



**MADE IN BRITAIN**  
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# Potential Equalisation Socket – POAG-PES-WM Series

[Equipotential Bonding Socket]



**CABL  FLOW™**  
H E A L T H C A R E

## POAG-PES-WM series

### Potential Equalisation Socket – Wall Mount

Publication of BS 7671 (17<sup>th</sup> Edition of the Wiring Regulations) Amendment 3 defines that it is now a mandated requirement in accordance with Section 710 to provide *supplementary equipotential bonding* in a UK healthcare facility at every Group 1 and Group 2 medical location. The same requirement applies globally within HD 60 364-7-710.

In all such medical locations this earthing facility must be provided whether bedhead services are supplied within trunking systems (*medical supply units*) or by wall mounted outlets.

#### MEDICAL ELECTRICAL EQUIPMENT

The constant use of Medical Electrical (ME) equipment in the healthcare environment increases the risk of shock if two separate ME items are touched simultaneously. Significant touch voltages within the medical location can occur and may be detrimental to both the patient or clinician.

In a healthcare environment the purpose of supplementary equipotential (*potential equalisation*) bonding is to equalise the differences in earth potential between differing metal parts that can be touched simultaneously, or to reduce differences of earth potential which can occur during the operation of ME devices and conductive parts of other objects.

#### REDUCING PATIENT AND CLINICIAN SHOCKS

Electric shocks can vary considerably in intensity although some shocks are so small they may not even be felt, particularly by an anaesthetised patient or clinical staff. However, the residual risk is that they lead to major issues such as ventricular fibrillation of the heart and this must be avoided.

Whilst such shocks of around 10mA may simply be experienced as an unpleasant tingle, an anaesthetised patient may not react to such a sensation in a way that would alert clinical staff and therefore go undetected, perhaps on several occasions. Larger currents can deliver a more fatal impact to a patient or clinical staff member.

To address this risk area it is essential that the medical location is properly earthed and all appropriate precautions taken to prevent any leakage current through the patient. This must not exceed 50 mA when assuming that the patient's body resistance is 1,000 Ohm.

Where surface mounted containment such as medical supply units is not used, the Cableflow **POAG-PES-WM series** provides a resilient polyester powder coated 1.2mm thick aluminium fascia plate to meet the requirements of BS7671 and HTM 06-01 in the patient environment.

#### VARIABLE CONFIGURATIONS

Supplied as a standard 1gang fascia configuration, it is fitted with 1, 2 or 4 gang POAG 6/25 potential equalisation sockets. Each fascia plate is finished in RAL 9010 and supported by a 25 year Applicators Guarantee and can be applied in all Group1 or 2 medical locations.



### **MANDATED REQUIREMENT (BS 7671 & HD 60 364-7-710)**

Supplementary equipotential bonding points must be provided in each medical location where ME equipment may be provided. All ME equipment should be manufactured with a corresponding inter-connection point in accordance with IEC 60601-1 to facilitate equipment connection by the use of a proprietary connecting lead.

BS7671 clause 710.415.2.1 requires that in each medical location of Group 1 and Group 2 activity, supplementary equipotential bonding connection points shall be installed. It states:

*Supplementary equipotential bonding connection points for the connection of ME equipment shall be provided in each medical location, as follows:*

*Group 1: a minimum of one per patient location*

*Group 2: a minimum of four but not less than 25% of the number of medical IT socket-outlets provided per patient location.*

### **ALL PATIENT LOCATIONS**

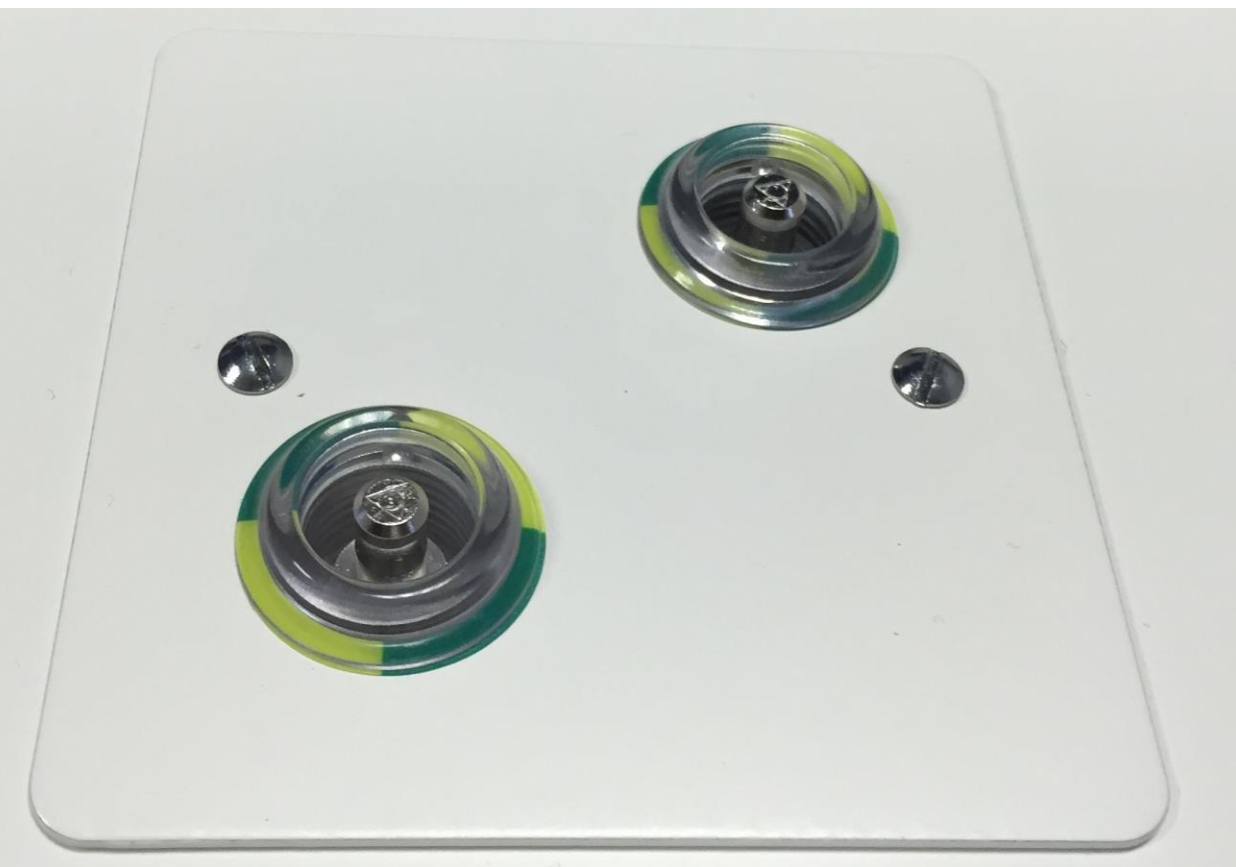
In practice this is any location within a healthcare facility where a patient may be treated, but not limited to being reviewed, consulted, treated, administered, retained overnight or for any form of procedure. The Regulation must be adhered to by designers and installers alike and verified by the Approved Person (AP) on each project.

### **POAG – PES CONNECTION**

The **POAG-PES-WM** series of outlet plates are fitted with a potential equalisation socket (POAG-PES) complying with the universally accepted DIN 42801 standard. A clear polycarbonate injection moulded insulation housing encapsulates a green/yellow micro-film label displaying the IEC 60417-5021 symbol for potential equalisation.

The design of the moulding has been carefully considered to create optics which work simultaneously with the label to magnify the image from all viewable angles, whilst identifying the component as a potential equalisation (supplementary equipotential bonding) point in accordance with IEC 60 601-1.

The insulation housing holds a TUV certified POAG connecting pin to DIN 42801 for proprietary lead connection. The POAG pin is fully insulated from the metal facia plate by the moulding and ensures a clean earth path to the equipotential bonding bar of the installation. The POAG pin is manufactured from nickel-plated brass, supplied complete with nut/washer assembly and primed for connection to the equipotential bonding cabling of either 4mm<sup>2</sup> or 6mm<sup>2</sup>.



The complete **Cableflow POAG-PES-WM** assembly is proven to be resilient to all healthcare cleaning chemicals commonly used.

Each fascia plate assembly can be supplied with a 47mm deep BS 4662 back box and fixing screws ready for installation although these are not supplied as standard.

### HIGH-GRADE MATERIALS

The amalgamation of high quality British manufacturing and the finest grade materials in each component ensures reliable potential equalisation in medical locations, supported by the Cableflow reputation as a globally renowned manufacturer of medical workplace components.



### APPLICABLE STANDARDS:

**IEC 60601-1:** Medical electrical equipment – General requirements for safety

**ISO 11197:** Medical supply units – essential safety requirements

**IEC 60364-1:** Low-voltage electrical installations – Part 1: Fundamental principles, assessment of general characteristics, definitions.

**IEC 60364-7-710:** Electrical Installations of buildings – requirements for special installations or locations – Medical locations

**BS 7671:** 17<sup>th</sup> Edition Wiring Regulations (Cg3 Section 710 – Medical locations)

**DIN 42801:** Potential equalisation leads – Connecting pins

**DIN 42801-2:** Potential equalisation leads – Connecting sockets

**HTM 08-03:** (UK DoH) Bedhead Services

### ORDER INFORMATION - COMPLETE ASSEMBLY PART NUMBERS:

1gang outlet: POAG-PES-WM1

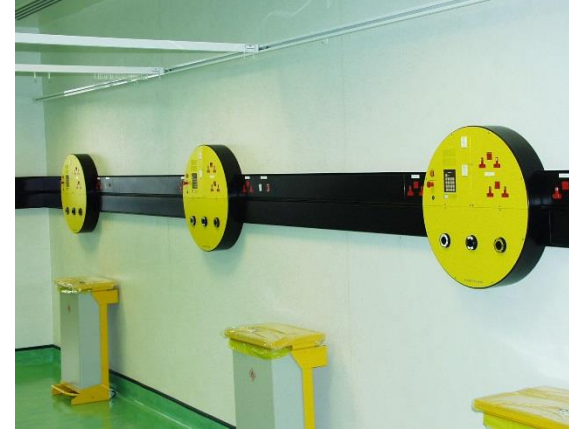
2gang outlet: POAG-PES-WM2

4gang outlet: POAG-PES-WM4

*If a 47mm BS4662 back box is required add digits 47 to the end of the part nr e.g:  
POAG-PES-WM147*









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