



**Manufacturer of Street Lighting Cut-Outs,
Passive Electrical Terminations,
Feeder Pillars & Pre-Wired Control Panels**



Supplier to the Street Lighting Industry Since 1973





Tofco CPP Limited is a family business based in the North East of England, just a few miles from Newcastle upon Tyne and its International Airport.

With over 40 years of industry experience Tofco CPP Ltd has developed into one of the UK's leading manufacturer and supplier of Street Lighting Cut-Outs, Isolators, Passive Electrical Terminations, Feeder Pillars and Pre-Wired Electrical Control Panels.

The company is also recognised as one of the leading suppliers of Street Lighting and Traffic Furniture in the UK.

Since its foundation, the company has provided a service which is second to none and remains committed to a continuous and well funded research and development program, which includes an in-house CAD design department.

The company's commitment to excellence was acknowledged by its achieving the accreditation of quality standard BS5750 and subsequently BS EN ISO 9001:2008.

The company was also awarded the Charter for the Environment Certificate by Newcastle City Council.

Tofco CPP Ltd supply products into the UK Roads Transport Network via Local Authorities, Highway Agencies, PFI, DNO's and the ASLEC Contractor Market.

Our customer base is Global with a thriving Export Market supplying products to Europe, Middle East, Far East, Africa, America, Australia and New Zealand.



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CUT-OUTS

F144 FUSE UNIT (BS7654)

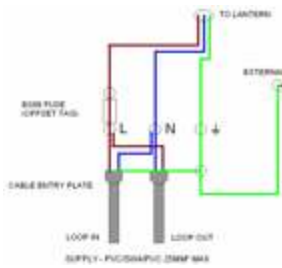


F144DP

Single Phase,
Double Pole, Single Fuse Unit.

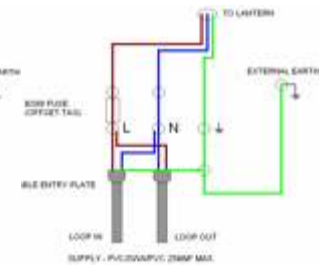
F144SP

Single Phase, Single Pole,
Single Fuse



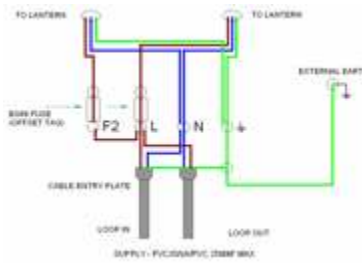
F144DP

Single Phase, Double Pole,
Single Fuse



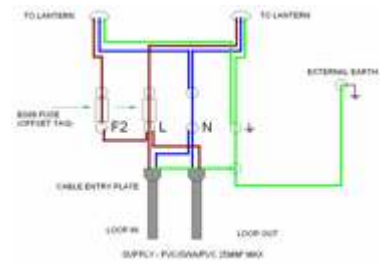
F244L

Single Phase, Single Pole,
Twin Fuse Upward



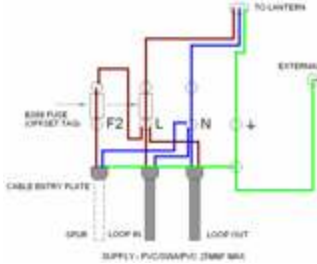
F244DL

Single Phase, Double Pole,
Twin Fuse Upward



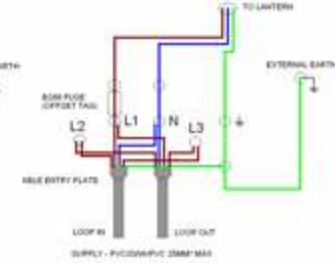
F244DS

Single Phase, Double Pole,
Twin Fuse with Spur



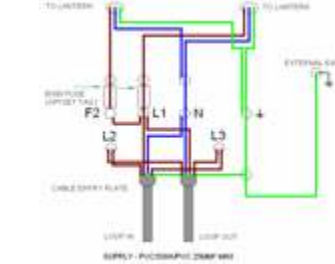
F344DP

Three Phase, Double Pole,
Single Fuse



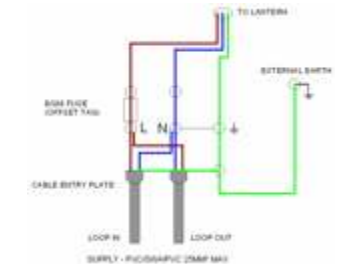
F344DL

Three Phase, Double Pole,
Twin Fuse Upward



F144PME

Single Phase, Double Pole,
PME Single Fuse (REC Supply)



CUT-OUTS

2 MODULE ISOLATOR UNIT

Moulded from flame retardant self extinguishing ABS



MDPI/F1L

Cut-Out Reference MDPI Isolator Unit

MDPI/F1L 32a DP Switch + 1 x BS88 Fuse Carrier Pre-Wired for 1 Upward Lantern Circuit
Designed to accept BS88 LD & MD fuse links up to 32A (29x12.7mm).

Miniature Circuit Breakers can be fitted instead of fuses.

Height 156 x Width 77 x Depth 91 mm.

Fitted with live, neutral and earth terminals as standard.

Other configurations are also available, please call for details.

Cut-Out Reference Cable Entry Plate Options

IP3 One Way Internal Brass Plate, available with 1x20mm hole, suitable for MDPI unit
ABS Plate fitted as standard with graduated cone grommet.

Brass Ferrule or Cable Gland can be supplied / fitted to the above plate.

External Brass Plates are also available, please call for details.



CUT-OUTS



DPI/F2

3 MODULE ISOLATOR UNIT

Moulded from flame retardant self extinguishing ABS

Cut-Out Reference DPI Isolator Unit

DPI/F1L	32a DP Switch + 1 x BS88 Fuse Carrier Pre-Wired for 1 Upward Lantern Circuit
DPI/F2L	32a DP Switch + 2 x BS88 Fuse Carrier Pre-Wired for 2 Upward Lantern Circuit
DPI/F1L/1S	32a DP Switch + 2 x BS88 Fuse Carrier Pre-Wired for 1 Upward Lantern & 1 Downward Spur Circuit

Designed to accept BS88 LD & MD fuse links up to 32A (29x12.7mm).

Miniature Circuit Breakers, RCD, RCBO and Time Clocks can be fitted instead of fuses.

Height 160 x Width 78 x Depth 80 mm.

Fitted with live, neutral and earth terminals as standard.

Other configurations are also available, please call for details.

Cut-Out Reference Extension Boxes

B1	Two way extension box
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Height 49 x Width 90 x Depth 67 mm, 80mm from switchgear to cable entry plate.

B21	Two way extension box, accepts up to 5 terminal blocks for up to 25mm ² circular conductors
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Height 123 x Width 88 x Depth 58 mm, 70mm from terminal block to cable entry plate.

B31	Three way extension box, accepts up to 5 terminal blocks for up to 25mm ² circular conductors
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Height 123 x Width 88 x Depth 95 mm, 70mm from terminal block to cable entry plate.

Other extension boxes are also available for up to 50mm² circular conductors, please call for details.

Cut-Out Reference Cable Entry Plate Options

IP4	Two Way Internal Brass Plate, available with 2x20mm holes, suitable for DPI unit
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ABS Plate fitted as standard with graduated cone grommets.

IP7	Two Way Internal Brass Plate, available with 2x20mm or 2x25mm holes, suitable for B1 and B21 extension box
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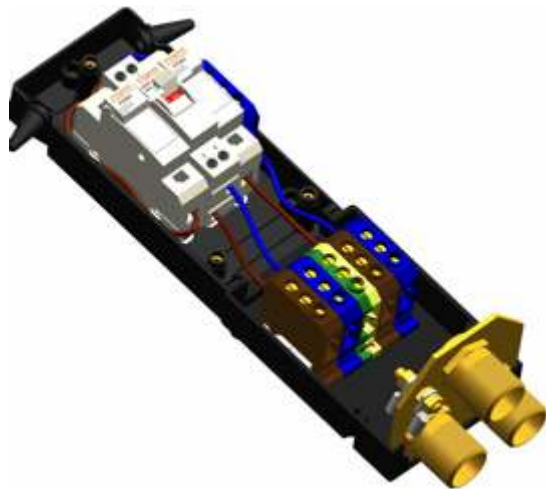
ABS Plate fitted as standard with graduated cone grommets.

IP8	Three Way Internal Brass Plate, available with 3x20mm or 3x25mm holes, suitable for B30 and B31 extension box
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ABS Plate fitted as standard with graduated cone grommets.

Brass Ferrules with cable clamps or Cable Glands can be supplied / fitted to any of the above plates.

External Brass Plates are also available, please call for details.



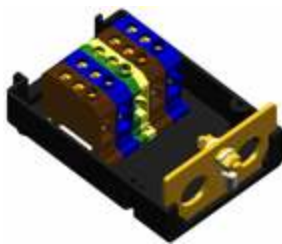
DPI/F1L/1S unit + B31 Extension + IP8 Plate.

Double Pole Twin Fuse Isolator Unit for Upward Fused Lantern and one Fused Spur Circuit with Extension Box and Brass Plate, 3 x Ferrules.

Total unit dimensions: Height 283 x Width 88 x Depth 95 mm



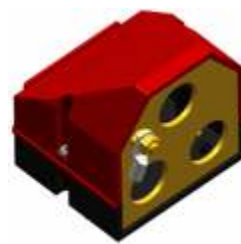
B21 Extension + IP7 Plate + 5 x E3 Terminal Blocks
H: 123 x W: 88 x D: 58mm



B21 Extension + IP7 Plate + 5 x Encapsulated Terminal Blocks
H: 123 x W: 88 x D: 58mm



B21 Extension + IP7 Plate + 2 x BW Glands
H: 123 x W: 88 x D: 58mm



B30 Extension + IP8 Plate
H: 75 x W: 88 x D: 95mm



B31 Extension + IP8 Plate + 3 Ferrules
H: 123 x W: 88 x D: 95mm

CUT-OUTS



FMI/F3

4 MODULE ISOLATOR UNIT

Moulded from flame retardant self extinguishing ABS

Cut-Out Reference FMI Isolator Unit

FMI/F1L	32a DP Switch + 1 x BS88 Fuse Carrier Pre-Wired for 1 Upward Lantern Circuit
FMI/F2L	32a DP Switch + 2 x BS88 Fuse Carrier Pre-Wired for 2 Upward Lantern Circuit
FMI/F3L	32a DP Switch + 3 x BS88 Fuse Carrier Pre-Wired for 3 Upward Lantern Circuit
FMI/F1L1S	32a DP Switch + 2 x BS88 Fuse Carrier Pre-Wired for 1 Upward Lantern & 1 Downward Spur Circuit
FMI/F1L2S	32a DP Switch + 3 x BS88 Fuse Carrier Pre-Wired for 1 Upward Lantern & 2 Downward Spur Circuit
FMI/F2L1S	32a DP Switch + 3 x BS88 Fuse Carrier Pre-Wired for 2 Upward Lantern & 1 Downward Spur Circuit

Designed to accept BS88 LD & MD fuse links up to 32A (29x12.7mm).

Miniature Circuit Breakers, RCD, RCBO and Time Clocks can be fitted instead of fuses.

Height 172 x Width 90 x Depth 91 mm.

Fitted with live, neutral and earth terminals as standard.

Other configurations are also available, please call for details.

Cut-Out Reference Extension Boxes

B2	Two way extension box, accepts up to 5 terminal blocks for up to 25mm ² circular conductors Height 105 x Width 90 x Depth 67 mm, 65mm from terminal block to cable entry plate.
B3	Three way extension box, accepts up to 5 terminal blocks for up to 25mm ² circular conductors Height 105 x Width 90 x Depth 93 mm, 65mm from terminal block to cable entry plate.

B22 and **B33** extension boxes increase distance from terminal block to cable entry plate to 125mm.

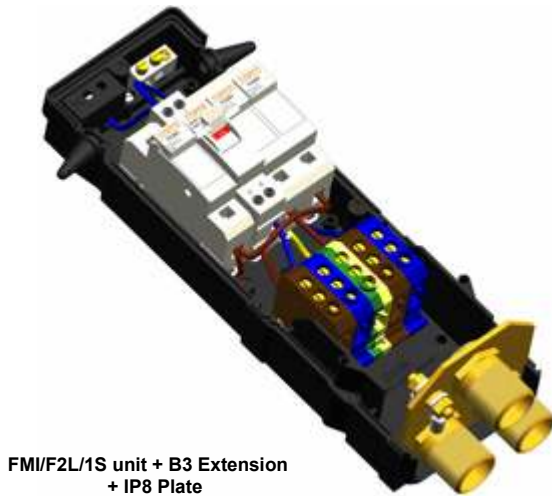
Other extension boxes are also available for up to 50mm² circular conductors, please call for details.

Cut-Out Reference Cable Entry Plate Options

IP7	Two Way Internal Brass Plate, available with 2x20mm or 2x25mm holes, suitable for B2 and B22 extension box ABS Plate fitted as standard with graduated cone grommets.
IP8	Three Way Internal Brass Plate, available with 3x20mm or 3x25mm holes, suitable for B3 and B33 extension box ABS Plate fitted as standard with graduated cone grommets.

Brass Ferrules with cable clamps or Cable Glands can be supplied / fitted to any of the above plates.

External Brass Plates are also available, please call for details.



FMI/F2L/1S unit + B3 Extension + IP8 Plate

Double Pole Triple Fuse Isolator Unit for Two Upward Fused Lantern and One Fused Spur Circuit with Extension Box and Brass Plate 3 x Ferrules.

Total unit dimensions: Height 277 x Width 90 x Depth 93 mm

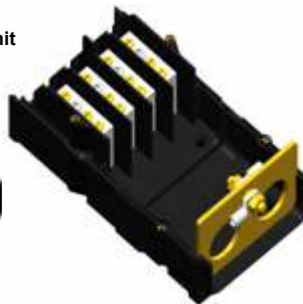
Two Way Extension Boxes to suit the 4 Module Isolator Unit



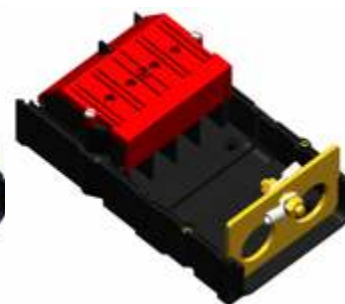
B2 Extension + IP7 Plate
4 x E3 Terminal Blocks
H: 105 x W: 90 x D: 67mm



B2 Extension + IP7 Plate
5 x Encapsulated Terminal Blocks
H: 105 x W: 90 x D: 67mm



B22 Extension + IP7 Plate
4 x T50 Terminal Blocks to accept 50mm² circular conductors
H: 165 x W: 90 x D: 67mm



B22 Extension + IP7 Plate
with Insulating Shroud over Terminal Blocks
H: 165 x W: 90 x D: 67mm



B22 Extension + IP7 Plate
+ 2 x BW Glands
H: 165 x W: 90 x D: 67mm

CUT-OUTS

FESTIVE - ISOLATOR UNIT

Moulded from flame retardant self extinguishing ABS

Cut-Out Reference	Festive Isolator Unit
TYPE1/FESTIVE	32a DP Switch, 3 x BS88 Fuse Carriers, RCBO + Timer, Pre-Wired for 1 Lantern Circuit

Height 345 x Width 90 x Depth 91 mm.

An Extension box can be fitted with up to 5 terminal blocks for up to 25mm² circular conductors.

Other configurations are also available, please call for details.



This is an example of a Typical Festive unit providing fused protection for the column lantern, sign light and time clock controlled RCD protection for the Festive decoration.

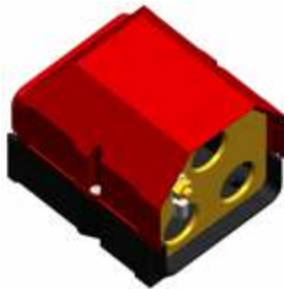
Three Way Extension Boxes to suit the 4 Module Isolator Unit



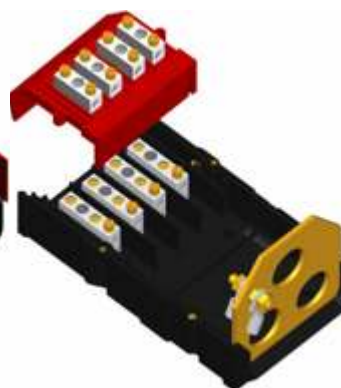
B3 Extension + IP8 Plate
4 x E3 or 4 x T50 + 4 x E4
Terminal Blocks
H: 105 x W: 90 x D: 93mm



B3 Extension + IP8 Plate
5 x Encapsulated
Terminal Blocks
H: 105 x W: 90 x D: 93mm



B3 Extension + IP8 Plate
H: 105 x W: 90 x D: 93mm



B33 Extension + IP8 Plate
4 x E3 + 4 x E4 Terminal Blocks



B33 Extension + IP8 Plate
+ 3 Ferrules
H: 165 x W: 90 x D: 93mm

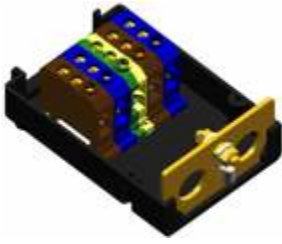
CUT-OUTS



B1 Extension + ABS Plate
Height 49 x Width 90 x Depth 67mm



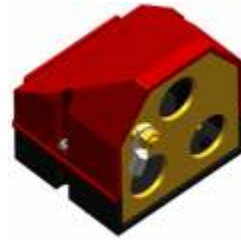
B21 Extension + IP7 Plate + 5 x E3 Terminal Blocks
H: 123 x W: 88 x D: 58mm



B21 Extension + IP7 Plate + 5 x Encapsulated Terminal Blocks
H: 123 x W: 88 x D: 58mm



B21 Extension + IP7 Plate + 2 x BW Glands
H: 123 x W: 88 x D: 58mm



B30 Extension + IP8 Plate
H: 75 x W: 88 x D: 95mm



B31 Extension + IP8 Plate + 3 Ferrules
H: 123 x W: 88 x D: 95mm

EXTENSION BOXES

Moulded from flame retardant self extinguishing ABS

Extension Boxes to Suit Fused Unit (F144) and 3 Module Isolator Unit (DPI)

Two and three way extension boxes, accepts up to 5 terminal blocks for up to 25mm² circular conductors. ABS Plate fitted as standard with graduated cone grommets. Brass Ferrules with cable clamps or Cable Glands can be supplied / fitted to any extension box. External Brass Plates are also available, please call for details.

B21 + B31, 70mm from terminal blocks to cable entry plate. B30, 28mm from terminal blocks to cable entry plate.

Extension Boxes to Suit 4 Module Isolator Unit (FMI)

Two and three way extension boxes, accepts up to 5 terminal blocks for up to 25mm² circular conductors. ABS Plate fitted as standard with graduated cone grommets.

Brass Ferrules with cable clamps or Cable Glands can be supplied / fitted to any extension box. External Brass Plates are also available, please call for details.

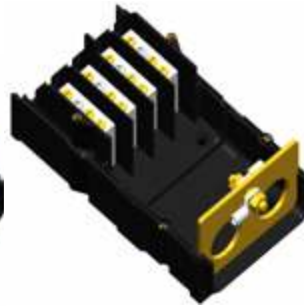
B2 + B3, 65mm from terminal blocks to cable entry plate. B22 + B33, 125mm from terminal blocks to cable entry plate.



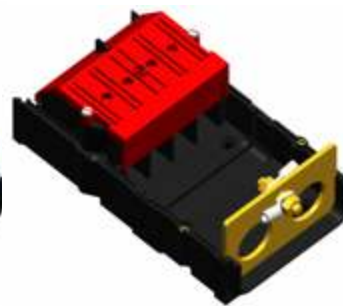
B2 Extension + IP7 Plate + 4 x E3 Terminal Blocks
H: 105 x W: 90 x D: 67mm



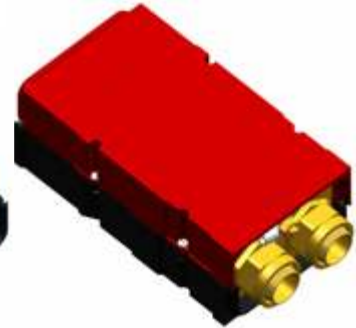
B2 Extension + IP7 Plate + 5 x Encapsulated Terminal Blocks
H: 105 x W: 90 x D: 67mm



B22 Extension + IP7 Plate + 4 x T50 Terminal Blocks to accept 50mm² circular conductors
H: 165 x W: 90 x D: 67mm



B22 Extension + IP7 Plate with Insulating Shroud over Terminal Blocks
H: 165 x W: 90 x D: 67mm



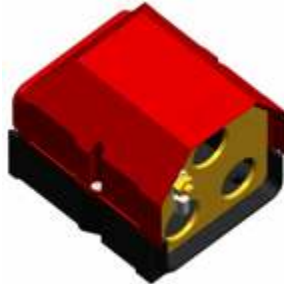
B22 Extension + IP7 Plate + 2 x BW Glands
H: 165 x W: 90 x D: 67mm



B3 Extension + IP8 Plate + 4 x E3 or 4 x T50 + 4 x E4 Terminal Blocks
H: 105 x W: 90 x D: 93mm



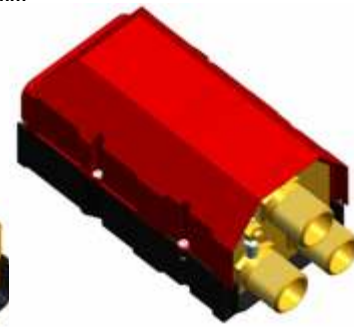
B3 Extension + IP8 Plate + 5 x Encapsulated Terminal Blocks
H: 105 x W: 90 x D: 93mm



B3 Extension + IP8 Plate
H: 105 x W: 90 x D: 93mm



B33 Extension + IP8 Plate + 4 x E3 + 4 x E4 Terminal Blocks
H: 165 x W: 90 x D: 93mm



B33 Extension + IP8 Plate + 3 Ferrules
H: 165 x W: 90 x D: 93mm

Other configurations are also available for all extension boxes, please call for details.

CUT-OUTS

TERMINAL BLOCKS

Cut-Out Reference Termination Blocks

TT253L, TT253E, TT253N Encapsulated Terminal Block to accept up to 25 mm² circular conductors.



Nickel Plated Brass Terminal Block with Flame Retardant ABS Case, colour coded Live, Neutral and Earth.

3no. Chambers (2no. Supply side and 1no. Load side) which are serrated to increase cable clamping security.

TS35 Din Rail Mounted.

Height (from din rail) 39 x Width 12 x Depth 45 mm.



TB030N (E3) Brass Terminal Block to accept up to 25 mm² circular conductors

Nickel Plated Brass Terminal Block secured by M4 set screw.

3no. 8.0 mm Diameter Chambers (2no. Supply side and 1no. Load side) which are serrated to increase cable clamping security.

Height 20 x Width 10 x Depth 37.5 mm.



TB035N Brass Terminal Block to accept up to 35 mm² circular conductors.

Nickel Plated Brass Terminal Block secured by M4 set screw..

3no. 9.4 mm Diameter Chambers (2no. Supply side and 1no. Load side) which are serrated to increase cable clamping security.

Height 25 x Width 12 x Depth 41.5 mm.



TBLOCK 35 Brass Terminal Block to accept up to 35 mm² circular conductors.

Nickel Plated Brass Terminal Block secured by M4 set screw..

4no. 9.4 mm Diameter Chambers (3no. Supply side and 1no. Load side) which are serrated to increase cable clamping security.

Height 38 x Width 15 x Depth 52 mm.

CUT-OUTS

EARTHING AND CLAMPING

Cut-Out Reference	Earthing and Clamping
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EMB8	Earth Marshalling Block with 8no. Chambers to accept up to 16mm ² cables Height 12 x Width 19 x Depth 51 mm
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EF0220 / EF0225 / EF0228	Earth Ferrule to fit Marshalling bridge, available with 20, 25 or 28mm diameters Diameter 22 x Length 33 mm (20mm ferrule) Diameter 27.6 x Length 33 mm (25mm ferrule) Diameter 29.4 x Length 33 mm (28mm ferrule)
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EMB1 +2 / 3	Earth Marshalling Bridge to accept up to three brass ferrules Height 38 x Width 62 x Depth 15 mm (EMB1) Height 38 x Width 97 x Depth 15 mm (EMB23)
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EF0020 / EF0025 / EF0028	Earth Ferrule to fit brass plates, available with 20, 25 or 28mm diameters Diameter 21 x Length 33 mm (20mm ferrule) Diameter 26.2 x Length 41 mm (25mm ferrule) Diameter 28 x Length 39 mm (28mm ferrule)
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EP3	One Way External Brass Plate, available with 20, 25 or 28mm hole Height 53 x Width 40 x Depth 63 mm
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EP5	Two Way External Brass Plate, available with 2x20mm, 2x25mm or 2x28mm holes Height 35 x Width 80 x Depth 63 mm
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IP3	One Way Internal Brass Plate, available with 1x20mm hole, suitable for MDPI unit Height 44 x Width 50 x Thickness 3 mm
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IP4	Two Way Internal Brass Plate, available with 2x20mm holes, suitable for F144 and DPI units Height 44 x Width 64 x Thickness 3 mm
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IP7	Two Way Internal Brass Plate, available with 2x20mm or 2x25mm holes, suitable for FMI Unit + B1, B2, B21 and B22 extension box Height 54 x Width 83 x Thickness 3 mm (46 x 82 mm for B21 extension box)
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IP8	Three Way Internal Brass Plate, available with 3x20mm or 3x25mm holes, suitable for B3, B30, B31 and B33 extension box Height 83 x Width 83 x Thickness 3 mm
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BW20 / BW25 / BW32	BW Brass Cable Gland for SWA cable, other sizes and types are also available. e.g. CW, D1W and E1W
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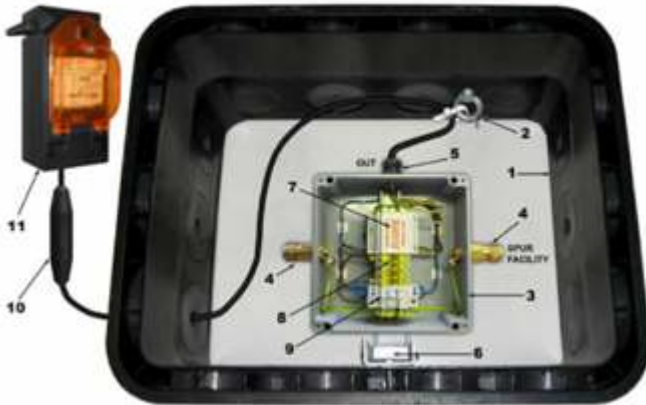
PG16	PG16 Nylon Cable Gland, other sizes are also available
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Other configurations are also available, please call for details.



TOFCO PASSIVE SAFETY KIT TPSK-ZV - Zero Voltage

The TPSK-ZV system provides complete electrical disconnection from the power supply upon impact of a column, post or sign, even if the supply cable is tethered. Electrical disconnection is achieved in the underground chamber within the time constraints as specified in BSEN 12767:2007. Upon a vehicular collision the ZV circuit will activate the Cut-out system housed within the enclosure and disconnect all power to the affected column, post or sign within the 0.4s time constraints as specified within BSEN 12767: 2007.



- 1 Underground cable chamber with duct access.
- 2 Fixing eye bolt for attaching IP67/68 snatch plug cable.
- 3 IP67 GRP Termination enclosure.
- 4 IP68 RC2K Brass gland.
- 5 IP68 Compression gland.
- 6 Adjustable height shelf can be fitted in vertical or horizontal position (removable for installation).
- 7 Passive disconnection circuit to comply with BSEN 12767:2007 disconnection time to achieve ZERO VOLTAGE.
- 8 Terminal Blocks up to 35mm² SWA to terminate supply cable.
- 9 Double Pole switch disconnecter & BS88 Fuse protection.
- 10 IP68 Snatch Plug & Socket System to comply with BSEN 12767:2007
- 11 Double Pole Column Isolator Unit manufactured to comply with BS60947-3 incorporating Zero Voltage Switch Unit (pat. pending).

FEATURES & BENEFITS OF ZERO VOLTAGE SYSTEM

Impact Detector:

- 1) **Feature:** Zero Voltage Switch.
- 2) **Feature:** Compact detector - Pre-fitted in Tofco DPI Isolator enclosure.
- 3) **Feature:** Epoxy encapsulated tilt switch.
- 4) **Feature:** Non-mercury based detection technology.

- Benefit:** Activated by collisions but not vibration.
Benefit: Reduced on-site installation time.
Benefit: Robust, not affected by moisture.
Benefit: Environmentally "friendly". RoHS Compliant.

Cut-out System:

- 1) **Feature:** Disconnects power to the Lamp Column on vehicular collision.
- 2) **Feature:** Disconnects power to the column when cable to column breaks.
- 3) **Feature:** No low voltage detection lines required.
- 4) **Feature:** Uses only 4 wires to column – supplied as part of kit.
- 5) **Feature:** Automatic restart after power interruption.
- 6) **Feature:** Can be Manually Disarmed and Armed Locally without interrupting entire circuit.
- 7) **Feature:** LED indication.
- 8) **Feature:** Filter circuit.

- Benefit:** Column is electrically safe after impact. No risk to emergency services. Disconnects within the 0.4s time scale as stated within BSEN 12767:2007.
Benefit: No risk to emergency services from live end of connector. Disconnects Live and Neutral if live cable accidentally severed by Groundworks contractors. Disconnects Live and Neutral to column even if detector is destroyed in impact.
Benefit: Simple to install. No low voltage power supply required.
Benefit: Lower cost. Easy to install in pre-wired kit format.
Benefit: No need for Manual Reset.
Benefit: Can be maintained independently.
Benefit: Installation and fault detecting easy. Warns installer/resetter that system is live.
Benefit: Removes risk of spurious triggering from electronic ballasts, traffic vibration or vandal attack (e.g. kicking the lamp column).

Please ensure minimum cable bend radius is achieved when selecting size of chamber.

TOFCO PASSIVE SAFETY KIT TPSK-ZV-FP (Zero Voltage - Feeder Pillar)

The latest addition to the Tofco Passive Safety Kit range is an above ground Zero Voltage Feeder Pillar System **TPSK-ZV-FP**.

The **TPSK-ZV-FP** has been designed to give individual circuit control that provides complete electrical disconnection from the power supply upon a vehicular collision of a **column, post or sign**. **Complete electrical disconnection** is achieved in the feeder pillar within the time constraints as specified in BSEN 12767:2007.

Each column, post or sign is fitted with a Tofco Isolator or Fuse Unit allowing looped & end of line terminations of SWA cables.

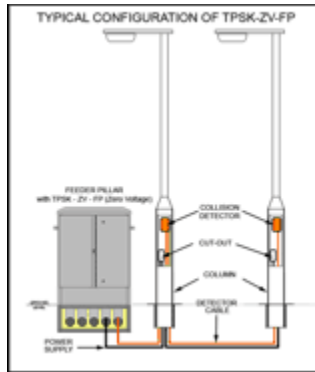
The independent Tofco Zero Voltage (ZV) Circuit Detector is fitted above the Isolator or Fuse Unit and is wired back to the ZV Controller located within the feeder pillar.

Upon a vehicular collision, the ZV detector will activate the ZV Controller housed within the feeder pillar and disconnect all power to the affected circuit within the 0.4s time constraints as specified within BSEN 12767: 2007.

Column Isolators / Fuse Units to BSEN 60947-1 and BS7654 will be supplied to meet the specification and allow for termination of SWA supply cables.



Typical installation Outgoing Impact Detector Cables



Column Impact Detector Cables –
Looped in each Column via Tilt Switch

The **TPSK-ZV-FP** system incorporates the same Zero Voltage technology that is used in our TPSK ZV underground chamber system offering the following features.

FEATURES & BENEFITS (TPSK-ZV-FP) - Impact Detector:

- 1. **Feature:** Zero Voltage switch
- 2. **Feature:** Compact detector
- 3. **Feature:** Epoxy encapsulated tilt switch.
- 4. **Feature:** Non-mercury based detection technology.

- Benefit:** Activated by collision but not vibration.
- Benefit:** Reduced on-site installation time.
- Benefit:** Robust, not affected by moisture.
- Benefit:** Environmentally "friendly". RoHS Compliant and disconnects within the 0.4s time scale as stated within BSEN 12767:2007.

FEATURES & BENEFITS (TPSK-ZV-FP) - Disconnection System:

- 1. **Feature:** Disconnects power to the lighting column / structure on vehicular collision.
- 2. **Feature:** Disconnects all Live and Neutral to the column when cable to column breaks.
- 3. **Feature:** No low voltage detection lines required.
- 4. **Feature:** Lighting Panel supplied pre-wired within Tofco steel feeder pillar.
- 5. **Feature:** Automatic restart after power fail.
- 6. **Feature:** LED indication.
- 7. **Feature:** Special detector filter circuit.

- Benefit:** COLUMN IS ELECTRICALLY SAFE AFTER COLLISION AND NO RISK TO EMERGENCY SERVICES.
- Benefit:** NO RISK TO EMERGENCY SERVICES FROM LIVE END OF CONNECTOR.
- Benefit:** Simple to install. No low voltage power supply required.
- Benefit:** Easy to install, factory test certificate.
- Benefit:** No need for manual reset.
- Benefit:** Installation and fault detecting easy. Indicates that system is live, that the detector is operational or if the ZV Disconnection system has been activated.
- Benefit:** Removes risk of spurious triggering from traffic vibration, electronic ballasts or vandal attack (e.g. kicking the lamp column).

FEEDER PILLAR CONSTRUCTION

The **TPSK-ZV-FP** comes pre-wired to meet the client's specification and can provide a combination of Passive and Non Passive outgoing circuits. Panel Assembly Drawings (PAD) will be provided for client approval prior to manufacture.

Pillar sized to accommodate all internal switchgear and DNO supply if required.
IP66 Internal enclosures to house panel components & ZV Disconnection System .
Main incoming Isolation device.
Protective devices for outgoing circuits.

Auxiliary circuits – heater, light, REC socket, thermostat.
Gland plate for SWA termination.
Internal wiring and blocks sized to suit.
Factory test certificate & PAD drawing supplied.

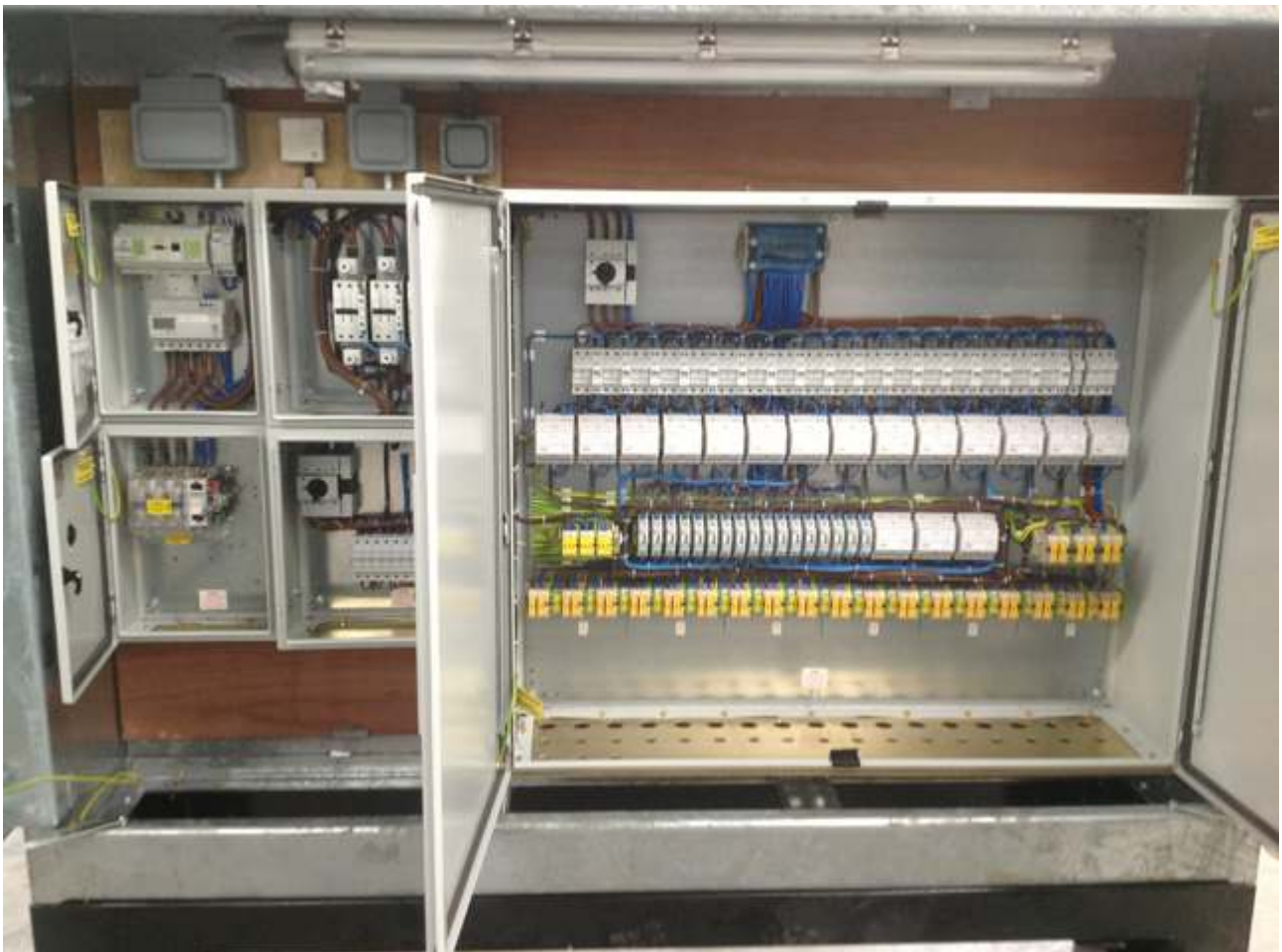
Please ensure minimum cable bend radius is achieved when selecting size of chamber.

TOFCO PASSIVE SAFETY KIT TPSK-ZV-FP (Zero Voltage - Feeder Pillar)



SPECIFICATION

- Passive Feeder Pillar System
- Designed to BSEN 12767
- DNO Supply
- Auxiliary Board
- Light, RCD, Heater & Thermostat
- PECU / Contactor Controlled
- 17 x M2000A Passive Circuits
- Built to HA Specification



TOFCO PASSIVE SAFETY KIT - M2000A ZV DISCONNECTOR



- Tofco Zero Voltage Disconnecter
- Tilt & Collision Sensor Interface
- DIN rail mounting
- <400ms second Disconnect if column is impacted
- RoHS Compliant

Connections & Indicators

Switched Output	2 x SPNO (Live + Neutral 230VAC / 50Hz)	
Contact Material	AgSnO ₂ (for lamp loads - 25A max inrush)	
Sensor Input	YT-ITS001 Sensor 230VAC / 50Hz	
Power Supply	230VAC Live & Neutral (Current required depends upon connected lamp ratings)	
LED Indicators	Red	Pulsing = Unit Working; Off = No Power or Fault;
	Yellow	On = Power Out OK; Off = Unit tripped
	Green	On = Unit OK; Flashing = Vibration detected; Off = Unit tripped

Description of Operation:

The **M2000A** module is a bespoke monitoring device, designed to work with the TOFCO Collision Detector Unit - CDU and will only operate in the event of a significant impact, wind and traffic vibration are filtered out by the unique time delay facility.

Both the TOFCO **TPSK-ZV** Chamber System and the **TPSK-ZV-FP** Feeder Pillar System use the M2000A & CDU technology to provide "**Complete Electrical Isolation**" of an impacted column, sign or pole.

When used with the TPSK-ZV Chamber system, the CDU is mounted within the TOFCO Cut-Out Unit and supplied pre-wired via the 4 core flex & snatch plug back to the IP67 enclosure.

The 4 core snatch plug that supplies the column cut-out unit is connected to the Live, Neutral, Earth & Sensor input port of the M2000A, housed within the IP67 enclosure. In the event of a column impact the CDU within the cut-out unit goes open circuit and the M2000A disconnects the power within the time constraints of BSEN 12767 - <400ms.

This gives complete electrical disconnection to the column, pole or sign.

TOFCO PASSIVE SAFETY KIT - M2000A ZV DISCONNECTOR

The TPSK ZV FP system operates by running a separate sensor cable for each Passive Circuit. The sensor cable is connected to the CDU's forming a closed loop system.

During an impact the CDU will go open circuit and disconnect the power back in the feeder pillar of the effected circuit within <400ms. This completely isolates the effected circuit at source.

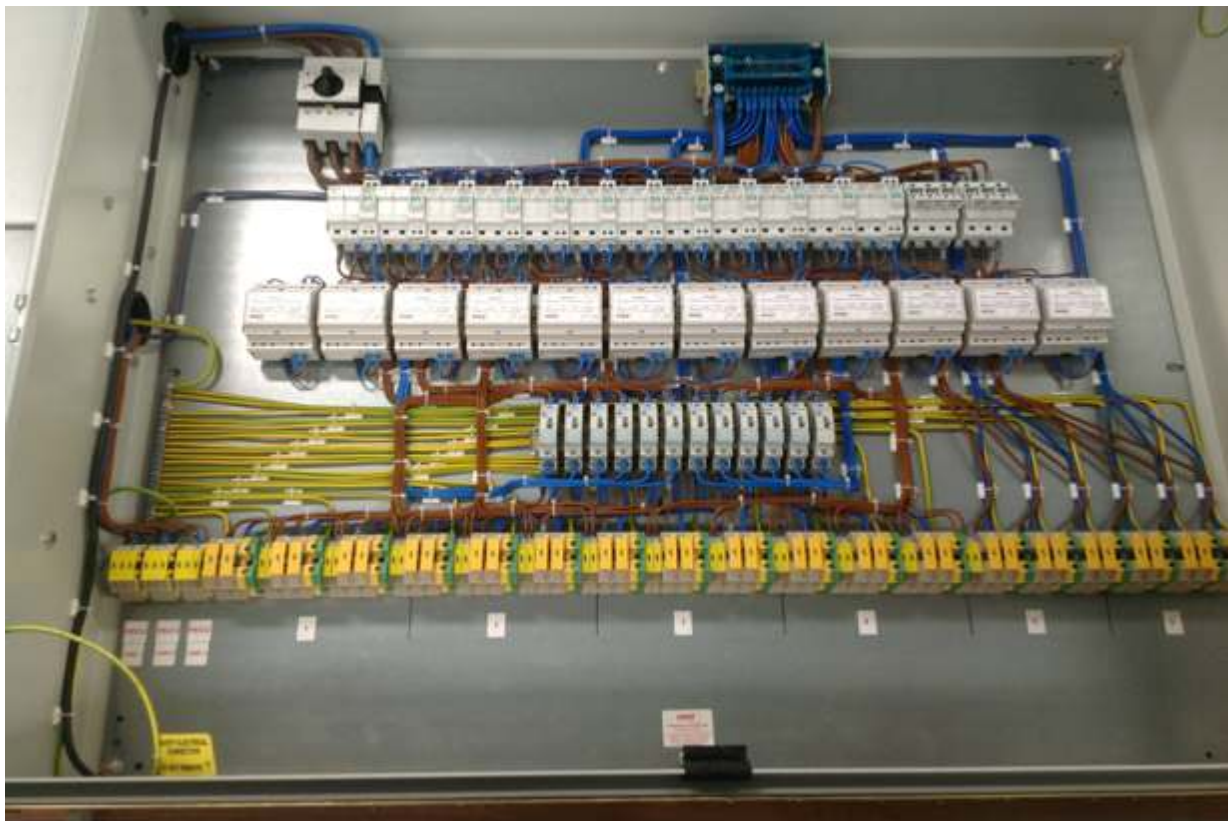
The M2000A is reset by turning off and re-applying the Live and Neutral supply. If the CDU is still indicating a tilt of the column, an open circuit, or the Live supply to the column is disconnected Then the M2000A will not reset, it is designed to fail SAFE.

The M2000A is fitted with three LED Indicators which can be used to verify that the TPSKZVFP System is working correctly or is in a tripped state:

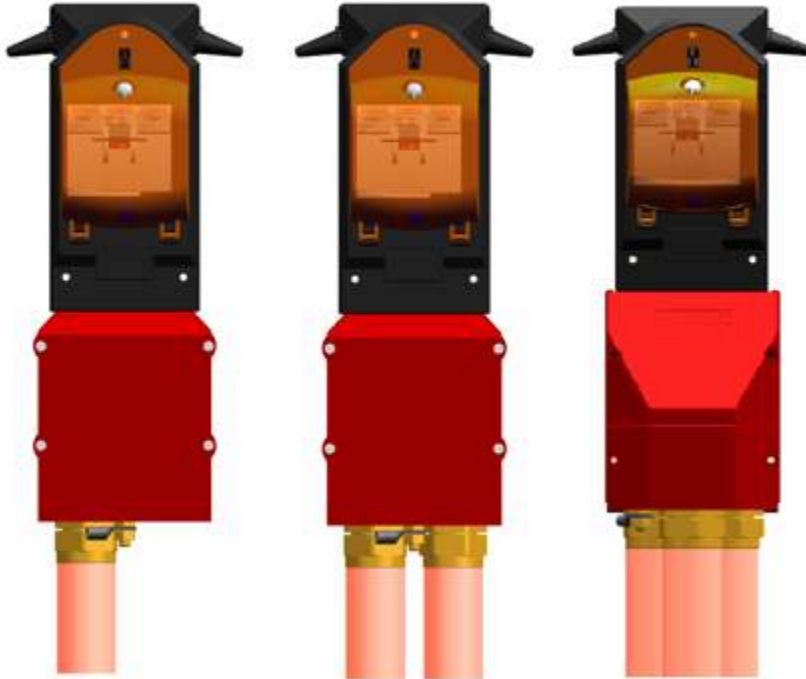
RED LED - When the unit is connected, and functioning correctly, the red LED will pulse slowly indicating that the 230VAC supply to the CDU circuit is on.

YELLOW LED - Indicates that the unit is supplying 230VAC to street lighting circuit, no LED = System tripped.

GREEN LED - Indicates that an input from the CDU is being received. No LED = System tripped.

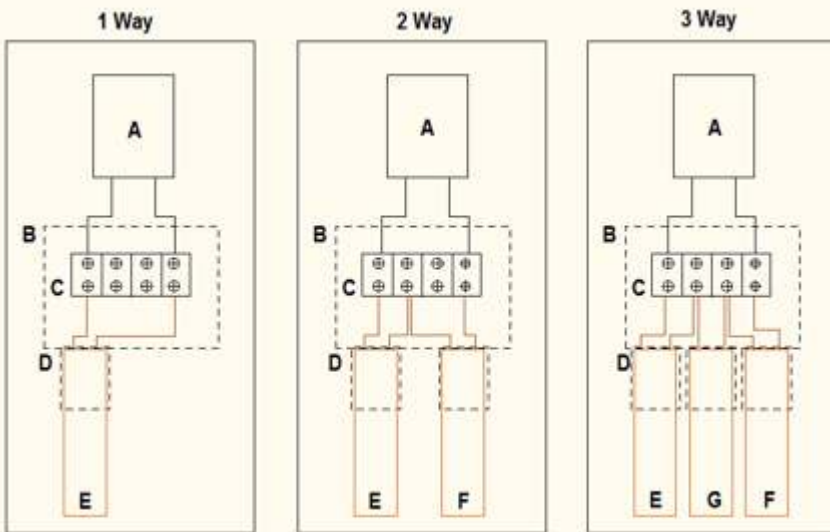


TOFCO PASSIVE SAFETY KIT - COLUMN COLLISION DETECTOR SENSOR



COLLISION DETECTOR UNIT - CDU

All Columns, Posts or Sign are fitted with a Collision Detector Unit (CDU), this is connected to the M2000A Disconnecter. In the event of an impact the CDU goes open circuit and disconnects the power from the M2000A within the time constraints of BSEN 12767 - <400ms.



- A = CDU
 - B = Mounting Plate & Clear Protective Cover
115mm high x 55mm wide x 65mm deep
 - C = Terminal Block
 - D = SWA Gland 20s
 - E = Incoming SWA Sensor Cable
 - F = Outgoing SWA Sensor Cable
 - G = Spur SWA Sensor Cable
- Note - For the TPSK-ZV Chamber system, the CDU is housed within the Cut-Out.**

COLUMN ISOLATOR / CUT-OUT UNIT

The Isolator or Cut-Out units are supplied to meet your scheme specification and requirements. They cater for all configurations - loop in / loop out, end of line, three way and spur facilities.

The SWA supply cable runs the length of the circuit and is followed by the Sensor Cable that connects into the CDU's forming a closed loop system. The Sensor cable is mains power, thus there is no requirements to run additional ducts, saving installation time and material costs.

For testing and maintenance, each Passive Circuit can be isolated within the feeder pillar, this disconnects all power to the lighting circuit and also the sensor circuit.

TOFCO PASSIVE SAFETY KIT (TPSK - SAFE)

The **TPSK-SAFE** provides electrical disconnection from the power supply upon impact of a column, post or sign, even if the supply cable is tethered. Electrical disconnection is achieved via the disconnection of the Snatch Plug system.

The **TPSK-SAFE** ensures that when a column/post/sign is knocked over the supply to it is terminated.

It is designed for use with all passive safety products but particularly recommended for **NE** (non energy absorbing) items.

TOFCO Passive safe electrical disconnection systems comprise the following five main components, with a variety of options to meet your specification.

- Cable Termination Box with pre-wired Din-rail mounted switchgear.
- Cable Glands for Armoured & Non Armoured Cables.
- Snatch Plug Cable system.
- TOFCO Fuse Unit / Isolator to BS7654 : 1997, BS EN 60947-3.
- Underground Cable Chamber.

ENCLOSURE FOR CABLE SIZES UP TO 16mm² SWA



- 1 Underground cable chamber with duct access.
- 2 Fixing eye bolt for attaching snatch plug cable.
- 3 Termination enclosure compliant to IP68 rating.
- 4 IP68 BW Corrosion guard captive cone gland for steel wire armoured cable.
- 5 IP68 Compression gland.
- 6 Adjustable height shelf can be fitted in vertical or horizontal position (removable for installation).
- 7 Double Pole switch disconnecter & BS88 Fuse protection.
- 8 Terminal Blocks to terminate supply cable.
- 9 IP68 Snatch Plug & Socket System to comply with BSEN 12767:2007.
- 10 Double Pole Column Isolator Unit manufactured to comply with BS60947-3.

CABLE TERMINATION BOX

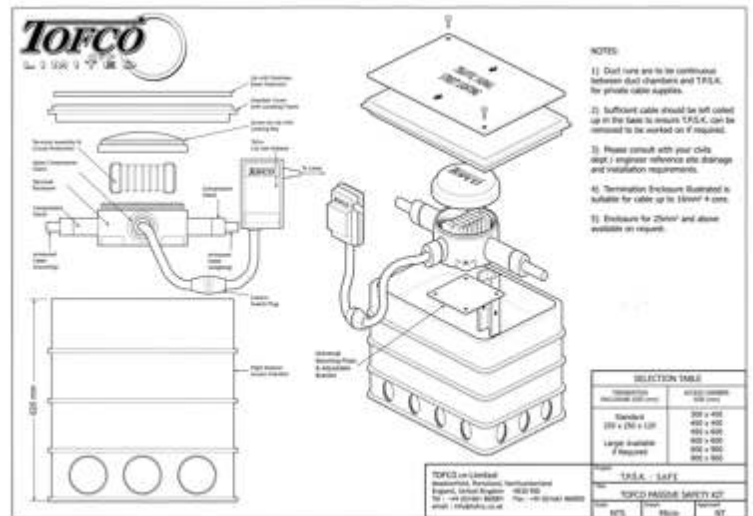
The termination box illustrated is manufactured from impact, corrosion and UV resistant glass reinforced polyester compound.

The screw-on lid allows ease of installation, locked with the special key prevents unauthorised tampering.

The box offers 1,2,3 and 4 way versatility and comes standard configured for three way cable termination, plus one blank plate option for an additional snatch plug cable connection.

An internal earth ring, connecting the four cable gland entries and steel din rail, achieves Earth continuity.

A bonded steel back plate secures the din rail, which carries a variety of cable terminals to allow the termination of the incoming and outgoing cable, whilst the TOFCO double pole **BS88 fuses, MCB, RCD, RCBO** and **Time Clock** options.



Please ensure minimum cable bend radius is achieved when selecting size of chamber.

TOFCO PASSIVE SAFETY KIT (TPSK - SAFE)

CABLE GLANDS

The **TPSK** will come complete with glands for looping cables and column take off cable, plus a fourth cable option to sign or bollard, where required.

SNATCH PLUG CABLE SYSTEM

The **TPSK "Snatch Plug Cable System"** is a 3 pin 16amp rubber sheathed male (2 metre length) & female (4 metre length) snatch plug assembly in standard format – other lengths available upon request. It is designed to disconnect if the Passively Safe Support Structure i.e. column or signpost, is knocked over.

A drawstring is fitted to the female end of the snatch connector to allow the cable joint to be pulled up to the column door for visual inspection.

Installation guidelines need to be followed regarding the clamping of the excess cable within the chamber and the fixing of the cable within the passive structure.

ENCLOSURE FOR CABLE SIZES 25mm² and 35mm² SWA



- 1 Underground cable chamber with duct access.
- 2 Fixing eye bolt for attaching snatch plug cable.
- 3 Termination enclosure compliant to IP67 rating
- 4 IP68 RC2K Brass gland
- 5 IP68 Compression gland.
- 6 Adjustable height shelf can be fitted in vertical or horizontal position (removable for installation).
- 7 Double Pole switch disconnecter & BS88 Fuse protection.
- 8 Terminal Blocks up to 35mm² SWA to terminate supply cable.
- 9 IP68 Snatch Plug & Socket System to comply with BSEN 12767:2007
- 10 Double Pole Column Isolator Unit manufactured to comply with BS60947-3

TOFCO FUSE UNIT / ISOLATOR to BS7654, BS EN 60947-3

The full range of TOFCO Fuse-Units and Isolators are available to be mounted within the Column or Signpost.

As standard we offer two options, pre-wired via a stuffing gland, with two metres of 3 core flex, connected to the male end of the snatch connector -

- TOFCO F144 double pole, single fused cut-out unit with earth.
- TOFCO DPI - 32amp switched double pole, single fused isolator with earth.

UNDERGROUND CABLE CHAMBER & ADJUSTABLE SHELF

The Chamber consists of 155mm high sections, in a variety of widths & depths, to accommodate your cabling requirements.

Cable entry is gained via a number of knock-outs which will accept cable ducts.

A ductile iron cover and frame badged "**Street Lighting**" comply to the 12.5 / 40 tonne vertical load HWA requirement for passive safe installations, without the presence of a crash barrier, connected to the male end of the snatch connector -

Within the chamber the Cable Termination Box can be mounted on the unique TOFCO adjustable shelf system in either the vertical or horizontal planes.

Please ensure minimum cable bend radius is achieved when selecting size of chamber.

DISTRIBUTION PANELS

The TOFCO range of pre-wired distribution panels are tailor made for various exterior lighting applications to meet our client's specification.

With over 20 years of panel building experience for the UK and export market we have specialised in supplying Pre-wired Panels & Feeder Pillars into the Street Lighting and Electrical Contractor Sectors.

TOFCO Feeder Pillar and Control Panels are currently powering Motorway & Local Authority Lighting, CCTV, Airports, Rail, Schools, Car Park, Traffic Lights, Data and Communication Applications.

TOFCO provide a full schematic and lay-out drawing service to meet your specification. As part of our ISO 9001 QA Procedures TOFCO "PAD" (Panel Assembly Design) drawings are submitted to our clients for approval prior to build stage.

We manufacture a wide variety of Electrical Control Panels – single or three phase, individual or group switched with a variety of protective devices Fuses, MCB, RCD, RCBO etc. Optional internal components include light, heater, thermostat, RCD socket, document holders.

Our aim is to meet your specification and exceed your requirements



DISTRIBUTION PANELS

Control Equipment

The following are generally required to be fitted as standard to the enclosure backplate. Other equipment may be specified:-

- * A Single Pole & Neutral (SPN) or Three Phase & Neutral (TPSN) incoming isolator or fuse switch, with door interlocking facility.
- * A suitable number of MCB's or BS88 fuse carriers for outgoing and auxiliary circuits - type, number and ratings as specified.
- * A Neutral shrouded terminal busbar for connection of up to 11 x 25mm² cables in addition to the control panel internal wiring.
- * Enclosure body, door and chassis plate fully bonded to the earth bar.
- * Relevant circuit identification and Safety Earth labels.

Additional Options

Examples of optional equipment that may be fitted to the enclosure are as follows:-

- * A suitably rated contactor(s) when switching is specified.
- * A brass gland plate attached to the bottom of the box for cable termination.
- * A switch unit for a 2 part photocell.
- * A photocell connector block.
- * Neon indicators on incoming and / or outgoing circuits.
- * A suitably rated anti-condensation heater - 15, 20 or 60W.
- * Terminal Blocks to accept cable sizes greater than 16mm².
- * Override switch, toggle or illuminated rotary.

The following may also be fitted as options when supplied with our range of Feeder Pillar Cabinets:-

- * External 13A RCD protected socket - for maintenance purposes.
- * Light and Switch inside the cabinet.



FABRICATION - 5mm FEEDER PILLARS - 500 SERIES



FP530



FP540

Single Door				
Pillar Reference	FP520	FP530	FP535	FP537
Height	1000	1230	1490	1200
Width	605	775	775	1100
Depth	295	455	460	455
Internal depth	265	425	430	425
Detachable Root	300	400	400	400
Backboard Height	800	950	1220	1000
Backboard Width	500	700	700	1000

Other sizes are available, please call for detail (mm)

Can be supplied Pre-wired to your specification

Double Door						
Pillar Reference	FP540	FP545	FP550	FP555	FP560	FP565
Height	1250	1490	1490	1490	2180	1490
Width	1200	1500	1800	2050	2100	2500
Depth	455	460	460	460	460	460
Internal depth	425	430	430	430	430	430
Detachable Root	400	400	400	400	400	400
Backboard Height	975	1220	1220	1220	1900	1220
Backboard Width	1100	1400	1700	1950	2000	2440

Other sizes are available, please call for detail (mm)

Can be supplied Pre-wired to your specification

Specifications:

Fabricated from 5mm mild steel sheet.
 Standard finish is hot dipped galvanised.
 18mm thick exterior grade ply backboard, treated with anti-fungicidal wood preservative.
 Pillar door hinged using internal Heavy duty HDG hinges.
 Earth strap fitted to pillar and door.
 Fitted with Heavy duty stainless steel locks c/w cover and security screw cap.
 A4 document holder fitted to inside of door.
 Door stay mechanism.
 Fitted with a detachable root section, open to front and back for easy cable entry.
 Root section Bitumen coated.
 Designed to IP44.

Optional Extras:

Can be supplied painted leatherette grey or other colours on request.
 Pillar can be supplied for surface mounting.
 Anti-graffiti / fly poster textured finish.
 Padlock facility.
 Vandal resistant padlock bar (VRB).

FABRICATION - 3mm FEEDER PILLARS - 300 SERIES



FP320



FP340

Single Door							
Pillar Reference	FP305	FP310	FP315	FP320	FP325	FP330	FP337
Height	800	920	985	990	995	1100	1140
Width	300	450	505	605	665	770	1100
Depth	205	205	255	290	275	350	350
Internal depth	180	180	230	265	250	325	325
Detachable Root	300	300	300	300	300	300	300
Backboard Height	675	830	890	890	900	1000	1000
Backboard Width	200	400	425	525	570	750	1000
Other sizes are available, please call for details							

Can be supplied Pre-wired to your specification

Double Door					
Pillar Reference	FP340	FP345	FP350	FP355	FP365
Height	1200	1490	1490	1490	1490
Width	1180	1500	1800	2050	2500
Depth	460	460	460	460	460
Internal depth	390	390	390	390	390
Detachable Root	400	400	400	400	400
Backboard Height	1000	1220	1220	1220	1220
Backboard Width	1150	1400	1700	1950	2440
Other sizes are available, please call for details					

Can be supplied Pre-wired to your specification

Specifications:

- Fabricated from 3mm mild steel sheet.
- Hot dipped galvanised.
- Standard finish is powder coated grey leatherette (BS693)
- 18mm thick exterior grade ply backboard, treated with anti-fungicidal wood preservative.
- Pillar door hinged using internal hinges.
- Earth strap fitted to pillar and door.
- Fitted with triangular headed locks.
- Door aperture fully gasketed.
- Pillar ventilation incorporated into design.
- Fitted with a detachable root section, open to front and back for easy cable entry.
- Root section Bitumen coated.
- Designed to IP54.

Optional Extras:

- Can be manufactured from stainless steel.
- Other colours are available.
- Pillar can be supplied for surface mounting.
- Anti-graffiti / fly poster textured finish.
- Padlock facility.
- Vandal resistant padlock bar (VRB).
- Other locks available.

FABRICATION - 3mm FEEDER PILLARS - 100 SERIES



FP138



FP140 with removable door open

Single Door				
Pillar Reference	FP138	FP139	FP140	FP141
Height	715	900	910	910
Width	205	380	480	780
Depth	160	160	240	310
Internal depth	135	135	215	280
Root	300	300	300	300
Backboard Height	585	785	785	785
Backboard Width	155	335	425	725
Other sizes are available, please call for details				(mm)

Can be supplied Pre-wired to your specification



FP141

Specifications:

- Fabricated from 3mm mild steel sheet.
- Standard finish is hot dipped galvanised.
- 18mm thick exterior grade ply backboard, treated with anti-fungicidal wood preservative.
- Removable door.
- Earth strap fitted to pillar and door.
- Fitted with triangular headed locks.
- Door aperture fully gasketed.
- Pillar ventilation incorporated into design.
- Fitted with an integral root section which can be bitumen coated.
- Designed to IP54.

Optional Extras:

- Can be manufactured from stainless steel.
- Door can be hinged via 2no. stainless steel hinges.
- Can be supplied painted leatherette grey or other colours on request.
- Pillar can be supplied for surface mounting.
- Anti-graffiti / fly poster textured finish.
- Vandal resistant padlock bar (VRB).
- Other locks available.

FABRICATION - MISCELLANEOUS

Control Gear Box Reference

	PB1	PB2
Length	430	390 (mm)
Width	170	140
Depth	140	140

Other sizes are available, please call for details



Specifications:

Fabricated from 2mm mild steel sheet.
Standard finish is hot dipped galvanised to BS EN 1461.
18mm thick exterior grade ply backboard, treated with a clear water repellent.
Earth strap fitted to pillar and door.
Fitted with triangular headed locks.

Tubular Traffic Bollard Reference

	TTB300	TTB450
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Height (above ground)	990	1065 (mm)
Width	500	616
Root	300	300
Sign Face diameter	300	450

Other sizes are available, please call for details



Specifications:

Fabricated from 48mm Dia. mild steel tube.
Hot dipped galvanised to BS EN 1461.
Standard finish is Powder coated Black.

Column Door - Reference

Adjustable Doors CD41 CD42

Concrete Utilities CUD1 CUD2

Stanton Staveley SSD1 SSD2

Length	673	673	685	609	711	940 (mm)
Width	139Dia.	168Dia	40-68-40	127	174	42+87+42
Design	Curved	Curved	3-Sided	Flat	Flat	3-Sided

Other sizes are available, please call for details



CD4 Adjustable Curved Door

CD4 Fitted with Adjustable sliding bar to accommodate a variety of aperture heights.

Specifications:

Fabricated from 2mm mild steel sheet.
Standard finish is hot dipped galvanised to BS EN 1461.
Fitted with M8 brass earth stud.
M8 tri-head lock.

Optional Extras:

Can be supplied painted.
Anti vandal Hex-pin locks are available.



CUD2 / SSD1 Flat Door



CUD2 / SSD1 Flat Door

Post extensions are manufactured to order, to your specific requirement, a variety of spigots and fixings are available.

Bracket Arms, we have an extensive drawing library of bracket arms and are sure we will have something to suit your requirement.



EP1 Post Extension



EP4 Post Extension



BA3 Bracket Arm



BA1 Bracket Arm



SA6 Spigot Adapter

The standard finish for all mild steel products is Hot Dipped Galvanised, we can also paint most things any colour you desire.

CABLE GLAND SELECTION CHARTS

SWA Conductor Size	No. Cores	Outside Diameter mm	Minimum Bend Radius mm	Gland Size				
				BW	CW	E1W	GPBW Min/Max O/D mm	RC2K Min/Max O/D mm
4 mm ²	2	13.4	107.2					
	3	14.1	112.8	20s	20s	20s	20s (11.5-16)	20s (9.5-15.9)
	4	15.0	120.0					
6 mm ²	2	14.4	115.8	20s	20s	20s	20s (11.5-16)	20s (9.5-15.9)
	3	15.1	120.8	20	20	20	20 (14.5-21)	20 (12.5-20.9)
	4	17.0	136.0					
10 mm ²	2	16.2	129.6	20	20	20	20 (14.5-21)	20 (12.5-20.9)
	3	17.8	142.4	25	25	25		
	4	19.1	152.8					
16 mm ²	2	19.1	152.8				20 (14.5-21)	20 (12.5-20.9)
	3	20.4	163.2	25	25	25	25 (20.5-27)	25s (14.0-22.0)
	4	22.0	176.0					25 (18.2-26.2)
25 mm ²	2	22.2	177.6	25	25	25	25 (20.5-27)	25 (18.2-26.2)
	3	24.9	199.2	32	32	32		32 (23.7-33.9)
	4	26.8	214.4					
35 mm ²	2	25.5	204.0					
	3	27.2	217.6	32	32	32	32 (26.5-33.5)	32 (23.7-33.9)
	4	29.5	236.0					

PG Nylon Cable Glands	
Gland Size	Cable Diameter Min – Max
PG7	3.0 – 6.5mm
PG9	4.0 – 8.0mm
PG11	5.0 – 10.0mm
PG13.5	6.0 – 12.0mm
PG16	10.0 – 14.0mm
PG21	13.0 – 18.0mm
PG29	18.0 – 25.0mm
PG36	22.0 – 32.0mm

The GPBW glands are for TPSK SAFE terminations for cables up to 16mm² 4 core, cables over this size i.e. 25mm² & 35mm² please refer to the RC2K glands.
Suggested minimum bending radius of BS5467 Mains, XLPE, PVC, SWA, MDPE copper conductors 4mm² – 35mm² is 8 x overall cable diameter.
The above data is for guidance purposes only as tolerances of cables and glands vary between manufacturers and will also vary for MDPE cables.

INGRESS PROTECTION CLASSIFICATION CHART

IP	Protection Provided	IP	Protection Provided
1	Protected against solid objects up to 50mm e.g. accidental touch by hands	1	Protected against vertically falling drops of water e.g. condensation
2	Protected against solid objects up to 12mm e.g. fingers	2	Protected against direct sprays of water up to 15 deg. from the vertical
3	Protected against solid objects over 2.5mm e.g. tools	3	Protected against direct sprays of water up to 60 deg. from the vertical
4	Protected against solid objects over 1mm e.g. wires	4	Protected against water sprayed from all directions - limited ingress permitted
5	Protected against dust - limited ingress (no harmful deposit)	5	Protected against low pressure jets of water from all directions - limited ingress permitted
6	Totally protected against dust	6	Protected against strong jets of water e.g. for use on shipdecks - limited ingress permitted
		7	Protected against the affects of immersion between 15cm and 1mtr
		8	Protected against long periods of immersion under water



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