positions of the second branch wiring harnesses are designed at corresponding positions on the first branch wiring harnesses of the corresponding models, and lengths of the second branch wiring harnesses are designed according to distances between the positions of the second branch wiring harnesses (positions for mounting the second branch wiring harnesses on the first branch wiring harnesses) and installation positions of the electronic products on the chassis (as shown in FIG. 4).

There are various electronic products that need to be connected to corresponding loops of a main circuit of the rail vehicle, respectively. The electronic products include a connector, a filter reactor, a terminal, and the like.

The electronic products are packed into individual modules with boxes. In this embodiment, each type or multiple types of electronic products are placed in a vehicle end box 2. Therefore, the vehicle end box 2 is mounted on the corresponding end of the chassis 1 according to the position requirements of the electronic products placed inside (as shown in FIG. 4).

Step S2. Off-line assembly

According to the design results in step S1, off-line assembly and wire connection are performed on the first branch wiring harnesses, the individual modules formed by the electronic products and the vehicle end boxes, and the second branch wiring harnesses to form an integrated module A.

Step S3. On-line assembly

The module A formed in step S2 is mounted as a whole below the chassis. The module A is mounted by means of chutes 6 of the chassis 1 (as shown in FIG. 1), which ensures that all cables and corresponding fixing structures do not pass through any holes on the chassis 1 and is conducive to wiring.

After assembly, the first branch wiring harnesses are located in a middle device mounting region of the chassis, and the electronic products are located at the ends of the chassis.

Embodiment 2

This embodiment repeats Embodiment 1, but has the following differences. In step S1.1, as shown in FIG. 2, a central slot 3 is designed according to the models of the first

As shown in FIG. 2, the high-voltage slot 31 is an open slot with an opening facing upwards. The low-voltage slot 32 is a closed slot, a main opening of the low-voltage slot 32 faces downwards, and the opening is sealed with a detachable sealing plate 322. A wire binding bracket 323 that can be flipped downwards is mounted on the sealing plate 322. When wire adding or maintenance is performed in the later stage, only the sealing plate 322 is removed and the wire binding bracket 323 is flipped to facilitate maintenance and wire adding.

In this embodiment, the central slot is mounted on the basis of Embodiment 1, and the central slot and the module A form a module B.

When step 3) is performed, the formed module B is mounted as a whole below the chassis. As shown in FIG. 1, the mounted chassis wiring structure for the rail vehicle is shown in FIG. 4: the central slot 3 is located in the middle device mounting region of the chassis 1, namely, between bogies at two ends of the vehicle body. Brake pipelines 7 are arranged on two sides of the central slot 3, and an under-vehicle installation device 8 is suspended on a chassis edge beam or a vehicle bottom plate and located below the central slot 3.

As shown in FIG. 1 and FIG. 2, the first mounting bracket 11 and the second mounting brackets 10 are fixedly connected to corresponding chutes 6 on the chassis 1, respectively. All cable and corresponding fixing structures are fixed with the chutes 6 by hanging via fasteners, without passing through any holes on the chassis.

Embodiment 3

This embodiment repeats Embodiment 2, but has the following differences. Step S1.2 further includes: providing small slots 4 according to the positions and lengths of the second branch wiring harnesses. The small slots are continuously distributed (as shown in FIG. 4).

Step 2) further includes: mounting the second branch wiring harnesses in the small slots, so that the small slots and the module B form a module C;

When step 3) is performed, the formed module C is mounted as a whole below the chassis 1. Portions, passing through regions of sleeper beams 5, of the small slots 4 are mounted below the sleeper beams 5.