

**CITY OF AUSTIN ELECTRIC UTILITY DEPARTMENT**

**PURCHASE SPECIFICATION**

**FOR**

**PROTECTOR, NETWORK, 480Y-277V**

<b>DATE</b>	<b>PREPARED BY</b>	<b>ISSUANCE/REVISION</b>	<b>APPROVAL PROCESS MANAGER/M&amp;ESS MANAGER</b>
03-22-99	Blankenship/ Boykin	Revision	
04-28-09	Steven Booher	Revision	
05-30-14	Daniel McReynolds	Update	
10-23-19	Brantley Gosey	Revision	

<i><b>REASON FOR REVISION</b></i>	<i><b>AFFECTED PARAGRAPHS</b></i>
03-22-99 Update	Remove 1.1.3, added sections 3.2 and 5
04-28-09 Revision	Revision sections 1.2, 2.0, 3.0, 4.0 and 5.0
05-30-14 Update	Added section 3.6, Revision sections 1.2.2, 2.0, 3.6, 4.1, 4.2, 4.3, 5.1
10-23-19 Revision	Revision Section 3.4 and 4.7 Removal 4.6 and 4.8

This specification, until rescinded, shall apply to each future purchase and contract for the commodity described herein.  
Retain for future reference.

**CITY OF AUSTIN ELECTRIC UTILITY**  
**PURCHASE SPECIFICATION**  
**FOR**  
**PROTECTOR, NETWORK, 480Y-277V**

1.0 Scope and Classification

1.1 Scope

1.1.1 This specification covers three-phase, 480Y/277 volt network Protectors with submersible enclosures.

1.1.2 No deviation from this specification will be permitted.

1.2 Classification

1.2.1 Network Protector voltage shall be 480Y/277, three-phase, 60 cycle.

1.2.2 Network Protector ratings shall be as follows: (to be specified on the bid sheet)

- 1875 amp - 500 and 1000 kVA transformer
- 2500 amp - 1500 kVA transformer
- 3000 amp - 2000 kVA transformer

2.0 Applicable Specifications

Unless otherwise stated in these specifications Network Protectors shall be manufactured, production tested and made ready for shipment in accordance with IEEE C57.12.44 Secondary Network Protectors and IEEE C57.12.40 Network Transformers.

3.0 Functional Requirements

3.1 Protector shall be motor operated, trip-free and automatic.

3.2 Each Network Protector shall be tested and supplied with Cutler/Hammer MPVC plug-in communication Network Protector relay. The protector shall utilize the

same relay for production acceptance testing as it is shipped with. This relay shall be made such that it can be tested on a AVO-Multiamp NPTS-1-X test set using the computer test sequence from the test set with no manual input.

- 3.3 Two (2) auxiliary switch contacts shall be furnished for operating indicating devices. These contacts shall be open when the breaker is closed.
- 3.4 Network protector shall be Eaton CM52 network protector or buyer approved equal.
- 3.5 Network protector shall have a fully interlocked, dead-front, four-position, draw out design.
- 3.6 Network Protector shall have a 10kV BIL impulse withstand voltage rating.
- 3.7 Phase rotation shall be CAB from left to right when facing the front of the protector.
- 3.8 Arc reduction system shall lower fault current levels (100 kA) to a level where PPE of 8 cal/cm<sup>2</sup> are appropriate. The system shall have a trip initiation time of 4 ms or less under either forward or reverse current, shall include visual status identification of protector, shall be switched in the on/off position by a switch located a distance not to exceed 100 ft. from protector, and this switch shall activate all protectors grouped together. The system shall be able to be switched on/off with protector door closed.

#### 4.0 Physical Requirements


- 4.1 Protector shall be furnished with submersible .25" thick mild steel housing produced out of .2% copper bearing steel for added protection. The housing shall be designed for mounting on a network transformer per IEEE C57.12.40.
- 4.2 A viewing window shall be provided for the network relay and for the protector open/close status indicator, as well as a visible break window.
- 4.3 Network Protector enclosures shall be supplied with top-mounted NEMA spade type terminations for connection to the secondary spot or grid network. Size of the terminations shall be as follows:
  - 4-hole spade suitable for 4-500 mcm per phase cables for the 1875.
  - 6-hole spade suitable for 6-per 500 mcm per phase cables for the 2500 and 3000 amp protectors.
- 4.4 The phase bars of the protector shall be isolated from each other and the case by continuous barriers.

- 4.5 Ammeter jacks shall be furnished on the protector for load checking.
- 4.6 A nameplate shall be provided on the exterior of each protector listing the manufacturer, date, and serial number.
- 4.7 The Protector shall be equipped with 6 Eaton 39C4004G23 locking quick latch handles or buyer approved equal.

## 5.0 Production Tests

- 5.1 Production tests shall be performed on every Network Protector. These tests shall be divided into the following categories and provided with each individual unit upon delivery:
  - Operational
  - Dielectric
  - Insulation resistance
  - Current path resistance
  - Mechanical

ATTACHMENT 1

	<b>NETWORK SYSTEMS</b>	
SHEET 1 OF 1	NETWORK PROTECTORS (TYPICAL)	
10/24/19	NETWORK PROTECTORS 480Y/277V	

