

## MP Medium Power range

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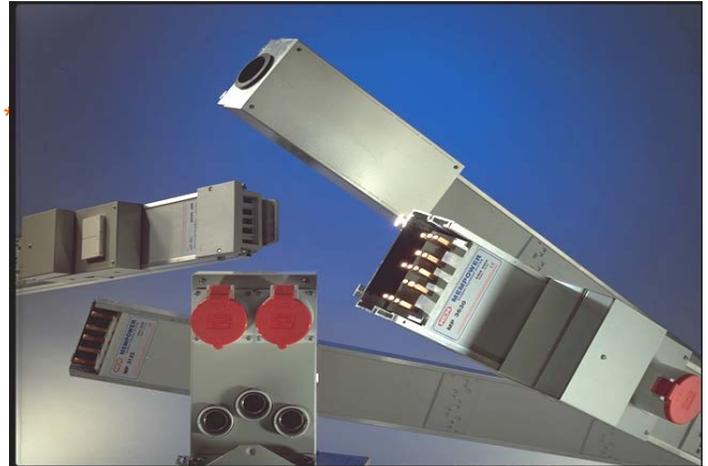
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## System range

Power trunking from **125A** to **800A** rated current on a **415V**max 3-phase supply in a **5-pole** configuration.

Single-pole tap-off units rated up to **125A** at 240Vmax 1-phase (SP&N+PE). Options: Outgoing circuit protective device – MCB; BS88 fuse switched or un-switched; BS4343 industrial socket-outlet + MCB; BS1363 twin socket outlet.

Triple-pole tap-off units rated up to **125A** at 415V 3-phase (TP&N+PE). Options: Outgoing circuit protective device – MCB; BS88 fuses switched or un-switched, DIN fuses switched, BS4343 industrial socket-outlet +MCB. Triple-pole tap-off units - fuse-switch with BS88 fuses SPN and TPN **160A** to **315A** rated current. Triple-pole tap-off units – MCCB TPN and 4-pole **125A** and **250A** rated current.

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## MP Medium Power range

### System components and list numbers

*This section is divided into three parts to reflect the differences in construction across the range: 125A – 250A; [400A & 630A](#); [800A](#).*

#### 125 – 250A

Component	Description	Example of list number
<b>Straight lengths</b> 125A – 250A	125, 160 & 250A - 5-pole with full size neutral and earth bar - in 3 metre lengths with 8 tap-off outlets; complete with fitted joint pack.  1 and 2 metre lengths available on request	<b>Example: MP3160FN</b> MP = medium power range 3 = 3 metres 160 = 160A rated FN = full neutral
<b>Feed units</b> 125A – 250A	<b>Un-switched</b> cable end-feed units at 125A, 160A and 250A. Polarity L1, E, L2, N, L3.  <b>Reverse</b> cable end-feed units, rated as above. Polarity L3, N, L2, E, L1.  <i>Switched end-feeds available to special order.</i>  <b>Centre-feed</b> units, to feed in from the LH side or the RH side of the face.  <i>Switched centre-feeds available to special order</i>	<b>Example: MP250EFN</b> MP = medium power range 250 = 250A rated EF = end-feed N = full neutral <b>Example: MP250REFN</b> REF = reverse end-feed  <b>Example: MP250EFNSW</b> SW = switched <b>Example: MP160CFLHFN</b> MP = medium power range 160 = 160A rated CF = centre-feed LH = left-hand FN = full Neutral
<b>Intersections</b> [cross] 125A – 250A	Allows a run to branch off left or right, or both.  An end-cap is required if only one branch is used - to seal the unused branch.	<b>Example: MP250ISFN</b> MP = medium power range 250 = 250A rated IS = intersection FN = full Neutral
<b>Angles</b> 125A – 250A	A <b>flat angle</b> turns the face of the trunking laterally through 90°. A <b>right-hand angle</b> turns the tapping face to the right as viewed from the normal direction of run. A <b>left-hand angle</b> turns the tapping face to the left as viewed from the normal direction of run. An <b>edge angle</b> turns the face of the trunking perpendicularly through 90° either away from (AOE), or forward from the tapping face (AIE).	<b>Example: MP250AFRHFN</b> MP = medium power range 250 = 250A rated AFRH = angle flat right-hand FN = full Neutral  <b>Example: MP250AIEFN</b> MP = medium power range 250 = 250A rated AIE = angle inside edge FN = full Neutral
<b>Tees</b> 125A – 250A	<b>Flat tee</b> - Allows a run to branch off one side of the run. Can be used for a left-hand or right-hand branch.	<b>Example: MP160FTFN</b> MP = medium power range 160 = 160A rated FT = flat-tee FN = full Neutral

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## MP Medium Power range

### System components and list numbers [cont'd.]

#### 125A -250A (cont'd)

<b>End cap</b> 125A – 250A	Cover to seal the open end of a run when feeding from the normal direction. Fits all ratings 125A – 250A. <b>Reverse</b> end cap used when feeding from the reverse end	<b>MP250EC</b>  <b>MP250REC</b>
<b>Universal fixing bracket - 250A</b>	Trunking fixing bracket for surface mounting. Fits all ratings 125A –250A.	<b>MP250UFB</b>
<b>Riser support bracket - 250A</b>	Support for vertical trunking run (riser). Fits all ratings 125A – 250A.	<b>MP250RFB</b>
<b>Spare joint pack</b>	Replacement pack for lost/damaged joint pack – part number according to rating.	<b>Example: MP160JPFN</b> 160A MP joint pack

#### 400A, 630A

Component	Description	Example of list number
<b>Straight lengths</b> 400A, 630A	400A and 630A - 5-pole including full size neutral and earth bar - in 3 metre lengths; complete with fitted joint pack. 8 tap-off outlets per length at 400A; 7 tap-off outlets per length at 630A.  1 and 2 metre lengths available on request	<b>Example: MP3630FN</b> MP = medium power range 3 = 3 metres 630 = 630A rated FN = full neutral
<b>Feed units</b> 400A, 630A	<b>Un-switched</b> cable end-feed units at 400A and 630A . Polarity L1, E, L2, N, L3.  <b>Reverse</b> cable end-feed units, rated as above. Polarity L3, N, L2, E, L1.  <i>Switched end-feeds available to special order.</i>  <b>Centre-feed</b> units, to feed in from the LH side or the RH side of the face.  <i>Switched centre-feeds available to special order.</i>	<b>Example: MP400EFN</b> MP = medium power range 400 = 400A rated EF = end-feed N = full neutral <b>Example: MP400REFN</b> REF = reverse end-feed  <b>Example: MP400EFNSW</b> SW = switched <b>Example: MP400CFLHFN</b> MP = medium power range 400 = 400A rated CF = centre-feed LH = left-hand FN = full Neutral
<b>Intersection</b> [cross] 400A, 630A	Allows a run to branch off left or right, or both.  An end-cap is required if only one branch is used - to seal the unused branch.	<b>Example: MP630ISFN</b> MP = medium power range 630 = 630A rated IS = intersection FN = full Neutral
<b>Tees</b> 400A, 630A	<b>Flat tee</b> - Allows a run to branch off one side of the run. Can be used for a left-hand or right-hand branch.	<b>Example: MP400FTFN</b> MP = medium power range 400 = 400A rated FT = flat-tee FN = full Neutral

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### System components and list numbers [cont'd.]

#### 400A, 630A (cont'd)

<b>Angles</b> 400A, 630A	<p>A <b>flat angle</b> turns the face of the trunking laterally through 90°. A <b>right-hand</b> angle turns the tapping face to the right as viewed from the normal direction of run. A <b>left-hand</b> angle turns the tapping face to the left as viewed from the normal direction of run.</p> <p>An <b>edge angle</b> turns the face of the trunking perpendicularly through 90° either away from (AOE), or forward from the tapping face (AIE).</p>	<p><b>Example: MP400AFRHFN</b> MP = medium power range 400 = 400A rated AFRH = angle flat right-hand FN = full Neutral</p> <p><b>Example: MP400AIEFN</b> MP = medium power range 400 = 400A rated AIE = angle inside edge FN = full Neutral</p>
<b>End cap</b> 400A, 630A	Cover to seal the open end of a run when feeding from the normal direction. Fits both ratings. <b>Reverse</b> end cap used when feeding from the reverse end	<b>MP630EC</b>  <b>MP630REC</b>
<b>Universal fixing bracket</b> - 400A, 630A	Trunking fixing bracket for surface mounting. Fits both ratings	<b>MP630UFB</b>
<b>Riser support bracket</b> - 400A, 630A	Support for vertical trunking run (riser). Fits both ratings	<b>MP630RFB</b>
<b>Spare joint pack</b>	Replacement pack for lost/damaged joint pack – part number according to rating.	<b>Example: MP630JPFN</b> 630A MP joint pack

#### 800A

Component	Description	Example of list number
<b>Straight lengths</b> 800A	800A - 5-pole with full size neutral and earth bar - in 3 metre lengths with 6 tap-off outlets; complete with fitted joint pack.  1 and 2 metre lengths available on request	<b>MP3800FNE</b> MP = medium power range 3 = 3 metres 800 = 800A rated FN = full neutral E = Earth bar
<b>End cap</b> 800A	Cover to seal the open end of a run when feeding from the normal direction. Fits both ratings. <b>Reverse</b> end cap used when feeding from the reverse end	<b>MP800EC</b>  <b>MP800REC</b>
<b>Tees</b> 800A	<b>Flat tee</b> - Allows a run to branch off one side of the run. Specified right-hand or left-hand	<b>Example: MP800FTRHFNE</b> MP = medium power range 800 = 800A rated FT = flat-tee RH = Right-hand FN = full Neutral E = Earth bar

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## MP Medium Power range System components and list numbers [cont'd.]

### 800A (cont'd)

<p><b>Feed units</b> 800A</p>	<p><b>Un-switched</b> cable end-feed unit at 800A. Polarity L1, E, L2, N, L3.</p> <p><b>Reverse</b> cable end-feed units, rated as above. Polarity L3, N, L2, E, L1.</p> <p>Switched end-feeds and offset entry end-feeds available to special order.</p> <p><b>Centre-feed</b> units, to feed in from the LH side or the RH side of the face.</p> <p>Switched centre-feeds available to special order.</p>	<p><b>MP800EFNE</b> MP = medium power range 800 = 800A rated EF = end-feed N = full neutral E = Earth bar <b>Example: MP800REFNE</b> REF = reverse end-feed</p> <p><b>Example: MP800EFNESW</b> SW = switched</p> <p><b>Example: MP800CFLHFNE</b> MP = medium power range 800 = 800A rated CF = centre-feed LH = left-hand FN = full Neutral E = Earth bar</p>
<p><b>Angles</b> 800A</p>	<p>A <b>flat angle</b> turns the face of the trunking laterally through 90°. A <b>right-hand</b> angle turns the tapping face to the right as viewed from the normal direction of run. A <b>left-hand</b> angle turns the tapping face to the left as viewed from the normal direction of run. An <b>edge angle</b> turns the face of the trunking perpendicularly through 90° either away from (AOE), or forward from the tapping face (AIE).</p>	<p><b>Example: MP800AFRHFNE</b> MP = medium power range 800 = 800A rated AFRH = angle flat right-hand FN = full Neutral E = Earth bar</p> <p><b>Example: MP800AIEFNE</b> MP = medium power range 800 = 800A rated AIE = angle inside edge FN = full Neutral E = Earth bar</p>
<p><b>Universal fixing bracket - 800A</b></p>	<p>Trunking fixing bracket for surface mounting.</p>	<p><b>MP800UFB</b></p>
<p><b>Riser support bracket - 800A</b></p>	<p>Support for vertical trunking run (riser).</p>	<p><b>MP800RFB</b></p>
<p><b>Spare joint packs</b></p>	<p>Replacement pack for lost/damaged joint pack IP4X Replacement pack for lost/damaged joint pack IP54</p>	<p><b>MP800JPNE</b> <b>MP800JPNEX</b></p>
<p><b>Universal code letters added to list numbers</b></p> <p><b>Applies to all ratings</b></p>	<p>'X' – added at the end of the list number of any of the trunking components signifies an IP54 protection rating</p> <p>'T' – added after the numerals of the list number of any of the trunking components signifies tinned copper bars.</p> <p>'F' - added at the end of the list number of any of the trunking components signifies an internal fire barrier has been fitted.</p> <p>Where the above letters are combined the sequence of use is 'T' after the numerals with 'F' and 'X' at the end of the part number</p>	<p><b>Example: MP800EFNEX</b> As MP800EFNE with degree of protection increased to IP54.</p> <p><b>Example: MP250TEFN</b> 250A end-feed with tinned copper bars</p> <p><b>Example: MP1160TFNFX</b></p>

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**MP Medium Power range**  
System components and list numbers [cont'd.]

Component	Description	Example of list number
<b>Plug-in tap-off units</b>	Tap-off unit with 1-pole Type C <b>MCB</b> 6A –63A SP&N in metal enclosure. Connected phase specified.	<b>Example: MTA116M/L1</b> MTA = MP range tap-off unit 1 = 1-pole 16 = 16A M = MCB L1 = connected L1 and N + E
	Tap-off unit with 3-pole Type C <b>MCB</b> 6A –63A TP&N in metal enclosure.	<b>Example: LT316M</b> MTA = MP range tap-off unit 3 = 3-pole 16 = 16A M = MCB
	Tap-off unit with 1-pole Type C <b>MCB</b> , 16A, 32A or 63A with BS4343 <b>socket-outlet</b> , in metal enclosure. Connected phase specified.	<b>Example: MTA116MC1/L2</b> MTA = MP range tap-off unit 1 = 1-pole 16 = 16A rated M = MCB C1= BS4343 socket-outlet L2 = connected L2 and N + E
	Tap-off unit with 3-pole Type C <b>MCB</b> , 16A, 32A or 63A with BS4343 <b>socket-outlet</b> , in metal enclosure.	<b>Example: MTA316MC1</b> MTA = MP range tap-off unit 3 = 3-pole 16 = 16A rated M = MCB C1= BS4343 socket-outlet
	Tap-off unit with <b>BS88 fuse</b> , 6A – 100A SP&N <b>un-switched</b> , in metal enclosure. Connected phase specified.	<b>Example: MTA163B/L1</b> MTA = MP range tap-off unit 1 = 1-pole 63 = 63A B = BS88 fuse L1 = connected L1 and N + E
	Tap-off unit with <b>BS88 fuses</b> , 6A – 200A TP&N <b>un-switched</b> TP&N in metal enclosure.	<b>Example: MT3200B</b> MT = MP range tap-off unit 3 = 3-pole 200 = 200A = BS88 fuse B
	Tap-off unit with <b>BS88 fuse</b> , 6A – 125A SP&N <b>switched</b> , in metal enclosure. Connected phase specified.	<b>Example: MTA1125BSW/L1</b> MTA = MP range tap-off unit 1 = 1-pole 125 = 125A = BS88 fuse SW = switched L1 = connected L1 and N + E
Tap-off unit with <b>BS88 fuses</b> , 6A – 125A TP&N <b>switched</b> TP&N in metal enclosure.	<b>Example: MTA3125BSW</b> MTA = MP range tap-off unit 3 = 3-pole 125 = 125A = BS88 fuse SW = switched B	
As above with <b>DIN type NH fuse(s)</b> 32A – 125A	<b>Example: MTA125NSW</b> N = NH fuse	
Tap-off unit with switch-disconnector-fuse with BS88 fuse, 160A – 200A SP&N in metal enclosure. Connected phase specified. <i>A switch-disconnector-fuse is also known as a fuse combination switch (FCS).</i>	<b>Example: MT1200BFS/L2</b> MT = MP range tap-off unit 1 = 1-pole 200 = 200A B = BS88 fuse L1 = connected L1 and N + E	
Tap-off unit with switch-disconnector-fuse with BS88 fuses, 200A – 315A TP&N in metal enclosure.	<b>Example: MT3200BFS</b> 3 = 3-pole	

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## MP Medium Power range

### System components and list numbers [cont'd.]

Plug-in tap-off units (cont'd.)	Tap-off unit with MCCB, 125A & 250A TP&N or 4-pole, in metal enclosure.	<b>Example: MT3250MB</b> MT = MP range tap-off unit 3 = 3-pole      250 = 250A MB = MCCB
	Tap-off unit with twin 13A BS1363 socket outlet in metal enclosure. Connected phase specified.	<b>MTA113B/L2</b> MTA = MP range tap-off unit 1 = 1-pole 13 = 13A socket outlet L2 = connected L2 and N + E
	Tap-off unit with RCD protected twin 13A BS1363 socket outlet in metal enclosure. Connected phase specified.	<b>MTA113B/L2/RCD</b>



MTA3100BSW



MT3125MB



MTA363M



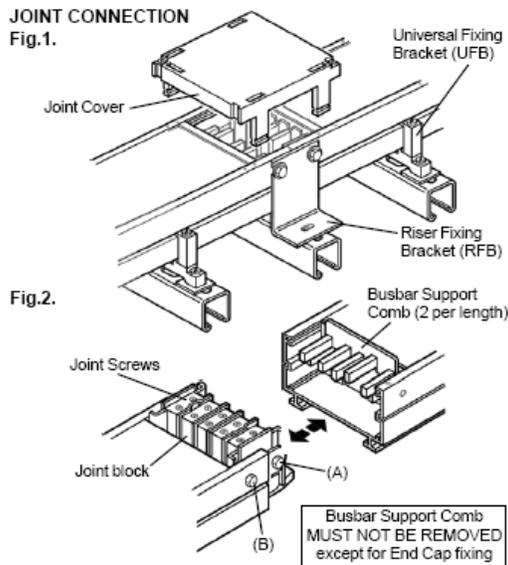
MT3200BFS

### Maintenance procedure

1. A check should be made annually to ensure the security of mountings and the fixing of covers, particularly where degree of protection IP54 is to be maintained.
2. It is recommended that condition monitoring is carried out annually, e.g. by thermal imaging. This would require a temperature profile being established under normal running conditions for comparison with the subsequent check methods.
3. Subject to satisfactory results of monitoring no routine examination of the electrical joints is necessary; however it is recommended that the integrity of each joint, where accessible, is checked at not more than 5 year intervals by the use of thermal imaging.
4. Circuit protective devices in tap-off units should be maintained in accordance with the instructions for each device.

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## MP Medium Power range Assembly and mounting



### Jointing – 125A – 630A

The trunking is mounted on the Universal Fixing Brackets (UFB) spaced at not more than 1.5 metres.

The two trunking components slot together as shown (Fig.2) and are bolted in place. The electrical joints are made with screw terminals, torque controlled.

### Risers - 125A – 630A

Where the trunking is vertically mounted Riser Fixing Brackets (RFB) are used at each joint.

For vertical sections over 9 metres high it is recommended that a trunking section with block bar is fitted at the base and thereafter every 9 metres up the run. **The block bar transfers the weight of the conductors to the case relieving the strain on the electrical joints.** The block bar is factory fitted to order, except for the 630A rating where it is fitted as standard. The block bar eliminates one of the tap-off outlets e.g. leaving 7 outlets on a 3-metre length.

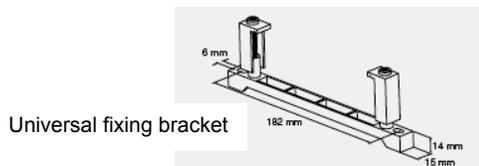
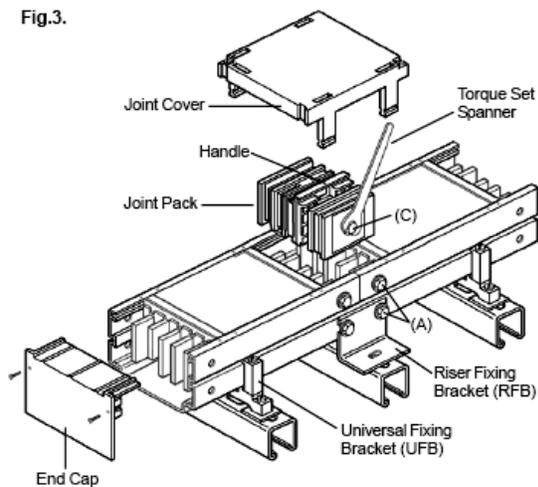
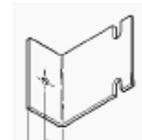


Fig.3.



Riser fixing bracket



### Jointing – 800A - Cassette-type joint pack

The trunking is mounted using Riser Fixing Brackets (RFB) at each joint with a Universal Fixing Bracket (UFB) positioned midway between the joints.

The two trunking components butt together as shown and the joint pack is inserted. The joint is then tightened with the torque-set disposable spanner.

### Risers – 800A

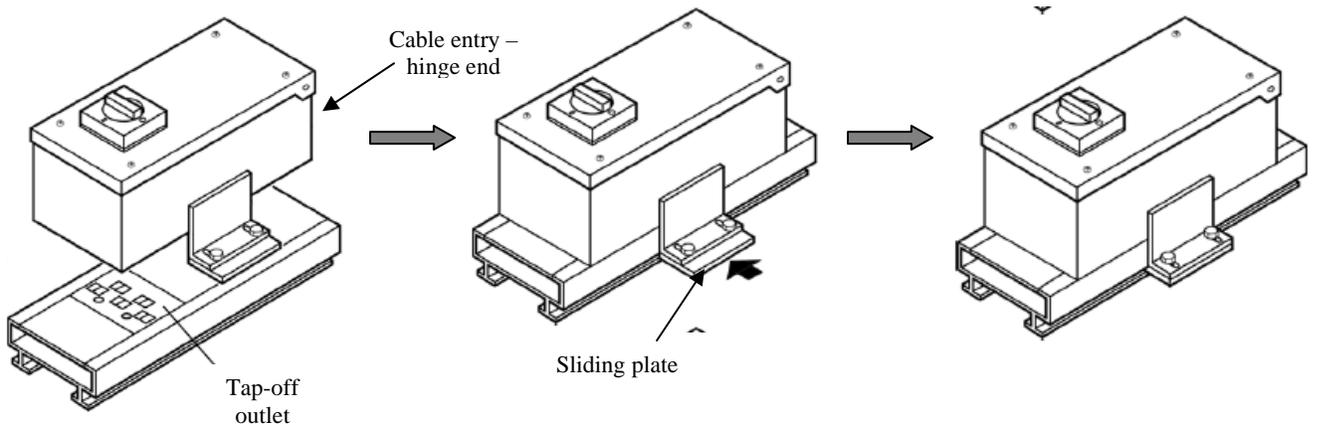
In the case of the 800A rated trunking block bars are factory fitted as standard.

**The block bars transfer the weight of the conductors to the case relieving the strain on the electrical joints when mounted in a vertical plane.**

## MP Medium Power range Assembly and mounting [cont'd]

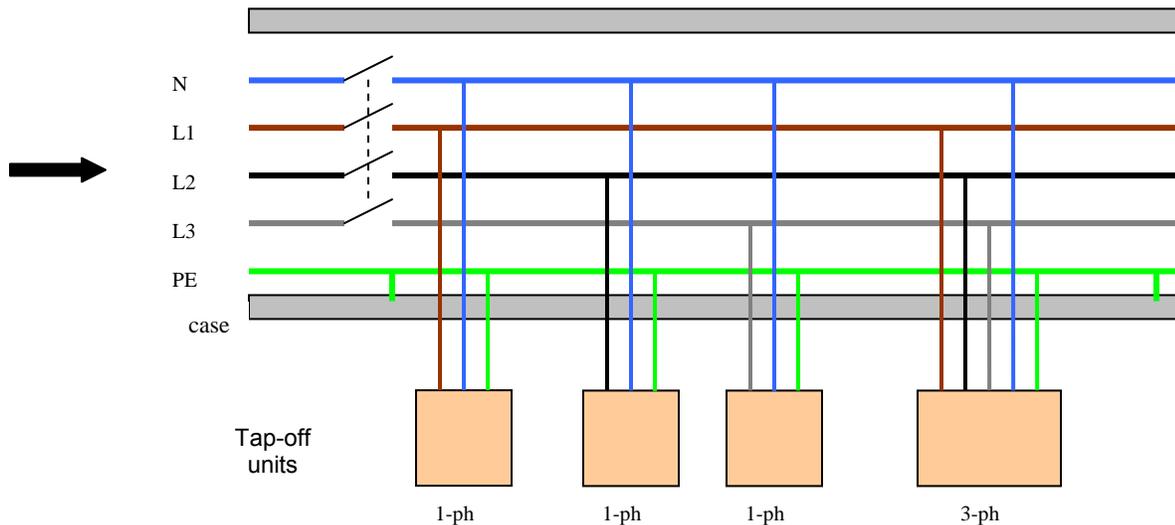
### Fitting a tap-off unit

The tap-off unit is plugged on to the trunking with the sliding plates withdrawn. The tap-off outlet shutter is opened as the tap-off unit is engaged. The sliding plates are then pushed in to engage with the trunking profile and the screws tightened.



The wiring of the outgoing circuit should preferably be carried out before fitting the unit to the trunking. **Where it is practicable the tap-off units should be fitted to the trunking with the supply disconnected.**

### Circuit diagram



5-pole trunking on a TP&N + PE supply. Single-phase tap-off units evenly distributed across the phases to minimise the current in the neutral. Supplied through a 3-phase and neutral linked switch.

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**MP Medium Power range**

## Technical data

	125A	160A	250A	400A	630A	800A
<b>Standards</b>	BSEN60439-2, EN60439-2, IEC60439-2					
<b>Rated current</b>	125A	160A	250A	400A	630A	800A
This is the maximum current per pole. Single-phase tap-off units must be evenly distributed across the poles so as not to exceed the current rating in one pole or the neutral.						
<b>Rated insulation voltage (Ui)</b>	500 Vac	500 Vac	500 Vac	500 Vac	500 Vac	500 Vac
- This is a.c. voltage that the trunking system is designed for and provides a safety factor over the rated operational voltage.						
<b>Rated operational voltage (Ue)</b>	415 Vac	415 Vac	415 Vac	415 Vac	415 Vac	415 Vac
- This is the maximum 3-phase voltage that trunking system is designed to operate at in service.						
<b>Rated frequency</b>	50Hz	50Hz	50Hz	50Hz	50Hz	50Hz
<b>Phase resistance [mΩ/m]</b>	0.669	0.397	0.296	0.162	0.09	0.079
- This is the resistance $R_{20}$ (at 20°C) of the conductor of each phase pole and the neutral and is used in the calculation of fault current, earth-loop impedance and voltage drop. For resistance at F/L temperature add 11%.						
<b>Phase reactance 50Hz [mΩ/m]</b>	0.209	0.148	0.133	0.107	0.087	0.079
This is the inductive reactance X of each phase pole and the neutral and is used in the calculation of volt-drop and circuit impedance						
<b>PE resistance [mΩ/m]</b>	0.669	0.669	0.397	0.296	0.162	0.162
The PE resistance and reactance are used in the calculation of the fault level to earth.						
<b>Volt-drop [V/A/100m]</b>						
- Unity pf	0.116	0.069	0.051	0.028	0.0158	0.018
- 0.9 pf	0.12	0.073	0.0558	0.0333	0.0206	0.0206
- 0.8 pf	0.114	0.0704	0.0548	0.0336	0.0215	0.0204
- 0.7 pf	0.107	0.0664	0.0523	0.0329	0.0217	0.0198
This figure allows an estimate to be made of the voltage drop along a run. This is the phase-to-phase voltage drop per ampere of load, along a 100m run without tap-offs. When loaded with tap-off units evenly distributed along the run the figures are multiplied by 0.55. <b>See example of application below.</b> Note that it is advisable to check the actual voltage drop on the completed installation.						
<b>Overload current protection</b> Rated current of fuses or circuit-breaker	125A	160A	250A	400A	630A	800A
<b>Fault current (S/C) protection</b> - Rated fused S/C current ( $I_{cf}$ ) - Rated S/C current with CB	80kA *	80kA *	80kA *	80kA *	80kA *	80kA *
The rated fused S/C current $I_{cf}$ is the maximum permissible fault level at the incomer to the trunking when protected by BS88 fuses of the rating quoted above for overload protection. * The rated S/C current with circuit-breaker protection is dependent on the type of circuit breaker – details of suitable devices on application.						
- Rated 1-second <b>short-time withstand current</b> $I_{cw}$ [kA] - Peak current withstand [kA]	5.1 8.7	10.5 21	11.5 23	16.5 35	24.5 51.5	25 52.5
The short-time current and time together with the peak withstand current allow determination of circuit-breaker characteristics required for S/C protection.						
<b>Weight of trunking [Kg/m]</b>	4.4	5	6	9.3	14	20

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## MP Medium Power range

### Technical data [cont'd]

	125A	160A	250A	400A	630A	800A
Degree of protection to BSEN60529	IP 4X as standard IP54 available to special order					
Cable capacity – std. feed units [mm <sup>2</sup> ]	70	70	2 x 95 or 1 x 150	2 x 95 or 1 x 150	2 x 185	2 x 300
Tap-off outlet spacing	0.33 meter centres					

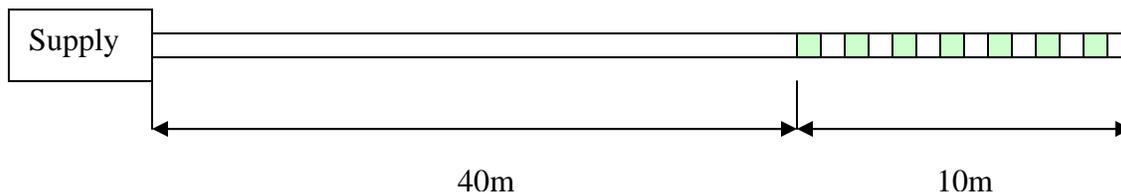
**Voltage drop** – Examples:

#### Case 1. .

400A MP trunking run – total length 50 metres. 20 tap-off units evenly distributed along the the run. Tap-off ratings the same and similarly loaded, drawing a total load of 348A at 0.9 power-factor.

Volt-drop at the far end of the run =  $0.0333 \times 348 \times 50/100 \times 0.55 = 3.19$  volts ph to ph.

#### Case 2. .



400A MP trunking run – total length 50 metres. 7 tap-off units evenly distributed over the last 10 metres. Tap-off ratings the same and similarly loaded, drawing a total load of 348A at 0.9 power-factor.

Volt-drop at the far end of the run =  $(0.0333 \times 348 \times 40/100) + (0.0333 \times 348 \times 10/100 \times 0.55)$   
= **5.27** volts ph to ph.

Note that the volt-drop figure for the trunking has to be added to the volt-drop of the circuit from the supply source to the trunking feeder, to obtain the overall volt-drop according to the Wiring Regulations.

#### Neutral current

The neutral conductor within the busbar trunking is of the same capacity as the phase conductors (100% neutral). Particular care needs to be taken to ensure that the neutral current is not excessive. Conditions under which this can arise include the following: -

- **Unbalanced load** – the connections to single-phase tap-off units on a 3-phase system must be alternated across the phases along the run to balance the load.
- **Harmonic currents** – Electronic equipment and luminaires with electronic control gear generate harmonics in the supply current. Certain harmonic currents accumulate in the neutral of the supply, even when the load is balanced across the phases. Usually this is not a problem with a 100% neutral but in the case of total loads near to the full rating of the trunking this should be checked. Either consult the manufacturer of the equipment and, if necessary, size the trunking according to the neutral current or split the load over two or more circuits. See also [‘Tap-off neutral currents’](#)

## MP Medium Power range

### Special applications

#### **Functional earth** - also referred to as 'noiseless earth' or 'clean earth'

In certain applications it is desirable to have an earth conductor that is not used as the protective earth (PE) for the system. This is to enhance the electromagnetic compatibility (EMC) function of the system, for example with supplies to buildings with a high concentration of data processing equipment. Using a separate earth conductor for connecting functional parts of equipment minimizes the risk of spurious signals or unwanted levels of voltage that might be present in the PE.

MP trunking can be factory-built with a 'clean earth' by isolating the earth terminals in the end feed and at each joint, from the case. A protective earth (PE) terminal is available at the end-feed in addition to a 'clean earth' terminal. This protective earth terminal serves to bond the trunking case.

#### **Fire stops**

**Recommendations for the construction of fire-stops where trunking penetrates walls and floors classified as fire barriers.** *Note: Mempower, as the trunking manufacturer, does not take the responsibility for the specification, rating or construction of the fire-stop external to the trunking.*

MP trunking needs to be factory-fitted with internal intumescent pads at the location of the fire-barrier as determined by site measurement. 'F' added to the component number indicates fire barrier fitted.

#### Typical arrangement of the external fire-stop

A semi-rigid mineral-fibre board [e.g. Hilti CP670] with an intumescent coating is used to fill the aperture around the trunking. The board is cut to closely follow the profile of the trunking and the edges of the aperture. The board is layered to fill the space completely, with intumescent filler [e.g. Hilti CP606] between layers. According to the type of material and the fire rating required each board will be up to 60mm thick. A total thickness of 150mm has been shown to provide a 4-hour rating. The edges of the boards and all joints will be sealed with the intumescent filler, which will also be overlapped on surrounding surfaces by approximately 50mm.

Careful consideration needs to be given to the access required to complete the fire-stop. It may be necessary to install sections of fire-stop at the stage of installation of the trunking if access afterwards is impossible e.g. trunking-runs in close proximity to each other.

In the application of the above a layer of impermeable foil should be wrapped around the trunking in the area of the fire-stop, following the profile, to prevent the possibility of chemical attack from any of the materials applied.

#### **Flange units**

Flange units to take off a feed to the trunking from a transformer housing or to connect to a switchboard: -

MP400FUN - 400A flange unit for feed end in normal direction of trunking run.

MP400RFUN - 400A flange unit for reverse end in normal direction of trunking run.

MP630FUN - 630A flange unit for feed end in normal direction of trunking run.

MP630RFUN - 630A flange unit for reverse end in normal direction of trunking run.

## MP Medium Power range

### Special applications [cont'd]

#### Technical note – Tap-off neutral currents - size of the neutral in tap-off units for circuits supplying equipment producing significant harmonics in the supply.

Research on the characteristics of circuits supplying computers has shown the RMS current in the neutral of a 4-wire supply to consist of largely 3<sup>rd</sup> and 9<sup>th</sup> harmonics amounting to a maximum of 161% of the line current.

Circuit-protective devices and their enclosures, including tap-off units, are rated for a balanced 3-phase load with zero neutral current. Introduction of neutral current requires consideration of the thermal effects on performance.

The size of the neutral circuit within the tap-off is designed to take account of the above conditions, making the following assumptions: -

- a) RMS harmonic resultant (Current THD) = 161%  $I_n$  as above.
- b) Load factor 75%  $I_n$ .

**Thus the neutral size must be: -**

$$0.75 \times 1.61 \times I_n = 1.21 \times I_n \text{ as a minimum}$$

This is often exceeded for reasons of design convenience, but for tap-off units 120% rated neutral should be adequate in practice.

The available neutral ratings for MP tap-offs are as follows: -

Rating (In)	Standard neutral size		Maximum neutral size	
	[A]	% $I_n$	[A]	% $I_n$
63	63	100	126	200
100	100	100	125	125
125	125	100	125	100
160	160	100	250	156
200	200	100	250	125
250	250	100	375	150
315	315	100	380	121

In the case where circuit calculations show that neutral capacity needs to exceed that shown in the right-hand column of the table above, a larger tap-off unit should be selected. Similarly where the neutral is switched in the tap-off unit it will usually be necessary to select a larger switching device to provide an increased neutral rating.

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## MP Medium Power range Special applications [cont'd]

### Electricity board high-rise distribution system Based on the MP range of busbar trunking rated 250A to 800A

#### Description

A range of busbar trunking and distribution board tap-off units that incorporate R-type cut out fuses for the protection of SPN supplies in residential and commercial high-rise buildings. The tap-off units are available from 3 to 21 SP ways and are fitted with Henley cutout fuse bases to accept 100A 30mm diameter RL type fuselinks.

The system reduces the amount of installation time and also the amount of space required, by incorporating the tap-offs and the electricity supply fuses into one unit. All enclosure screws on end feeds and tap-off units are tamper-proof and enclosure doors are sealable / padlockable. Trunking is fitted with anti-vandal external covers and sliding joint connections to facilitate replacement. Tap-off units and end-feed units are internal shielded to prevent contact with live parts when replacing fuse cartridges.

**Tap-off units** Tap-off unit supplied integral with a 1250mm length of trunking.

<b>250A</b> rated trunking	No. of outgoing ways RL-type fuse 100A max	3	6	9	12		
	Mempower reference <b>MPSPEC</b> No.	475	476	477	478		
<b>400A</b> rated trunking	No. of outgoing ways RL-type fuse 100A max	3	4	6	8	9	12
	Mempower reference <b>MPSPEC</b> No.	446	454	447	455	448	449
<b>630A</b> rated trunking	No. of outgoing ways RL-type fuse 100A max	3	4	6	8	9	12
	Mempower reference <b>MPSPEC</b> No.	442	452	443	453	444	445
<b>800A</b> rated trunking	No. of outgoing ways RL-type fuse 100A max	3	6	9	12		
	Mempower reference <b>MPSPEC</b> No.	438	439	440	441		

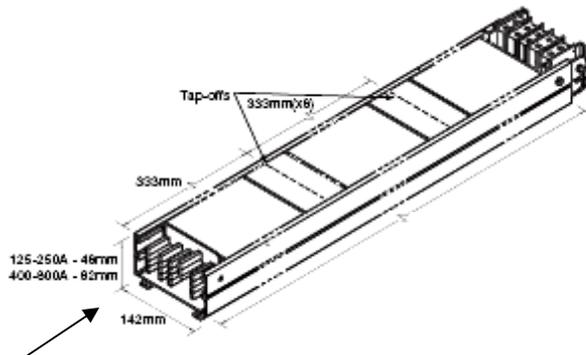
*Note: Tap-off units with up to 21 ways available on request*

#### Plug-in tap-off units

Incoming	Outgoing	MP SPEC No.
Tap-off unit cut-out 100A TP&N	3-way SP&N RL-type fuses 100A	0286
Tap-off unit cut-out 200A TP&N	3-way SP&N J-type fuses 200A	0161
Tap-off unit cut-out 100A TP&N	3-way SP&N J-type fuses 100A	0162

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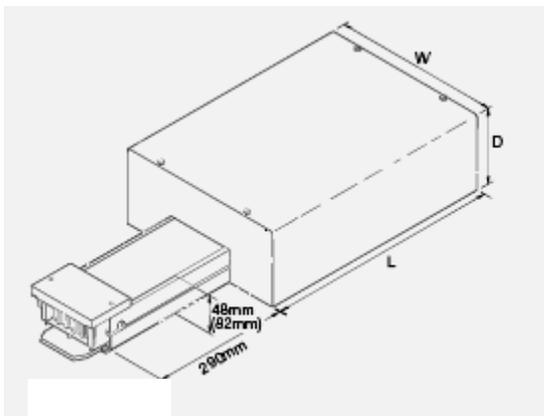
**MP Medium Power range**  
Drawings and dimensions



**Straight length**

Width – 142mm  
 Depth – 125-250A - 48mm  
 400 – 800A – 82mm  
 Length – 3 metres standard  
 1 & 2 metres to special order  
 Tap-off spacing 333mm; number per length  
 – see ‘Components and list numbers’

**End-feed units** (reverse end-feed illustrated)

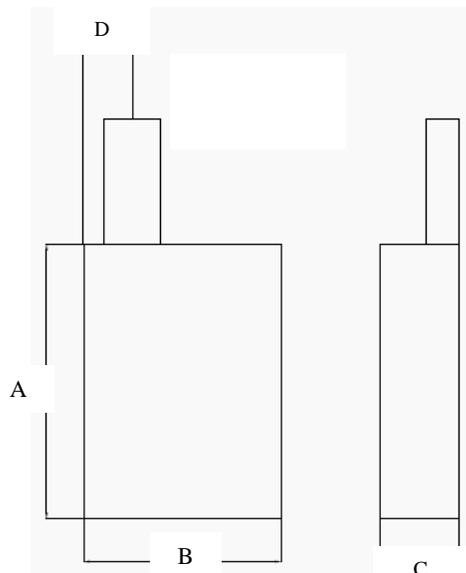


Description	L	W	D
125A, 160A	363mm	142mm	104mm
250A & 400A	500mm	360mm	130mm
630A	600mm	470mm	200mm
800A	700mm	500mm	200mm

**Switched End Feeds (Load Break)**

125A	500mm	280mm	115mm
250A	550mm	360mm	160mm
400A	730mm	360mm	165mm
630A	865mm	470mm	205mm
800A	700mm	500mm	200mm

For cable capacities – see  
 ‘Technical data’ table



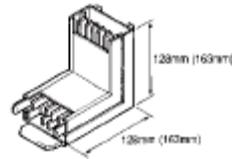
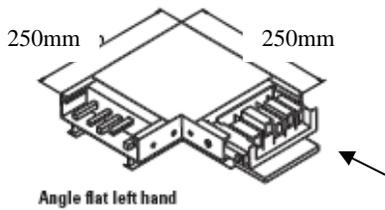
**Offset end-feed units**

Dimension D gives offset from trunking C/L  
 Offset may be from LH or RH edge

RATING	DIM A	DIM B	DIM C	DIM D
800A	700mm	500mm	200mm	165mm
630A	600mm	470mm	160mm	85mm
400A	600mm	470mm	160mm	85mm
250A	500mm	400mm	120mm	85mm

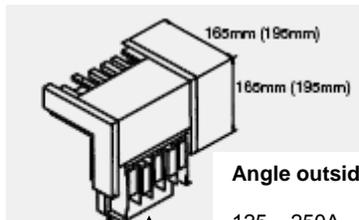
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**MP Medium Power range**  
Drawings and dimensions [Cont'd.]



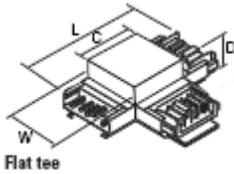
**Angle inside edge**

- 125 – 250A 185 x 185 mm
- 400 – 800A 220 x 220 mm

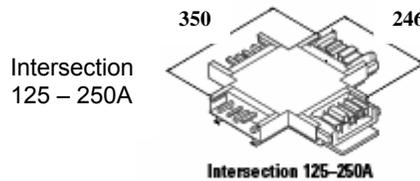


**Angle outside edge**

- 125 – 250A 165 x 165 mm
- 400 – 800A 195 x 195 mm

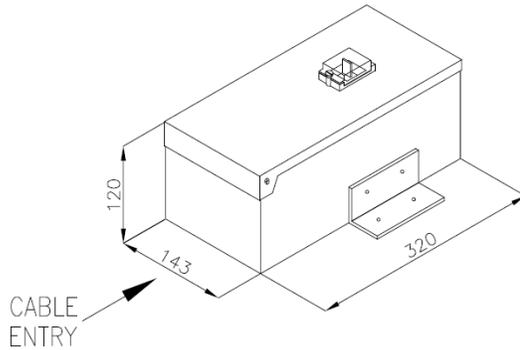


Amps	L	W	D	C
250A	300mm	225mm	50mm	-
630/400A	520mm	245mm	160mm	280mm
800A	1178mm	600mm	200mm	600mm



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**MP Medium Power range**  
Drawings and dimensions [Cont'd.] Tap-off Units



**MCB TAP-OFFS**

6A, 10A, 16A, 20A, 25A, 32A, 40A, 50A & 63A

MTA306M to MTA363M – 3 POLE

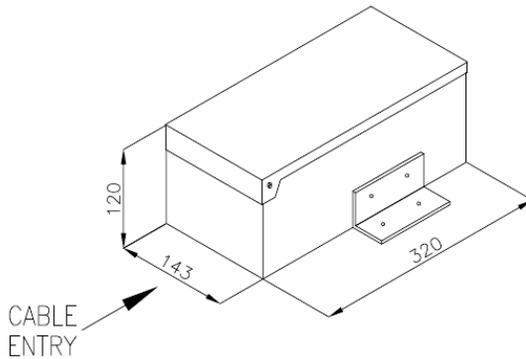
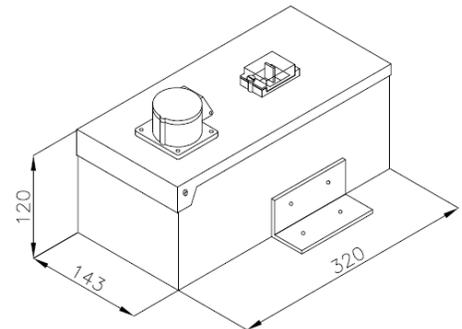
MTA106M to MTA163M – 1 POLE

**MCB TAP-OFFS WITH CEE SOCKET OUTLET**

MTA306MC1 to MTA363MC1 – 3 POLE

MTA106MC1 to MTA163MC1 – 1 POLE

C/W BS4343 INDUSTRIAL SOCKET



**BS88 FUSED TAP-OFFS to 63A - UNSWITCHED**

6A, 10A, 16A, 20A, 25A, 32A, 40A, 50A & 63A

MTA306B to MTA363B – 3 POLE

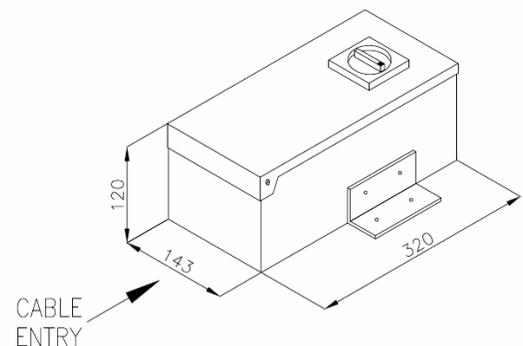
MTA106B to MTA163B – 1 POLE

**BS88 FUSED TAP-OFFS to 63A - SWITCHED**

6A, 10A, 16A, 20A, 25A, 32A, 40A, 50A & 63A

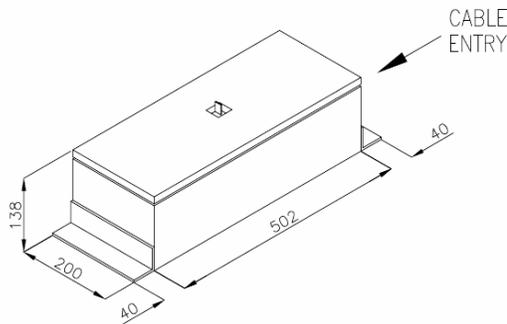
MTA306BSW to MTA363BSW – 3 POLE

MTA106BSW to MTA163BSW – 1 POLE



**MP Medium Power range**  
Drawings and dimensions [Cont'd.]

**Tap-off Units**



**MCCB TAP-OFF UNITS 3-POLE 16A – 200A**

16A, 32A, 40A, 50A, 63A, 80A, 100A, 125A, 160A & 200A

MT316MB to MT3200MB – 3 POLE

MT116MB to MT1200MB – 1 POLE

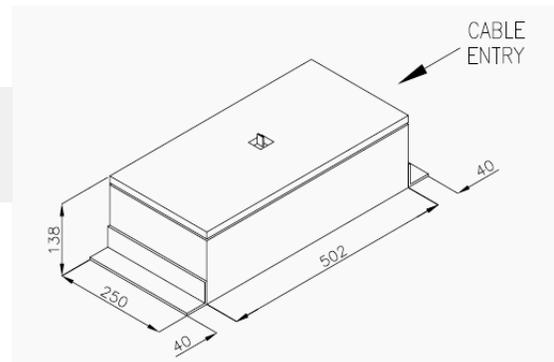
**MCCB TAP-OFF UNITS 4-POLE 16A –  
200A 3-POLE & 4-POLE 250A**

16A, 32A, 40A, 50A, 63A, 80A, 100A, 125A, 160A & 200A

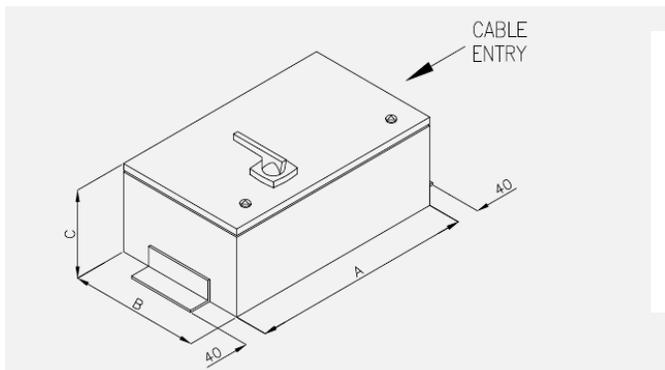
MT416MB to MT4200MB

3 POLE & 4 POLE (SW. NEUTRAL) – 250A

MT3250MB & MT4250MB



**FUSE COMBINATION SWITCH TAP-OFF  
UNITS 1-POLE & 3-POLE**



DEVICE	RATING	DIM A	DIM B	DIM C
MT3125BFS	125A	400	300	200
MT3160BFS	160A	502	350	275
MT3200BFS	200A	502	350	275
MT3250BFS	250A	502	450	285
MT3315BFS	315A	835	450	285

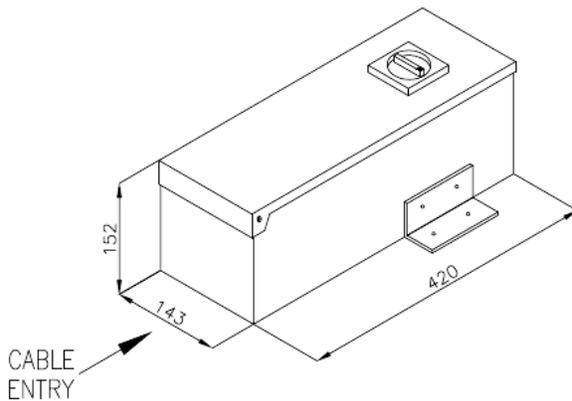
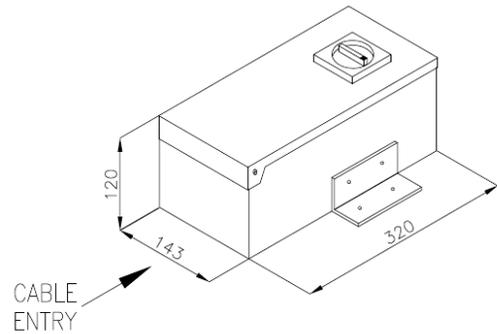
**MP Medium Power range**  
Drawings and dimensions [Cont'd.] Tap-off Units

FUSED SWITCH TAP-OFF UNITS  
BS88 FUSES 80A, 100A & 125A

6A, 10A, 16A, 20A, 25A, 32A, 40A, 50A & 63A

MTA306BSW to MTA363BSW – 3 POLE

MTA106BSW to MTA163BSW – 1 POLE



FUSED SWITCH TAP-OFF UNITS  
BS88 FUSES 80A, 100A & 125A

MTA380BSW to MTA3125BSW – 3 POLE

MTA180BSW to MTA1125BSW – 1 POLE

FUSED SWITCH TAP-OFF UNITS  
DIN FUSES 32 to 125A

MTA332NSW to MTA3125NSW – 3 POLE

MTA132NSW to MTA1125NSW – 1 POLE



**MEM**

**MEMPOWER BUSBAR TRUNKING  
BUSDUCT / BUSWAY**

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Application Notes