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Contact Assembly for Multiple Connection Strap for
Cable Terminals, as well as Multiple Connection Strip

This invention relates to a contact assembly for
insertion into lengthwise spaced open chambers of a
multiple connection strap for cable terminals, in
particular a distributor of telephone and data lines.

Previous contact assemblies were designed for placement
into open casing parts of the strap during the
manufacture of finished connection straps, after which
the casing was completed with additional parts.

Their unsuitable configurations make the known contact
assemblies unusable for insertion into lengthwise
spaced open chambers of a multiple connection strap,
which hence requires assembly on one side from outside.

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Therefore, the object of this invention is to provide a contact assembly that enables assembly on one side from outside.

This is achieved according to the invention first by — virtue of the fact that the contact assembly encompasses at least two spaced tongues with contact springs, wherein the longitudinal edges of the tongues are intended for insertion and positive meshing in guide grooves of one of the chambers of a multiple connection strap; that the tongues exhibit wire connecting means at the free end, preferably insulation-piercing connecting devices, and are connected at the inner end by a web; and that at least the wire connecting means, contact springs and web sequentially arranged, in at least an approximately flush manner, between the longitudinal edges of the tongues.

The web is here preferably of limited width and separable.

This makes it possible for the contact assembly to be a through contact transformable into an isolating contact by separating the web, or into a switching contact by inserting an isolating piece or via molding.

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To protect the highly sensitive contact points in these contact assemblies against contamination and/or damage during manipulations, like testing, separating, etc., the invention provides for arranging the contact points laterally inclined, so that only the edges of the contact points are touched when inserting a plug connector.

A contact assembly according to this invention now makes it possible to assemble a connection strap from one side on the outside. In turn, this results in the task of developing a corresponding connection strap that can then only be assembled with a single embodiment of a contact assembly according to the invention, but can still be used as the through strap, or separation strap or switching strap.

Such a multiple connection strap with lengthwise spaced open chambers for the insertion of one contact assembly each, for cable terminals, in particular a distributor of telephone and data lines, is initially characterized according to the invention by the fact that its casing now consists of a one-piece plastic body.

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Preferably, the chambers exhibit lateral guide grooves for the form-fitting accommodation of the longitudinal edges of at least two spaced tongues on the contact assembly, wherein the tongues carry contact springs, and exhibit wire connecting means, preferably insulation-piercing connecting devices, at the free end, and are connected on the inside end by a web, and wherein at least the wire connecting means, the contact springs and the web are located one in back of the other in the assembly direction, in at least an approximately flush manner, between the longitudinal edges of the tongues.

The universality of the connection strap according to the invention is increased by virtue of the fact that the chambers exhibit a hole for temporarily holding a separating tool in the area of the preferably separable web that connects the tongs of a contact assembly on the inner end.

In addition, it is advantageous for the chambers in the area of the contact areas of a contact assembly to exhibit guiding means for incorporating an isolating and separating piece.

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In this case, the connection strap can be a through strap or separating strap or a switching strap, by virtue of the fact that the contact assemblies are through contacts that can be transformed into separating contacts by separating the web, or into switching contacts by inserting an isolating and separating piece or via molding.

These measures now make it possible to assemble the one-piece distributor straps on the front side with uniform contact assemblies, whose distributor straps then can, depending on designation, be left as connecting straps, or transformed into separating straps by separating the webs, or into switching straps by inserting an isolating piece or via molding.

This results in an extremely cost-effective production and storage.

Embodiments of the subject matter of the invention will be described in greater detail below based on the drawing. Shown on:

Fig. 1 is a graphic depiction of a one-piece multiple-connection strap with upstream contact assembly in the assembly direction;

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Fig. 2 is a sectional graphic depiction of the multiple-connection strap according to Fig. 1 on an enlarged scale, with contact assembly inserted;

Fig. 3 is a graphic depiction of a contact assembly according to the invention;

Fig. 4 to 6 is a side view of the contact assembly according to Fig. 3 as a through contact, separating contact or switching contact; and

Fig. 7 and 8 is top view on an enlarged scale of the contact point of the contact assembly according to Fig. 3 in varying functions.

The multiple-connection strap according to the invention in Fig. 1 and 2 is intended for cable terminals, in particular a distributor of telephone and data lines, with a casing 1 made out of plastic, which accommodates numerous contact assemblies 3 spaced apart lengthwise.

According to the invention, the plastic casing 1 is designed as a single piece, and encompasses numerous

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longitudinally spaced apart open chambers 2 for the insertion of one contact assembly 3 each.

The chambers 2 here exhibit lateral, here parallel guide grooves 9 (Fig. 2) for the insertable, form-fitting accommodation of at least two spaced apart, here parallel tongues 4 at the contact assembly 3.

In addition, the chambers 2 exhibit a hole in the area of a separable web 6 that connects the tongues 4 of a contact assembly 3 at the inner end for the temporary accommodation of a separating tool (not shown).

In addition, the chambers 2 exhibit guide means (not shown) in the area of contact points 8 of a contact assembly 3 for accommodating an isolating and separating piece (Fig. 6).

To be able to use a contact assembly in such a chamber 2 in an aligned and torsion-resistant manner, each contact assembly 3 in Fig. 3 according to the invention encompasses at least two spaced apart, here parallel tongues 4, with contact springs 7 exhibiting contact points 8, wherein the longitudinal edges of the tongues are intended for the insertable, positive meshing in

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guide grooves 9 of one of the chambers 2 of the multiple-connection strap 1 (Fig. 2).

The tongues 4 of the contact assembly 3 additionally exhibit wire connecting means at the free end, in particular insulation-piercing connecting devices 5, and are connected at the inner end by at least one, preferably separable web 6.

In this case, at least the wire connecting means 5, the contact springs 7 and the web 6 are sequentially arranged, in an approximately flush manner, between the longitudinal edges of the tongues 4 intended for positive meshing.

According to Fig. 4, 5 and 6, the contact assembly is a through contact that can be transformed into a separating contact by separating the web, or into a switching contact by inserting an isolating piece or via contact molding.

These measures now make it possible to assemble the one-part or one-piece distribution straps on the front side with uniform contact assemblies, wherein these distribution straps can then be transformed into connecting or through strap, separating strap or

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switching strap, depending on designation, by having the contact assemblies be through contacts that can be transformed into separating contacts by separating the web, or into switching contacts by inserting an isolating separation piece or via molding.

To protect the highly sensitive contact points 8 against contamination and/or damage for these contact assemblies during manipulations, e.g., tests, separation, etc., Fig. 7 and 8 also envisage arranging the contact points 8 laterally inclined, so that only the edges of the contact points are touched when inserting a plug connector 10 (Fig. 8), but the actual contact surface remains undisturbed. Each contact assembly 3 can also exhibit a parallel tap 11.

When using a contact assembly for solder-free insulation displacement wiring that encompasses an insulation displacement slit and a cutting edge arranged behind the insulation displacement slit spaced apart at a preset distance, additional lateral guide grooves must be provided in each chamber in order to accommodate the longitudinal edges of the insulation displacement receptacle or tongues with the cutting edge.

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We hereby claim protection as follows:

CLAIMS

1. Modular multiple connection strap for cable connections, comprising a one-piece housing made of plastic with a plurality of modular spaced and open chambers on the longitudinal side for inserting respectively one contact assembly, characterized in that

the connection strap is a through strap or a separating strap or a switching strap, in that the contact assemblies (3) are through contacts that can be converted to switching contacts by separating a web (6) that connects the inside ends of the tongues (4) of a contact assembly (3) into separating contacts or by inserting an insulating separator or through deformation; and

the chambers (2) in the area of a web (6) that connects the tongues (4) of a contact assembly (3) on the inside end are provided with an opening for temporarily accommodating a insulation-piercing connecting device.

2. Modular multiple connection strap according to claim 1, characterized in that

the chambers (2) are provided in the area of the contact locations (8) of a contact assembly (3) with guide means for inserting an insulation separator.

3. Modular multiple connection strap according to claim 1, characterized in that

the contact locations (8) of a contact assembly are laterally inclined on the side, such that if a plug connector is inserted, it touches only the edges of the contact locations.

AMENDED SHEET