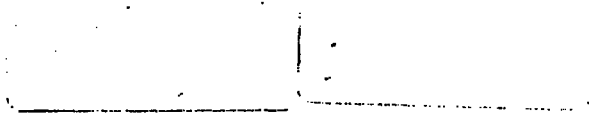


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"SURGE-PROTECTED CABLE JOINT"

This invention relates to a surge-protected cable joint principally for telecommunication networks, of the type comprising a tubular casing whose axial ends are closed and have inlets for respective cables, and a plurality of terminal strips disposed within the casing for connection to wires of said cables.

Various designs of surge-protected cable joints are known in which the cables are already connected at the place of manufacture and surge arresters are seated on printed boards inserted into multipoint connectors. However, due to the relatively small conductor diameter these known cable joints have a rather low resistance to surge currents. Also, upon installation of such a surge-protected cable joint in a buried cable it is necessary to use two additional joints for connecting the two ends of the buried cable with the cable ends extending from the joint, whereby the costs are considerably increased. Furthermore, the number of cable cores or wires which can be connected with these known joints is insufficient.

It is an object of the present invention to overcome the above-mentioned deficiencies in known surge-protected cable joints.

According to the present invention, a surge-protected cable joint comprises a tubular casing whose axial ends are closed by respective sealing end plates, the end plates being provided with inlets for respective cables, a plurality of terminal strips disposed within the casing for connection to wires of said cables, the terminal strips being arranged in a plurality of rows on either side of a central longitudinal plane of the casing so that said rows are disposed one after another along the length of the casing, a plurality of troughs which receive the rows of terminal strips respectively and which are arranged in pairs with their bases opposed to one another, lateral connecting rails to which the troughs are secured, and support rails

mechanically and electrically coupling the connecting rails to the end plates of the casing.

Such a cable joint enables the ends of a buried cable to be connected directly to the terminal strips. Moreover, due to the structure of the unit received within the casing, and particularly in view of the longitudinal arrangement of the terminal strips in a plurality of rows provided in series within the casing, it is possible to make the wiring without any crossover points. Furthermore, the capacity of the cable joint, i.e. the number of twin-wires which can be connected together therein, can be increased by about 50% with respect to known cable joints of the same size.

Advantageously, surge arresters in the form of magazines are detachably secured to the terminal strips, for example by means of multi-point connectors.

With the terminal strips employed, the resistance to surge currents can be increased from 4kA to 10kA with a waveform of 8/20.

An embodiment of the present invention will now be described, by way of example, with reference to the accompanying drawings, in which Figures 1, 2 and 3 are respectively a sectional side view, a sectional plan view and a sectional end view of a cable joint according to the present invention.

The cable joint shown in the drawings comprises a tubular casing 1 whose axial ends are closed respectively by end plates 1a and 1b, the latter having inlets 1c and 1d through which respective cables pass. A pre-assembled unit is mounted within the casing 1 and comprises three twin rows of terminal strips 3 disposed symmetrically with respect to a central longitudinal plane of the casing, the rows being disposed one after another along

the length of the casing. The terminal strips 3 in each row are received in a respective trough 2, 2a, the troughs being arranged in pairs with their bases opposed to one another and secured together by means of screw connections 7 (see Figure 3). A surge arrester magazine 8 is detachably plugged into each individual terminal strip 3.

The pre-assembled unit is fixed within the interior of the casing 1 by means of longitudinally extending support rails 6, the rails 6 providing a mechanical and electrical connection between the end plates 1a, 1b and lateral connecting rails 4 to which the troughs 2, 2a are secured. An earth connection is made through an earth cable provided between one end of the support rails 6 and a connecting bolt 5 fixedly mounted in the end plate 1a.

A significant advantage of the surge-protected cable joint described above resides in that it is possible to use a great number of commercially available component parts such as casings, terminal strips and troughs, so that the additional structural expenditure required to achieve surge protection is relatively limited.



C L A I M S :

1. A surge-protected cable joint comprising a tubular casing whose axial ends are closed by respective sealing end plates, the end plates being provided with inlets for respective cables, a plurality of terminal strips disposed within the casing for connection to wires of said cables, the terminal strips being arranged in a plurality of rows on either side of a central longitudinal plane of the casing so that said rows are disposed one after another along the length of the casing, a plurality of troughs which receive the rows of terminal strips respectively and which are arranged in pairs with their bases opposed to one another, lateral connecting rails to which the troughs are secured, and support rails mechanically and electrically coupling the connecting rails to the end plates of the casing.
2. A cable joint as claimed in Claim 1, further comprising surge arrester magazines detachably secured to the terminal strips.
3. A surge-protected cable joint substantially as hereinbefore described with reference to the accompanying drawings.