

# Electricity Specification 400C6

Issue 22      November 2021

## Street Lighting Cut-outs



## Amendment Summary

ISSUE NO. DATE	DESCRIPTION
<b>Issue 22</b> <b>November 2021</b>	<p>Major review of document to bring up to date to reflect current specifications and standards.</p> <p>The new template for Engineering Specification Documents has been applied.</p> <p>Prepared by: Philip Howell Approved by: Policy Approval Panel and signed on its behalf by Steve Cox, Engineering and Technical Director</p>

## Contents

1	Introduction	5
2	Scope	5
3	Definitions	5
4	General Requirements for Approvals and Testing	6
4.1	Product not to be Changed	6
4.2	Electricity North West Technical Approval	6
4.3	Quality Assurance	6
4.4	Formulation	7
4.5	Identification Markings	7
4.6	Minimum Life Expectancy	7
4.7	Product Conformity	7
4.8	Confirmation of Conformance	7
5	Requirements for Type and Routine Testing	8
5.1	Requirement for Type Tests at Suppliers Premises	8
5.2	Requirement for Routine Tests at the Supplier's Premises	8
6	Technical Particulars	8
6.1	Basic Parts	8
6.2	Materials and Construction	8
6.3	Safety Features	8
6.4	Dimensions	9
6.5	Incoming Phase Terminal Block	9
6.6	Incoming Neutral/Neutral Earth Block	9
6.7	Outgoing Terminals	9
6.8	Fuse Carrier	9
6.9	Gland Plate	9
6.10	Date Stamp	9
7	Documents Referenced	10
8	Keywords	10
	Appendix A – Conformance Declaration	11

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## 1 Introduction

This specification covers Electricity North West Limited requirements for 25 Amp Cut-outs for street furniture used on the electricity distribution network (Network) owned by Electricity North West Limited, as Distribution Licensee.

## 2 Scope

Cut-outs covered by this technical specification shall comply with the latest issue of: -

- BS 7654:2010 - Specification For 25 Amp Street Lighting Cut-outs,
- BS HD 60269-2:2013 BS 88-2:2013 – Low-voltage fuses - Part 2: Supplementary requirements for fuses for use by authorized persons (fuses mainly for industrial application) — Examples of standardized systems of fuses A to K.

Additional requirements over and above the provisions of these specifications are detailed in this document.

This document is intended to clarify the Company requirements relating to these specifications with respect to: -

- Type 1 Cut-out, 25 Amp, Single Phase, Single Pole Separate Neutral and Earth (SNE)
- Type 2 Cut-out, 25 Amp, Single Phase, Single Pole Combined Neutral and Earth (CNE)
- Type 5 Cut-out, 25 Amp, Single Phase, Double Pole Combined Neutral and Earth (CNE)

## 3 Definitions

<b>Approval</b>	Sanction by the Electricity North West Circuits Policy Manager that specified criteria have been satisfied
<b>Contract</b>	The agreement between Electricity North West and the Contractor for the execution of the Works including therein all documents to which reference may properly be made in order to ascertain the rights and obligations of the parties under the said agreement.
<b>Contractor</b>	The person or person's firm or company, including personal representatives, successors and permitted assigns, who's Tender has been accepted by Electricity North West.
<b>Specification</b>	The Specifications and schedules (if any) agreed by the parties for the purpose of the Contract.

<b>Supplier</b>	Any person or person's firm or company who supplies goods to Electricity North West or to its Contractor.
<b>Tender</b>	An offer in writing to execute work or supply goods at a fixed price.
<b>Tenderer</b>	The person or person's firm or company, including personal representatives, successors and permitted assigns, invited by Electricity North West to submit a Tender.

## 4 General Requirements for Approvals and Testing

### 4.1 Product not to be Changed

No change in the product, packaging or labelling shall be made after Approval has been granted without prior notice to the Electricity North West Circuits Policy Manager, and receipt of a written agreement to the proposed change from the Electricity North West Circuits Policy Manager.

### 4.2 Electricity North West Technical Approval

The Tenderer shall submit, with this Tender, proposals for testing which will demonstrate, to the satisfaction of the Electricity North West Circuits Policy Manager, compliance with this Specification. Such tests shall be carried out without expense to Electricity North West.

Alternatively, technical reports and other data may be submitted that the Tenderer considers will demonstrate, to the satisfaction of the Electricity North West Circuits Policy Manager, compliance with this Specification. Acceptance of this evidence shall be at the discretion of the Electricity North West Circuits Policy Manager but will not be unreasonably withheld.

Approval shall be 'factory specific' and is not transferable to another factory without the written Approval of the Electricity North West Circuits Policy Manager.

The Supplier and product shall comply with all the relevant requirements of Electricity North West document CP311.

### 4.3 Quality Assurance

The Tenderer shall confirm whether or not Approval is held in accordance with a quality assurance scheme accredited under ISO 9000. If not, the Tenderer shall submit a statement of the quality assurance procedures employed to control the quality of the product, including the performance of Suppliers and Sub-Contractors.

The right is reserved for the repeat of such tests, from time to time, that the Electricity North West Circuits Policy Manager may deem to be reasonably necessary to demonstrate continued compliance with the Specification.

The Tenderer shall submit, with the Tender, a list of tests and inspections which are carried out on the product prior to despatch which shall demonstrate, to the satisfaction of the Electricity North West Circuits Policy Manager, fitness for installation and service.

The Tenderer shall provide free of charge to Electricity North West such samples as may, in the opinion of the Electricity North West Circuits Policy Manager, be reasonably required for inspection and/or retention as quality control samples. The Electricity North West Circuits Policy Manager will confirm the requirement for samples at the time of Tendering.

The right is reserved for inspections to be made of Tenderer's facilities, from time to time, as deemed reasonably necessary by the Electricity North West Circuits Policy Manager to ensure compliance with this Specification and any Contract of which it forms a part.

The Tenderer shall submit, with the Tender, such details of product packaging disposal, as will enable Electricity North West to comply with the requirements of BS EN ISO 14001 - Environmental Management Systems.

#### **4.4 Formulation**

The Tenderer shall submit, with the Tender, such details of the formulation and use of the product and associated substances as will enable Electricity North West to comply with the obligations of the Health and Safety at Work Act 1974 and the Control of Substances Hazardous to Health Regulations 2002, in the use, storage and disposal of the product. The Tenderer may stipulate, prior to submission of such information, that it is to remain confidential, and the Electricity North West Circuits Policy Manager will, if requested, confirm agreement to this prior to receipt of the information.

#### **4.5 Identification Markings**

The Tenderer shall submit, with the Tender, details of markings which it is proposed to apply to the product or packaging to identify manufacturing batches or items. The forms and content of such markings shall be subject to the Approval of the Electricity North West Circuits Policy Manager and shall in all cases include the Electricity North West approved description and commodity code number.

The Tenderer shall submit, with the Tender, such details of marking gross weight on components, assemblies and packages, as will enable Electricity North West to comply with the Health and Safety Manual Handling Operation Regulations 1992, for components, assemblies and packages supplied with a gross weight over 1kg. The forms and content of such markings shall be subject to the Approval of the Electricity North West Circuits Policy Manager.

#### **4.6 Minimum Life Expectancy**

The minimum life expectancy of all products covered by this Specification is 60 years.

#### **4.7 Product Conformity**

Preference will be given to those Suppliers who can provide suitable product conformity certification to a recognised or specified standard, or an equivalent certification.

#### **4.8 Confirmation of Conformance**

The Tenderer shall complete the conformance declaration sheets in [Appendix A](#). Failure to complete these declaration sheets may result in an unacceptable bid.

## 5 Requirements for Type and Routine Testing

The Electricity North West Circuits Policy Manager shall set out the requirement of the following tests to be carried out by the Supplier at the Supplier's cost.

### 5.1 Requirement for Type Tests at Suppliers Premises

These are a series of one-off type tests, which are carried out to ensure the satisfactory performance of the product design, under extremes of operating stresses, and of endurance, as may be appropriate, to be determined by the Electricity North West Circuits Policy Manager.

These may or may not be destructive tests.

### 5.2 Requirement for Routine Tests at the Supplier's Premises

These tests may be required to be carried out on every individual unit or component, as specified, or at some regular frequency to be determined by the Electricity North West Circuits Policy Manager.

The results of these tests may be required to be supplied to Electricity North West with each unit purchased or retained for inspection, at a period to be determined by the Electricity North West Circuits Policy Manager.

## 6 Technical Particulars

### 6.1 Basic Parts

The units shall have the ability to loop in / out with either 2 x 25mm<sup>2</sup> solid aluminium cored cables or 2 x 16mm<sup>2</sup> stranded copper cored cables and shall also comprise of three basic parts; a one-piece rear panel, front incoming termination/terminal cover and fuse carrier. The one-piece rear panel shall comprise of all the parts necessary for the connection to the system.

### 6.2 Materials and Construction

All non-metallic parts including fuse bases, front terminal covers, cable termination covers and fuse carriers shall be manufactured from insulating material and shall conform to the relevant requirements of BS7654:2010 relating to impact, insulation / tracking and flammability. Typically, the compartments shall have rating of IP43 when all covers are in place.

The incoming cable termination/block cover shall be moulded in a clear (see through) material and comply with the relevant requirements of BS 7654:2010. It shall be interlocked so that it cannot be removed until the fuse carrier has been withdrawn. When fuse carrier is withdrawn the unit shall have a rating of IP2X. Small access holes shall be provided in the incoming cable termination/block cover adjacent to the in-coming phase and neutral contact slots for testing purposes.

### 6.3 Safety Features

A red coloured insulated shield covering the incoming phase terminals shall be provided which allows for the removal and insertion of the fuse link as defined in BS 7654:2010.

Facilities shall be provided to allow the unit to be sealed in the closed position using standard galvanised sealing wire of maximum diameter of 2mm.



## 6.4 Dimensions

The unit shall be capable of being fixed to a 12mm thick x 65mm wide (minimum) mounting board, by a minimum of 2 x corrosion-proof, cross-headed screws. Suitable screws should be supplied with the unit.

## 6.5 Incoming Phase Terminal Block

A double, incoming phase terminal block shall be formed from solid brass and electroplated. All terminal bores shall be serrated to ensure good electrical contact and suitable for the connection of either 2 x 16mm<sup>2</sup> stranded copper or 2 x 25mm<sup>2</sup> solid aluminium conductors. Terminal screws should be able to be tightened by an Electricity North West Approved insulated 3mm A/F hexagon drive tool.

The incoming phase terminals may use insulating piercing screws (IPC) as an option to allow connection without removal of the cable phase insulation. However, these should also allow for the correct connection if the cable insulation has been stripped in the normal manner for a non-IPC type terminal.

## 6.6 Incoming Neutral/Neutral Earth Block

The combined Neutral/Earth or the separate Neutral and Earth blocks shall be formed from solid brass and electroplated. Terminal bores shall be serrated to ensure good electrical contact and suitable for copper or aluminium conductors. Terminal screws should be able to be tightened by an Electricity North West Approved insulated 3mm A/F hexagon drive tool.

An insulated barrier shall be provided between any adjacent terminal assemblies.

## 6.7 Outgoing Terminals

The outgoing phase, neutral and earth terminals shall be suitable for terminating up to 10mm<sup>2</sup> cross-sectioned copper conductors.

## 6.8 Fuse Carrier

Fuse carrier shall be capable of carrying a fuse-link in accordance with BS HD 60269-2:2013 BS 88-2:2013 – Low voltage fuses - Part 2: Supplementary requirements for fuses for use by authorized persons (fuses mainly for industrial application) — Examples of standardized systems of fuses A to K.

It should also be capable of carrying currents associated with the operation under fault conditions.

It shall not be possible to fit the fuse-link in the neutral position. The fuse carrier shall have a captive screw and a sealing wire facility.

A fuse link is NOT required to be supplied with fuse carrier / cut-out.

## 6.9 Gland Plate

The base gland plate shall be split plastic and be suitable for accepting up to 2 x 16mm<sup>2</sup> stranded copper cored cables or 2 x 25mm<sup>2</sup> solid aluminium cored cables, each entry hole shall be fitted with an appropriate 'cone' shaped rubber grommet.

## 6.10 Date Stamp

All cut-out types shall be indelibly marked with the month and year of manufacture. This "date stamp/tag" shall be located on the main body of the cut-out only and shall be easily visible in the normally installed position of the unit.

## 7 Documents Referenced

All references to documents listed below are to the latest versions, unless stated otherwise.

DOCUMENTS REFERENCED	
<b>Health and Safety at Work Etc Act 1974.</b>	
<b>Control of Substances Hazardous to Health Regulations 2002.</b>	
<b>Manual Handling Operations Regulation 1992.</b>	
<b>BS EN ISO 9000</b>	Quality management systems.
<b>BS EN ISO 14001: 2004</b>	Environmental Management Systems.
<b>BS 7654:2010</b>	Specification for single phase street lighting fuses (cut-outs) for low voltage public electricity distribution systems. 25 A rating for highway power supplies and street furniture.
<b>BS HD 60269-2:2013 BS 88-2: 2013</b>	Low-voltage fuses - Part2: Supplementary requirements for fuses for use by authorized persons (fuses mainly for industrial application) - Examples of standardized systems of fuses A to K.
<b>CP311</b>	Equipment Approval Policy and Process

## 8 Keywords

Cut-out; street lighting

## Appendix A – Scope of Materials

The following cut-outs are approved for use on Electricity North West Network.

ITEM NO.	ORDERING SPECIFICATION	COMMODITY CODE
1	Henley CNE Street Lighting Cut-out DP (Type 5) 54715-53	<b>066214</b>
2	Henley SCNE Street Lighting Cut-out SP (Type 1) 54715-47	<b>066215</b>
3	Henley CNE Street Lighting Cut-out SP (Type 2) (insulating piercing connector version) 54715-49	<b>787925</b>
4	Henley SCNE Street Lighting Cut-out SP (Type 1) (insulating piercing connector version) 54715-50	<b>787926</b>
5	Lucy CNE Street Lighting Cut-out SP (Type 2) 0260010009	<b>066222</b>
6	Lucy SCNE Street Lighting Cut-out SP (Type 1) 0260009009	<b>066230</b>

## Appendix B – Conformance Declaration

### SECTION-BY-SECTION CONFORMANCE WITH SPECIFICATION

The Tenderer shall declare conformance or otherwise for each product/service or range of products/services, section-by-section, using the following Conformance Declaration Codes.

#### Conformance Declaration Codes:

<b>N/A =</b>	Clause is not applicable/appropriate to the product/service.
<b>C1 =</b>	The product/service conforms fully with the requirements of this clause.
<b>C2 =</b>	The product/service conforms partially with the requirements of this clause.
<b>C3 =</b>	The product/service does not conform to the requirements of this clause.
<b>C4 =</b>	The product/service does not currently conform to the requirements of this clause, but the manufacturer proposes to modify and test the product in order to conform.

**Manufacturer:**

**Product/Service Description:**

**Product/Service Reference:**

**Name:**

**Company:**

**Signature:**

**SECTION-BY-SECTION CONFORMANCE**

Section	Section Topic	Conformance Declaration Code	Remarks * (must be completed if code is not C1)
1	Introduction		
2	Scope		
4.1	Product not to be Changed		
4.2	Electricity North West Technical Approval		
4.3	Quality Assurance		
4.4	Formulation		
4.5	Identification Markings		
4.6	Minimum Life Expectancy		
4.7	Product Conformity		
4.8	Confirmation of Conformance		
5.1	Requirements for Type Tests at the Supplier's Premises		
5.2	Requirement for Routine Tests at the Supplier's Premises		
6.1	Basic Parts		
6.2	Materials and Construction		
6.3	Safety Features		
6.4	Dimensions		

<b>6.5</b>	<b>Incoming Phase Terminal Block</b>		
<b>6.6</b>	<b>Incoming Neutral/Neutral Earth Terminal Block</b>		
<b>6.7</b>	<b>Outgoing Terminals</b>		
<b>6.8</b>	<b>Fuse Carrier</b>		
<b>6.9</b>	<b>Gland Plate</b>		
<b>6.10</b>	<b>Date Stamp</b>		

\* Applicable specifications shall be stated in the Remarks column where alternatives are quoted within a section. The Remarks column shall also be used to indicate cases where the products or services exceed the quoted specifications.

**Additional Notes:**