

P & B WEIR ELECTRICAL



Distribution Line Earthing Kits

*P & B Weir Electrical
DLE Earthing Kits have
been specially designed to
meet the requirements of
EA Technical Specification
ES1 43-81, to provide a
compact lightweight
temporary earthing assembly
that can be easily applied to
3 phase high voltage overhead
lines up to 66kV.*



**P & B WEIR
ELECTRICAL**

Unit 10 Leaffield Way
Leaffield Industrial Estate

Corsham Wiltshire
SN13 9SW

United Kingdom

Phone: +44(0)1225 811449

Fax: +44(0)1225 810909

Email: sales@pbweir.com

Earthing Equipment for High Voltage Distribution Lines

Line End Clamps, Cluster Bars/Terminal Plates, Cross Arm Clamps,
Operating Poles, Sockets, Earth Leads, Earth Rods & Earth End Clamps

P & B WEIR ELECTRICAL

Equipment Details:

- **Conductor Clamps** – Type S9BS/A line end clamps are manufactured from aluminium alloy and are suitable for a conductor range from 3.0 to 27.0 mm diameter. The clamps can be fitted with ring type operating screws or tapered shaft operating screws with cross pins.



S9BS/A/DLES

- **Cluster Bar** – The cluster bar is an attachment for bolting to the centre conductor clamp to facilitate the parking of the other two conductor clamps with interconnecting leads (see diagram DLE/1).
- **Terminal Plates** – As an alternative to the cluster bar a terminal plate can be specified. There are several types of terminal plate available for mounting on to the pole or steel structure (see diagram DLE/2).



Type A



Type B

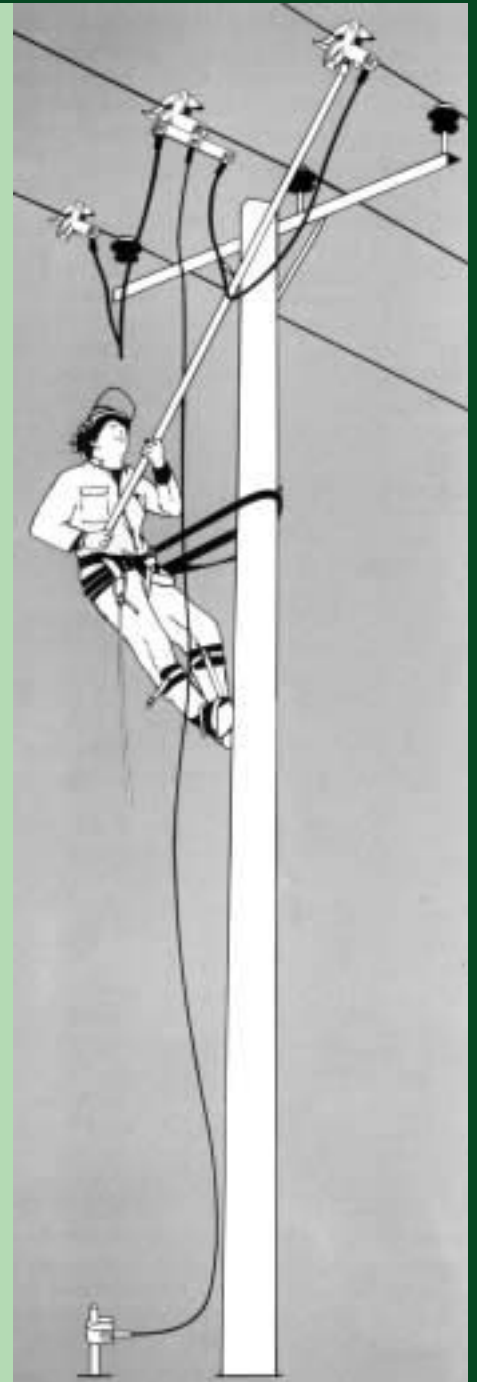


Type C

- **Earth Leads** – Flexible aluminium earth leads with approved compression terminations and support sleeves are used for interconnecting the conductor clamps and to provide the download for bolting to the earth rod or earth point. The earth leads are multi-stranded from commercially pure aluminium with an extruded PVC sheath, either clear or opaque 'Arctic' orange grade to protect the cable from damage. The standard sizes have a nominal cross sectional area of 150, 120 or 50 sq.mm and are used according to the fault level of the system.
- **Earth Rod** – Standard earth rods are manufactured from either 16mm (5/8") or 19mm (3/4") diameter steel cored copper bonded rods and are usually supplied in 1220mm (4') sections. The rod can be supplied with a split connector clamp to accept the termination of the download. Alternatively a lightweight Aluminium clamp type S9A can be supplied fitted with an insulated PVC handle.
- **Cross Arm Clamp** – Where a kit is specified using a terminal plate an additional cross arm clamp can be supplied. The type CE10/A clamp is suitable for cross arms up to 16.5mm thick. It is manufactured from lightweight Aluminium alloy and has a Stainless Steel operating screw fitted with a hardened steel tip to penetrate painted or non conductive surfaces, to ensure a strong efficient earth connection.



CE10/A



Type DLE/1

The fibre glass operating pole is attached to the central conductor clamp with the use of the socket head. The whole assembly is then raised and applied to the mid conductor of the 3 phase overhead line. On tightening of the centre clamp, the operating pole is removed and used to locate the other conductor clamps with interconnecting leads on the cluster bar and apply in turn to the other two overhead line conductors. This forms a 3 phase short circuit connection and the down lead forms the earth connection to an earth rod or earthing point.

Distribution Line Earthing

- **Operating Poles** – Fibre Glass Poles can be supplied in standard section lengths of 1220mm (4'). Interconnecting joints are machined to provide a rigid assembly and include a snap action spring locking device. Non-slip grips are bonded to lower pole sections to provide a sure grip upon the pole. The upper section can be provided with connecting configuration to suit preferred Operating Socket fitment.
- A Telescopic design of pole can be supplied to reduce the number of individual pole sections which need to be transported if required.
- **Operating Sockets** – These are manufactured in light alloy and essentially support the line end clamps when fitted in the pole during actuation of the operating screw during fitting or removal. Socket type CEA/S is specifically suited to 'short taper' operating screws and employs a spring loaded mechanism to secure the clamp within the socket. The PB331 socket is suitable for either long or short taper operating screws and also employs a spring loaded mechanism to secure the clamp in the socket.

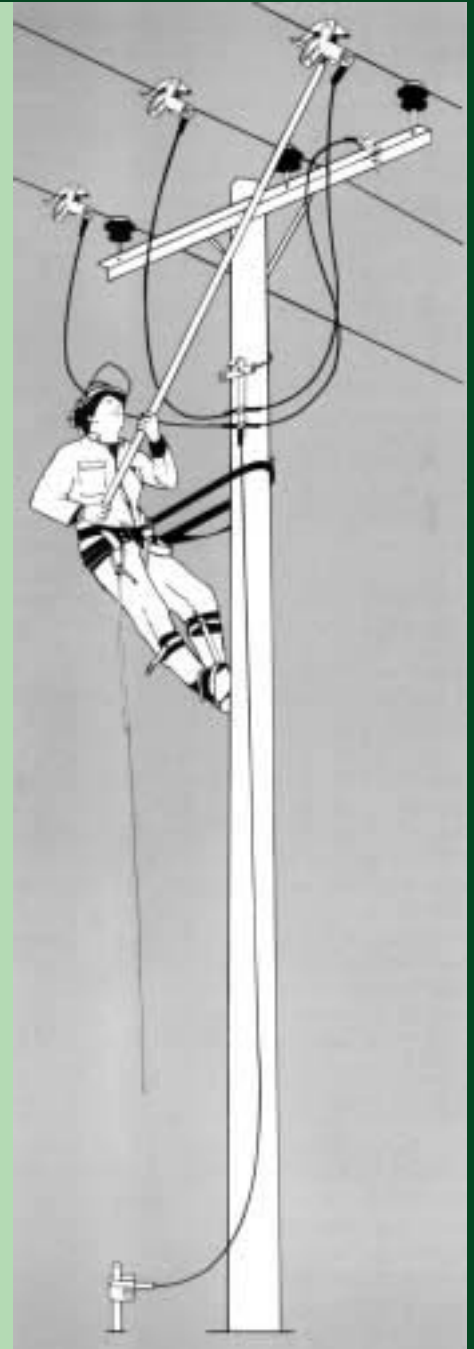


CEA/S SOCKET



PB331 SOCKET

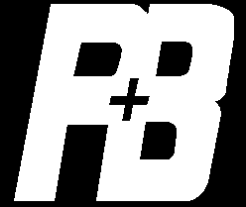
- **Carrying Bags** – Reinforced PVC carrying bags can be supplied to contain a complete earthing set to provide protection of the equipment during transit as well as easing transportation in the field.



Type DLE/2

In contrast to the cluster bar arrangement it is often preferred to employ a terminal plate which can either be fitted to the pole via a strap or chain, or hooked upon the cross arm strap. The DLE/2 kit can be supplied to suit 3, 4 or 5 wire (3 phase) assemblies. The application procedure is similar to the DLE/1 kit except that the whole assembly is supported by the terminal plate and then the individual line end clamps are connected in turn.

The DLE/2 kit also allows a cross arm clamp to be included if required.



Earthing Kit Combinations

Distribution Line Earthing Kits can be configured to suit your specific requirements. The common components are detailed in the chart below.

ITEM	Description	Remarks
1	S9BS/A/DLER Line End Clamp	Ring Type Operating Screw
2	S9BS/A/DLES Line End Clamp	Taper Type Operating Screw
3	Cluster Bar	
4	Terminal Plate	Type A, B or C
5	150 sq.mm x 2.5m long Conductor Leads	20kA/1 sec 14.1kA/2 secs
6	120 sq.mm x 2.5m long Conductor Leads	17.5kA/1 sec 12.4kA/2 secs
7	50 sq.mm x 2.5m long Conductor Leads	8.0kA/1 sec 5.7kA/2 secs
8	150 sq.mm x 15m long Down Lead	20kA/1sec 14.1kA/2 secs
9	120 sq.mm x 15m long Down Lead	17.5kA/1 sec 12.4kA/2 secs
10	50 sq.mm x 15m long Down Lead	8.0kA/1 sec 5.7kA/2 secs
11	CE10/A Cross Arm Clamp	Taper Type Operating Screw
12	1220mm (4') long Earth Rod	
13	2440mm (8') long Operating Pole	2 x 1220mm (4') Sections
14	RT Operating Socket	For use with S9BS/A/DLER Clamps
15	CEA/S Operating Socket	For use with S9BS/A/DLES Clamps
16	PB331 Operating Socket	For use with S9BS/A/DLES Clamps
17	S9A Earth End Clamp	Fitted with Insulated Handle
18	Split Connector	For use with Earth Rod
19	Carrying Bag	



P & B WEIR ELECTRICAL

Unit 10, Leaffield Way
 Leaffield Industrial Estate
 Corsham, Wiltshire
 SN13 9SW
 United Kingdom
 Phone: +44(0)1225 811449
 Fax: +44(0)1225 810909
 Email: sales@pbweir.com