AVA MOJ SANAT

Digital Multimedia & Communication co.

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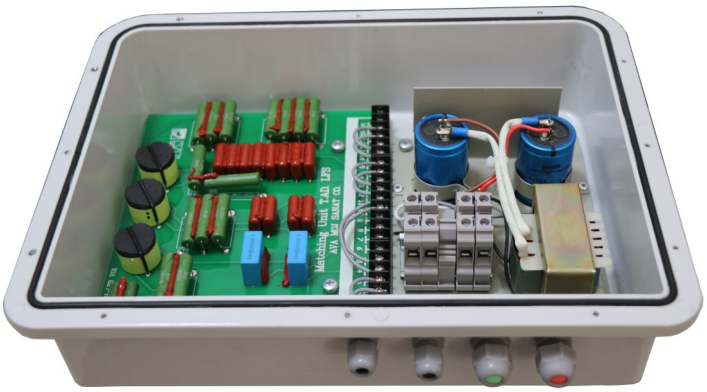
MATCHING UNIT FICTITIOUS LINE - MUFL



- ***PHYSICAL DESCRIPTION***
- ***SYSTEM FUNCTIONING***

Date: 2017/05/20

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• *PHYSICAL DESCRIPTION*

The MUFL for the transmission of the continuous information is a poly carbonate light color box supplied with a removable lid allowing access to connection strips .

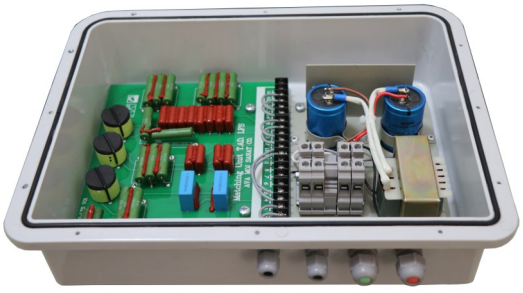
The fixing of the MUFL on the track post is carried out using two bolts situated on the back of the box .

The box includes :

- ***A printed and the plate support for the electrical components and a terminal .***
- ***The support plate for the chemical capacitors of the induction an transformer as well as a terminal .***

The board and the plate are fixed with screws to terminals which are part of the box.

The connection is realized using welded wires .



Matching unit - Fictituous line

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• *SYSTEM FUNCTIONING*

It is the intermediary between the track and the transmitter EMTVMS or the UM71 receiver situated in the technical room .
It is installed on a track post generally back to back with a TU .

It is made of :

- ***An adaptation part installed on a pilot .***
- ***A Fictitious line mounted on a printed circuit .***

Adaptation
The adaptation part is made of :

- ***A transformer – T1 of a ratio 7 .***
- ***An induction - L1 of 10mH witch can not be short circuited .***
- ***Tow capacitors - C1-and C2 installed head to tail .***
- ***A protection against surges - F1 .***

The electrochemical capacitors C1 and C2 installed in series in the primary of the transformer T1 stop any continuous current to cross it and avoid its saturation .

The transformer T1 of lowering ratio 7 track side carries out the adaptation between the track impedance and the one presented by 7.5 Km of cable linking the matching unit to the technical room.

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In fact it carries out a compromise between .

- ***Power delivered and dispersed by the EMTVMS.***
- ***Range of the transmitted signal - TC length .***
- ***The shunting in the JES .***

The induction L1 of 10mH compensate the capacitance part of the impedance presented by the cable . It is also used for the shunting in the JES .

It is made of 2 half induction in order to present the same induction over each of the 2 cable wires .

The reduction of the induction impedance might lead to the increase of the levels of Tc reception precautions have been taken for is manufacturing.

Symmetric fictitious line .
The cable separating the technical room from the track dose not have the same lengths for the transmission and the reception of a TC . For reversibility reasons this length has to be equal .
In order not to multiply the adjustment it has been decided to render the length . uniform. It has been fixed to 7.5 Km .
The fictitious line is makes it possible to realies at all time the constant :

REAL CABLE LENGTH + FICTITIOUS LINE = 7.5 Km

The fictitious line is made of 4 independent cells in of length 0.5,1,2,and 4 Km . the elements constituting it represent the parameters R,L and C of a ZCO3 type cable . R : resistance 35 ohm/Km L : 0.88mH /Km C: capacitance nF/km
The symmetry observed in the relisation allows a better protection against atmospheric surges .
The capacitors have 4 out puts as their cut is translated by a lower weakening of the cable which would be against safety .

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