

Moulded Case Circuit Breaker

Features:

- Wide range : 16A to 1600A (AC)
- Compact dimensions
- Adjustable thermal setting (70-100%) I_n
- Adjustable magnetic setting (5-10 times / 4-10 times) I_n
- Suitable for use as switch disconnecter
- In 4PwSN version, neutral makes first and breaks last
- Push to trip button provision
- Uniform front escutcheon plate
- Positive dolly position indication
- Suitable for DC application upto 1600A
- Separate main and arcing contacts
- Wide range of accessories

Range :

16A to 1600A in 5 frame sizes in single pole, three pole and four pole with switched neutral execution.

Specification :

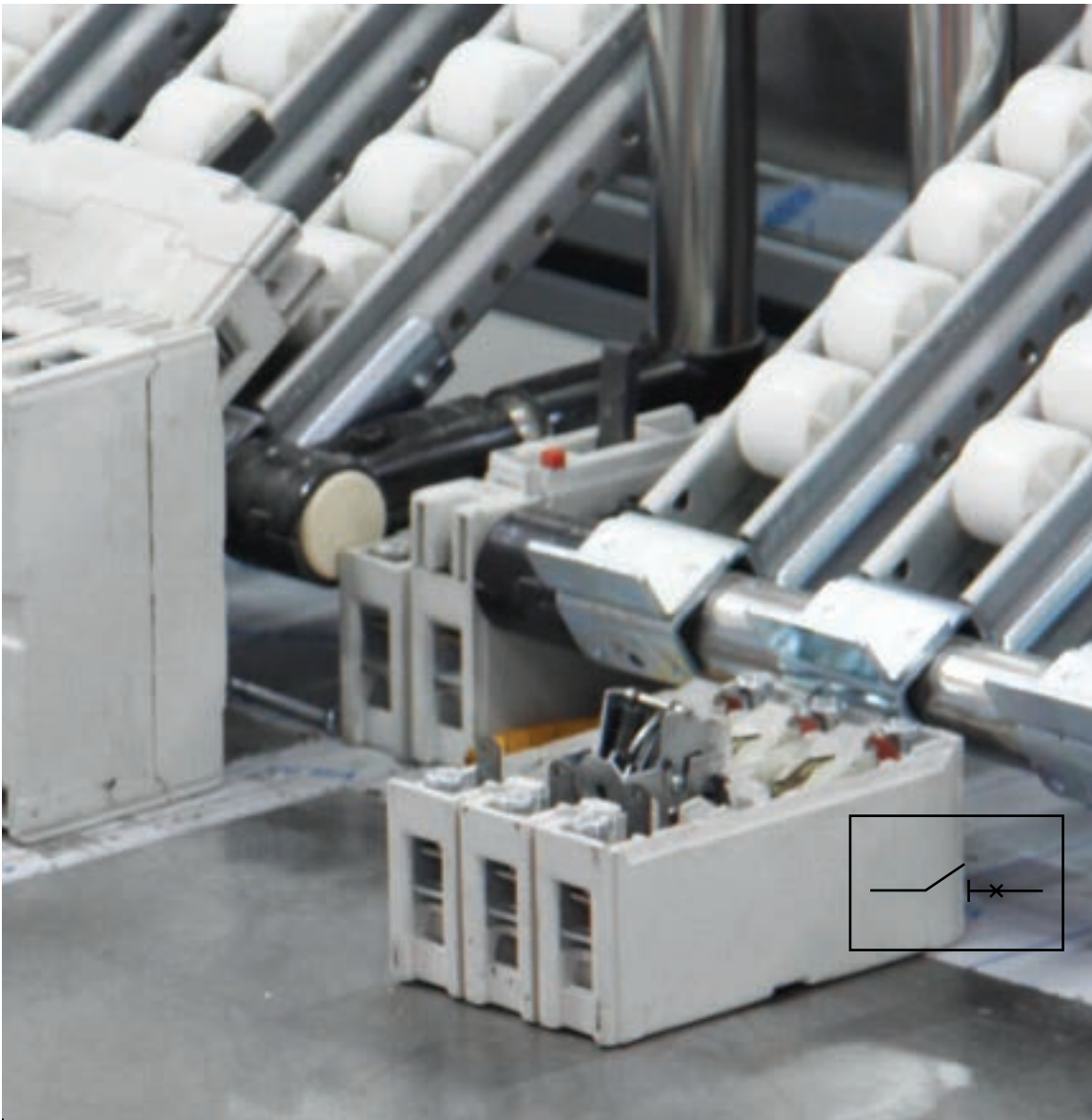
Conforms to IEC : 60947-1&2 / IS:13947-1&2.

Load Line range of Moulded Case Circuit Breakers are designed and manufactured to world-class standards. Loadline series MCCBs provide overload and short-circuit protection for all applications. The thermal & magnetic elements, adjustable over a wide band, make these MCCBs ideal for any distribution application.



Loadline

Moulded Case Circuit Breaker



Loadline Moulded Case Circuit Breakers have precision formed moulded case and cover of high performance resin bonded thermoset material. The circuit breakers are designed to allow grouping in distribution panels or switchboards to present their operating handles and label escutcheons uniformly aligned in a single panel cut out.

The **switching mechanism** is Quick make-Quick break type and is tripfree, i.e. the breaker trips internally even if the operating knob is held in ON position.

The **contact mechanism** comprises of fixed and moving contacts made of sintered silver alloy for reliability, long life and anti-welding properties. Arcing contacts are provided in higher frames, further increasing the contact life.

The **arc extinguishing device** comprises of arc chutes having grid plates mounted in parallel between supports of insulating material. The arc is divided between these grid plates which helps in its fast quenching. The arc is thus confined, divided and extinguished in the arc chute. The excellent insulation between the conducting parts and better energy dissipation after short circuit makes it possible to make the load and line connections on either side.

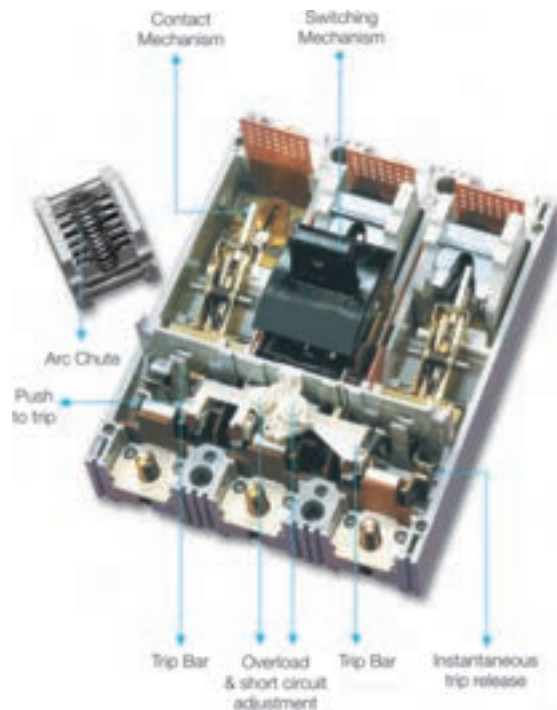
The **tripping mechanism** comprises of a bimetal and heater element for overload protection and fixed & moving core for magnetic protection in each pole coupled to a single trip bar unit to avoid single phasing. The overload and magnetic setting are front adjustable on site.

Thermal Magnetic Type

The overload protection is provided by a combination of the heater element and the bimetal strip in each phase which activates the trip mechanism.

Short Circuit protection is provided by the magnetic circuit comprising of the fixed and moving core. In the event of short circuit, the moving core is attracted towards the fixed core due to the high electromagnetic forces developed which actuates the trip mechanism.

The fixed and moving contacts of Loadline MCCBs are so designed that an electromagnetic repulsive force is developed under high currents which is sufficient to overcome the spring tension holding the moving contacts, thereby initiating the contact opening resulting into faster opening of the contacts limiting the prospective short circuit current.



Technical Information

SH Frame

Ref. Standard	:	IS / IEC 60947-2
Rated operational Voltage	:	415V AC
Rated insulation Voltage	:	690V AC
Rated Impulse Voltage	:	8kV
Utilisation category	:	A
Rated frequency	:	50/60Hz
Operating altitude	:	2000 metres
Humidity	:	0 - 90%



Frame	SH 100			
Number of Poles		2P	3P	4P wSN
Rated Current, I _n at 40° C	A	15 - 100*	15 - 100*	15 - 100*
Overload / Short Circuit Release		Fixed	Fixed	Fixed
Rated Ultimate Short Circuit Breaking Capacity (I _{cu}) (at different voltages)	kA			
240V	kA	25	25	25
415V	kA	10	10	10
440V	kA	10	10	10
500V	kA	7.5	7.5	7.5
Service Short Circuit Breaking Capacity (I _{cs})=% (I _{cu})	%	50	50	50
Weight	kg	0.45	0.65	0.85
Terminal Capacity(mm ²)	mm ²	35	35	35
Busbar Width(mm)	mm	15	15	15
Terminal screw size (15A - 50A) / (60A - 100A)		M5x12 / M8x12	M5x12 / M8x12	M5x12 / M8x12
Recommended Torque	Nm	2.5 / 10	2.5 / 10	2.5 / 10
Dimension (WxHxD)	mm	50x130x60	75x130x60	100x130x60
External Accessories				
Phase Barriers			+	+
Extended Terminals			●	●

* Current Ratings - 15A, 20A, 32A, 40A, 50A, 63A, 75A, 100A

+ Supplied with MCCB as standard

● Supplied with MCCB of rating 100A only

2P - Double Pole

3P - Three Pole

4PwSN - Four Pole with Switched Neutral

Technical Information

G-Frame

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Standard conformity	:	IEC 60947-2/IS:13947-2
Rated operational voltage	:	500V AC
Rated Insulation Voltage	:	750V AC
Type of release	:	Thermomagnetic
Utilisation Category	:	A
Rated frequency	:	50/60 Hz
Ambient temp	:	40°C (50°C on request)
Operating altitude	:	2000 meters
Humidity	:	0 - 90%
Rated impulse voltage	:	8 KV



Frame			GS	GN	GH
No. of Poles			1P / 3P / 4PwSN	1P / 3P / 4PwSN	3P / 4PwSN
Standard current range / rating (I _n)A			16-160*	16-160*	16-160*
Thermal release setting			Fixed	Fixed	Fixed
Magnetic release setting for current rating :					
	16A - 32A	A	350	350	350
	40A - 50A	A	500	500	500
	63A - 80A	A	800	800	800
	100A - 160A	A	1000	1000	1000
Rated short circuit making capacity (Peak) I _{cm} at 415V AC		KA	17	32	52.5
Rated ultimate short circuit breaking capacity (I _{cu}), KA (at different voltages)		240V 415V 440V 500V	16 10 10 7.5	25 16 14 10	40 25 16 12
I _{cs} = % I _{cu}			100%	75%	50%
Weight	SP	Kg	0.35	0.35	0.35
	TP	Kg	0.93	0.93	0.93
	4PwSN	Kg	1.2	1.2	1.2
Terminal capacity (cable)		Sq.mm	70	70	70
Bus bar (width)		mm	10	10	10
Recommended Torque		Nm	2.5	2.5	2.5
Internal Accessories					
Auxiliary Switch (1 C/O or 2C/O)			•	•	•
Shunt Trip			•	•	•
Under Voltage Release			•	•	•
External Accessories					
Earth Fault Relay			•	•	•
Rotary Handle			•	•	•
Back Studs			-	-	-
Extended Terminals (above 63A)			+	+	+
Dolly Extension			-	-	-
Phase Barriers			+	+	+
Terminal Shrouds			•	•	•
Dolly pad locking Device†			•	•	•

* Current Ratings - 16A, 20A, 25A, 32A, 40A, 50A, 63A, 80A, 100A, 125A, 150A, 160A

• Available, - Not Available, + Supplied alongwith the MCCB as standard.

Δ Available in single pole

† Available in 3P & 4P

1P - Single Pole

3P - Three Pole

4PwSN - Four Pole with Switched Neutral

Technical Information

AA-Frame

Standard conformity	:	IEC 60947-2/IS:13947-2
Rated operational voltage	:	500V AC
Rated Insulation Voltage	:	750V AC
Type of release	:	Thermomagnetic
Utilisation Category	:	A
Rated frequency	:	50/60 Hz
Ambient temp	:	40°C (50°C on request)
Operating altitude	:	2000 meters
Humidity	:	0 - 90%
Rated impulse voltage	:	8 KV



Frame		AAS		AAN	
No. of Poles		1P / 3P / 4PwSN		1P / 3P / 4PwSN	
Standard current range / ratings (I _n)	A	25-200*		25-250*	
Thermal release setting (Adjustable)		70-100% of I _n		70-100% of I _n	
Magnetic release setting for current rating :					
25A - 63A		400A		400A	
80A - 125A		800A		800A	
160A - 250A		1600A		1600A	
50A -125A AM Frame		-		-	
160A -250A AM Frame		-		-	
Rated short circuit making capacity (Peak) I _{cm}	KA	32		73.5	52.5
Rated ultimate short circuit breaking capacity (I _{cu}), KA		(160-200A)		(25-125A)	(25-250A)
(at different voltages)					
	240V	25		50	40
	415V	16		35	25
	440V	16		35	25
	500V	12		25	18
I _{cs} = % I _{cu}		100%		75%	75%
Weight					
SP (Single Pole)	Kg	0.7		0.7	
TP (Triple Pole)	Kg	1.8		1.8	
FPwSN (Four Pole Switched Neutral)	Kg	2.4		2.4	
Terminal capacity (Cable)	Sq.mm			70 (upto 100A)/150 (125A-250A)	
(Bus bar width)		mm		25 (125A-250A)	
Recommended Torque	Nm	10		10	
Internal Accessories					
Auxiliary Switch (1 C/O or 2C/O)		•		•	
Shunt Trip		•		•	
Under Voltage Release		•		•	
Alarm Switch (1 C/O) Factory Fitted		•		•	
External Accessories					
Earth Fault Relay		•		•	
Rotary Handle		•		•	
Back Studs		•		•	
Extended Terminals (above 63A)		+		+	
Dolly Extension		-		-	
Phase Barriers		+		+	
Terminal Shrouds		•		•	
Dolly pad locking Device		•		•	

* Current Ratings - 25A, 32A, 40A, 50A, 63A, 80A, 100A, 125A, 160A, 200A, 250A

• Available, - Not Available, + Supplied alongwith the MCCB above 63A..

1P - Single Pole

3P - Three Pole

4PwSN - Four Pole with Switched Neutral

Technical Information

F-Frame

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Standard conformity	:	IEC 60947-2/IS:13947-2
Rated operational voltage	:	500V AC
Rated Insulation Voltage	:	750V AC
Type of release	:	Thermomagnetic
Utilisation Category	:	A
Rated frequency	:	50/60 Hz
Ambient temp	:	40°C (55°C on request)
Operating altitude	:	2000 meters
Humidity	:	0 - 90%
Rated impulse voltage	:	8 KV



Frame		FN	FH
No. of Poles		3P / 4PwSN	3P / 4PwSN
Standard Current ratings (I _n)	A	25-250*	25-250*
Thermal release setting		Fixed	Fixed
Magnetic release setting for current rating		Fixed	Fixed
25A - 32A		500A	500A
40A - 80A		800A	800A
100A - 125A		1250A	1250A
160A - 250A		1600A	1600A
Rated short circuit making capacity (Peak) I _{cm} kA		73.5	105
Rated ultimate short circuit breaking capacity(I _{cu}), kA	240V	50	70
(at different voltages)	380V	35	50
	415V	35	50
	500V	25	35
I _{cs} = % I _{cu}		100%	100%
Weight TP (Triple Pole) / FPwSN	Kg	2.9 / 3.8	2.9 / 3.8
Terminal Type		M8	M8
Terminal capacity (Cable)	Sq.mm	185	185
(Bus bar width)	mm	18	18
Internal Accessories			
Auxiliary Switch (1 C/O or 2C/O)		•	•
Shunt Trip		•	•
Under Voltage Release		•	•
Alarm Switch (1 C/O) # (Factory Fitted)		•	•
External Accessories			
Earth Fault Relay		•	•
Rotary Handle		•	•
Back Studs		•	•
Extended Terminals (above 63A)		+	+
Dolly Extension		-	-
Phase Barriers		+	+
Terminal Shrouds (only in 3P MCCB)		•	•
Dolly pad locking Device		•	•

* Current Ratings - 25A, 32A, 40A, 50A, 63A, 80A, 100A, 125A, 160A, 200A, 250A

• Available, - Not Available, + Supplied alongwith the MCCB above 63A.

Factory Fitted

3P - Three Pole

4PwSN - Four Pole with Switched Neutral

Technical Information

L-Frame

Ref. Standard	:	IS / IEC 60947-2
Rated operational Voltage	:	415V AC
Rated insulation Voltage	:	750V AC
Rated impulse Voltage	:	8kV
Type of Release	:	Thermal Magnetic
Utilisation category	:	A
Rated frequency	:	50 / 60Hz
Operating altitude	:	2000 metres
Humidity	:	0 - 90%
Suitability of Isolation	:	Yes



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Frame			LS	LN
No. of Poles			3P	3P
Standard Current Ratings (I_n)	A		250, 315, 400, 500, 630	250, 315, 400, 500, 630
Thermal release setting (Adjustable)			80-100% I_n	80-100% I_n
Magnetic release setting for current rating				
250A - 400A			4000A	4000A
500A - 630A			6300A	6300A
Rated S.C. Making Capacity at 415V (I _{cm})	kA		75.6	105
Rated Ultimate S.C breaking capacity (I _{cu}) at				
240V	kA		50	65
415V	kA		36	50
Rated Service S.C Breaking Capacity at 415V	I _{cs} = % I _{cu}	%	100	75
Weight	Kg		6	6
Terminal capacity (Max.)	Sq. mm		1x240 (250A-400A) 2x185 (500A-630A)	1x240 (250A-400A) 2x185 (500A-630A)
Bus bar width	mm		30	30
Overall dimension (W X H X D)			140x254x109	140x254x109
Internal Accessories #				
Auxillary Switch	1C/O or 2C/O		•	•
Shunt Trip (built-in auxillary contact)			•	•
Under Voltage release			•	•
Alarm Switch			•	•
External Accessories				
Rotary Handle - Extended			•	•
Extended Terminals			•	•
Dolly Extension			•	•
Phase Barriers			•	•
Dolly pad locking device			•	•
Earth Fault Relay			•	•

• Available

Only 2 accessories at a time can be fitted in the MCCB

3P - Three Pole

Note: i) Breaker with adjustable thermal & magnetic release will be available shortly.
ii) Breaker in four Pole execution will also be available.

Technical Information

CN / CN / DN - Frame

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Standard conformity	:	IEC 60947-2/IS:13947-2
Rated operational voltage	:	500V AC
Rated Insulation Voltage	:	690V AC
Type of release	:	Thermomagnetic
Utilisation Category	:	A
Rated frequency	:	50/60 Hz
Ambient temp	:	40°C (50°C on request)
Operating altitude	:	2000 meters
Humidity	:	0 - 90%
Rated impulse voltage	:	8 KV



Frame		CN	CH	DN
No. of Poles		3P/4PwSN	3P/4PwSN	3P/4PwSN
Standard current ratings (I _n)	A	160-800*	160-800*	1000-1600*
Thermal release setting (Adjustable)		70-100% of I _n	70-100% of I _n	70-100% of I _n
Magnetic release setting		Adjustable	Adjustable	Adjustable
160 - 315A	CN/CH Frame	5-10 times I _n	5-10 times I _n	-
400 - 800A	CN/CH Frame	4-10 times I _n	4-10 times I _n	-
800 - 1600A	DN Frame	-	-	4000-10,000A
Rated short circuit making capacity (Peak) I _{cm}	KA	73.5	105	105
Rated ultimate short circuit breaking capacity(I _{cu}), KA (at different voltages)	240V 380V 415V 500V	50 35 35 25	70 50 50 35	70 50 50 35
I _{cs} = % I _{cu}		75%	50%	75%
Weight TP (Triple Pole)	Kg	9.2	9.2	17#/19**
FPwSN (Four Pole with Switched Neutral)	Kg	11.6	11.6	22/25
Terminal capacity (Cable)	Sq.mm	-	-	-
(Busbar width)	mm	40	40	45** upto 1000A 60** upto 1250A 65** upto 1600A 35.5# upto 1600A
Internal Accessories				
Auxiliary Switch (1 C/O or 2 C/O)		•	•	•
Shunt Trip		•	•	•
Under Voltage Release		•	•	•
Alarm Switch (1 C/O) # Factory Filled		•	•	•
External Accessories				
Earth Fault Relay		•	•	•
Rotary Handle		•	•	•
Back Studs		•	-	•
Extended Terminals		+	•	•
Dolly Extension		•	•	•
Phase Barriers		+	-	•
Terminal Shrouds		-	-	-
Dolly pad locking Device		•	•	•

* Current Ratings - 160A, 200A, 250A, 315A, 400A, 500A, 630A, 800A, 1000A, 1250A, 1600A.

• Available, - Not Available, + Supplied alongwith the MCCB as standard.

** Terminals at Front

Terminals at back / rear

3P - Three Pole

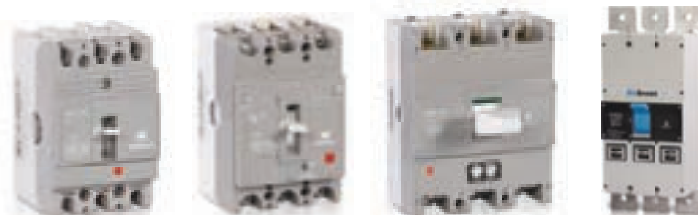
4PwSN - Four Pole with Switched Neutral

Technical Information (DC MCCBs)

GN / AN / CH / DN - Frame

DC MCCBs

Standard conformity	: IEC 60947-2/IS:13947-2
Rated operational voltage	: 250V DC
Rated Insulation Voltage	: 690V AC
Type of release	: Thermomagnetic
Utilisation Category	: A
Ambient temp	: 40°C
Operating altitude	: 2000 meters
Humidity	: 0-90%



Frame		GN	AAN	CH	DN
No. of Poles		3P	3P	3P	3P
Standard current ratings I _n	A	25-125*	160-250*	160-800*	1000-1600*
Thermal release setting		Fixed	Adjustable (70-100% of I _n)	Adjustable (70-100% of I _n)	Adjustable (70-100% of I _n)
Magnetic release setting for current rating :					
25-50A	GN Frame	500A	-	-	-
63-80A	GN Frame	800A	-	-	-
100-125A	GN Frame	1000A	-	-	-
160-200A	AN Frame	-	1600A	-	-
160-315A	CH Frame	-	-	5 - 10 times I _n	-
400-800A	CH Frame	-	-	4 - 10 times I _n	-
800-1600A	DN Frame	-	-	-	4000-10,000A
Rated ultimate short circuit breaking capacity (I _{cu}), at 250V DC	KA	5	10	20	20
I _{cs} = % I _{cu}		75%	75%	50%	75%
Weight	Kg	0.93	1.8	9.2	17#/19**
Terminal capacity (Cable)	Sq.mm	70	70(upto 100A)/150 (125A-250A)	-	-
(Busbar width)	mm	10	25	40	45** upto 1000A 60** upto 1250A 65** upto 1600A 35.5# upto 1600A
Recommended Torque	Nm	2.5	10	-	-
Internal Accessories					
Auxiliary Switch		•	•	•	•
Shunt Trip		•	•	•	•
External Accessories					
Earth Fault Relay		•	•	•	•
Rotary Handle		•	•	•	•
Back Studs		-	-	-	-
Extended Terminals		+	+	+	•
Dolly Extension		-	-	•	•
Phase Barriers		+	+	+	•
Terminal Shrouds		•	•	-	-
Dolly pad locking Device		•	•	•	•

* Current Ratings - 25A, 32A, 40A, 50A, 63A, 80A, 100A, 125A, 160A, 200A, 250A, 315A, 400A, 500A, 630A, 800A, 1000A, 1250A, 1600A.

• Available, - Not Available, + Supplied alongwith the MCCB as standard. ** Terminals at Front, # Terminals at Rear.

Loadline DC MCCBs

DC MCCBs are available in three pole version from 25A-1600A with breaking capacity of 5KA, 10KA & 20KA.

The selection of the circuit breaker for DC applications depends on these criteria :-

- Rated current of the equipment.
- Rated voltage, which determines the number of poles in series for breaking. For voltages upto 250V DC, two poles of the breaker are connected in series to form the positive pole and the third pole to be used as a negative pole or three poles can be used in series.
- The maximum short-circuit current at the point of installation, which determines the breaking capacity.
- The (L/R) ratio for the application should be ≤ 15 ms.

SH Frame MCCBs

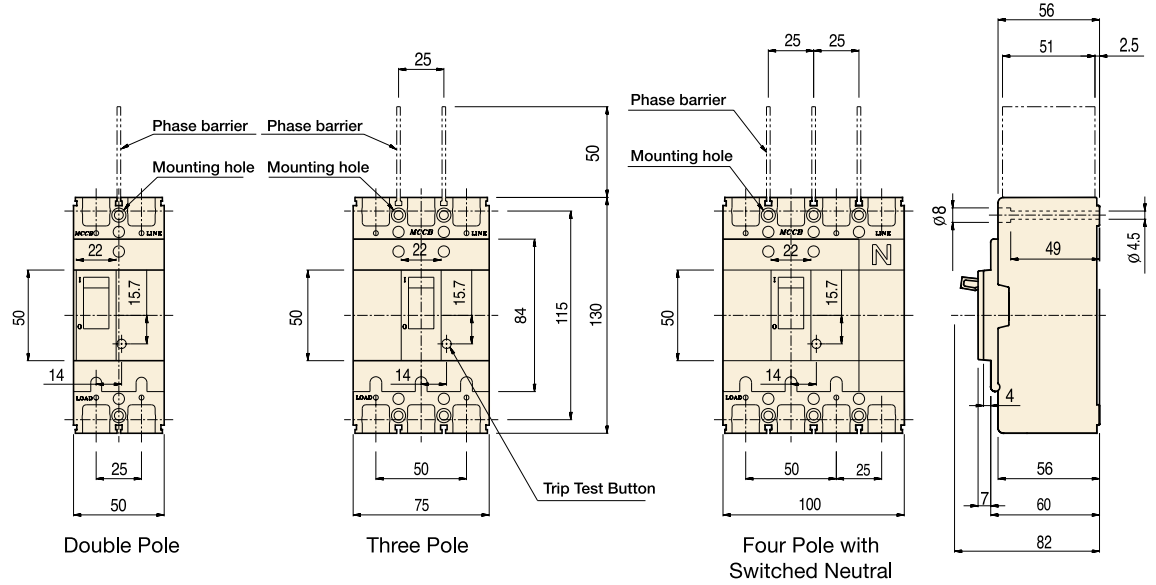
SH Frame MCCB



Current Rating (A)	Cat. No.		
	Double Pole	Three Pole	Four Pole wSN
15A	IHLSHAAD0015	IHLSHAAT0015	IHLSHAAF0015
20A	IHLSHAAD0020	IHLSHAAT0020	IHLSHAAF0020
30A	IHLSHAAD0030	IHLSHAAT0030	IHLSHAAF0030
40A	IHLSHAAD0040	IHLSHAAT0040	IHLSHAAF0040
50A	IHLSHAAD0050	IHLSHAAT0050	IHLSHAAF0050
60A	IHLSHAAD0060	IHLSHAAT0060	IHLSHAAF0060
75A*	IHLSHAAD0075	IHLSHAAT0075	IHLSHAAF0075
100A*	IHLSHAAD0100	IHLSHAAT0100	IHLSHAAF0100

* Extended Terminals supplied with MCCB of rating 100A only.

Dimension (in mm)



G Frame MCCBs



G Frame Single Pole MCCB			
Current Rating (A)	Icu 10kA Cat. No.	Icu 16kA Cat. No.	Icu 25kA Cat. No.
16	IHLGSS0016	IHLGNS0016	IHLGHS0016
20	IHLGSS0020	IHLGNS0020	IHLGHS0020
25	IHLGSS0025	IHLGNS0025	IHLGHS0025
32	IHLGSS0032	IHLGNS0032	IHLGHS0032
40	IHLGSS0040	IHLGNS0040	IHLGHS0040
50	IHLGSS0050	IHLGNS0050	IHLGHS0050
63	IHLGSS0063	IHLGNS0063	IHLGHS0063
80	IHLGSS0080	IHLGNS0080	IHLGHS0080
100	IHLGSS0100	IHLGNS0100	IHLGHS0100
125	IHLGSS0125	IHLGNS0125	IHLGHS0125
160	IHLGSS0160	IHLGNS0160	IHLGHS0160



G Frame Three Pole MCCB			
Current Rating (A)	Icu 10kA Cat. No.	Icu 16kA Cat. No.	Icu 25kA Cat. No.
16	IHLGST0016	IHLGNT0016	IHLGHT0016
20	IHLGST0020	IHLGNT0020	IHLGHT0020
25	IHLGST0025	IHLGNT0025	IHLGHT0025
32	IHLGST0032	IHLGNT0032	IHLGHT0032
40	IHLGST0040	IHLGNT0040	IHLGHT0040
50	IHLGST0050	IHLGNT0050	IHLGHT0050
63	IHLGST0063	IHLGNT0063	IHLGHT0063
80	IHLGST0080	IHLGNT0080	IHLGHT0080
100	IHLGST0100	IHLGNT0100	IHLGHT0100
125	IHLGST0125	IHLGNT0125	IHLGHT0125
160	IHLGST0160	IHLGNT0160	IHLGHT0160

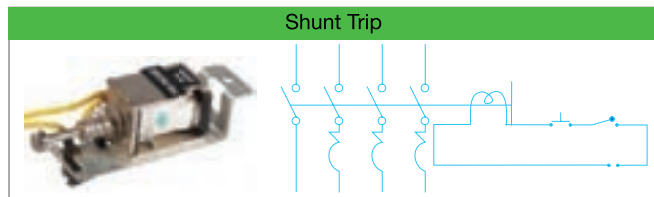


G Frame Four Pole wSN MCCB			
Current Rating (A)	Icu 10kA Cat. No.	Icu 16kA Cat. No.	Icu 25kA Cat. No.
16	IHLGSF0016	IHLGNF0016	IHLGHF0016
20	IHLGSF0020	IHLGNF0020	IHLGHF0020
25	IHLGSF0025	IHLGNF0025	IHLGHF0025
32	IHLGSF0032	IHLGNF0032	IHLGHF0032
40	IHLGSF0040	IHLGNF0040	IHLGHF0040
50	IHLGSF0050	IHLGNF0050	IHLGHF0050
63	IHLGSF0063	IHLGNF0063	IHLGHF0063
80	IHLGSF0080	IHLGNF0080	IHLGHF0080
100	IHLGSF0100	IHLGNF0100	IHLGHF0100
125	IHLGSF0125	IHLGNF0125	IHLGHF0125
160	IHLGSF0160	IHLGNF0160	IHLGHF0160

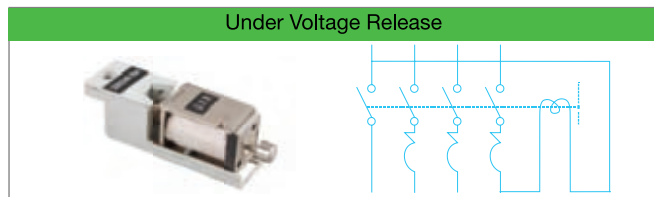
G Frame Accessories

(Accessories are for 3P / 4P wSN)

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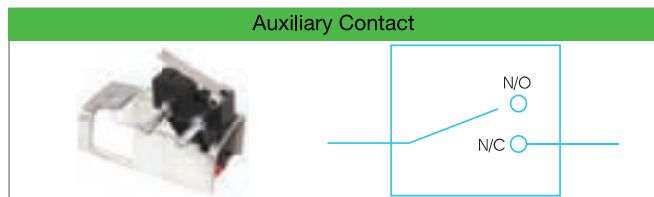
Voltage	Cat. No.
100-110Vac	IHLGS110
220-240Vac	IHLGS240
380-415Vac	IHLGS415



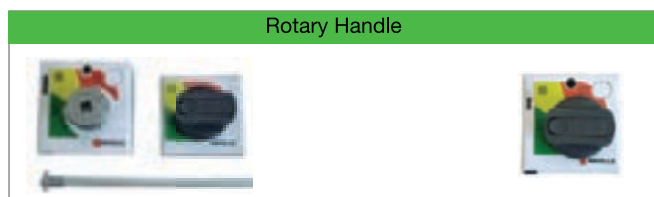
Voltage	Cat. No.
110-120 Vac	IHLGU110
220-240 Vac	IHLGU240
380-440 Vac	IHLGU440

The breaker trips if the supply voltage dips below 70% to 35% of the rated voltage.

The breaker cannot be switched ON unless there is a supply to the UVR. (NVNC feature).



Auxiliary Contact (250Vac / 250Vdc) (450Vac / 250Vdc)	
1. Change Over (1NO+1NC)	IHLASG1CO
2. Change Over (2NO+2NC)	IHLASG2CO



Description	Cat. No.
Direct Mounted	IHLGD000
With Door interlock and 300mm remote shaft	IHLGRN30

G Frame Accessories

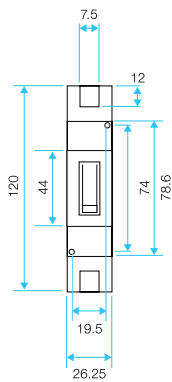
(Accessories are for 3P / 4P WSN)

Other Accessories

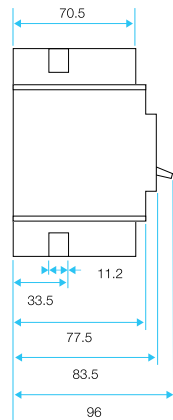


		Cat. No.
Dolly Pad locking device		IHLDPG125
Phase Barriers	Three P	ISLGX0046
	Four P	ISLGX0048
Terminal Shrouds	Single P	IHLTSGS00
	Three P	IHLTSGT00
	Four P	IHLTSGF00
Extended terminals Up to 80 A	Single P	ISLGX0055
	Three P	ISLGX0056
	Four P	ISLGX0057
Extended terminals 100 A - 160 A	Single P	ISLGX0014
	Three P	ISLGX0012
	Four P	ISLGX0045

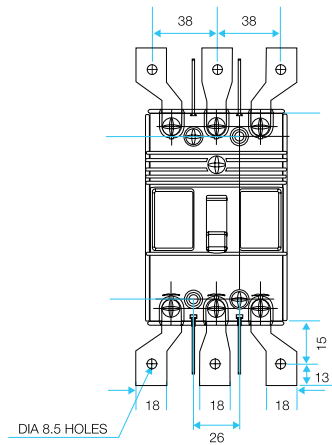
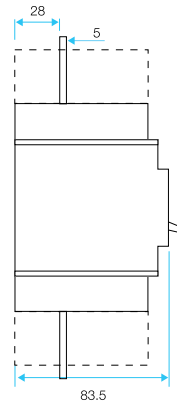
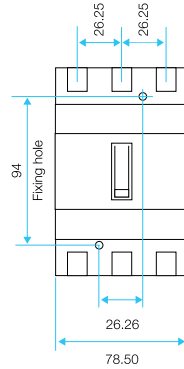
Dimensions (in mm)



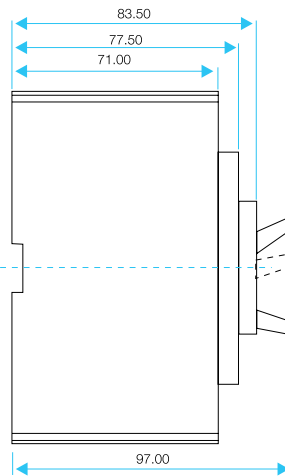
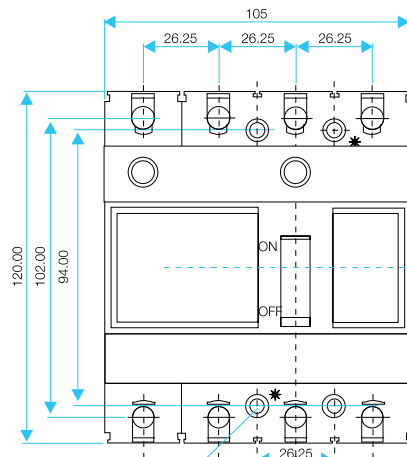
Single Pole



Three Pole



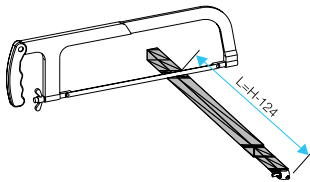
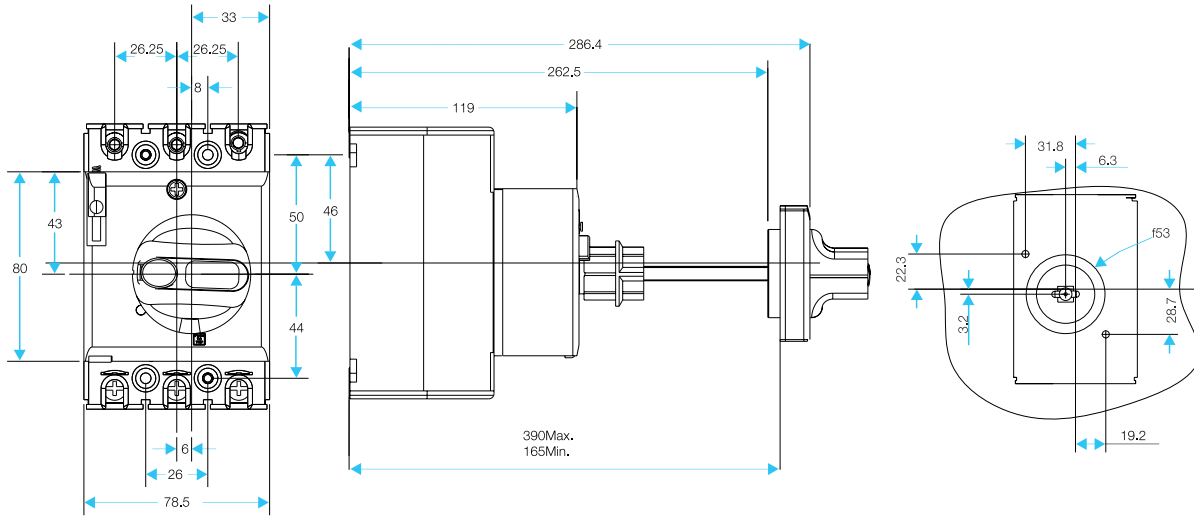
Three Pole with Extended Terminals



2 NOS. MOUNTING HOLES FOR M4 SCREWS

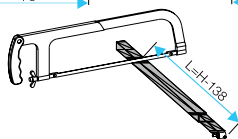
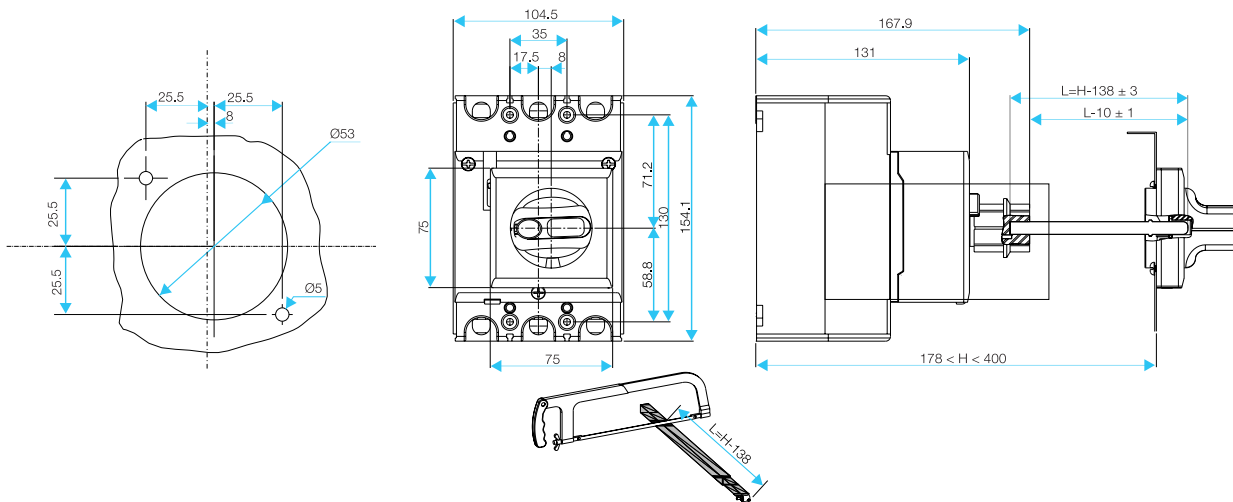
Four Pole with Switched Neutral

Handle Fixing Details - 'G' Frame



- I - MCCB ON
- O - MCCB OFF
- Trip - (In between I and O positions)
MCCB tripped by release or push to trip
- To re-close the MCCB move the handle towards position 'RESET' first till MCCB resets and then switch to position - 'I'.

Handle Fixing Details - 'A' Frame



AA Frame MCCBs



AA Frame Single Pole MCCB	
Current Rating (A)	Icu 25kA Cat. No.
25	IHLASS0025
32	IHLASS0032
40	IHLASS0040
50	IHLASS0050
63	IHLASS0063
80	IHLASS0080
100	IHLASS0100
125	IHLASS0125
160	IHLANS0160
200	IHLANS0200
250	IHLANS0250



AA Frame Three Pole MCCB			
Current Rating (A)	Icu 16kA Cat. No.	Icu 25kA Cat. No.	Icu 35kA Cat. No.
25	--	IHLAST0025	IHLANT0025
32	--	IHLAST0032	IHLANT0032
40	--	IHLAST0040	IHLANT0040
50	--	IHLAST0050	IHLANT0050
63	--	IHLAST0063	IHLANT0063
80	--	IHLAST0080	IHLANT0080
100	--	IHLAST0100	IHLANT0100
125	--	IHLAST0125	IHLANT0125
160	IHLAST0160	IHLANT0160	--
200	IHLAST0200	IHLANT0200	--
250	--	IHLANT0250	--

AA Frame MCCBs

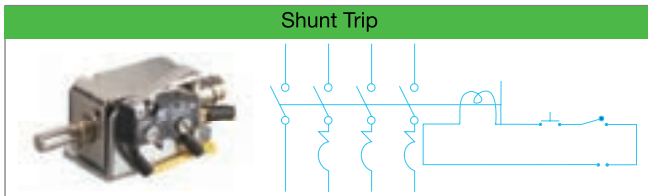
96



AA Frame Four Pole wSN MCCB			
Current Rating (A)	Icu 16kA Cat. No.	Icu 25kA Cat. No.	Icu 35kA Cat. No.
25	--	IHLASF0025	IHLANF0025
32	--	IHLASF0032	IHLANF0032
40	--	IHLASF0040	IHLANF0040
50	--	IHLASF0050	IHLANF0050
63	--	IHLASF0063	IHLANF0063
80	--	IHLASF0080	IHLANF0080
100	--	IHLASF0100	IHLANF0100
125	--	IHLASF0125	IHLANF0125
160	IHLASF0160	IHLANF0160	--
200	IHLASF0200	IHLANF0200	--
250	--	IHLANF0250	--

AA Frame Accessories

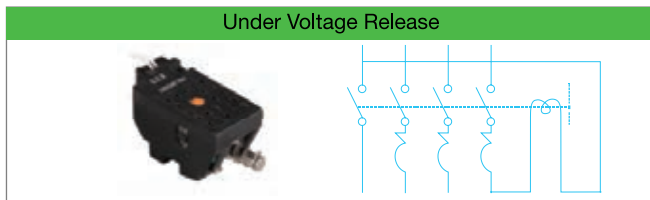
(Accessories are for 3P / 4P wSN)



Voltage	Cat. No.
100-110Vac	IHLAS110
220-240Vac	IHLAS240
380-415 Vac	IHLAS415

AA Frame Accessories

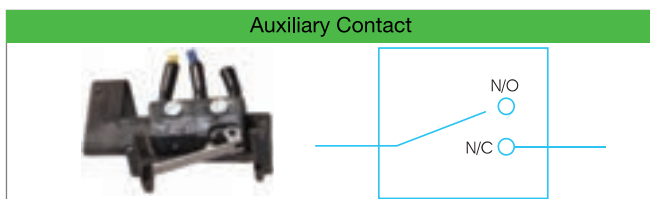
(Accessories are for 3P / 4P wSN)



Voltage	Cat. No.
110-120 Vac	IHLAU110
220-240 Vac	IHLAU240
380-440 Vac	IHLAU440

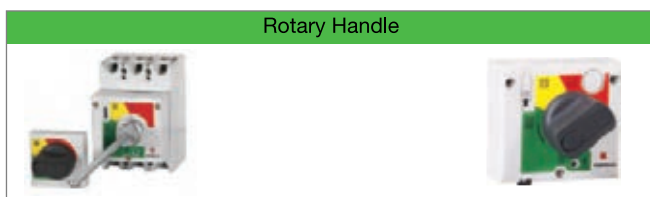
The breaker trips if the supply voltage dips below 70% to 35% of the rated voltage.

The breaker cannot be switched ON unless there is a supply to the UVR. (NVNC feature).



Auxiliary Contact (250Vac / 250Vdc) (450Vac / 250Vdc)

1. Change Over (1NO+1NC)	IHLAA1CO
2. Change Over (2NO+2NC)	IHLAA2CO



Description	Cat. No.
Direct Mounted	IHLAD000
With Door interlock and 300mm remote shaft	IHLARN30

AA Frame Accessories

(Accessories are for 3P / 4P wSN)

Back Studs



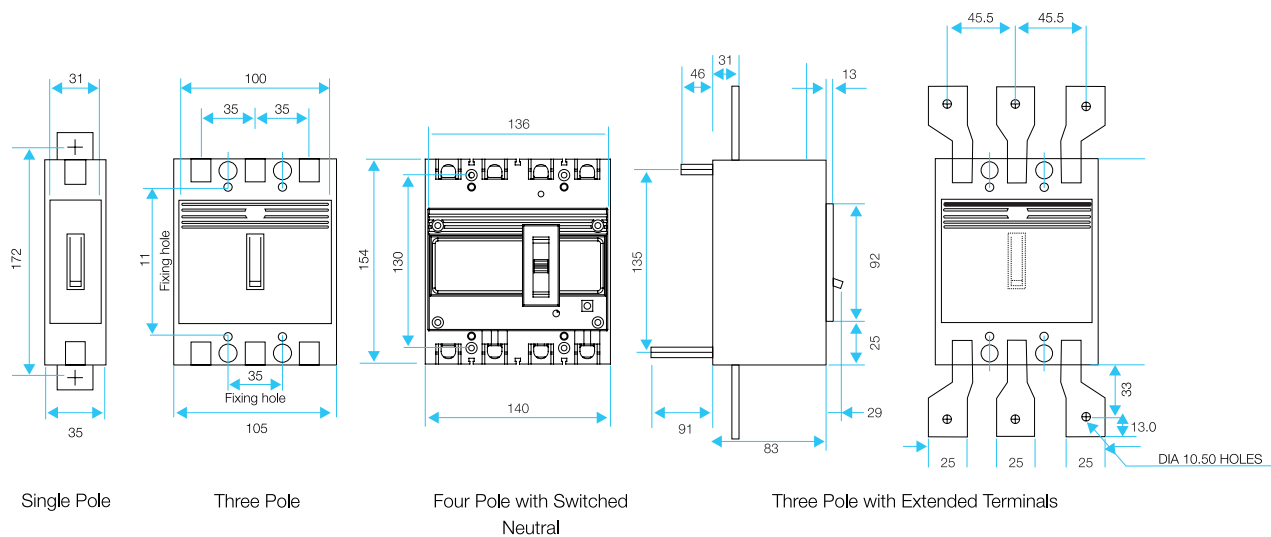
Cat. No.	
Upto 250A	IHLBSA250

Other Accessories



		Cat. No.
Dolly Pad locking device		IHLDDPA250
Phase Barriers	Three Pole	ISLAX0063
	Four Pole	ISLAX0064
Terminal Shrouds	Single Pole	IHLTSAS00
	Three Pole	IHLTSAT00
	Four Pole	IHLTSAF00
Extended terminals Up to 100 A	Single Pole	ISLAX0056
	Three Pole	ISLAX0057
	Four Pole	ISLAX0058
Extended terminals 125 A - 250 A	Single Pole	ISLAX0048
	Three Pole	ISLAX0061
	Four Pole	ISLAX0059

Dimensions (in mm)



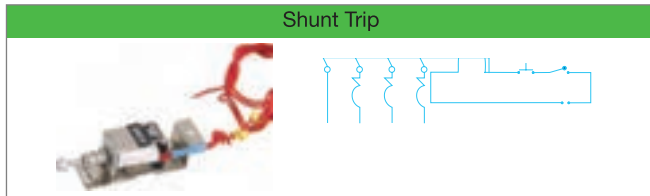
FN/FH Frame MCCBs



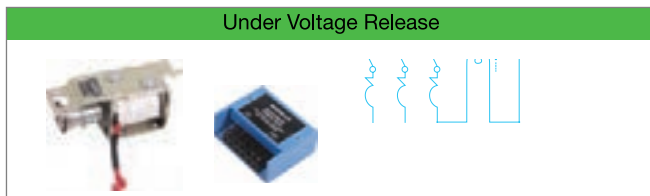
FN/FH Frame Three Pole / Four Pole with Switch Neutral				
Current Rating (A)	Icu 35kA Cat. No.	Icu 50kA Cat. No.	Icu 35kA Cat. No.	Icu 50kA Cat. No.
	Three Pole		Four Pole	
25	IHLFNT0025	IHLFHT0025	IHLFNF0025	IHLFHF0025
32	IHLFNT0032	IHLFHT0032	IHLFNF0032	IHLFHF0032
40	IHLFNT0040	IHLFHT0040	IHLFNF0040	IHLFHF0040
50	IHLFNT0050	IHLFHT0050	IHLFNF0050	IHLFHF0050
63	IHLFNT0063	IHLFHT0063	IHLFNF0063	IHLFHF0063
80	IHLFNT0080	IHLFHT0080	IHLFNF0080	IHLFHF0080
100	IHLFNT0100	IHLFHT0100	IHLFNF0100	IHLFHF0100
125	IHLFNT0125	IHLFHT0125	IHLFNF0125	IHLFHF0125
160	IHLFNT0160	IHLFHT0160	IHLFNF0160	IHLFHF0160
200	IHLFNT0200	IHLFHT0200	IHLFNF0200	IHLFHF0200
250	IHLFNT0250	IHLFHT0250	IHLFNF0250	IHLFHF0250

FN/FH Frame Accessories

(Accessories are for 3P / 4P wSN)



Voltage	Cat. No.
100-110Vac	IHLLSTF110
220-240Vac	IHLLSTF240
380-415 Vac	IHLLSTF415

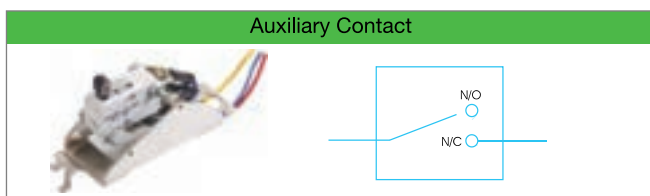


Voltage	Cat. No.
110-120 Vac	IHLUVRF110
220-240 Vac	IHLUVRF240
380-440 Vac	IHLUVRF440

The breaker trips if the supply voltage dips below 70% to 35% of the rated voltage.

The breaker cannot be switched ON unless there is a supply to the UVR. (NVNC feature).

Supplied with external mounting Power pack to operate on AC supplies. Additional transformer is supplied with ILUVRF440 & ILUVRF110.



Auxiliary Contact (250Vac / 250Vdc) (450Vac / 250Vdc)	
1. Change Over (1NO+1NC)	IHLLASF1CO
2. Change Over (2NO+2NC)	IHLLASF2CO

FN/FH Frame Accessories

(Accessories are for 3P / 4P wSN)

100

Rotary Handle



Cat. No.

With Door interlock and
300mm remote shaft

IHLRRHF30

Other Accessories



Cat. No.

Dolly Pad locking device

IHLDPF250

Phase Barriers

Three Pole
Four Pole

ISSLFX0036
ISSLFX0038

Terminal Shrouds

Three Pole
Four Pole

IHLTSFT00
IHLTSFF00

Extended terminals
Up to 100 A

Three Pole
Four Pole

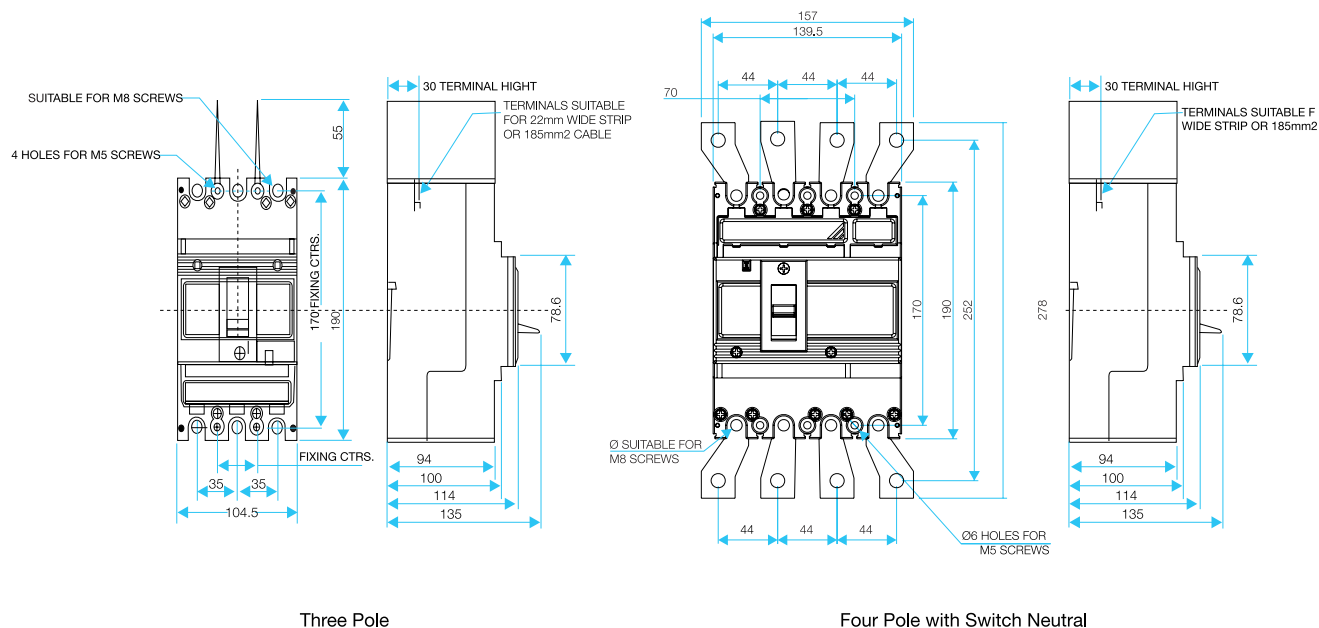
ISLFX0047
ISLFX0044

Extended terminals
125 A - 250 A

Three Pole
Four Pole

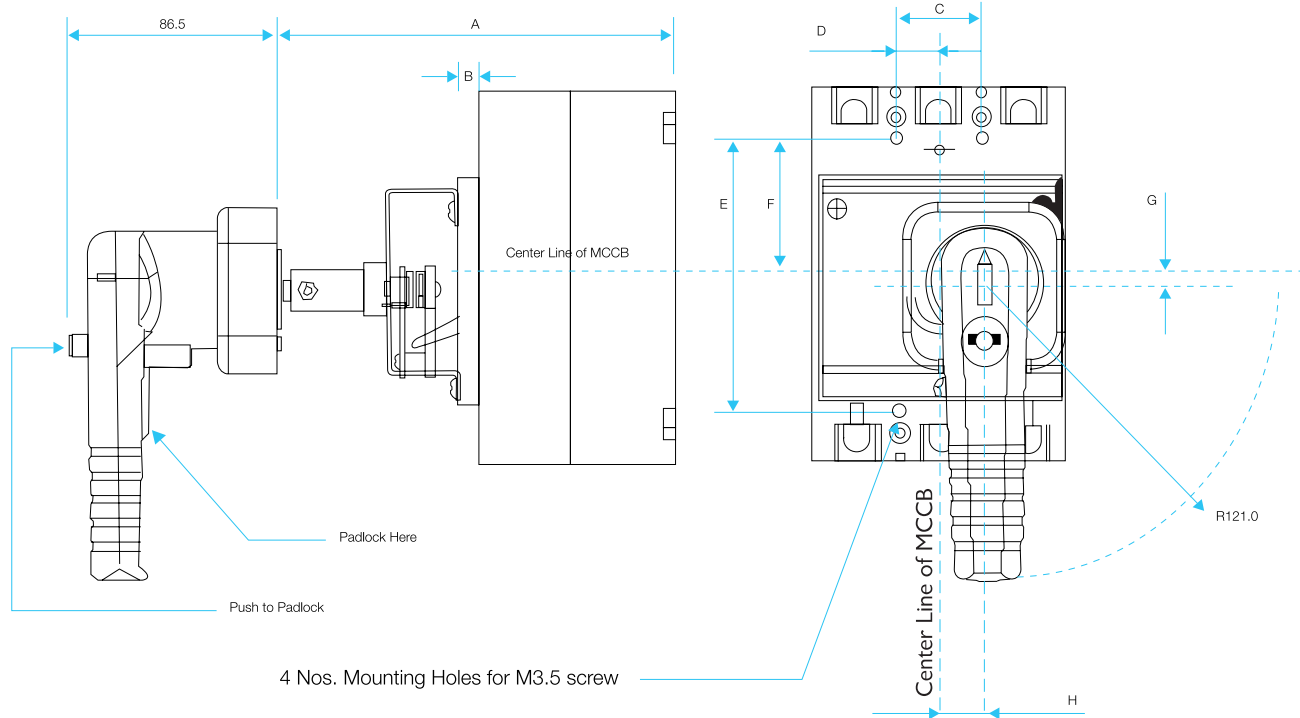
ISLFX0049
ISLFX0046

Dimensions (in mm)

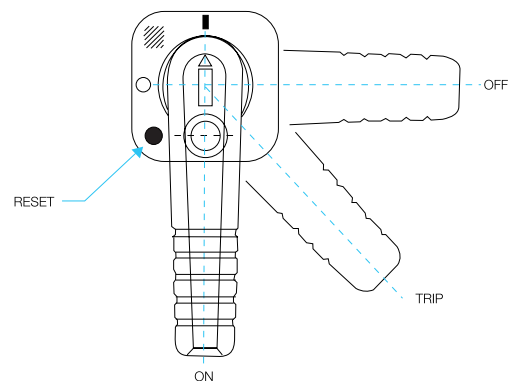
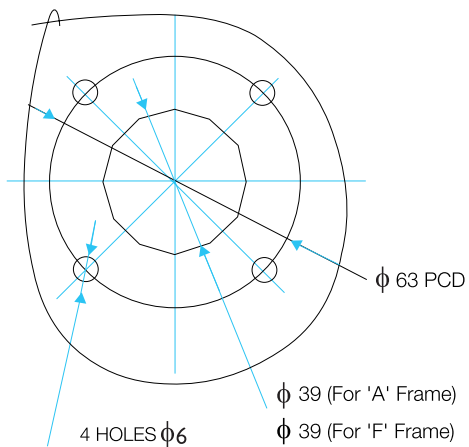


Dimensions (in mm) - Rotary Handle

Handle Fixin Details - 'F' Frame



S. No.	Frame	A	B	C	D	E	F	G	H
1	F	190.0	4.25	35.0	17.5	170.0	85.0	3.75	15.0



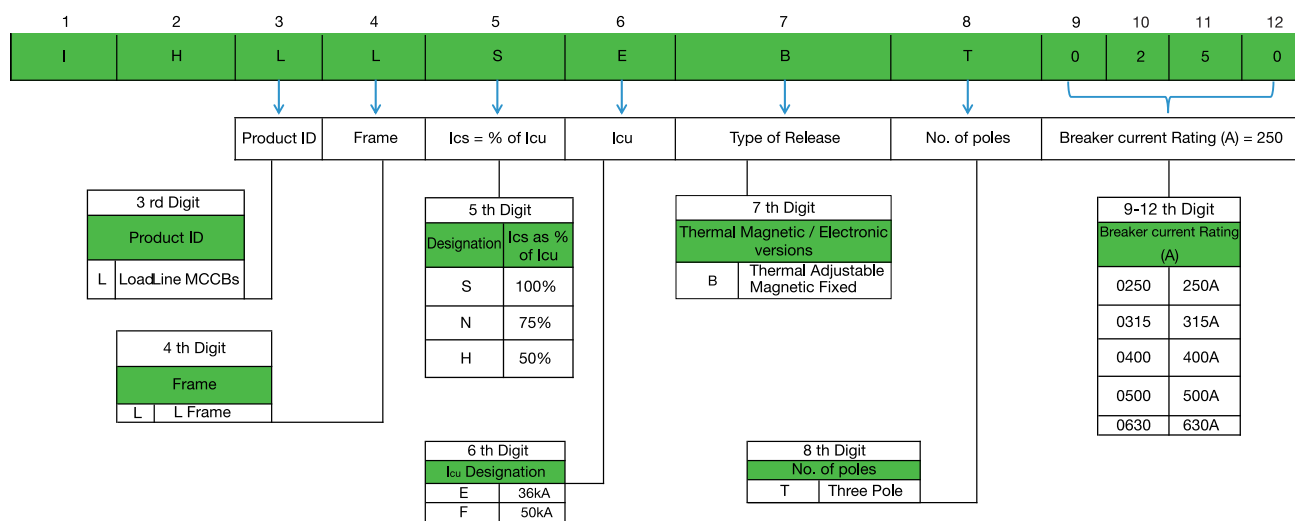
- I - MCCB ON
- O - MCCB OFF
- Trip - (In between I and O positions)
MCCB tripped by release or push to trip
- To re-close the MCCB move the handle towards position 'RESET' first till MCCB resets and then switch to position - 'I'.

LS / LN Frame MCCB



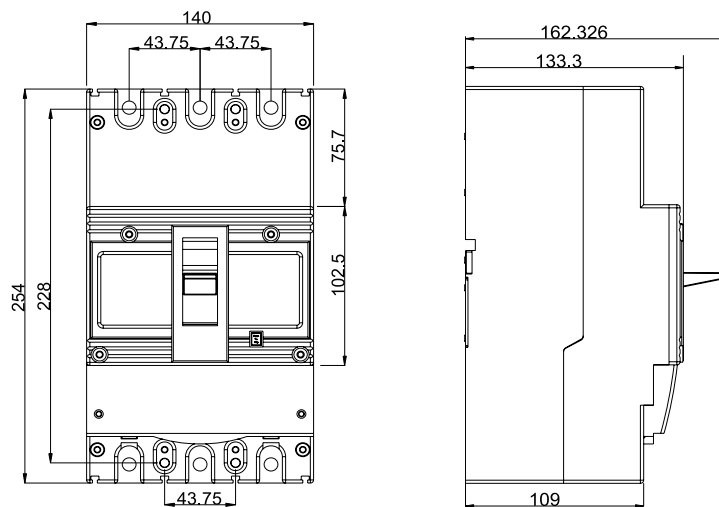
LS / LN Frame Three Pole MCCB		
Current Rating (A)	Icu 36kA Cat. No.	Icu 50kA Cat. No.
250	IHLLSEBT0250	IHLLNFBT0250
315	IHLLSEBT0315	IHLLNFBT0315
400	IHLLSEBT0400	IHLLNFBT0400
500	IHLLSEBT0500	IHLLNFBT0500
630	IHLLSEBT0630	IHLLNFBT0630

Code Logic



Example	Description
IHLLSEBT0250	Industrial Havells Loadline MCCB L Frame with Ics as 100% Icu, Icu = 36kA, Release Type: Thermal Adjustable, Magnetic Fixed, 3-Pole, 250A Current Rating

Dimensions (in mm)



Three Pole

LS / LN Frame Accessories

Alarm Switch



Voltage	Rating	Configuration	Cat. No.
240 Vac	1A	1NO + NC	IHLLB000

Shunt Trip with Auxiliary switch



Voltage	Cat. No.
110Vac	IHLLS110
240Vac	IHLLS240
415 Vac	IHLLS415

Note: Shunt Trip release is provided with built-in auxiliary contact

Under Voltage Release



Voltage	Cat. No.
110 Vac	IHLLU110
240 Vac	IHLLU240
415 Vac	IHLLU415

Note: The breaker trips if the supply voltage dips below 70%- 35% of the rated voltage.

The breaker cannot be switched ON unless there is a supply to the UVR. (NVNC feature).

Supplied with external mounting Electronic Power pack to operate on AC supplies.

Auxiliary Switch



Voltage	Current Rating (AC12)	Configuration	Cat. No.
250Vac	4 Amps	(1NO+1NC)	IHLLA1CO
250Vac	4 Amps	2(1NO+1NC)	IHLLA2CO

Rotary Handle



Rotary Handle	Cat. No.
With Door interlock and 300mm remote shaft	IHLLRN30

Dolly Pad Lock



	Cat. No.
Dolly Extension	ISCPMLLX009
Dolly Pad locking device	IHLLP000

Extended terminal with phase barrier



	Cat. No.
Extended terminals (250A-400A)	ISSLX0013
(500A-630A)	ISSLX0014
Phase Barriers	ISSLLX0004

CN/CH Frame MCCBs

104



CN Frame Three Pole MCCB

Current Rating (A)	Icu 35kA Cat. No.
160	IHLCNT0160
200	IHLCNT0200
250	IHLCNT0250
315	IHLCNT0315
400	IHLCNT0400
500	IHLCNT0500
630	IHLCNT0630
800	IHLCNT0800



CN Frame Four Pole wSN MCCB

Current Rating (A)	Icu 35kA Cat. No.
160	IHLCNF0160
200	IHLCNF0200
250	IHLCNF0250
315	IHLCNF0315
400	IHLCNF0400
500	IHLCNF0500
630	IHLCNF0630
800	IHLCNF0800



CH Frame Three Pole MCCB

Current Rating (A)	Icu 50kA Cat. No.
160	IHLCHT0160
200	IHLCHT0200
250	IHLCHT0250
315	IHLCHT0315
400	IHLCHT0400
500	IHLCHT0500
630	IHLCHT0630
800	IHLCHT0800

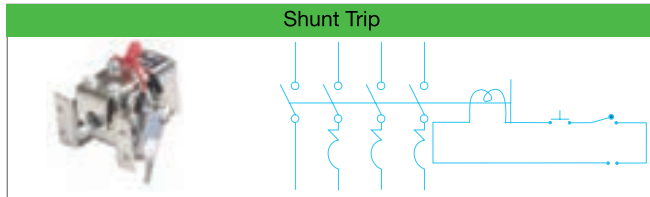


CH Frame Four Pole wSN MCCB

Current Rating (A)	Icu 50kA Cat. No.
160	IHLCHF0160
200	IHLCHF0200
250	IHLCHF0250
315	IHLCHF0315
400	IHLCHF0400
500	IHLCHF0500
630	IHLCHF0630
800	IHLCHF0800

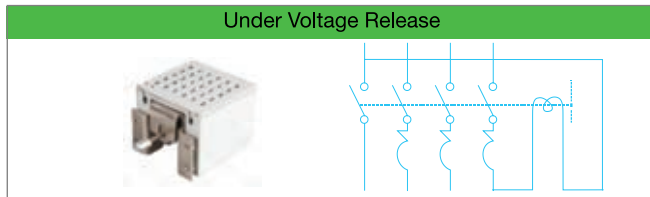
CN/CH Frame Accessories

(Accessories are for 3P / 4P wSN)



Voltage	Cat. No.
100-110Vac	IHLCS110
220-240Vac	IHLCS240
380-415 Vac	IHLCS415

105



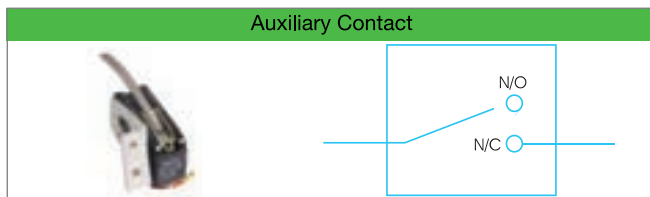
Voltage	Cat. No.
110-120 Vac	IHLCU110
220-240 Vac	IHLCU240
380-440 Vac	IHLCU440

The breaker trips if the supply voltage dips below 70% to 35% of the rated voltage.

The breaker cannot be switched ON unless there is a supply to the UVR. (NVNC feature).

Supplied with external Power pack to operate on AC supplies.

Additional transformer is supplied with ILUVR440 & ILUVR110.



Auxiliary Contact (250Vac / 250Vdc) (450Vac / 250Vdc)

1. Change Over (1NO+1NC)	IHLASC1CO
2. Change Over (2NO+2NC)	IHLASC2CO



Cat. No.	
With Door interlock and 300mm remote shaft	IHLRRHC30

CN/CH Frame MCCBs

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Back Studs

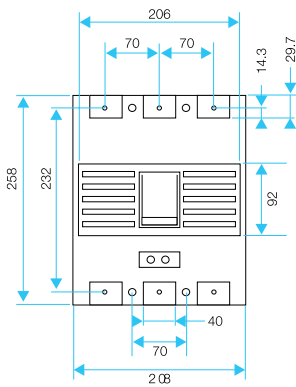


Cat. No.	
Upto 400A	IHLLBSC400

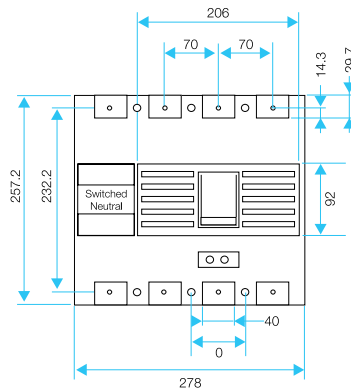
Other Accessories

Cat. No.	
Dolly Pad locking device	IHLLDPC800
Phase Barriers	IHLLPBC800
Dolly Extension	IHLLDEC800

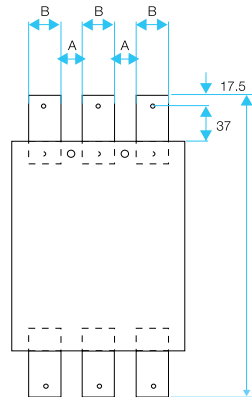
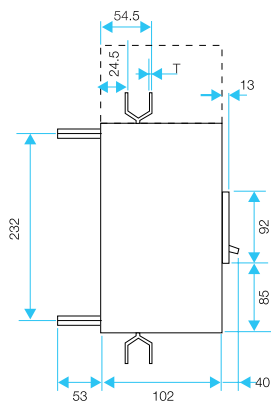
Dimensions (in mm)



Three Pole



Four Pole with Switched Neutral

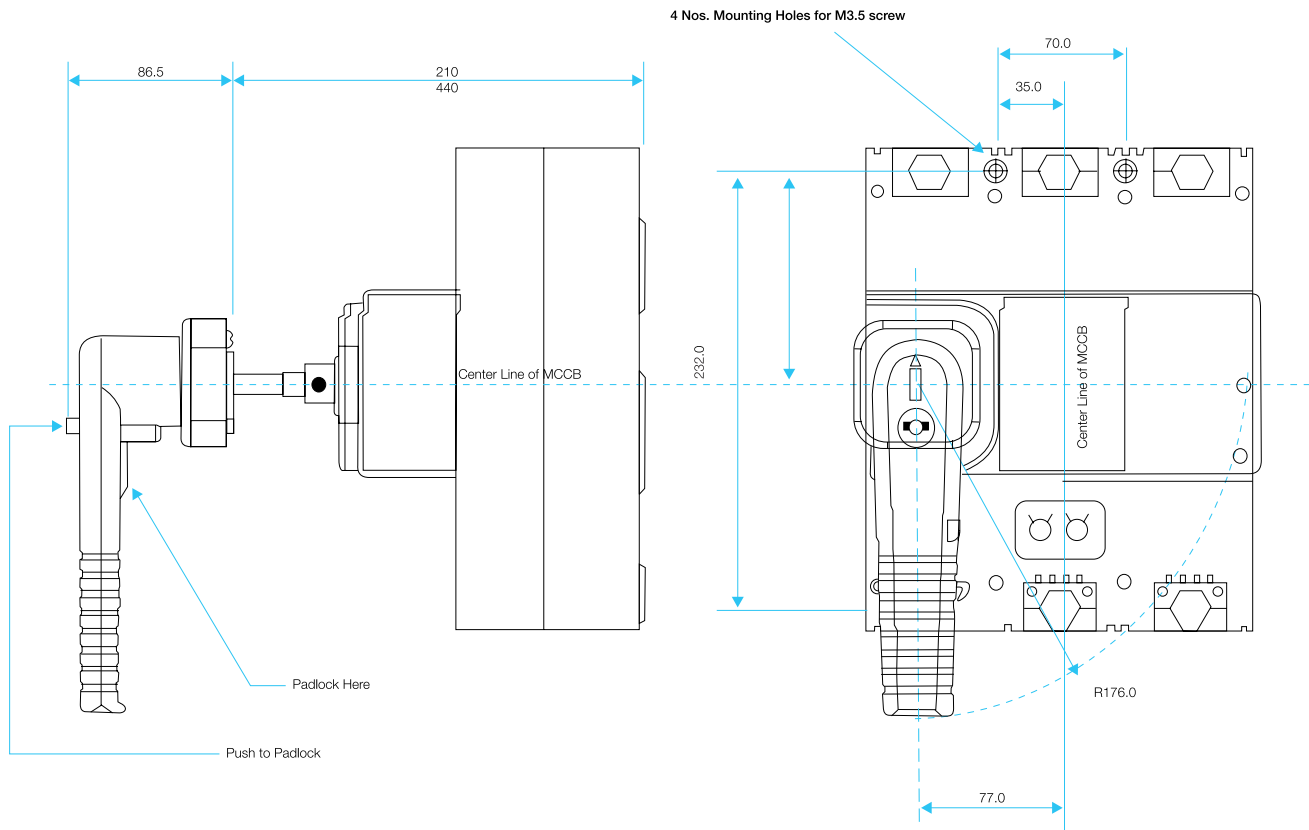


Three Pole with Extended Terminals

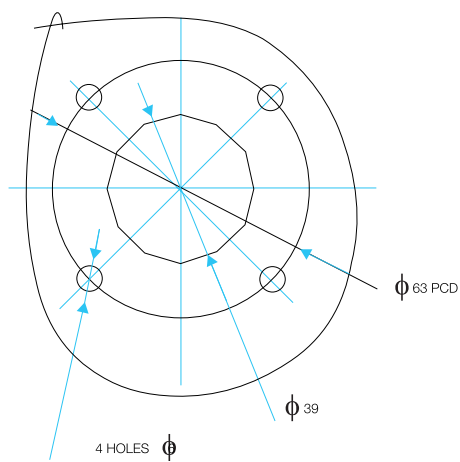
S. No.	Frame	A	B	T
1	16 - 250A	40	30	5
2	315 - 400A	20	50	5
3	500 - 800A	20	50	6

Dimensions (in mm) - Rotary Handle

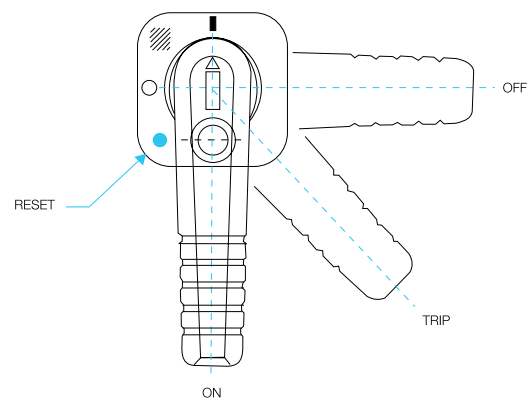
Handle Fixing Details - 'C' Frame



Door Cut-Out



Rotary Handle Position



- I - MCCB ON
- O - MCCB OFF
- Trip - (In between I and O positions)
MCCB tripped by release or push to trip
- To re-close the MCCB move the handle towards position 'RESET' first till MCCB resets and then switch to position - 'I'.

DN Frame MCCBs

108



DN Frame MCCB - Three Pole with Switched Neutral

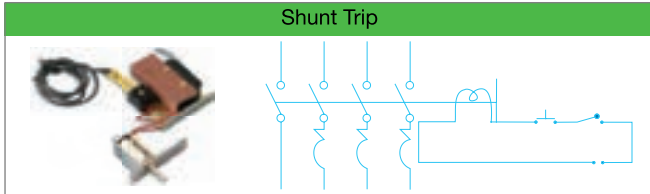
Current Rating (A)	Icu 50kA Cat. No.
800	IHLDNT0800
1000	IHLDNT1000
1250	IHLDNT1250
1600	IHLDNT1600

DN Frame MCCB - Four Pole with Switched Neutral

Current Rating (A)	Icu 35kA Cat. No.
1000	IHLDNF1000
1250	IHLDNF1250

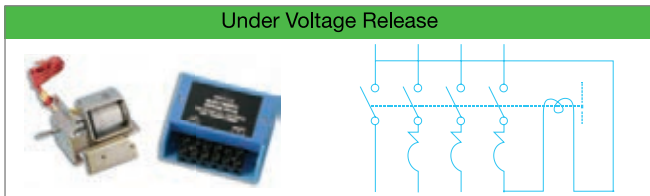
D Frame Accessories

Shunt Trip



Voltage	Cat. No.
100-110Vac	IHLLSTD110
220-240Vac	IHLLSTD240
380-415 Vac	IHLLSTD415

Under Voltage Release



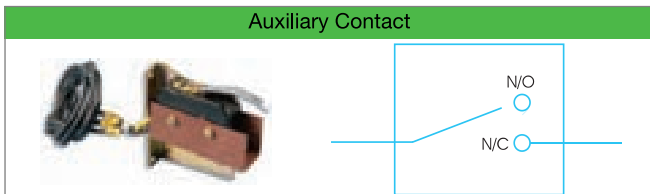
Voltage	Cat. No.
110-120 Vac	IHLUVRD110
220-240 Vac	IHLUVRD240
380-440 Vac	IHLUVRD440

The breaker trips if the supply voltage dips below 70% to 35% of the rated voltage.

The breaker cannot be switched ON unless there is a supply to the UVR. (NVNC feature).

Supplied with external mounting Power pack to operate on AC supplies. Additional transformer is supplied with LUVRD440 & LUVRD110.

Auxiliary Contact



Auxiliary Contact (250Vac / 250Vdc) (450Vac / 250Vdc)

1. Change Over (1NO+1NC)	IHLLASD1C0
2. Change Over (2NO+2NC)	IHLLASD2C1

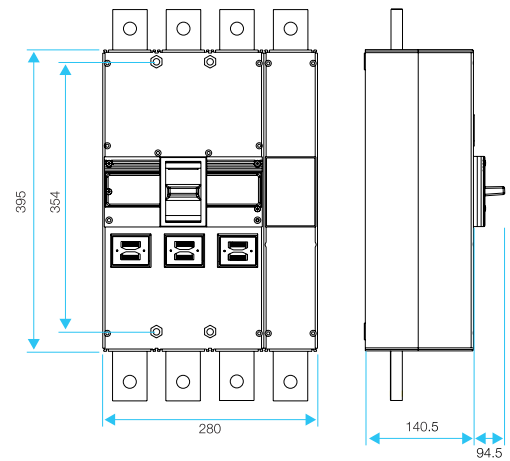
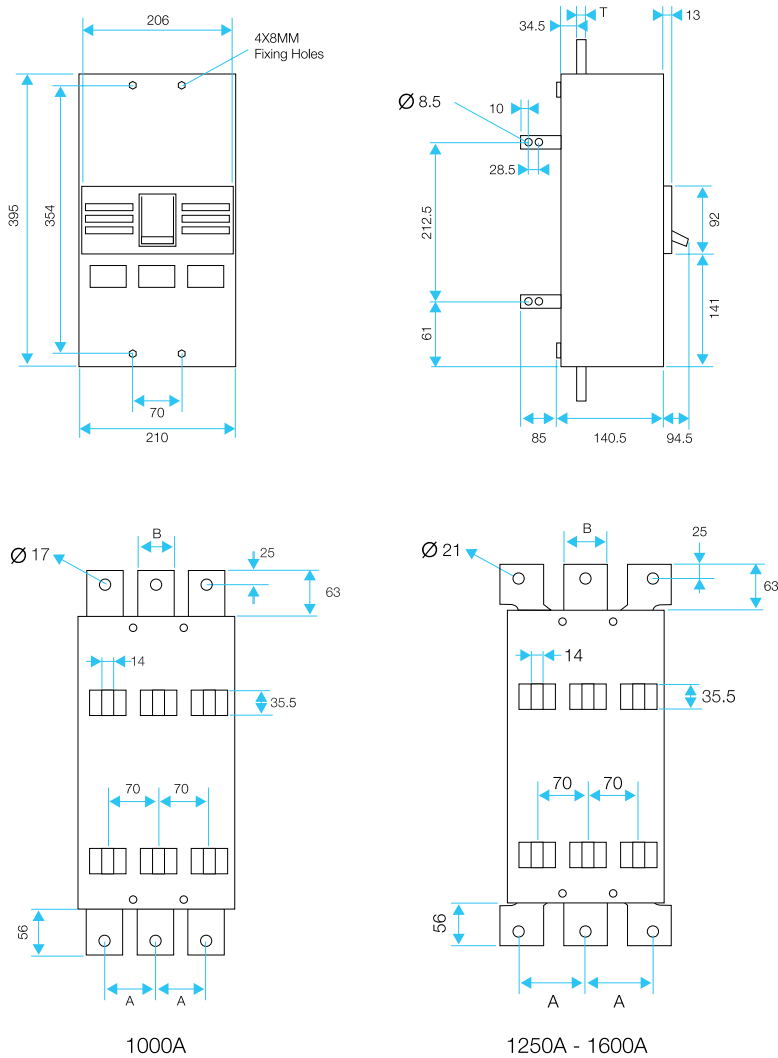
D Frame Accessories

Rotary Handle	
Cat. No.	
With Door interlock and 300mm remote shaft	IHLRRHD30

Other Accessories	
Cat. No.	
Dolly Pad locking device	IHLDPD160
Dolly Extension	IHLDED160

Dimensions (in mm)

Three Pole



Four Pole with Switched Neutral

S. No.	Frame	A	B	T
1	1000A	70	45	15
2	1250A	82	60	15
3	1600A	87	65	18

DC MCCBs

110



GN Frame Three Pole MCCB	
Current Rating (A)	Icu 5kA Cat. No.
25	IHMCGNT0025
32	IHMCGNT0032
40	IHMCGNT0040
50	IHMCGNT0050
63	IHMCGNT0063
80	IHMCGNT0080
100	IHMCGNT0100
125	IHMCGNT0125



AN Frame Three Pole MCCB	
Current Rating (A)	Icu 10kA Cat. No.
160	IHMCANT0160
200	IHMCANT0200
250	IHMCANT0250



CH Frame Three Pole MCCB	
Current Rating (A)	Icu 20kA Cat. No.
160	IHMCCHT0160
200	IHMCCHT0200
250	IHMCCHT0250
315	IHMCCHT0315
400	IHMCCHT0400
500	IHMCCHT0500
630	IHMCCHT0630
800	IHMCCHT0800



DN Frame Three Pole MCCB	
Current Rating (A)	Icu 20kA Cat. No.
1000	IHMCDNT1000
1250	IHMCDNT1250
1600	IHMCDNT1600

HAVELLS

Earth Fault Relay

The Earth Fault Relay is a common accessory for use in conjunction with all MCCB frames.

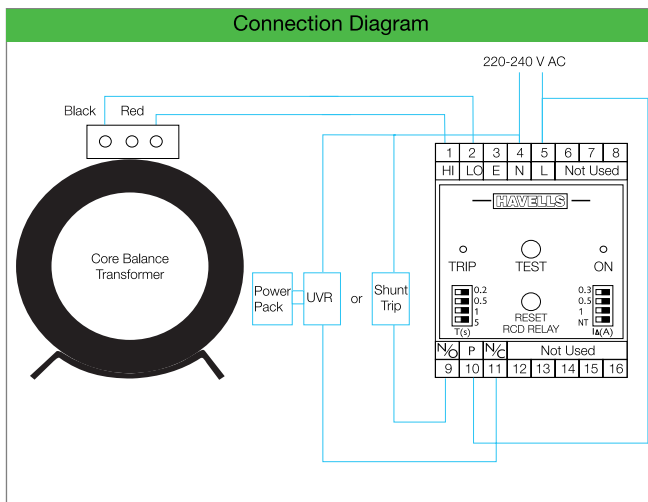
The Earth Fault detection system for use with Loadline MCCBs comprises of a core balance transformer (CT) coupled to an advanced RCD relay. The relay may be used to trip a circuit breaker via a shunt trip or an under voltage release in the event of an Earth Fault.

The relay and one of the four available CT's is all that is required for a complete earth fault sensing system suitable for the control of a circuit breaker in a circuit upto 800A fitted with either a shunt trip or an under voltage release. The simple arrangement and a small number of inter-connections necessary ensure that EFR is easily selected and installed.

The relay is suitable for 220-240V AC supply with the flexibility of choosing the sensitivity between 300mA to 1A and time delay in the range of 200m. sec - 5 sec. The required sensitivity and time delay should be selected by the dip switches provided on the facia of the relay.

Features

- No nuisance tripping
- DIN rail mounting
- Adjustable time delay
- Choice of sensitivity from 300mA upto 1A
- Trip indication LED (Red)
- ON indication LED (Green)
- Test push button
- Reset push button



Technical Information	
Supply Voltage	220/240 V AC, 50/60 Hz
Changeover contact	5A AC-15 250V
Sensitivity	300mA, 500mA, 1A, NT
Time delay (m. sec.)	200, 500, 1000, 5000

Note: Option to By-Pass EFR in NT position available with dip switch.

Core Balanced Current Transformer			
Size	Current Rating	Dimension	Shape
1.	25-100A	60mm	Circular
2.	125-200A	95mm	Circular
3.	250-400A	145mm	Circular
4.	500-800A	300 x 80 mm	Rectangular

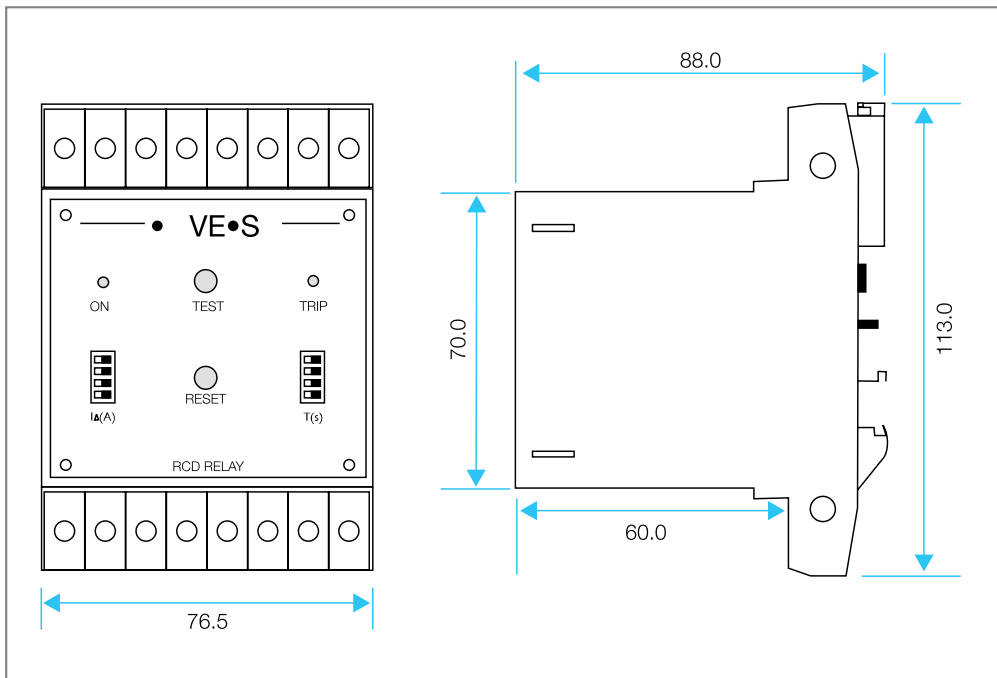


Earth Fault Relay

MCCB Current Rating (A)	Cat. No.
25 - 100	IHEF1100
125-200	IHEF2200
250-400	IHEF3400
500-800	IHEF4800

The earth fault relay is supplied with the CT based on the current rating. To operate the EFR, a shunt trip or an under voltage release is necessary which has to be ordered separately.

Dimensions (in mm)

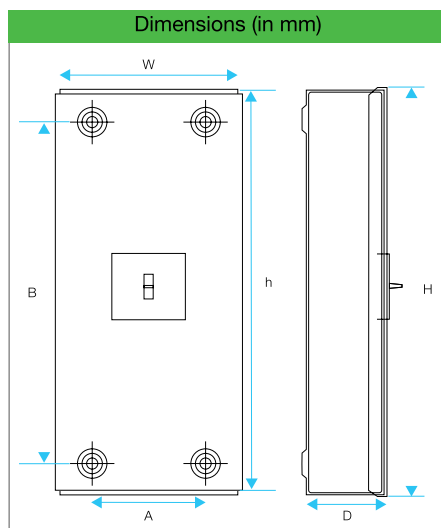


General Purpose Enclosure



Enclosures made of special grade CRCA steel are available for housing G, A and C Frame MCCBs upto 800A. They are manufactured with latest technology using CNC Punch and Brake presses to attain highest degree of perfection. The enclosures are painted with latest techniques in powder coating using epoxy polyester and polyester resin based powder paints to ensure smooth, scratch resistant surface coatings. They are suitable for wall mounting & adequate knockouts are provided for cable entry.

Description	Cat. No.
G Frame TP	IHEGTP
G Frame FP	IHEGFP
A Frame TP	IHEATP
A Frame FP	IHEAFP
F Frame TP	IHEFTP
F Frame FP	IHEFFP
C Frame TP (400A)	IHECTP
C Frame FP (400A)	IHECFP
C Frame TP (800A)	IHECTS
C Frame FP (800A)	IHECFS



Description	W	D	h	H	AxB
G Frame	209	108	360	370	160x280
AA Frame	215	108	420	415	160x350
F Frame	215	122	420	415	160x350
C Frame upto 400 A	440	122	960	975	280x802
C Frame upto 800 A	540	122	960	975	380x802