing Current:	(x Rated Current)		
Conventional Time:	(Hours)	Table 2 in AS/NZS 60269.2.1	
Category of Duty:			
Power dissipation at rated current:	(W)	Figure 1(IV) of Section IV in AS/NZS 60269.2.1	
DC Resistance measured at no load at a stated ambient temperature:	(Ohms @ ^{0}C)		

ATTACHMENT 1 - TECHNICAL DETAILS (CONT'D)

GROUP D – Clip in Staggered Offset Blade Contact Type

		Specified Requirement	Guaranteed Value
Has the fuse been fully tested to AS/NZS 60269.1 (or equivalent) by an accredited testing authority:		Yes/No	
Name of Testing Authority:			
Overall Length:	(mm)	Figure 1(IV) of Section IV in AS/NZS 60269.2.1	
Length of Tags:	(mm)	Figure 1(IV) of Section IV in AS/NZS 60269.2.1	
Width of Tags:	(mm)	Figure 1(IV) of Section IV in AS/NZS 60269.2.1	
Height of Tags:	(mm)	Figure 1(IV) of Section IV in AS/NZS 60269.2.1	
Diameter of End Caps:	(mm)	Figure 1(IV) of Section IV in AS/NZS 60269.2.1	
Barrel Length:	(mm)	Figure 1(IV) of Section IV in AS/NZS 60269.2.1	
Barrel Diameter:	(mm)	Figure 1(IV) of Section IV in AS/NZS 60269.2.1	
Barrel Material:			
End Cap / Tag corrosion Protection:			
Fuse Element Material:		Refer to sub-clause 5.1	
Weight of Fuse:	(kg)		
Weight per Crate:	(kg)		
Number of Fuses per Crate:			

SIGNATURE OF TENDERER: _____

25. Attachment 1 – Technical Details…(Cont'd)

25.1 GROUP E – Blade Contact (DIN) Type

		Specified Requirement	Guaranteed Value
Tender Item Number:			
Tender Item description:			
Ergon I.I.Number:			
Manufacturer's Name and Address:			
Country of Manufacture:			
Manufacturer's Drawing Number.			
Manufacturer's Type Test Certificate Number:			
Rated Voltage:	(V)	Min. of 500V	
Rated Current:	(A)		
Breaking Capacity:	(kA)		
Conventional Non-fusing Current:	(x Rated Current)		
Conventional Fusing Current:	(x Rated Current)		
Conventional Time:	(Hours)	Table 2 in AS/NZS 60269.2.1	
Category of Duty:			
Power dissipation at rated current:	(W)	Figure 1(I*) of Section I in AS/NZS 60269.2.1	
DC Resistance measured at no load at a stated ambient temperature:	(Ohms @ ^{0}C)		

ATTACHMENT 1 - TECHNICAL DETAILS

GROUP E – BLADE CONTACT (DIN) TYPE

		Specified Requirement	Guaranteed Value
Has the fuse been fully tested to AS/NZS 60269.1 (or equivalent) by an accredited testing authority:		Yes/No	
Name of Testing Authority:			
Overall Length:	(mm)	Figure 1(I) of Section I in AS/NZS 60269.2.1	
Length of Blade:	(mm)	Figure 1(I) of Section I in AS/NZS 60269.2.1	
Width of Blade:	(mm)	Figure 1(I) of Section I in AS/NZS 60269.2.1	
Height of Blade:	(mm)	Figure 1(I) of Section I in AS/NZS 60269.2.1	
Body Length:	(mm)	Figure 1(I) of Section I in AS/NZS 60269.2.1	
Body Width:	(mm)	Figure 1(I) of Section I in AS/NZS 60269.2.1	
Body Height:	(mm)	Figure 1(I) of Section I in AS/NZS 60269.2.1	
Body Material:			
Blade corrosion Protection:			
Fuse Element Material:		Refer to sub-clause 5.1	
Weight of Fuse:	(kg)		
Weight per Crate:	(kg)		
Number of Fuses per Crate:			

SIGNATURE OF TENDERER: _____

26. Attachment 2 – Technical Document Checklist

CLAUSE Ref.	PARTICULARS	UNITS
Have full and comprehensive details been submitted WITH the tender documents associated with each of the following items?		
3.2	Dimensioned drawings of the fuses offered	Yes/No
6.1	Time-current characteristics of fuse links	Yes/No
6.1	Type Test certificates	Yes/No
8	Documentary evidence of the Quality System Certification of **BOTH** the **SUPPLIER** and the **MANUFACTURER** (including **Capability Statement**)	Yes/No
9	Availability of samples	Yes/No
11	Service Performance	Yes/No
12	Comments on Reliability	Yes/No
13	Training Materials (availability)	Yes/No
14	Environmental Considerations (availability)	Yes/No
15	Completed **Attachment 1 and 2** including other information requested therein	Yes/No

NAME OF TENDERER:

ADDRESS OF TENDERER:_____

SIGNATURE: _____ FOR AND ON BEHALF OF TENDERER

DATE: _____