

General Specification for a Low Power 1 or 2 circuits Busbar Trunking System

25A to 40A busbar trunking

- For the distribution of lighting and the electric power supply of loads of low power
- **1 or 2 circuits**, single or three phases
- **Very rigid**, so that the distance between 2 fixing points can be **up to 5 m**
- Compliant with **Sprinkler test**
- **Can support the luminaires**

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1. General

The electrical power shall be distributed by a **busbar trunking system** and its accessories.

All the components of the busbar trunking fittings shall be **IP55**, in any positions, in accordance with IEC 60529 and **sprinkler tested**, with **no need of additional accessories** in both cases.

After the dismantling of a tap-off unit, the **IP55 shall be restored** by installing the blanking plate initially factory fitted.

All the components composing the busbar trunking system shall be **halogen free** and **silicon free**.

1 or 2 circuits , **single phase** or **three phases** each, shall be available, allowing different specialised circuits.

2. Standards

All the stages of design, manufacturing and tests of the busbar trunking system including its accessories shall be in compliance with **all the requirements of IEC/EN 60 439-2 standard**, and related certificates, **issued by a third party such as ASEFA shall be available**.

3. Design

3.1 Straight lengths

The carrier rail, which shall also ensure the function of protective earth conductor (PE), shall be **crimp closed, made of hot-galvanised sheet steel**.

As an option, it shall be **pre-lacquered with RAL 9010 white painting**.

0, 2, 3, 2+1 or **3+2** tap-off outlets shall be available on the busbar trunking.

Thanks to its **important rigidity**, the distance between two fixing points shall be able to be **up to 5 metres**.

The installation of the luminaires shall be possible **at any point** on the line, including the jointing units.

2 and **3** metres long busbar trunkings shall be available.

Electrical and mechanical jointings shall be carried out simultaneously. Proper tightening at the end of the assembly operation shall be ensured by **a captive screw with a notched base**.

The electrical jointing unit shall ensure automatic and simultaneous connection of all live conductors. The contacts shall be clamp and spring type and exert no forces on the plastic parts.

Flexible lengths shall be available to change direction or avoid obstacles.

3.2 Conductors

2 or **4** conductors per circuit shall be insulated and made of **tin-plated copper on the whole length**, to ensure reliable and better contacts.

As an option, **a factory-fitted dedicated earth conductor isolated from earth** shall be available on the main circuit.

The busbar trunking system shall have the following characteristics:

Rated current at 35°C (Inc) for standard circuit operation	:	25 or 40A
Number of live conductors	:	2 or 4 , 2+2 , 2+4 or 4+4
Rated Insulation Voltage (Ui)	:	690 Volts
Rated Operating Voltage (Ue)	:	230...400 Volts
Impulse Withstand Voltage (Ump)	:	4 kV
Frequency (f)	:	50/60Hz

3.3. Short Circuit Capacity

Optimum installation performance shall be ensured by coordinating the protection circuit-breakers and the busbar trunking, with equipment from the same manufacturer. Selection guides defining the rating of the circuit breaker required to fully protect the busbar trunking shall be available to simplify the design of the installation.

3.4. Plug-in Connectors

The busbar bar trunking system shall derive the electrical power by means of a range of plug-in connectors, **compatible with all the ranges of busbar trunkings, from 20 to 40A, of the same manufacturer.**

Connection and disconnection of the plug-in connectors shall be possible, even when they are **energised and under live conditions.**

No live part can be able to be accessed at any time, before, during and after the plugging.

For a better safety, during the connection of the plug-in connectors, the PE connection shall occur prior to the connection of the phases and the neutral.

Phase selection plug-in connectors shall be available, to balance 3-phase distribution systems; **the selection shall be visible** via a transparent window.

Among the range of plug-in connectors, 10A units, ensuring both the supply **and the control** of the lighting, with following options, shall be available :

- control by single-circuit switch
- control by double-circuit switch
- control by two-way switch
- control by impulse switch or timer

The quality of the live contacts between the busbar trunking and the plug-in connectors shall be ensured by means of a **spring clamp system.**

3.5. Fixing systems

Fixing systems for the mounting of **both the trunking and the luminaires, with final automatic locking** around the trunking shall be available.

To run adjacent circuits such as telephone lines, emergency lighting, etc, **cable brackets or cable duct support systems with cable duct**, easily adaptable on the busbar trunking itself ,shall be available.

Supports ensuring the mounting of both the busbar trunking and VDI cables, shall be available.

4. Communication bus

A factory mounted communication bus shall be available, as an option. It shall allow the **transmission of electrical signals of low level (up to $\pm 50V$)** for the control and the **transmission of data under MODBUS protocol**.