

# ELINEDL

## ►► General Characteristics

E-Line DL Busbar Trunking Systems are used in buildings with an energy requirement between 25A-40A. They are designed to feed lighting fittings due to the characteristics of the 10A-25A tap-off plugs.

EAE Busbar Systems are manufactured using the latest production technologies available worldwide according to ISO 9001 standards with certified Quality Assurance systems. The products are designed and tested in accordance with IEC 60439-2.



### Tap-off Plugs

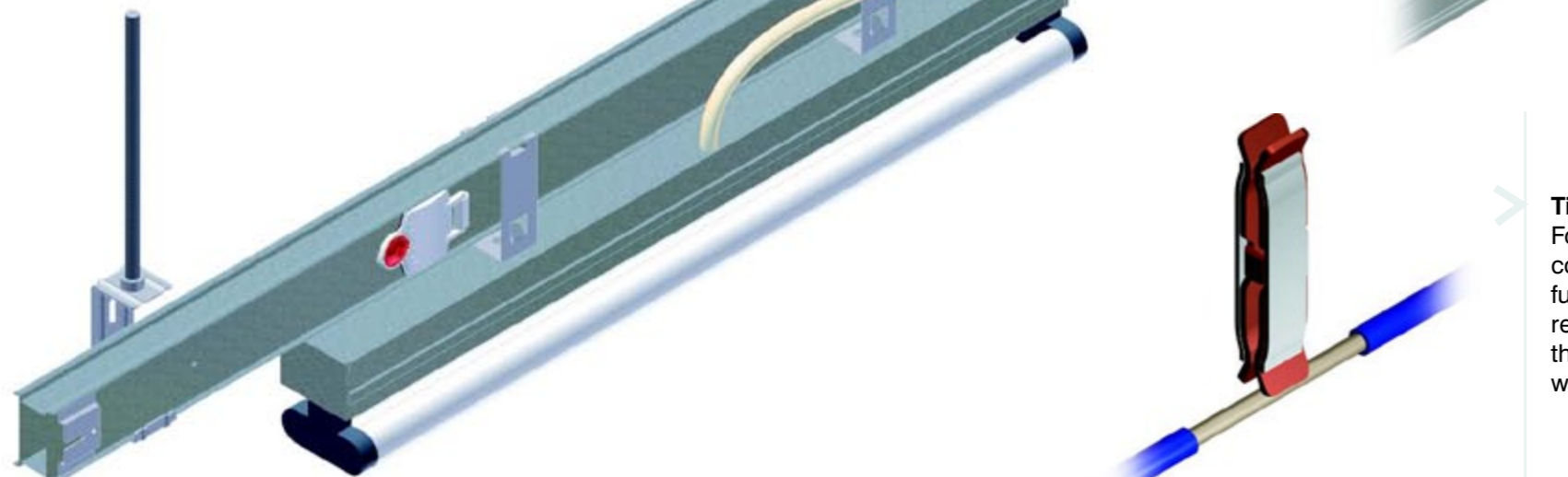
Arrangement of E-Line DL Busbar systems are designed with different contacts to prevent incorrect assembly.

### Safety

Earth contacts of the tap-off plugs make first during assembly, and the contact breaks last during disassembly.

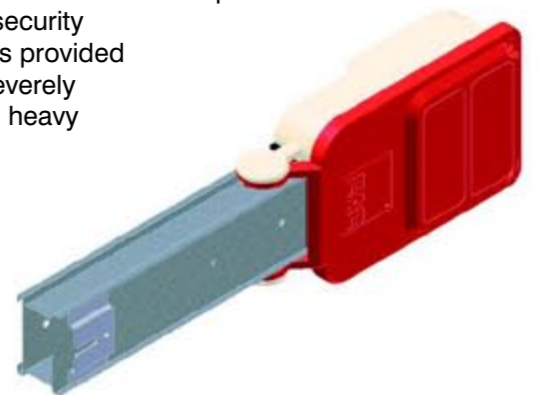
### Colour Coded Covers Indicate The Phases

The covers of the single phase, 10 Amp, wired tap-off plugs of the EAE DL Lighting busbar systems are designed with different colours to indicate which phase the light fittings are fed.



### Full Isolation

The busbar conductors are coated in flameproof insulation material. Total security regarding human safety is provided even when the body is severely damaged due to external heavy impacts that may occur.



### Fast, Easy and Secure Assembly

Provided with single action by driving the mechanical and electrical joint silver coated sprung contacts towards each other. You only need to tighten one bolt to fix the joint.



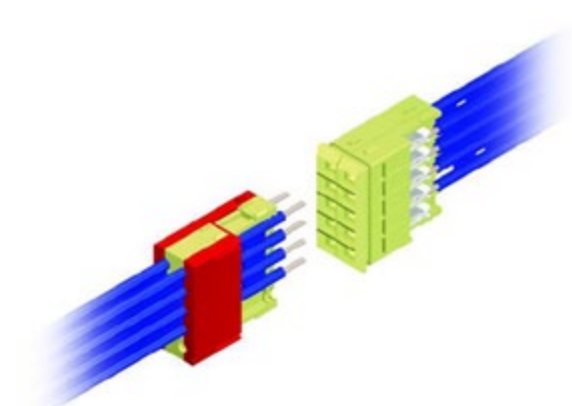
### Tin Coated Conductors

Formation of Copper Oxide is prevented by coating the electrolytic copper conductors with full size tin. By this feature, the contact resistances are minimised. The contacts of the tap-off plugs compress the conductor within the busbar from two surfaces.



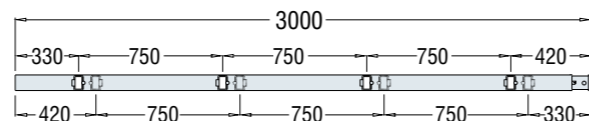
### Silver Coated Joint Contacts

The contacts at the joining points of the busbar and the contacts of all tap-off units are silver coated. The silver coating minimises the contact impedances, thus preventing the over-heating of the contacts in case of possible over-loads.



### 8 Plug-in Points are provided on a Standard 3 m Length

A total of 8 plug-ins on both sides of the busbar is provided as standard.



			DL 2424	DL 3434	DL 4444
Rated Current	In	A	25	32	40
Standards	IEC 60439 1-2				
Rated Insulation Voltage	Ui	V	1000	1000	1000
Rated Frequency	f	Hz 50/60			
Protection Degree	IP 55				
Short-Circuit (1 sn.)	I <sub>cw</sub>	kA <sub>rms</sub>	2.50	3.00	4.00
Short-Circuit (Peak)	I <sub>p</sub>	kA	4.00	5.00	6.50
Short Circuit(Peak)Tested 1 msec.		kA	21	21	21
Resistance	R <sub>20</sub>	mΩ / m	5.42	4.46	2.90
Reactance	X <sub>1</sub>	mΩ / m	2.02	1.62	1.27
Impedance	Z	mΩ / m	5.61	4.47	3.17
Joule Losses At In	I <sup>2</sup> R	W / m	3.85	5.24	5.65
L1, L2, L3, N (Cross Section)		mm <sup>2</sup>	3.20	4.00	6.00
PE (Housing)		mm <sup>2</sup>	18.30	18.30	18.30
PE (Conductor)		mm <sup>2</sup>	3.20	4.00	6.00
Weight (4 Conductors)		kg/m	1.40	1.43	1.60
Weight (5 Conductors)		kg/m	1.50	1.55	1.72

The maximum permitted load for the support of light fittings of the system is 15 kg. concentrated or 20 kg. distributed for a recommended support span of every 2 meters without any deformation of the housing.

### Voltage Drop Calculation

Voltage drop of a busbar system can be calculated with the following formula taking into account the “α” load distribution constant.

For single phase;

$$\Delta U = \alpha \cdot I \cdot 2L (R \cdot \cos \varphi + X \cdot \sin \varphi) \cdot 10^{-3} \text{ [V]}$$

For three phase ;

$$\Delta U = \alpha \cdot \sqrt{3} \cdot I \cdot L (R \cdot \cos \varphi + X \cdot \sin \varphi) \cdot 10^{-3} \text{ [V]}$$

$$\Delta U = \text{Voltage Drop [V]}$$

$$I = \text{Rated Current [A]}$$

$$L = \text{Length of Line [mt]}$$

$$\alpha = \text{Load Distribution Constant}$$

$$R = \text{Resistance [m}\Omega\text{m]}$$

$$X = \text{Reactance [m}\Omega\text{m]}$$

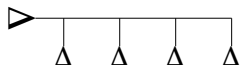
### Load Distribution Constant

α



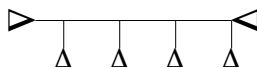
Load concentrated at the end of line. Line fed from one end of the line.

1.00



Distributed load. Line fed from one end of the line.

0.50



Distributed load. Line fed from both ends of the line.

0.25

### Pratik Hesap Tablosu

Hesaplar aydınlatmada sık kullanılan α = 0.50 için yapılmıştır.

$$\Delta U = K \cdot I \cdot L$$

k = Gerilim Düşümü Sabiti

I = Hat Akımı [A]

L = Hat Uzunluğu [m]