Main Distribution Boards

MDB’s

Instructor: Eng. Wael Younis
Main Distribution Board (MDB) For Residential Buildings

1. MDB for Single Floor Buildings (Single Phase)

Single Line Power Diagram
1. MDB for Single Floor Buildings

MDB inside view
1. MDB for Single Floor Buildings

MDB outside view

Dimensions:
- Height: 45 cm
- Width: 35 cm
- Depth: 25 cm
- Side: 20 cm
Kilowatt hour meters (KWHM)

KWHM Single Line Diagram
Kilowatt hour meters (KWHM)
Main Distribution Board MDB

KWHM Direct Connection Diagram
2. MDB for Single Floor Buildings (Three Phase)

CABLE (CU) 4x10mm²
&
CABLE (CU) 4x16mm²

CB 3x32A+N
&
CB 3x63A+N

CABLE (CU) 1x10 mm² (E)
&
CABLE (CU) 1x16 mm² (E)

Loads
2. MDB for Single Floor Buildings (Three Phase)

MDB Inside View

Dimensions:
- Height: 55 cm
- Width: 40 cm
- Depth: 25 cm

Equipment:
- CB 3x32A+N
- CB 3x63A+N
- KWH
- 3Ph
2. MDB for Single Floor Buildings (Three Phase)
3. MDB for Multi Floor Buildings (5 Flats)

Single Line Power Diagram
3. MDB for Multi Floor Buildings (5 Flats)

MDB Inside View
3. MDB for Multi Floor Buildings (5 Flats)

MDB Outside View

Dimensions:
- Height: 85 cm
- Width (front to back): 70 cm
- Depth: 30 cm
- Width (side view): 20 cm
- Height (side view): 30 cm
3. MDB for Multi Floor Buildings (10 Flats)

Single Line Power Diagram
3. MDB for Multi Floor Buildings (10 Flats)

MDB Inside View
3. MDB for Multi Floor Buildings (10 Flats)
4. MDB for Towers (22 Flats)

Single Line Power Diagram
4. MDB for Towers (22 Flats)

MDB Inside View
4. MDB for Towers (22 Flats)

MDB Outside View
5. MDB for Towers (36 Flats)

Single Line Power Diagram
5. MDB for Towers (36 Flats)

MDB Inside View
5. MDB for Towers (36 Flats)

MDB Outside View
6. MDB for Towers (48 Flats)

Single Line Power Diagram

CABLE (CU) 3x300+1x185 mm²

CABLE (CU) 2x(3x150+ 1x70mm²)

CB, (LTL) 630 A

Busbar CRS,T,N 4x630A

CT 600/5 A

Loads

Cable (Cu) 3x150+1x70 mm²

Cable (Cu) 3x150+1x70 mm²

CB LTL 1500 A

CB LTL 1500 A

1 2 3 4 5 6 23 24

 Loads

25 26 27 28 29 30 ... 47 48

Cable (Cu) 3x400 A

Cable (Cu) 3x320 A

Cable (Cu) 3x400 A

Cable (Cu) 3x320 A

CB 3x63 A

CB 3x5 A

Load Service
6. MDB for Towers (48 Flats)
6. MDB for Towers (48 Flats)

MDB Outside View
Main Distribution Board (MDB) For Industrial Buildings

1. MDB for Industrial Buildings (3x32A, 3x63A)

Single Line Power Diagram
1. MDB for Industrial Buildings (3x32A, 3x63A)
1. MDB for Industrial Buildings (3x32A, 3x63A)
2. MDB for Industrial Buildings (3x100A-3x400A)
2. MDB for Industrial Buildings (3x100A-3x400A)

MDB Inside View
2. MDB for Industrial Buildings (3x100A-3x400A)
<table>
<thead>
<tr>
<th>Distribution Board</th>
<th>Connected Load (KW)</th>
</tr>
</thead>
<tbody>
<tr>
<td>DB-1</td>
<td>Ground Floor</td>
</tr>
<tr>
<td>DB-2</td>
<td>Ground Floor</td>
</tr>
<tr>
<td>DB-3</td>
<td>Second Floor</td>
</tr>
<tr>
<td>DB-4</td>
<td>Second Floor</td>
</tr>
<tr>
<td>DB-5</td>
<td>Second Floor</td>
</tr>
<tr>
<td>DB-6</td>
<td>Third Floor</td>
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<tr>
<td>DB-7</td>
<td>Third Floor</td>
</tr>
<tr>
<td>DB-8</td>
<td>Third Floor</td>
</tr>
<tr>
<td>DB-9</td>
<td>Third Floor</td>
</tr>
<tr>
<td>DB-10</td>
<td>Third Floor</td>
</tr>
<tr>
<td>DB-11</td>
<td>Fourth Floor</td>
</tr>
</tbody>
</table>

**Total Connected Load** 223.0

**Diversity Factor** 0.80

**Total Demand Load** 178.4

**(25%) Spare Load** 44.6

**Total Demand Load With (25%) Spare Load** 223.0

**Total Current (A)**

**Selected Main Cable Size (mm²)**

**Percent Voltage Drop**

**Main Circuit Breaker (A)**
Main Distribution Board
MDB