

Title: **TECHNICAL BULLETIN FOR
ARTECHE LINE TRAPS
SUPPLIED BY MEGA HVT
(CONTRACT NO: 4600066985)**

Unique Identifier: **240-170000183**

Alternative Reference Number: **<n/a>**

Area of Applicability: **Engineering**

Documentation Type: **Technical Bulletin**

Revision: **1**

Total Pages: **5**

Next Review Date: **N/A**

Disclosure Classification: **Controlled
Disclosure**

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Date: 22 July 2020

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Revision History

Date	Rev	Compiler	Remarks
July 2020	1	S Maphosa	First issue

1. Introduction

An enquiry (Corp 4392) was issued to the market in May 2018 for the design, manufacture, test and supply of line traps together with tuning units for voltage ranges of 132kV up to 765kV. After all technical and commercial process were complete, MEGA HVT was awarded a contract (No: 4600066985) to supply 132kV post insulators, 275kV line traps and their corresponding tuning units. These line traps are manufactured by Coil Innovation factory in Austria and tuning units are manufactured by ARTECHE factory in Spain.

2. Line Traps and Tuning Units in MEGA HVT (ARTECHE) contract

2.1 List of Items in Contract

Line traps and post insulators which form part of the contract are listed in table 1 and tuning units are listed in table 2.

Table 1: Line Traps in MEGA HVT (ARTECHE) Contract

SAP No	Item	Short Description	Drawing Number
N/A	U5	132kV Post Insulator (Station) C4-550 25mm/kV	In Draft
17528	U5HH	132kV Post Insulator (Station) C4-550 31mm/kV	In Draft
11055	S1H	275kV line trap 2500A 50kA 0.2mH 25mm/kV	In Draft
558642	S1HH	275kV line trap 2500A 50kA 0.2mH 31mm/kV	In Draft
558637	S5H	275kV line trap 2500A 50kA 1.2mH 25mm/kV	In Draft
558636	S5HH	275kV line trap 2500A 50kA 1.2mH 31mm/kV	In Draft

Table 2: Tuning units used with Line Taps

SAP No	Short Description	Comments
667904	Line Trap Tuning Unit 50kA 0.2mH 80 - 108kHz	Used for S1H & S1HH
667950	Line Trap Tuning Unit 50kA 0.2mH 104 - 156kHz	
667942	Line Trap Tuning Unit 50kA 0.2mH 125 - 204kHz	
667944	Line Trap Tuning Unit 50kA 0.2mH 194 - 500kHz	
667945	Line Trap Tuning Unit 50kA 1.2mH 40 - 500kHz	Used for S5H & S5HH

Notes:

- Item U5 was included by mistake. For voltages up to 132kV, we only use PIs with 31mm/kV creepage.
- Drawings will be loaded on the following link: <http://eng.eskom.co.za/sites/fs/pde/hvp/IT/Pages/Default.aspx> as soon as they are finalised.
- Tuning units are manufacturer specific.

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3. Technical Details

The line traps are coils of conductor with rated inductance and are designed to carry continuous and short circuit currents. The creepage in the technical description does not apply to the coil but applies to support (post) insulators. NB: Line traps rated for 132kV do not come standard with support insulators hence 132kV insulators must be ordered separately when required. This requirement arises due to the fact that at 132kV and lower voltages, line traps are normally mounted on top of coupling capacitors or capacitor voltage transformers.

3.1 Tuning units

Line traps work in conjunction with tuning units. Tuning units used in Eskom are fixed wideband type and their design parameters are the line trap inductance (mail coil inductance), short circuit current and bandwidth frequencies. Tuning units are not voltage dependent and can be used with line traps of different voltage levels as long as the inductance, short circuit current and bandwidth frequency requirements are the same.

Tuning units are ordered separately either for immediate insertion into line traps or as spares. When ordered as spares, it is important to note that they are manufacturer specific i.e. an ARTECHE tuning unit cannot be used with a line trap from another manufacturer and vice versa.

3.2 HV Terminals

The HV terminals of ARTECHE line traps are made of aluminium and are 8-bolt pads.

3.3 Installation

These line traps can be installed using different YC or 3YC clamps depending on current carrying requirements and conductor take off angle.

3.4 Orders

Line traps and tuning units in this contract must be ordered using the allocated SAP number and the accompanying short description to avoid incorrect ordering.

Secondary plant project engineers are responsible for specifying and ordering the line traps and corresponding tuning units.

Orders for critical spares shall be discussed and verified by the subject matter expert(s).

4. Packaging, Shipping and Storage

Line traps are packaged and shipped in crates to protect them against damage. If the line traps are not installed immediately after arrival, they should be placed in intermediate storage without removing the packaging.

The crates must be stored on a level area with sufficient strength to bear their weight and in a clean and non-corrosive atmosphere. If the intermediate storage is outdoors, the period of storage must be limited to 6 months.

NB: Longer storage period leads to deterioration in wooden packaging but does not affect the line trap.

5. Contract Validity

This is a four years contract and is valid until the 31st January 2024 or when funds are depleted, whichever comes first.

6. Contract Communication

Persons listed in table 3 can be contacted for further enquiries.

Table 3: Contact Persons

Technical (Primary)	Name	Sibongile Maphosa
	Telephone number	+27 11 800 5208
	Mobile number	+27 82 940 3634
	E-mail address	sibongile.maphosa@eskom.co.za
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