MCCB
Distribution Panel

- Range : 4, 6, 8, 10 & 12 ways.
- Incoming - 250A / 400A / 630A / 800A.
- Outgoing - 160A / 250A
- No. of poles of MCCB - 3 / 4.
- Fully shrouded bus bar with high short circuit withstand.
- Multifunction Digital Metering - Optional.
- Provision for single Door / Double Door.
- Highly Reliable Tested Solution

Incoming power when distributed into different branch circuits/ sub circuits as required in various Installation- needs accurate monitoring, control & protection. HPL MCCB Distribution Panel while meeting this need- plays a key role in the reliability chain of the power system.

It is a dependable Link between Incoming power supply & various down stream circuits for Final Distribution / further distribution and control.

HPL MCCB Distribution Panel extends :

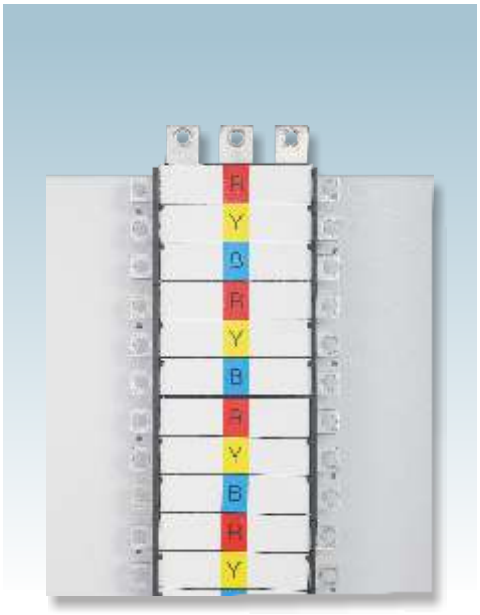
- ✓ Safety – To human life against direct / indirect electric shock.
- ✓ Protection- of electrical devices including components for protection, measurement, indication against impact (mechanical) & other causes which may affects the function.
- ✓ Minimum maintenance.
- ✓ User friendly Modular Construction & Compact Design
- ✓ Highly reliable tested solution to Industrial, Residential & Commercial application

MCCB Distribution panel is an assembly of industrial switchgear components & Bus bar housed in sheet steel enclosure. The components discharge different functions like power switching & Distribution, metering, protection , indication etc.

Flexibility :

HPL MCCB Distribution panels are available in various configuration based on –

- ✓ No. of circuits (Ways)
- ✓ Incoming & outgoing power need (Rating)
- ✓ Type of circuit (3 ph 3 wire / 3 ph 4 wire - 3P/4P)
- ✓ Multifunction Digital Metering option.
- ✓ One can select based on the need.



Enclosure :

In our plant, the sheet metal that goes into the manufacture of MCCB distribution panel undergoes a series of pretreatment process before being sent for painting which helps for perfect locking of the paint & thereby the life.

There are a number of factors which contribute to the design of enclosure. One important criteria is the temperature rise that takes place due to passage of current. The flow and distribution of current into various components is entrusted to the Bus bar system. It forms the back bone of the panel. Bus bar size determines the current carrying capacity within the confines of acceptable limit.

Also the short circuit capacity of the Bus bar system determines the size of bus bar, Insulating supports etc.

Our Shrouded Bus bar (Copper) system used through out the range is tested for very high withstand capability under short circuit & there by making the distribution panel highly reliable while using HPL MCCB range.

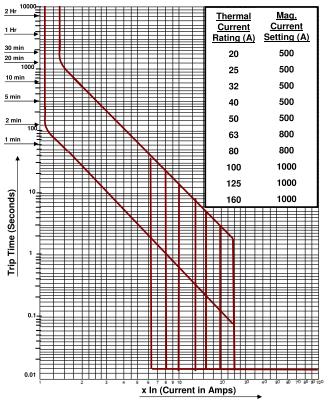
We take utmost care while designing to ensure that heat generated by bus bars does not damage the different switchgear component, CTs & other adjacent equipments. Also the bus bar system is capable enough to withstand the stresses arising out of the fault conditions.

Bus bars must withstand dielectric test also which is standard part of our quality system

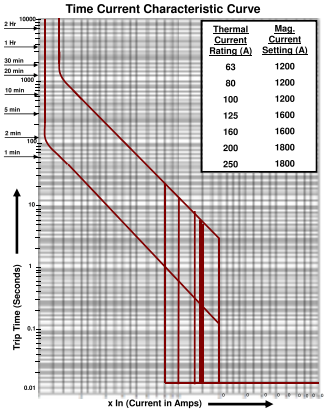
PAN assemblies are also available to facilitate the switchboard manufacturers / Panel makers with a better designed, high quality tested solution. It can be installed in the enclosure & a tested solution (for PAN assembly) can be supplied to the actual users.

Flexibility in configuration, superior features, high short circuit with stand capability and very high standard of quality checks make it an ideal choice for every installation.

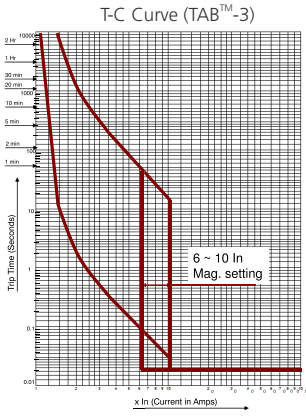
T-C Curve (TAB™-1)



T-C Curve (TAB™-2)



T-C Curve (TAB™-3)



Power Switching

HPL MCCBs are designed and manufactured to handle significant power effectively & reliably for every Application.

Major Features :

- ✓ Available in various frame size from 10A- 800A, 415v, 50Hz.
- ✓ Wide range of Breaking Capacity- from 10kA to 65kA
- ✓ Available with wide range of internal & external accessories.
- ✓ Conforms to IEC 60947-2 / IS 13947-2
- ✓ Positive Isolation
- ✓ Line – load Reversibility
- ✓ Low let through energy
- ✓ High Insulation / Impulse withstand voltage

Routine tests are carried out on each & every MCCB we manufacture. A rigorous quality system is in place to check the process quality & ultimately the final product to ensure efficient working at the time of need (under abnormal system condition)

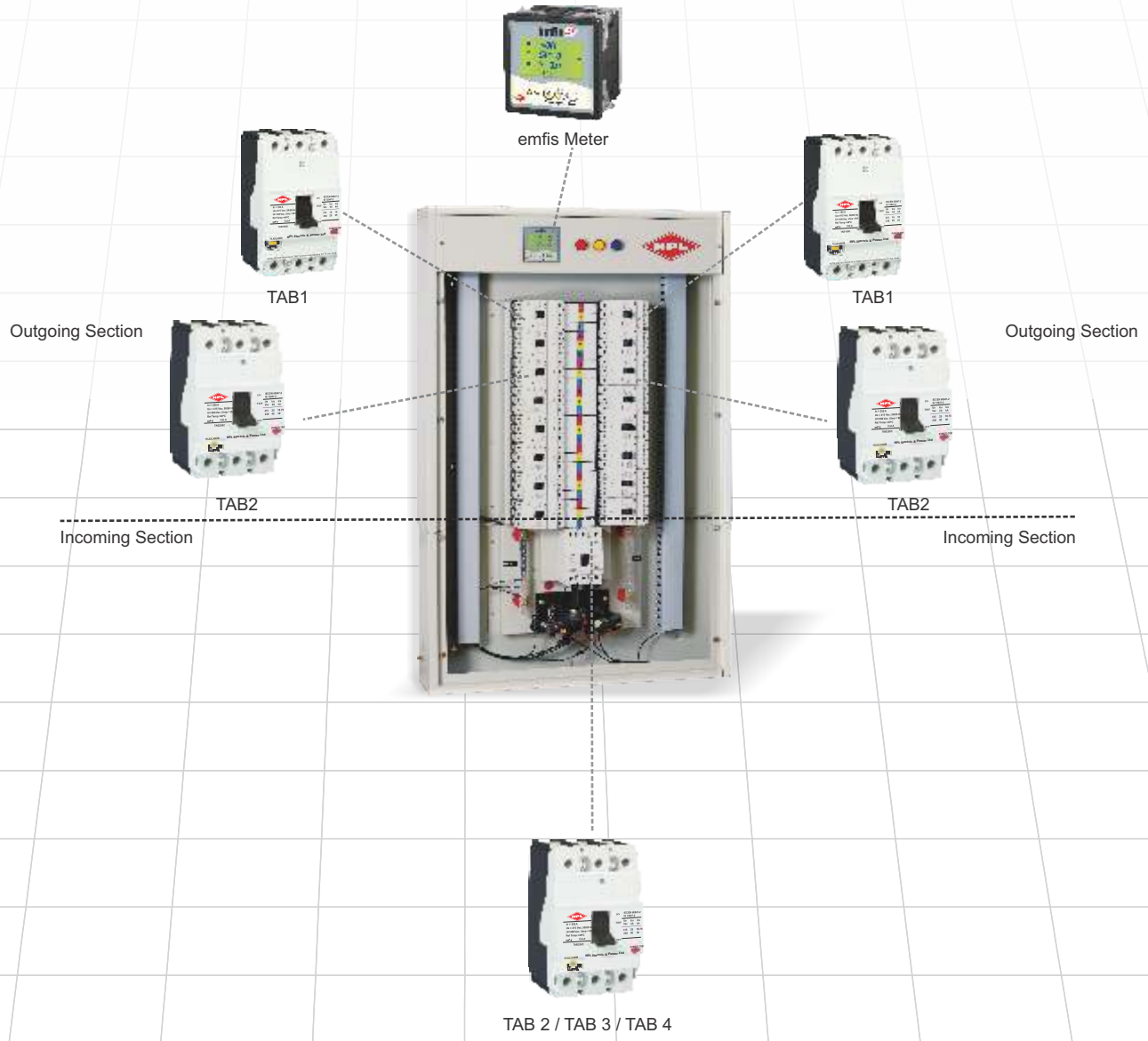
General Features

Construction	:	Steel Sheet (Thickness 1.6 mm)
Type	:	Three Phase, Four Wire
Type of Separation	:	Form 2
Incomer Rating Options	:	250A - TAB2
		400A & 500A TAB-3
		630A & 800A TAB-4
Incomer Selection	:	MCCB - 3 Pole / 4 Pole
Outgoing Rating Options	:	16-160A TAB-1. 3 Pole / 4 Pole
		63-250A TAB-2, 3 Pole
Degree of Protection	:	IP 31 / IP 41
Single Door / Double Door	:	(Single Door) standard/ (Double Door Optional)
No. of Ways	:	4 / 6 / 8 / 10 & 12
Features are available	:	With / Without separate cable alley

Electrical Features

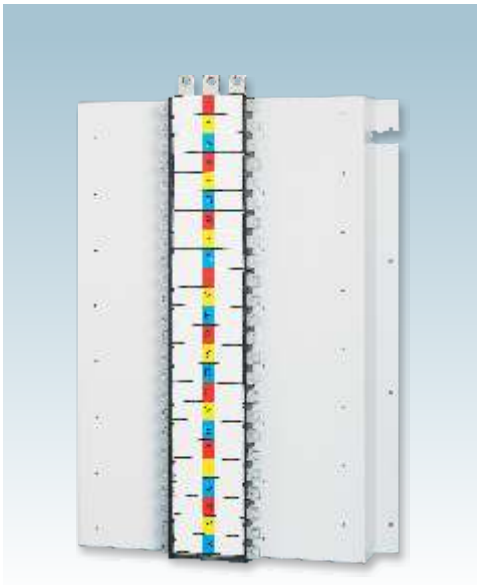
Bus Bar(Copper) Nominal Rating	:	250A Size 25x7x1
	:	400A Size 25x5x2
		630A Size 35x6x2
		800A Size 35x8x2
Bus Bar Short Circuit withstand Capacity (Icw)	:	36kA for 1 sec (250 & 400A)
		50kA for 1 sec (630A)
Rated Operational Voltage (Ue)	:	415V AC
Rated Frequency	:	50 / 60 Hz
Rated Insulation Voltage (Ui)	:	800V AC
Input Withstand Voltage (Uimp)	:	8 kV
Reference Standard	:	IEC:61439
Indication Lamps	:	ON / OFF / TRIP
Multifunction Digital Metering	:	Optional
Control Circuit Protection	:	By MCB as standard
Cable Entry	:	From bottom (as standard)

Internal Configuration



- ✓ Versatile Solution accommodating different size / rating / configuration of MCCBs to best match application needs - truely user friendly.
- ✓ Out going MCCBs fit directly to stack (Bus bar shrouded system) without any additional parts easy to connect / replace at site.
- ✓ Blanking plates finger protect non connected/ Unused MCCB outgoings.

emfis vifp - Digital Multi-function Panel Mounted Meter



Pan Assembly

Current Transfarmer

Metering Option

Digital Multi- Function Panel Mounted Meters (emfis):

This is an optional feature Today Hpl is recognized globally for various products / Technologies including various types of intelligent metering solution. In Distribution Panel we can provide :

- ✓ emfis-vif Digital Multifunction Meter
- ✓ emfis-vifp Digital Multifunction Meter
- ✓ emfis-vifpe Digital Multifunction Meter
- ✓ emfis-Basic Digital Multifunction Meter

Some of the salient features:

- ✓ Three line backlit LCD display
- ✓ Flush mounted compact display
- ✓ Maximum demand with real date & time (emfis-Basic)
- ✓ Optically isolated energy pulse output (emfis-vifpe / emfis-Basic)
- ✓ RS485 port (optional- emfis-vifpe / basic)

Also we can certainly extend solution to your any specific application need

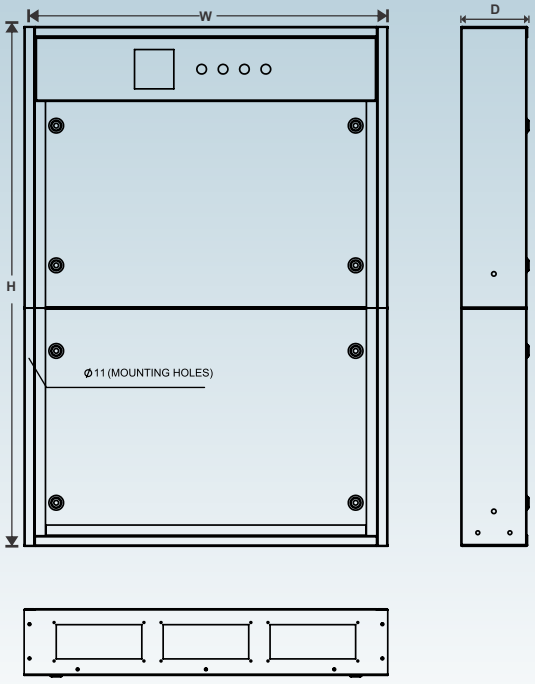
In our plant routine tests are carried out on each & every MCCB Distribution Panel that comes out of manufacturing line The tests primarily consist of

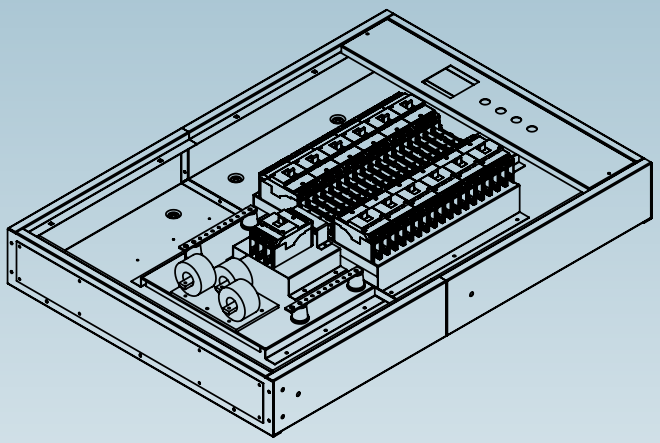
- ✓ Dimensional & Mechanical checks
- ✓ Dielectric Test
- ✓ Functional Test
- ✓ Measurement of Insulation resistance between phases and phase & earth etc.

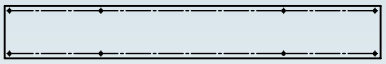
Our bus bar with high short circuit withstand capability is the indication of superior design where as very high rate of winning the customer confidence is the result of quality of manufacturing in line with proven design.

Also, complete Factory Built Assemblies for Specific requirement / project can be discussed to offer our service.

Dimensional Details







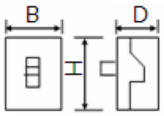
GLAND PLATE FOR PANEL

S. No	Modules	Dimensions with Incoming (I/C) / Outgoing (O/G) Option				
		TAB2,3P- I/C TAB1,3P- O /G	TAB 2,4P- I/C TAB1,4P- O /G	TAB-3 400A 3P- I/C TAB1,3P- O /G	TAB-3 400A 4P- I/C TAB1,4P- O /G	TAB-4 630A/800A 3P- I/C TAB2,3P- O /G
1	4 Way	850(W) X 154(D) X 988(H)	850(W) X 154(D) X 1067(H)	850(W) X 154(D) X 1188(H)	850(W) X 154(D) X 1267(H)	950(W) X 200(D) X 1612(H)
2	6 Way	850(W) X 154(D) X 988(H)	850(W) X 154(D) X 1067(H)	850(W) X 154(D) X 1188(H)	850(W) X 154(D) X 1267(H)	950(W) X 200(D) X 1612(H)
3	8 Way	850(W) X 154(D) X 1139(H)	850(W) X 154(D) X 1271(H)	850(W) X 154(D) X 1339(H)	850(W) X 154(D) X 1471(H)	950(W) X 200(D) X 1930(H)
4	10 Way	850(W) X 154(D) X 1139(H)	850(W) X 154(D) X 1271(H)	850(W) X 154(D) X 1339(H)	850(W) X 154(D) X 1471(H)	950(W) X 200(D) X 1930(H)
5	12 Way	850(W) X 154(D) X 1215(H)	850(W) X 154(D) X 1373(H)	850(W) X 154(D) X 1415(H)	850(W) X 154(D) X 1573(H)	950(W) X 200(D) X 2089(H)

Notes :-

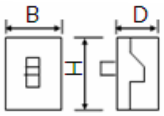
- I / C- Incomer
- O / G - Outgoing
- All Dimn. are in mm

Specifications The TAB™1 Series

No. of poles	3/4+			
Type	L	D	C	N
Rated Current*	20-160A	20-160A	20-160A	20-160A
Rated Operational Voltage	415V			
Rated Insulation Voltage	800V			
Rated Impulse withstand voltage	8kV			
Dielectric strength	3 KV for 1 minute			
Rated Frequency	50/60 Hz			
Reference Ambient Calibration Temperature**	40ºC			
Rated Ultimate S.C. Breaking Capacity (at 415 VAC, 50/60 Hz) Icu in kA	10	16	25	36
Rated Ultimate S.C. Breaking Capacity (at 230 VAC, 50/60 Hz) Icu in kA	16	25	40	50
Rated Ultimate S.C. Breaking Capacity (at 250 VDC) Icu in kA	12	18	30	40
Rated Service S.C. Breaking Capacity (at 415 VAC, 50/60 Hz) Ics in kA	100% Icu	100% Icu	75% Icu	50% Icu
Rated Service S.C. Breaking Capacity (at 230 VAC, 50/60 Hz) Ics in kA	100% Icu	100% Icu	75% Icu	50% Icu
Rated S.C. Making Capacity (at 415 VAC, 50/60 Hz) Icm in kA	17	32	52.5	75.6
Utilization Category	A			
Positive Isolation	Available			
No. of operating cycles	Mechanical-25000; Electrical-7000			
Type of Releases	Thermal - Magnetic			
Release Setting Thermal	80-100% Adjustable			
Release Setting Magnetic	Fixed			
Terminal Capacity (Cables)	50mm² max.			
Terminal Capacity (Link)	120mm² max.			
Terminal Capacity (Busbar width for direct mounting)	16 mm max.			
Size (H x B x D) 	**Dim.** H B D	**3P** 130 75 71	**4P** 130 100 71	**Unit** mm mm mm
Weight	1.2 Kg (3P) & 1.6 Kg (4P)			
Reference Standards	IS / IEC 60947-2			

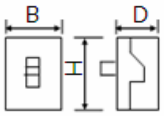
Notes :- *Continuous current rating available are 20, 25, 32, 40, 50, 63, 80, 100, 125 & 160 Amps.
**However on demand, MCCBs can be provided with calibration done at higher temperature also.
+4P MCCBs are available in TPN as well as true 4 pole version.

Specifications The TAB2™ Series

No. of poles	3/4+			
Type	-	C	N	S
Rated Current*	_	63-250A	63-250A	63-250A
Rated Operational Voltage	415V			
Rated Insulation Voltage	800V			
Rated Impulse withstand voltage	8kV			
Dielectric strength	3 KV for 1 minute			
Rated Frequency	50/60 Hz			
Reference Ambient Calibration Temperature**	40ºC			
Rated Ultimate S.C. Breaking Capacity (at 415 VAC, 50/60 Hz) Icu in kA	-	25	36	50
Rated Ultimate S.C. Breaking Capacity (at 230 VAC, 50/60 Hz) Icu in kA	-	40	50	70
Rated Ultimate S.C. Breaking Capacity (at 250 VDC) Icu in kA	-	30	40	55
Rated Service S.C. Breaking Capacity (at 415 VAC, 50/60 Hz) Ics in kA	-	100% Icu	100% Icu	50% Icu
Rated Service S.C. Breaking Capacity (at 230 VAC, 50/60 Hz) Ics in kA	-	100% Icu	100% Icu	50% Icu
Rated S.C. Making Capacity (at 415 VAC, 50/60 Hz) Icm in kA	-	52.5	75.6	105
Utilization Category	A			
Positive Isolation	Available			
No. of operating cycles	Mechanical-20000; Electrical-5000			
Type of Releases	Thermal-Magnetic			
Release Setting Thermal	80-100% Adjustable			
Release Setting Magnetic	Fixed			
Terminal Capacity (Cables)	95mm² max.			
Terminal Capacity (Link)	185mm² max.			
Terminal Capacity (Busbar width for direct mounting)	22 mm max.			
Size (H x B x D) 	**Dim.** H B D	**3P** 150 105 72	**4P** 150 140 72	**Unit** mm mm mm
Weight	2.3 Kg (3P) & 2.9 Kg (4P)			
Reference Standards	IS / IEC 60947-2			

Notes :- *Continuous current rating available are 63, 80, 100, 125, 160, 200 & 250 Amps.
**However on demand, MCCBs can be provided with calibration done at higher temperature also.
+4P MCCBs are available in TPN as well as true 4 pole version.

Specifications The TAB™3 Series

No. of poles	3/4+			
Type	-	N	S	H
Rated Current*	_	250-500A	250-500A	250-500A
Rated Operational Voltage	415V			
Rated Insulation Voltage	800V			
Rated Impulse withstand voltage	8kV			
Dielectric strength	3 KV for 1 minute			
Rated Frequency	50/60 Hz			
Reference Ambient Calibration Temperature**	40ºC			
Rated Ultimate S.C. Breaking Capacity (at 415 VAC, 50/60 Hz) Icu in kA	-	36	50	65
Rated Ultimate S.C. Breaking Capacity (at 230 VAC, 50/60 Hz) Icu in kA	-	65	85	95
Rated Ultimate S.C. Breaking Capacity (at 250 VDC) Icu in kA	-	20	25	35
Rated Service S.C. Breaking Capacity (at 415 VAC, 50/60 Hz) Ics in kA	-	100% Icu	75% Icu	50% Icu
Rated Service S.C. Breaking Capacity (at 230 VAC, 50/60 Hz) Ics in kA	-	100% Icu	75% Icu	50% Icu
Rated S.C. Making Capacity (at 415 VAC, 50/60 Hz) Icm in kA	-	76	105	143
Utilization Category	A			
Positive Isolation	Available			
No. of operating cycles	Mechanical-15000; Electrical-3000			
Type of Releases	Thermal-Magnetic			
Release Setting Thermal	Adjustable 70-100%			
Release Setting Magnetic	Adjustable 6In - 10In			
Terminal Capacity (Cables)	-			
Terminal Capacity (Link)	320mm² max.			
Terminal Capacity (Busbar width for direct mounting)	28 mm max.			
Size (H x B x D) 	**Dim.** H B D	**3P** 254.5 140 99	**4P** 254.5 184 99	**Unit** mm mm mm
Weight	6.8 Kg (3P) & 8.8 Kg (4P)			
Reference Standards	IS/IEC 60947-2			

Notes :- * However on demand, MCCBs can be provided with calibration done at higher temperature also.

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