Changes for the Better

# Take a Risk-Free Leap using our FINAL DISTRIBUIION PRODUGTS 



Empowering Industries


## INNOVATION THAT LEADS THE CHANGE


#### Abstract

Mitsubishi Electric's foray in the Low Voltage Switchgears segment in India marked the beginning of a series of innovations that are now gathering tremendous industry accolades.. The commendable line up of products include Miniature Circuit Breakers which are considered to be most reliable for their safety features, range of Residual Current Circuit Breakers that boast unmatched protection quality coupled with Distribution Boards that are known for their all inclusive aesthetics, customised for residential, commercial \& industrial segments.


Mitsubishi Electric group is taking steps to strengthen its initiatives in growing market segments. Right from expanding business in India and international markets, MEI is bolstering the social infrastructure system and is developing the business by combining a wide array of technologies with expertise gained in the varied product range and other fields.

Common to all of our products and endeavours is MEQ, which stands for 'Mitsubishi Electric Quality.' MEQ promises the best experience in our products, services, partnerships and people. It lies at the very core of our business.Guided by our corporate statement, 'Changes for the Better,' we take our responsibility as a corporate citizen very seriously. Our products are developed with superior energy efficiency and the environment in mind.

Since our operations began in India in the mid-1950s, Mitsubishi Electric has grown to become one of the most highly regarded companies in this country.

It is our endeavour to present you with the most delightful innovations in this catalogue, let us welcome you to learn more about the impact each product delivers, their various applications and the maximum advantage one can build on.



## PRODUCT LINE-UP

| Model type |  | No of poles <br> (P) | Rating | Instantaneous tripping | Voltage (V) | Short-Circuit capacity (kA) | Compliance standard |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
| MCB | BHW-T10 | $1,1+\mathrm{N}, 2,3,3+\mathrm{N}, 4$ | 6 to 63A | TYPE B | 240/415AC | 10 | IEC 60898-1 |
|  |  | $1,1+\mathrm{N}, 2,3,3+\mathrm{N}, 4$ | 0.5 to 63A | TYPE C, D | 240/415AC |  | IEC 60898-1 |
| RCCB | BVW-T | $2(1+N), 4(3+N)$ | 16 to 63A | - | 240/415AC | - | IEC 61008-1 |
| Isolating Switch | KBW-T | 1, 2, 3, 4 | 25, 40, 63A | - | 240/415AC | - | IEC 60947-3 |
|  |  | 2, 3, 4 | 80, 100, 125A | - | 240/415AC | - | IEC 60947-3 |

## Technical Specifications

| Ambient temperature range | -10 to $+40^{\circ} \mathrm{C}$ |
| :--- | :---: |
| Frequency | $50 / 60 \mathrm{~Hz}$ |

## CONSTRUCTION FEATURES

» State of the art design
» Elegant appearance, cover and handle in arc shape make comfortable operation
» Knob padlock feature
» MCB knob can be locked either at "ON" position or at "OFF" position to prevent unwanted operation of the product

## » Mounting / Removal

» By means of a unique snap mechanism products can be mounted on DIN rail strip or removed even from a row of devices by lifting the clip without dismantling the whole row
» Dual position clip
» Dual position plastic clip helps in easy mounting and renewal of MCBs on DIN channel
» Interchangeable terminal connection
» The input and output can be interchanged
» Bi-connect terminals
» Both the sides of terminals are bi-connect type, giving ultimate flexibility.
" High terminal capacity
» Deep serrated terminals able to accomodate 35 sq mm cable
» Tightening torque
» Combination head captive screw
» M5 screw-3 N.m
» M6 screw - 3.5 N.m
» IP 2X protection
» Terminals are finger touch proof to prevent electric shock by accidental touch


## FUNCTION \& FEATURES

## Product Standard

Confirming to IS/IEC/EN 60898-1

## Certification Marking

KEMA, CB (DERKA, Netharland), CE, ISI

## Trip Free Mechanism

During fault MCB trips even if hadle is held in ON position

## Wide Range

0.5A to 63A
$1 P, 1 P+N, 2 P, 3 P, 3 P+N, 4 P$
$B, C \& D$ tripping characteristics

## Low watt loss

Power loss values are much lesser than IS/IEC specified values; making it one of the most energy efficient MCB

## Energy limiting class: 3

High current limiting performance under fault conditions achived due to ultra fast contact opening and rapid quenching of arc

## Isolation

MCB guarantees complete electric isolation of the downstream circuit when switched off ; thus enhancing safety for users

## Circuit Identification

Legend plates for circuit identifications and hence enhanced safety

## Explanation of Marking



Instantaneous tripping model type and Rated current

## SPECIFICATIONS

|  |  |  |  | MCB |  |  |  |  |  |  |  |  |  |  |  |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
| Type |  |  |  | BHW-T10 |  |  |  |  |  |  |  |  |  |  |  |
| Image |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| No. of poles [P] |  |  |  | 1 | $1+\mathrm{N}^{* 1}$ | 2 | 3 | $3+\mathrm{N}^{* 1}$ | 4 | 1 | $1+\mathrm{N}^{* 1}$ | 2 | 3 | $3+\mathrm{N}^{* 1}$ | 4 |
| Instantaneous tripping |  |  |  | Type $\mathrm{B}^{* 2}$ |  |  |  |  |  | Type C, D* |  |  |  |  |  |
| Rated insulation voltage $U_{i}[\mathrm{~V}]$ |  |  |  | 660 |  |  |  |  |  | 660 |  |  |  |  |  |
| Rated current $I_{n}[\mathrm{~A}]$ at ambient temperature $30^{\circ} \mathrm{C}$ |  |  |  | $\begin{gathered} 6,10,16,20,25 \\ 32,40,50,63 \end{gathered}$ |  |  |  |  |  | $0.5,1,2,3,4,5$, $6,10,16,20,25$, 32, 40, 50, 63 |  |  |  |  |  |
|  | IEC/EN | AC | 240 V | 10 |  |  |  |  |  | 10 |  |  |  |  |  |
| circuit | 60898-1 |  | 240/415V | 10 | - | 10 |  |  |  | 10 | - | 10 |  |  |  |
|  |  |  | 415 V | - |  | 10 |  |  |  | - |  | 10 |  |  |  |
| Energy limiting class*3 |  |  |  | Class 3 |  |  |  |  |  |  |  |  |  |  |  |
| Number of operating cycles |  | Without current |  | 4,000 |  |  |  |  |  |  |  |  |  |  |  |
|  |  | With current |  | 4,000 |  |  |  |  |  |  |  |  |  |  |  |
| Dimensio [mm] | s | $\frac{\mathrm{ca}_{2}^{\mathrm{c}}}{\sqrt{\mathrm{c}-1}}$ | a | 18 | 36 |  | 54 | 72 |  | 18 | 36 |  | 54 | 72 |  |
|  | $\xrightarrow{\text { a }}$ |  | b | 92.6 |  |  |  |  |  |  |  |  |  |  |  |
|  | $11$ |  | c | 44 |  |  |  |  |  |  |  |  |  |  |  |
|  |  |  | ca | Max. 73.5 |  |  |  |  |  |  |  |  |  |  |  |
| Type of overcurrent release |  |  |  | Thermal-magnetic |  |  |  |  |  |  |  |  |  |  |  |
| Mounting |  |  |  | IEC 35mm rail |  |  |  |  |  |  |  |  |  |  |  |
| Applicable wire size |  |  |  | 1 to $25 \mathrm{~mm}^{2}$ |  |  |  |  |  |  |  |  |  |  |  |
| Mass [kg] |  |  |  | 0.13 | 0.25 | 0.26 | 0.39 | 0.51 | 0.52 | 0.13 | 0.25 | 0.26 | 0.39 | 0.51 | 0.52 |
| Accessories (optional)*4 |  | Auxiliary switch (AX) |  | $\bigcirc$ |  |  |  |  |  |  |  |  |  |  |  |
|  |  | Shunt trip (SHT) |  | $\bigcirc$ |  |  |  |  |  |  |  |  |  |  |  |
| Terminal connection |  |  |  | Solderless |  |  |  |  |  |  |  |  |  |  |  |
| Based on standard |  |  |  | IEC/EN 60898-1 |  |  |  |  |  |  |  |  |  |  |  |
| CE marking |  |  |  | $\bigcirc$ |  |  |  |  |  |  |  |  |  |  |  |
| *1: N pole is a switched neutral pole (without overcurrent release device). <br> *2: Type B: ( $3 I_{n}<, \leqq 5 I_{n}$ ), Type C: $\left(5 I_{n}<, \leqq 10 I_{n}\right)$, Type D: $\left(10 I_{n}<, \leqq 20 I_{n}\right)$ <br> *3: Except for Type D |  |  |  |  |  |  |  |  | *4: Factory fitted <br> *5: In case of installing breakers side by side, reduce the passing current to under $80 \%$ of the rated current. |  |  |  |  |  |  |

## OPERATING CHARACTERISTICS



| Trip <br> Type | Range of <br> Trip ( $l_{n}$ ) | Load Type | Application Load |
| :--- | :--- | :--- | :--- |
| B | IS I IEC I EN 60898-1 RANGE |  |  |
| C to $5 I_{n}$ | Resistive | Domestic, Heaters, Showers, Coockers, Genral Socket outlets |  |

Note: There is no Type A instantaneous tripping characteristic to avoide confusion with the A abbrevition for amperes.

## Thermal Tripping : Overload Protection

The overload protection is achieved with a thermal bimetal strip which gets heated and deflected in case of overload (increased current from rated capacity) and hence pulls of latch which separates movig contact from fixed contact.
The overload protection works only up to the level where magnetic tripping starts.

## Magnetic tripping : Short Circuit Protection

The short circuit protection is achieved through a solenoid designed on the principle of electromagnetic induction principle. In case of high fault current, magnetic force induced in the solenoid causes plunger to strike on latch which ensures immediate release of tripping mechanism causing contacts to open.

## AMBIENT COMPENSATION CURVE



## CURRENT LIMITING GRAPH


$0=$ Point of fault initation
$\mathrm{t}_{0}=$ Contact opening time (i.e. creation of arc)
$\mathrm{t}_{1}=$ Current / Voltage peak (i.e. current initation)
$t_{2}=$ Time to total extinction of arc (i.e. complete shutdown of fault current)

## Accessories

## Functions of Accessories

| Internal accessory | Function |
| :--- | :--- |
| AX Auxiliary switch | Electrically indicates the On/Off status of the circuit breaker. |
| SHT Shunt trip | Electrically trips the circuit breaker from a remote location. <br> Permissible working voltage is $100 \%$ of the rated voltage. |

## Equipping of Accessories

| Accessory Model name | BHW-T10 | BVW-T, KBW-T |
| :--- | :---: | :---: |
| AX | 0 | - |
| SHT | 0 | - |

O: Accessory equipment
-: Accessory not equipped
Specifications

| Type | SHT |  |  |  |
| :---: | :---: | :---: | :---: | :---: |
| Cut-off switch | Equipped |  |  |  |
| Voltage | 12 VDC | 24 VDC | 48 VDC | 220 VAC |
| Input power requirement | 40 | 110 | 300 | 250 |
| Operating time [ms] | Solderless |  |  |  |
| Connection | IEC 60947-1 |  |  |  |
| Compliance standard |  |  |  |  |

* Secure a sufficient input power supply so that the voltage will not drop below the permissible working voltage ( $100 \%$ of the rated voltage).
* The operating time denotes the time from when the rated voltage is applied to SHT until the time the main contact of the breaker starts to open.


## Combinations of Accessories

| Accessory <br> connection combinations | AX | $\square \square$ |
| :--- | :--- | ---: |
|  | SHT | $\square \square(\square)$ |



## Outer Dimensions

BHW-T10 with AX


Specifications

| Type |  | AX |
| :---: | :---: | :---: |
| Contact | Configuration | 1A1B |
|  | Contact capacity | 220VAC 6A |
| Connection |  | Lead wire |
| Compliance standard |  | IEC 60947-5-1 |

$\square$ Breaker $\square \mathrm{AX} \quad$ 爻 SHT

BHW-T10 with SHT


## SPECIFICATIONS



|  |  |  | Isolating switch |  |  |  |  |  |  |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
| Type |  |  | KBW-T |  |  |  |  |  |  |
| Image |  |  |  |  |  |  |  |  |  |
| No. of poles [P] |  |  | 1 | 2 | 3 | 4 | 2 | 3 | 4 |
| Utilization category |  |  | AC-22A |  |  |  | AC-22A |  |  |
| Rated current $I_{\mathrm{n}}[\mathrm{A}]$ at ambient temperature $30^{\circ} \mathrm{C}$ |  |  | 25, 40, 63 |  |  |  | 80, 100, 125 |  |  |
| Rated voltage [VAC] |  |  | 240 |  | 240/415 |  | 240/415 |  |  |
| Short time withstand current $I_{\mathrm{cw}}[\mathrm{A}]$ |  |  | $12 \times \mathrm{ln}, 1 \mathrm{~s}$ |  |  |  | $12 \times \mathrm{ln}, 1 \mathrm{~s}$ |  |  |
| Short-circuit making capacity $I_{\mathrm{cm}}[\mathrm{A}]$ |  |  | $12 \times \mathrm{ln}$ |  |  |  | $12 \times \mathrm{ln}$ |  |  |
| Rated impulse withstand voltage Uimp [kV] |  |  | 6 |  |  |  | 6 |  |  |
| Pollution degree |  |  | 2 |  |  |  | 2 |  |  |
|  |  | a | 18 | 36 | 54 | 72 | 36 | 54 | 72 |
|  |  | b | 92.6 |  |  |  | 92.6 |  |  |
|  |  | c | 44 |  |  |  | 44 |  |  |
|  |  | ca | Max. 73.5 |  |  |  | Max. 73.5 |  |  |
| Number of operating cycles | Without current |  | 10,000 |  |  |  | $\begin{gathered} 10,000 \\ 8,000(125 \mathrm{~A}) \end{gathered}$ |  |  |
|  | With current |  | 15,00 |  |  |  | $\begin{gathered} 15,00 \\ 1,000(125 A) \end{gathered}$ |  |  |
| Mounting |  |  | IEC 35 mm rail |  |  |  | IEC 35 mm rail |  |  |
| Applicable wire size |  |  | 1 to $25 \mathrm{~mm}^{2}$ |  |  |  | 16 to $50 \mathrm{~mm}^{2}$ |  |  |
| Mass [kg] |  |  | 0.12 | 0.22 | 0.33 | 0.47 | 0.2 | 0.3 | 0.4 |
| Terminal connection |  |  | Solderless |  |  |  | Solderless |  |  |
| Based on standard |  |  | IEC/EN 60947-3 |  |  |  | IEC/EN 60947-3 |  |  |
| CE marking |  |  | $\bigcirc$ |  |  |  | $\bigcirc$ |  |  |



RESIDUAL CURRENT CIRCUIT BREAKER

$$
6 \Leftrightarrow 6
$$



## Operating principle

RCCB works on the current balance principle. It incorporates a core balance transformer (CBT) having primary and secondary windings with sensitive relay for instantaneous detection for fault signal. The primary winding lies in series with supply mains and load. Secondary windings is connected to a very sensitive relay. In faultless condition, the magnetizing effect of current carrying conductors cancel each other. There is no residual magnetic field that could induce a voltage in the secondary. During flow of leakage current in the circuit an imbalance is created in the circuit which gives rise to leakage flux in core. This leakage flux generates an electrical signal that is sensed by relay and it trips the mechanism thereby disconnecting supply.

When pressing the TEST button T , (during load condition) a fault is simulated via the test resistance and RCCB trips.

## Construction and features

» Automatically disconnect the circuit when earth fault/leakage current occurs and exceeds the rated sensitivity and also fulfills the function of isolation

High short-circuit current withstand capacity with backup protection fuse
» Equipped with finger protected connection terminals
» Dual termination possible for cable and comb type busbar connection
» Easy padlocking facility
» Fire resistant plastic parts endures abnormal heating and strong impact
» Independent of power supply and line voltage, and free from external interference, voltage fluctuation

Prevents nuisance tripping due to transient voltage with help of filtering device
» Test button "T" is provided for periodic checkup

## SPECIFICATIONS

|  |  |  |  | RCCB |  |
| :---: | :---: | :---: | :---: | :---: | :---: |
| Type |  |  | BVW-T |  |  |
| Image |  |  |  |  |  |
| No. of poles [P] |  |  | $2(1+N){ }^{* 1}$ |  | $4(3+N){ }^{* 1}$ |
| Rated current $I_{n}[A]$ at ambient temperature $30^{\circ} \mathrm{C}$ |  |  | 16, 25, 32, 40, 63 |  |  |
| Rated voltage [VAC] |  |  | 240 |  | 415 |
| Rated current sensitivity $I_{\Delta n}[\mathrm{~mA}]$ |  |  | 30, 100, 300 |  |  |
| Max. operating time at $5 I_{\Delta n}[\mathrm{~s}]$ |  |  | 0.04 |  |  |
| Pulsating current sensitivity |  |  | Type AC |  |  |
|  |  | a | 36 |  | 72 |
|  |  | b | 90 |  |  |
|  |  | c | 44 |  |  |
|  |  | ca | 74 |  |  |
| Rated making and breaking capacity $I_{\mathrm{m}}[\mathrm{A}]$ |  |  | 500(In 16, 25, 32, 40A), 630(In 63A) |  |  |
| Rated conditional short-circuit current $I_{\text {nc }}[\mathrm{kA}]$ |  |  | 6 |  |  |
| Rated residual making and breaking capacity $I_{\Delta m}[\mathrm{~A}]$ |  |  | 500(In 16, 25, 32, 40A), 630(In 63A) |  |  |
| Rated conditional residual short-circuit current $I_{\triangle}[\mathrm{KA}]$ |  |  | 6 |  |  |
| Number of operating cycles | Without current |  | 4,000*2 |  |  |
|  | With curre |  | 2,000 |  |  |
| Type of overcurrent release |  |  | - |  |  |
| Mounting |  |  | IEC 35mm rail |  |  |
| Applicable wire size |  |  | 1 to $25 \mathrm{~mm}^{2}$ |  |  |
| Mass [kg] |  |  | 0.22 |  | 0.44 |
| Terminal connection |  |  | Solderless |  |  |
| Based on standard |  |  | IEC/EN 61008-1 |  |  |
| CE marking |  |  | $\bigcirc$ |  |  |

*1: N pole is a switched neutral pole (without overcurrent release device).
*2: In case of ampere rating 32, 40 and 63A, the number of operating cycles is 3,000.

KEMA

CB
SCHEME

## PROTECTION AGAINST DIRECT AND INDIRECT CURRENT

Direct protection in the event of direct contact (unearthed) live parts, extremely sensitive RCCB with rated residual operating current of 30 mA or less are used instead of a more conventional RCCB with higher residual operating fault currents.
Protection is necessary if :
a. The insulation of totally insulated device or their loads are damaged
b. The earth wire is interrupted
c. The earth wire and live wire are transposed
d. A component which is live in normal operations is touched during repair work

Indirect current when a person makes contact with a metal part which accidently been powered up following an insulation fault.

## SENSITIVITY APPLICATIONS SELECTION CRITERIA OF RCCB

30mA Provides additional protection against direct contact. Also protects against leakage currents, and indirect contact.
$100 \mathrm{~mA} \quad$ Provide protection against indirect contact and leakage current for larger installations. But do not provide the same level of personal protection against direct contact as that of 30 mA RCCB's.
$300 \mathrm{~mA} \quad$ Lower sensitive protection device, suitable for protection against large instalations having high levels of leakage current. Provide preventive fire protection.

EARTH-LEAKAGE TRIPPING CHARACTERISTICS


## Detection of Faulty RCCB

Switch off all the switches/MCB's connected in circuit downstream with the RCCB. Switch ON RCCB and simultaneously switch ON the switches one by one. You will find during switching ON of a particular appliances/switch RCCB trips again and again. Which shows that this is a faulty circuit/appliance. Isolate the faulty circuit, rectify the fault and switch ON the RCCB.

## Earth-leakage Test

Earth-leakage test steps:
(1) Move the handle to the On position under rated voltage.
(2) Push the yellow test button.
(3) At this time, the RCCB must be tripped within the specified time.
(4) The handle will move to the Off position.

* Please conduct the above test regularly.
* Do not use the test button to switch off the RCCB.



## Withstand Voltage Test

(1) Withstand voltage test: The voltage applied to the main circuit during the withstand voltage test is $2,000 \mathrm{VAC}$ (effective for 1 min ). Do not conduct a withstand voltage tests using voltages exceeding 2,000VAC.
(2) Measurement of insulation resistance and withstand voltage test Please note the following restrictions (1) and (2) below) that apply when using earth-leakage circuit breakers.
(1) Measuring insulation resistance:

- Do not use a 1000 V insulation resistance tester. Please use a 500 V insulation resistance tester.
- The " $\boldsymbol{\Delta}$ " marks in the table are based on minimum insulation resistance values.
(2) Testing withstand voltage: The " $\times$ " marks in the table below indicate that the test voltage is not to be applied to that model. (If a test voltage is accidently applied to one of these models, do not reuse the product regardless of whether or not they were tripped.)

| Measuring position $\quad$ Test |  |  |  | Insulation resistance measurement |  | Withstand voltage test |  |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
| Handle position |  |  |  | ON | OFF | ON | OFF |
| Between main circuit live part and ground |  |  |  | $\bigcirc$ | $\bigcirc$ | $\bigcirc$ | $\bigcirc$ |
| Between different poles | On line side | BVW-T 2P |  | $\triangle$ | $\bigcirc$ | $\times$ | $\bigcirc$ |
|  |  | BVW-T 4P | Between right pole (terminal symbol 6) and N pole | $\triangle$ | $\bigcirc$ | $\times$ | $\bigcirc$ |
|  |  |  | Between poles other than above | $\bigcirc$ | $\bigcirc$ | $\bigcirc$ | $\bigcirc$ |
|  | On load side | BVW-T 2P |  | $\triangle$ | $\triangle$ | $\times$ | $\times$ |
|  |  | BVW-T 4P | Between right pole (terminal symbol 6) and N pole | $\triangle$ | $\triangle$ | $\times$ | $\times$ |
|  |  |  | Between poles other than above | $\bigcirc$ | $\bigcirc$ | $\bigcirc$ | $\bigcirc$ |
| Between terminals on line side and load side |  |  |  | - | $\bigcirc$ | - | $\bigcirc$ |

Ordering Information
Please specify items with $\qquad$

| Type name | Number of poles | Operating characteristics | Rated current | Internal accessory |  | Quantity |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: |
| BHW-T10 | 1 P | Type C | 16A | SHT(12VDC) |  | 12 |
| $\downarrow$ | $\downarrow$ | $\downarrow$ | $\downarrow$ | $\downarrow$ |  |  |
| BHW-T10 | $\begin{aligned} & 1 \mathrm{P}, 1 \mathrm{P}+\mathrm{N}, 2 \mathrm{P}, \\ & 3 \mathrm{P}, 3 \mathrm{P}+\mathrm{N}, 4 \mathrm{P} \end{aligned}$ | Type B Type C Type D | $\begin{aligned} & 0.5,1,2,3,4,5, \\ & 6,10,16,20,25, \\ & 32,40,50,63 \mathrm{~A} \end{aligned}$ | Shunt trip | SHT(12VDC), <br> SHT(24VDC), <br> SHT(48VDC), <br> SHT(22OVAC) |  |
|  |  |  |  | Auxiliary switch | AX |  |


| Type name | Number of poles | Rated current |  | Quantity |
| :---: | :---: | :---: | :---: | :---: |
| KBW-T | 1 P | 63A |  | 12 |
|  | $\downarrow$ | $\downarrow$ |  |  |
|  | 1P, 2P, 3P, 4P | $\begin{gathered} 25,40,63, \\ 80,100,125 \mathrm{~A} \end{gathered}$ |  |  |
| Type name | Number of poles | Rated current | Rated sensitivity current | Quantity |
| BVW-T | 2 P | 63A | 30 mA | 6 |
|  | $\downarrow$ | $\downarrow$ | $\downarrow$ |  |
|  | 2P, 4P | 16, 25, 32, 40, 63A | 30, 100, 300 mA |  |

## Miniature Circuit Breakers



$1 P \quad 1 P+N, 2 P$


3P

$3 P+N, 4 P$

## Isolating Switches



Residual Current Circuit Breakers





## A PERFECT BLEND OF STYLE \& PRECISION

Mitsubishi Electric's distribution boards have been specially designed to provide excellent aesthetics for the interiors of modern day houses and are suitable for all domestic, commercial and industrial applications.

With a blend of style, flexibility and safety, the DIN series distribution boards are made up of fine quality CRCA steel for long lasting strength.

Manufactured with the help of high precision deep drawn tools (no welding involved), and treated with nine tank phosphating process these distribution boards provide perfect quality and high corrosion resistance.

Available in both flush as well as surface mounting type the DB's are fitted with an unique cassette assembly which facilitates easy removale of intermediate player and minimises the assembly time.

## SALIENT FEATURES

» Tested in compliane with IEC 61439-3 standards from third party and in-house test labs
" IP 43 protection
» Manufactured by Deep drawn tools for precise dimensional accuracy, weld free process
» Additional safety for users with help of Shrouded Neutral links, Insulated bus bar and door earthing
" Reversible and easy mounting of door on either side of the board
» Detachable Din rail assembly (cassette type) for ease in wiring during installation and maintenance
» Excellent aesthetics - Pure white in colour to suit any type of interior walls, high corrosion and scratch resistance
" Cement protection sheet provided as standard for protection during masonry work

## DISTRIBUTION BOARDS

## Flushed and sliding Latch:



Aesthetically pleasing black colour auto locking sliding latch/knob

## Earthing:

Door earthing to prevent shock due to current leakage
Earthing screw identified with the help of embossed impression

## Safety:

Circuit identification provided on MCB's for better safety

## Easy Reversible mounting \& removal of door /

## Reversible mounting of door:

Unique spring loaded hinge mechanism to easily remove the door from frame for convenient installation / maintenance.
Door can be mounted on either side hence allowing flexibility of mounting under varying site condition

## Dust free and safe:

Two finger holes for lifting the plate, plugged to keep the board dust free and safe

## Shrouded neutral link/Insulated bus bar for better

 safety and protection:Insulated bus bar and shrouded neutral terminal for enhanced safety and protection

## Unique cassette type assembly:

For ease of assembly and maintenance. Removal of MCB mounted inside the DB can be done by removal of four screws, hence helping easy wiring and replacement


Knob provide for easy Handling and removal of middle plate

## 



## Easy Handling:

Removeable middle plate for easy wiring, mounting and installation

## Detachable gland plates:

Detachable gland plates provided on top and bottom for easy and flexible cabling / installation

## Steel nut inserts:

Special deep steel nut inserts able to bear high torque, no risk of poor threading or powder deposition on threads

## Side locking DIN bar

Stoppers provided at the end of DIN bar for avoiding slippage of the products

## Double mounting key holes:

For easy positioning, DB's are provided with double mounted key holes

## Enhanced Aesthetics:

Standard DB's are tapered on the front surface, coated with pure white scratch resistant powder to compliment the interior of house

## Deep Drawn Front Frame and Door:

Construction with deep draw tool ensures there are no weld marks, increased impact resistance, high accuracy \& precision.

## METALLIC DISRIBUTION BOARDS - RANGE

- SPN Horizontol Double Door Distribution Board - 04 way to 16 way
- TPN Horizontol Double Door Distribution Board - 04 way to 16 way
- VTPN Distribution Board with Miniature Circuit Breaker (upto 63A) as incomer - 04,08,12 way
- VTPN Distribution Board with Moulded Case Circuit Breaker (upto 250A) as incomer - 04,08,12 way
- Flexi (tier) Distribution Board 2 Row / 3 Row / 4 Row - upto 13 module per Row
- Seven segment Distribution Board - 04 way to 12 way
- TPN Horizontal Per Phase Isolation Distribution Board - 04 way to 12 way
- TPN Phase selector Distribution Board - 04 way to 12 way
- Plug and socket Distribution Board -SPN - 10A, 20A and TPN -20A, 30A
- Cable end box Distribution Board




## Outer Dimensions

## SPN DD DISTRIBUTION BOARD



| All Dimensions are in mm |  |  |  |  | TOP |  | BOTTOM |  | SIDES |  |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
| Cat.No. | No.of Way | A | B | C | Ø32 Knockout | $\begin{gathered} \emptyset 25 \\ \text { Knockout } \end{gathered}$ | Ø32 Knockout | Ø25 Knockout | Ø32 Knockout | Ø25 Knockout |
| MDBSPNDD04 | 04 | 229.0 | 195.0 | 145.0 | 1 Nos. | 2 Nos. | 1 Nos. | 2 Nos. | 1 No. | 2 Nos. |
| MDBSPNDD08 | 08 | 301.0 | 267.0 | 217.0 | 2 Nos. | 2 Nos. | 2 Nos. | 2 Nos. | 1 No. | 2 Nos. |
| MDBSPNDD12 | 12 | 373.0 | 339.0 | 289.0 | 2 Nos. | 4 Nos. | 2 Nos. | 4 Nos. | 1 No. | 2 Nos. |
| MDBSPNDD16 | 16 | 445.0 | 411.0 | 361.0 | 2 Nos. | 5 Nos. | 2 Nos. | 5 Nos. | 1 No. | 2 Nos. |

## TPNH DD DISTRIBUTION BOARD



| All Dimensions are in mm |  |  |  |  | TOP |  | BOTTOM |  | SIDES |  |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
| Cat.No. | No.of Way | A | B | C | Ø32 Knockout | Ø25 Knockout | Ø32 Knockout | Ø25 Knockout | Ø32 Knockout | Ø25 Knockout |
| MDBTPNHDD04 | 04 | 417.0 | 392.0 | 295.0 | 2 Nos. | 4 Nos. | 2 Nos. | 4 Nos. | 1 No. | 2 Nos. |
| MDBTPNHDD06 | 06 | 452.0 | 427.0 | 330.0 | 2 Nos. | 4 Nos. | 2 Nos. | 4 Nos. | 1 No. | 2 Nos. |
| MDBTPNHDD08 | 08 | 597.0 | 572.0 | 380.0 | 2 Nos. | 4 Nos. | 2 Nos. | 4 Nos. | 1 No. | 2 Nos. |
| MDBTPNHDD12 | 12 | 742.0 | 717.0 | 430.0 | 2 Nos. | 7 Nos. | 2 Nos. | 7 Nos. | 1 No. | 2 Nos. |
| MDBTPNHDD16 | 16 | 742.0 | 717.0 | 430.0 | 2 Nos. | 9 Nos. | 2 Nos. | 9 Nos. | 1 No. | 2 Nos. |

## Outer Dimensions

## VTPN MCB AS INCOMER DISTRIBUTION BOARD


$\emptyset 6.25 \quad$ Ø32.0

$\emptyset 10.25$
$\emptyset 24.0$

Mounting Hole Details

| All Dimensions are in mm |  |  |  |  | TOP |  | BOTTOM |  | SIDES |  |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
| Cat.No. | No.of Way | A | B | C | Ø32 Knockout | Ø25 Knockout | $\begin{gathered} \text { Ø32 } \\ \text { Knockout } \end{gathered}$ | $\begin{array}{\|c\|} \hline \emptyset 25 \\ \text { Knockout } \end{array}$ | Ø32 Knockout | $\begin{gathered} \text { Ø25 } \\ \text { Knockout } \end{gathered}$ |
| MDBTPNVDD04 | 04 | 427.0 | 452.0 | 325.0 | 1 No. | 5 Nos. | 1 No. | 5 Nos. | 1 No. | 4 Nos. |
| MDBTPNVDD08 | 08 | 572.0 | 597.0 | 470.0 | 1 No. | 5 Nos. | 1 No. | 5 Nos. | 1 No. | 4 Nos. |
| MDBTPNVDD12 | 12 | 717.0 | 742.0 | 615.0 | 1 No. | 5 Nos. | 1 No. | 5 Nos. | 1 No. | 4 Nos. |

VTPN MCCB AS INCOMER DISTRIBUTION BOARD


| All dimensions are in mm |  |  |  |  | TOP |  | BOTTOM |  | SIDES |  |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
| Cat.No. | No.of Way | A | B | C | $\begin{array}{c\|} \hline \varnothing 32 \\ \text { Knockout } \end{array}$ | $\begin{array}{c\|} \varnothing 25 \\ \text { Knockout } \end{array}$ | $\begin{array}{\|c\|} \hline \emptyset 32 \\ \text { Knockout } \end{array}$ | $\begin{gathered} \varnothing 25 \\ \text { Knockout } \end{gathered}$ | $\begin{array}{\|c\|} \hline \text { Ø32 } \\ \text { Knockout } \end{array}$ | $\begin{gathered} \emptyset 25 \\ \text { Knockout } \end{gathered}$ |
| MDBMCCB250DD04 | 04 | 653.0 | 669.0 | 517.0 | 1 No. | 5 Nos. | 1 No. | 5 Nos. | 1 No. | 4 Nos. |
| MDBMCCB250DD08 | 08 | 761.0 | 777.0 | 625.0 | $1 \mathrm{No}$. | 5 Nos. | 1 No. | 5 Nos. | 1 No . | 4 Nos. |
| MDBMCCB250DD12 | 12 | 869.0 | 885.0 | 733.0 | 1 No. | 5 Nos. | 1 No. | 5 Nos. | $1 \mathrm{No}$. | 4 Nos. |

## FLEXI DD DISTRIBUTION BOARD



MOUNTING HOLE DETAIL

| All Dimensions are in mm |  |  |  |  |  |  |  | TOP/BOTTM (BOTH SIDES) |  | L \& R SIDES (BOTH SIDES) | SHEET. THICK |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
| S.No. | Cat.No. | Decription | A | B | C | NEUTRAL DETAIL | EARTHING DETAIL | Ø25 Knockout | Ø32 <br> Knockout | Ø32 <br> Knockout |  |
| 1 | MDBFLDD2R13 | FLEXI DD DB 26 WAY 2 R 13M | 415.0 | 305.0 | 435.0 | 15 Conn. x 2 | 12 Conn. x 2 | 5 Nos. | 2 Nos. | 2 Nos. | 1.2 mm |
| 2 | MDBFLDD3R13 | FLEXI DD DB 39 WAY 3 R 13M | 560.0 | 450.0 | 580.0 | 15 Conn. x 3 | 12 Conn. x 3 | 5 Nos. | 2 Nos. | 2 Nos. | 1.2 mm |
| 3 | MDBFLDD4R13 | FLEXI DD DB 52 WAY 4 R 13M | 720.0 | 610.0 | 740.0 | 15 Conn. 4 | 12 Conn. x 4 | 5 Nos. | 3 Nos. | 2 Nos. | 1.2 mm |

## 7 SEGMENT DD DISTRIBUTION BOARD



| S.No. | Cat.No. | No. OF WAY | Decription | (A) | (B) | (C) | $\begin{array}{\|c\|} \hline \text { TOP/BOTTOM } \\ \hline \emptyset 25.0 \\ \text { KNOCKOUTS } \\ \hline \end{array}$ | NEUTRAL DETAIL | EARTHING DETAIL | $\begin{aligned} & \text { SHEET } \\ & \text { THICK } \end{aligned}$ |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
| 1 | MDBSEGDD04 | 04 | 7 SEG. DD DB 04 WAY | 440.0 | 460.0 | 365.0 | 6 NOS. | 6 Conn. x 3 | 4 Conn. x 3 | 1.2 mm . |
| 2 | MDBSEGDD06 | 06 | 7 SEG. DD DB 06 WAY | 548.0 | 568.0 | 473.0 | 6 NOS. | 10 Conn. x 3 | 6 Conn. x 3 | 1.2 mm . |
| 3 | MDBSEGDD08 | 08 | 7 SEG. DD DB 08 WAY | 656.0 | 676.0 | 581.0 | 6 NOS. | 10 Conn. x 3 | 8 Conn. x 3 | 1.6 mm . |
| 4 | MDBSEGDD12 | 12 | 7 SEG. DD DB 12 WAY | 872.0 | 892.0 | 797.0 | 6 NOS. | 15 Conn. x 3 | 12 Conn. x 3 | 1.6 mm . |

## Outer Dimensions

## TPN DD PHASE SELECTOR DISTRIBUTION BOARD




Mounting Hole Details

| All Dimensions are in mm |  |  |  |  |  | TOP |  | BOTTOM |  | NEUTRAL DETAIL. | EARTHING DETAIL. | $\begin{aligned} & \text { SHEET } \\ & \text { THICK. } \end{aligned}$ |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
| S.No. | Cat.No. | No.of Way | A | B | C | $\begin{array}{c\|} \hline 032 \\ \text { Knockout } \end{array}$ | $\left\lvert\, \begin{gathered} \text { Ø25 } \\ \text { Knockout } \end{gathered}\right.$ | $\begin{gathered} \text { Ø32 } \\ \text { Knockout } \end{gathered}$ | $\begin{gathered} \boxed{\emptyset 25} \\ \text { Knockout } \end{gathered}$ |  |  |  |
| 1 | MDBPHSDD04\# | 04 | 395.0 | 295.0 | 413.0 | 1 No. | 4 Nos. | 1 No. | 4 Nos. | 15 Conn. x 1 | 12 Conn. x 1 | 1.2 mm |
| 2 | MDBPHSDD06 | 06 | 431.0 | 331.0 | 449.0 | 1 No. | 5 Nos. | 1 No. | 5 Nos. | 21 Conn. x 1 | 18 Conn. x 1 | 1.2 mm |
| 3 | MDBPHSDD08\# | 08 | 467.0 | 367.0 | 485.0 | 1 No. | 5 Nos. | 1 No. | 5 Nos. | 15 Conn. x 2 | 12 Conn. x 2 | 1.2 mm |
| 4 | MDBPHSDD12\# | 12 | 539.0 | 439.0 | 557.0 | 1 No. | 7 Nos. | 1 No. | 7 Nos. | 21 Conn. x 2 | 18 Conn. x 2 | 1.2 mm |

## TPNH PPI DD DISTRIBUTION BOARD




Mounting Hole Details

| All Dimensions are in mm |  |  |  |  | TOP |  | BOTTOM |  | SIDES |  |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
| Cat.No. | No.of Way | A | B | C | Ø32 Knockout | $\begin{gathered} \text { Ø25 } \\ \text { Knockout } \end{gathered}$ | Ø32 Knockout | $\begin{gathered} \text { Ø25 } \\ \text { Knockout } \end{gathered}$ | $\begin{gathered} \text { Ø32 } \\ \text { Knockout } \end{gathered}$ | Ø25 Knockout |
| MDBTPNPPIDD04 | 04 | 452.0 | 427.0 | 330.0 | 2 Nos. | 4 Nos. | 2 Nos. | 4 Nos. | 1 No. | 2 Nos. |
| MDBTPNPPIDD06 | 06 | 597.0 | 572.0 | 380.0 | 2 Nos. | 7 Nos. | 2 Nos. | 7 Nos. | 1 No. | 2 Nos. |
| MDBTPNPPIDD08 | 08 | 597.0 | 572.0 | 380.0 | 2 Nos. | 7 Nos. | 2 Nos. | 7 Nos. | 1 No. | 2 Nos. |
| MDBTPNPPIDD12 | 12 | 742.0 | 717.0 | 430.0 | 2 Nos. | 9 Nos. | 2 Nos. | 9 Nos. | 1 No. | 2 Nos. |

## Outer Dimensions

## PLUG \& SOCKET



| All dimensions are in mm |  |  |  |  |  | TOP |  | BOTTOM | SHEET. THICK |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
| Cat.No. | A | B | C | D | E | F | Ø25Knockout | Ø25Knockout |  |
| MDBPSSPN010 | 173.0 | 140.0 | 105.0 | 153.0 | 78.0 | 124.0 | 2 Nos. | 2 Nos. | 1.0 mm |
| MDBPSSPN020 | 173.0 | 140.0 | 105.0 | 153.0 | 78.0 | 124.0 | 2 Nos. | 2 Nos. | 1.0 mm |
| MDBPSTPN020 | 296.0 | 130.0 | 234.0 | 276.0 | 73.0 | 114.0 | 1 No. | 1 No. | 1.0 mm |
| MDBPSTPN030 | 296.0 | 130.0 | 234.0 | 276.0 | 73.0 | 114.0 | 1 No. | 1 No. | 1.0 mm |
| MDBPSSPN020SP | 173.0 | 140.0 | 105.0 | 153.0 | 78.0 | 124.0 | 2 Nos. | 2 Nos. | 1.0 mm |



## PLUG



Plug dimensions are in mm

| 04 | MDBPTPN030 | PLUG 30A TPN | 74.0 | 62.5 | 68.0 |
| :---: | :---: | :---: | :---: | :---: | :---: |
| 03 | MDBPTPN020 | PLUG 20A TPN | 44.0 | 52.5 | 56.0 |
| 02 | MDBPSPN020 | PLUG 20A SPN | 43.0 | 45.5 | 47.5 |
| 01 | MDBPSPN010 | PLUG 10A SPN | 37.0 | 39.0 | 42.0 |
| S.No. | CAT. No. | DESCRIPTION | (A) | (B) | AFF(C) |

## SOCKET



## CABLE END BOX FOR TPNV DOUBLE DOOR DISTRIBUTION



MOUNTING HOLE DETAIL

| All dimensions are in mm |  |  |  |  | TOP |  |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: |
| Cat. No. | No.of <br> ways | A | B | C | Ø25 <br> Knockout | Ø32 <br> Knockout |
| MDBCBTPNVDD | 04,08 \& 12 WAY | 405.0 | 380.0 | 290.0 | 5 Nos. | 1 Nos. |

## CABLE END BOX FOR TPNH DOUBLE DOOR DISTRIBUTION



| All dimensions are in mm |  |  |  |  | TOP |  |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: |
| Cat. No. | No.of <br> ways | A | B | C | $\boldsymbol{\varnothing} 32$ <br> Knockout | $\boldsymbol{\varnothing} 25$ <br> Knockout |
| MDBCBTPNHDD04 | 04 | 417.0 | 392.0 | 295.0 | 2 Nos. | 4 Nos. |
| MDBCBTPNHDD06 | 06 | 417.0 | 392.0 | 295.0 | 2 Nos. | 4 Nos. |
| MDBCBTPNHDD08 | 08 | 452.0 | 427.0 | 330.0 | 2 Nos. | 5 Nos. |
| MDBCBTPNHDD12 | 12 | 597.0 | 572.0 | 380.0 | 2 Nos. | 7 Nos. |
| MDBCBTPNHDD16 | 16 | 742.0 | 717.0 | 430.0 | 2 Nos. | 9 Nos. |

## CABLE END BOX FOR SPN DOUBLE DOOR DISTRIBUTION



| All dimensions are in mm |  |  |  |  | TOP |  |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: |
| Cat. No. | No.of <br> ways | A | B | C | $\boldsymbol{\varnothing} 22$ <br> Knockout | Ønockout |
| MDBCBSPNDD04 | 04 | 229.0 | 195.0 | 145.0 | 1 Nos. | 2 Nos. |
| MDBCBSPNDD08 | 08 | 301.0 | 267.0 | 217.0 | 2 Nos. | 2 Nos. |
| MDBCBSPNDD12 | 12 | 373.0 | 339.0 | 289.0 | 2 Nos. | 4 Nos. |
| MDBCBSPNDD16 | 16 | 445.0 | 411.0 | 361.0 | 2 Nos. | 5 Nos. |

$\qquad$
$\qquad$
$\qquad$
$\qquad$
$\qquad$
$\qquad$
$\qquad$
$\qquad$
$\qquad$
$\qquad$
$\qquad$
$\qquad$
$\qquad$
$\qquad$
$\qquad$
$\qquad$

## ! Safety Warning

To ensure proper use of the products listed in this catalog, please be sure to read the instruction manual prior to use.


# MITSUBISHI ELECTRIC INDIA PVT. LTD. <br> Factory Automation and Industrial Division 

## 2nd Floor, Tower A \& B DLF Cyber Greens, Dif Cyber City, DLF Phase -III, Gurgaon-122002,India <br> Phone: +91 (124) 463-0300 +91 (124) 673-9300 Fax: +91 (124) 463-0399 / 398

