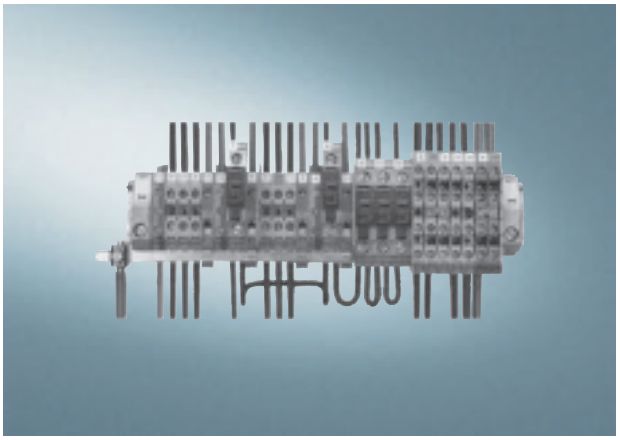
ALPHA FIX 8WA and 8WH Terminals with Screw Connection

Introduction

Overview



Terminal strip with different terminal blocks: 8WA1 011-1DG11 terminal blocks, 8WA1 011-1NG31 neutral isolating terminals with feeder terminal for neutral busbar 6 × 6 mm, 8WA1 011-1PG00 conductor terminals, 8WA1 011-1SF12 fuse terminals, and various two-tier terminals. The standard mounting rail according to EN 50022-35 serves as the PE bar.

Terminal blocks are used for the space-saving connection of incoming and outgoing lines in switchgear and distribution boards.

Standards

EN 60664-1,
EN 60999 and
IEC 60947-7-1 or
IEC 60947-7-2.

The terminals are finger-safe to IEC 60529 and EN 50274 (except for bare terminals and solder terminations). Through-type terminals are resistant to earthquakes according to IEC 60068-2-6.

Colored terminal blocks

With colored wiring according to EN 60204-1, the connecting level can also be included in the colored markings:

- Red for control circuits with AC current
- Blue for control circuits with DC current or neutral conductor
- Orange for interlock circuits with AC or DC current which are fed from outside and are live when the main control switch is turned off
- Green-yellow through-type terminals for protective conductors (without a link to the mounting rail).

Design

The terminal blocks are insulated on both sides, with the exception of two-tier, flat-type and bolt-type screw terminals, which are insulated on one side only.

The insulating material for terminal sizes up to 240 mm^2 is made of thermoplastic, polyamide 6.6, and for the flat-type and bolt-type screw terminals of duroplastic; with a resistance to creepage CTI according to IEC 112 and EN 60112.

The materials used are ecologically harmless: for example cadmium-free, and without halogens or silicone.

The plastics used are flame-retardant and self-extinguishing according to EN 60695-2-2, VDE 0471 Part 2-2 and UL 94 V-2.

Clamping methods

The terminals are designed so that, when the terminal screws are tightened, any tensile stress which occurs causes elastic deformation of the terminal bodies. This compensates for any creepage of the clamping conductor. The deformation of the threaded section prevents loosening of the clamping screw, even under heavy mechanical and thermal strain (for example vibration stress of 10 *g* or thermal cycles).

The following clamping methods are used: terminal body with pressure plate for terminal sizes 16, 35 and 70 mm^2. Strain-relief clamps for terminal sizes 2.5, 4 and 6 mm^2. Screw with connection disk for fuse terminals, circuit-breaker terminals and component terminals.

Terminal size

The terminal size corresponds with the nominal cross-section. According to EN 60947-7-1 a flexible copper conductor of nominal cross-section can be connected to any clamping point with or without ferrule.

Mounting

The terminals are snapped onto 35 mm mounting rails according to IEC 60715 TH35 and secured against movement using end retainers.

A lateral mounting tolerance of 0.2 mm must be maintained between the terminals.

Screw fixing – in particular of the terminal blocks – is possible with the 8WA1 815 fastening accessory.

Connection of conductors

Except for flat- and bolt-type versions, all terminals are designed so that solid, stranded and finely stranded conductors with or without end sleeves (according to DIN 46228) can be securely clamped (please observe cross-section).

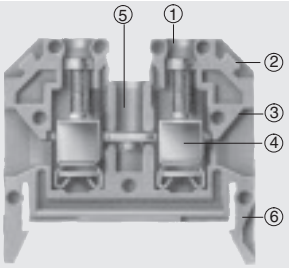
Damage to the clamped conductors is prevented by pressure plates or strain-relief clamps. For the connecting cross-sections when 1 or 2 conductors are connected, see technical specifications.

Connection of aluminum conductors

Siemens screw terminals are suitable for connecting aluminum conductors when the normal processing guidelines, for example brushing and greasing of the conductors before connection, are complied with.

After a few days, the connection should be tightened again for safety reasons.

Stranded conductors must be crimped in prepared plug connectors immediately after being stripped of their insulation (the shaft of the pin-end connector is made of pure aluminum, the pin of copper).



8WA1 through-type terminal with screw connection on both sides, sectional view

① Screwdriver guide
② Cut-out for labeling plate
③ Cable entry
④ Terminal body
⑤ Thread for parallel link rail
⑥ Elastic retaining feet

PE and PEN terminals

In switchgear and controlgear systems the mounting rails for the terminal blocks are frequently used as protective ground busbars. The PE (protective ground) terminals provide the connection to the mounting rail.

The elimination of a separate PE busbar allows the PE terminals to be lined up with the insulated main conductor terminals and neutral isolating terminals in any required arrangement. This results in a clear relationship to the individual circuits.

The bare 8WA1 010-1PH01 PE terminals should preferably be used for connecting the shields of screened cables. They are normally mounted on a standard mounting rail, which is installed by means of an 8WA1 857 insulation carrier.

Accessories

Parallel link rails

The link rails are screwed into the terminals from above and allow parallel connection of up to 10 terminals up to terminal size 35 mm². The 10-pole link rails can be shortened as required. On 70 mm² terminals the link rails are two-pole. On the 95 mm² to 240 mm² terminals they are inserted in the connection points. Link rails for flat-type and bolt-type screw terminals are not included in the scope of delivery.

Barriers

Barriers are yellow in color and project beyond the contours of the terminals. Their functions are the visual separation of groups of terminals, the electrical isolation of adjacent link rails and improving the insulation rating for solder and push-on terminals.

Insulation plates

8WA1 825 and 8WA1 022-7TK00 insulation plates can be used with different terminals for providing electrical insulation between link rails.

Test sockets and plugs

The 8WA1 854 test sockets for ∅ 2.3 test plugs and reduction plugs with a Ø 4 mm bore can be screwed into some terminals in place of the link rails.

Disconnecting links

The 8WA1 865 disconnecting links provide a detachable connection between two adjacent terminals sizes 2.5 to 6 mm².

Covers with lightning symbol

The purpose of these covers is to identify the power input terminals. At the same time, they provide additional touch protection.

End retainers and marking tags

End retainers are available in thermoplastic or galvanized and chromated steel. The marking tag can be fitted in an 8WA1 808 end retainer or, in any of three positions, in an 8WA1 805 end retainer.