

DU Range of Moulded Case Circuit Breakers

A Journey of Continuous Upgradation



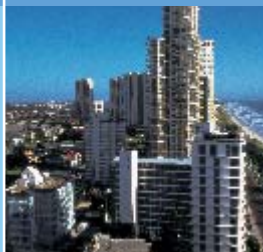
UTILITY



DG SET



BUILDING



UPS



BATTERY BANKS



CAPACITOR



ABOUT US

Larsen & Toubro is a technology-driven company that infuses engineering with imagination. The Company offers a wide range of advanced solutions in the field of Engineering, Construction, Electrical & Automation and Information Technology.

L&T Switchgear, a part of the Electrical & Automation business, is India's largest manufacturer of low voltage switchgear, with the scale, sophistication and range to meet global benchmarks. With over five decades of experience in this field, the Company today enjoys a leadership position in the Indian market with a growing international presence.

It offers a complete range of products including powergear, controlgear, industrial automation, building electricals & automation, reactive power management, energy meters, and protective relays. These products conform to Indian and International Standards.



Switchgear Factory, Baroda

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INTRODUCTION

The DU Series, a new generation of MCCBs, stands out due to its state-of-the-art design, contemporary user-friendly features, ergonomics, aesthetics and compactness.

DU Series complies with the latest standards like IS/IEC 60947-2, IEC 60947-2 & EN 60947-2. The products conform to international standards, carry $\text{C}\epsilon$ marking and are *KEMA* & CB certified.

The range is specially designed for tropical conditions, ensuring reliable performance at high ambient and humid environments. The range can satisfy the most demanding system requirements.

The DU Series, having a wide range of accessories, ensures operational safety, reliability and versatility.

MCCB ENCLOSURE

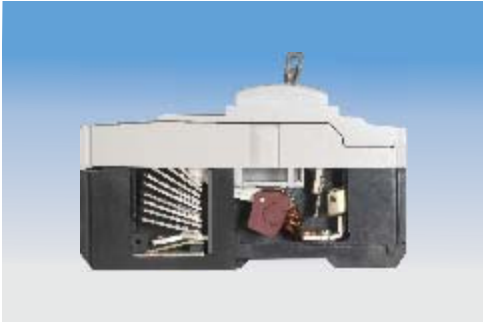
New Range of MCCB enclosures, Size I Enclosure suitable for DU100D/DU125D/DU100H/DU125H and Size II Enclosure suitable for DU250/DU250C. These standalone enclosures not only provides ample space for cable termination but are also superior in aesthetics.

- Conforms to IEC 62208, IEC 62262 and IEC 60529
- Common Enclosure for 3P/4P MCCBs
- RoHS compliant
- IP30 Protection & IK08 Protection
- Inbuilt Neutral Link for TPN systems
- Mounting Holes on the back plate
- Louvers for better heat dissipation

Enclosure	Height (mm)	Width (mm)	Depth (mm)
Size I	543	198	97
Size II	830	337	111



SALIENT FEATURES



Technology

- Current Limiting MCCBs: The unique speed contact system with current limiting feature accelerates the opening of contacts during short circuit, resulting in very low let-through energy
- No load line bias: Either side of MCCB terminal can be used as load or line*
- MCCB Mechanism: Quick make, quick break & trip free mechanism

Ergonomic Design & User Friendliness

- Knob designed for better grip
- Color indication of ON/TRIP/OFF*
- Current rating on the knob
- Overload adjustment from front*
- Easy ON/OFF/RESET operations



Safe to Use

- Suitable for Isolation*
- Finger proof terminals
- Phase barriers supplied along with MCCBs to enhance the clearance between the phases
- Lockable shroud on thermal knob to prevent unauthorized operation*
- CE marked range*
- Double Insulation

Accessories

- Auxiliary contacts
- Trip alarm contacts
- Combined Auxiliary + Trip alarm contacts*
- Shunt & Under Voltage release*
- Direct & Extended ROM with Padlocking
- Spreader links
- SS Enclosure
- GF module for earth fault protection
- All internal accessories are Snap fit type*



Compact & Easy to Install

- Compact size
- Common depth upto 250A
- 45mm door cutout upto 250A
- Optional DIN rail mounting available**

* For DU100D / DU125D / DU100H / DU125H / DU250C / DU250 / DU400N

** For DU100 / DU125U / DU100B / DU100D / DU125D / DU100H / DU125H

TECHNICAL SPECIFICATIONS

DU Series

Technical Parameters		Specifications		
Type Designation		DU100	DU125U	DU100B
No. of Poles		2/3		3
Rated Current	I_n (A)	16, 20, 25, 32, 40, 50, 63, 80, 100	125	16, 20, 25, 32, 40, 50, 63, 80, 100
Impulse Withstand Voltage	U_{mp} (kV) AC	6		
Rated Operational Voltage	U_e (V) AC	415		
Rated Insulation Voltage	U_i (V) AC	690		
Operational Frequency (Hz)		50 / 60		
Utilisation Category		A		
Reference Temperature		50°C		
Operating Temperature		-5°C to + 55°C		
Standard		IS/IEC60947-2, IEC60947-2		
I_{cu} (kA)	240V AC	25		
	415V AC	10		
	250V DC (2P in series) L/R<15 msec	5	-	
	250V DC (3P in series) L/R<15 msec	10		
Rated Service S. C. Breaking Capacity (I_{cs})		50% of I_{cu}		100% of I_{cu}
Single Stage Capacitor Rating at 415V, 50Hz (kVAr)		upto 50 kVAr* (for 100A) & 65 kVAr* (for 125A)		
Mechanical Life	No. of operations	20000		
Electrical Life	No. of operations	6000	1000	1500
IP Protection (from front side)		IP40		
Pollution Degree		III		
Type of Release		Thermal - Magnetic		
Thermal		Fixed		
Magnetic		Fixed ($9I_n$)		
Terminal Capacity (without spreaders)				
Cables with Lug (mm ²)		50		
Link (mm)		≤17		
Overall Dimensions				
Width (mm)		75		
Height (mm)		130		
Depth (mm)		60		
Weight (2/3 Pole) (kg)		0.56/0.68	0.66/0.8	0.68

* Please use Capacitor Duty Contactors with MCCB for Capacitor Applications. Capacitor ratings mentioned are with MO C only.

TECHNICAL SPECIFICATIONS

DU Series

Technical Parameters		Specification				
Type Designation		DU100D/DU125D	DU100H/DU125H	DU250C	DU250	DU400N
No. of Poles		3/4	2/3/4	3/4	2/3/4	2/3/4
Rated Current	I_n (A)	20, 25, 32, 40, 50, 63, 80, 100, 125	20, 25, 32, 40, 50, 63, 80, 100, 125	160, 200, 250		320, 400
Impulse Withstand Voltage	U_{imp} (kV) AC	8				8
Rated Operational Voltage	U_e (V) AC	415				690
Rated Insulation Voltage	U_i (V) AC	800				800
Operational Frequency (Hz)		50 / 60				
Utilisation Category		A				
Reference Temperature		40°C				
Operating Temperature		-5°C to + 55°C				
Standard		IS/IEC60947-2, IEC60947-2 & EN60947-2				
I_{cu} (kA)	240V AC	32	65	65	65	65
	415V AC	18	30	25	36	50
	250V DC (2P in series) L/R<15 msec	-	15	-	15	25
	250V DC (3P in series) L/R<15 msec	15	20	15	20	30
	500V DC (3P in series) L/R<15 msec	10	15**	10	15**	20***
Rated Service S. C. Breaking Capacity (I_{cs})		100% of I_{cu}	50% of I_{cu}			
Single Stage Capacitor Rating at 415V, 50Hz (kVAR)		upto 50 kVAR* (for 100A) & 65 kVAR* (for 125A)		upto 95 kVAR*		upto 150 kVAR*
Mechanical Life	No. of operations	40000		15000		10000
Electrical Life	No. of operations	8000 [§]		3000		4000
IP Protection (from front side)		IP40				
Pollution Degree		III				
Type of Release		Thermal - Magnetic				
Thermal		Variable (0.8 - 1.0 I_n)				
Magnetic		Fixed (9 I_n)				
Terminal Capacity (without spreaders)						
Cables with Lug (mm ²)		35		120		185
Link (mm)		≤17		≤26		≤32
Overall Dimensions						
Width (mm)		75/100	75/75/100	105/140		140/184
Height (mm)		130		165		205
Depth (mm)		60		60		110.5
Weight (2/3/4 Pole) (kg)		0.85/1.1	0.6/0.85/1.1	1.55/2	1.3/1.55/2	4/5

* Please use Capacitor Duty Contactors with MCCB for Capacitor Applications. Capacitor ratings mentioned are with MO C only.

** 10 kA at 500V d.c. (2P in series) L/R<15 msec

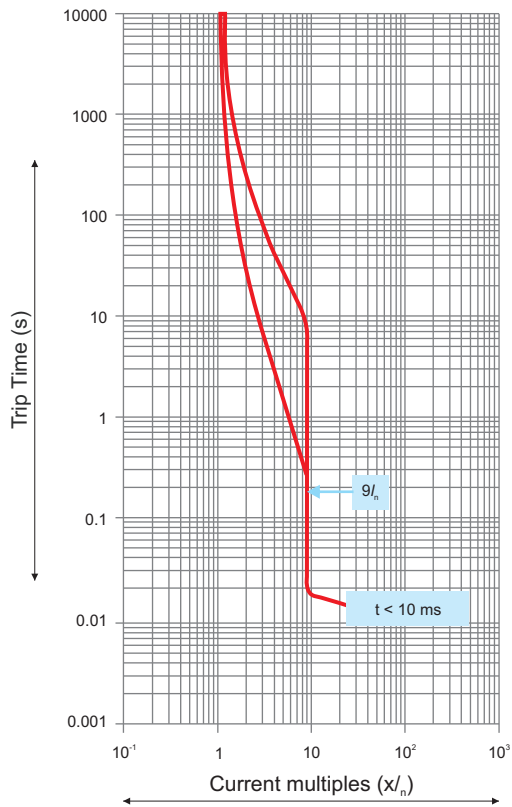
*** 15kA at 500V d.c. (2P in series) L/R<15 msec

§ 4000 for DU125D/DU125H

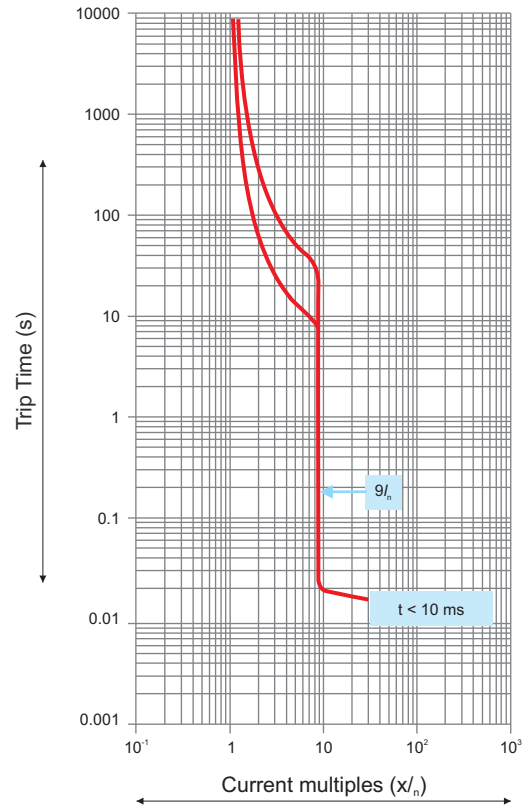
Note : 2P MCCBs are available upto 100A in DU100H

I-T CHARACTERISTIC CURVES

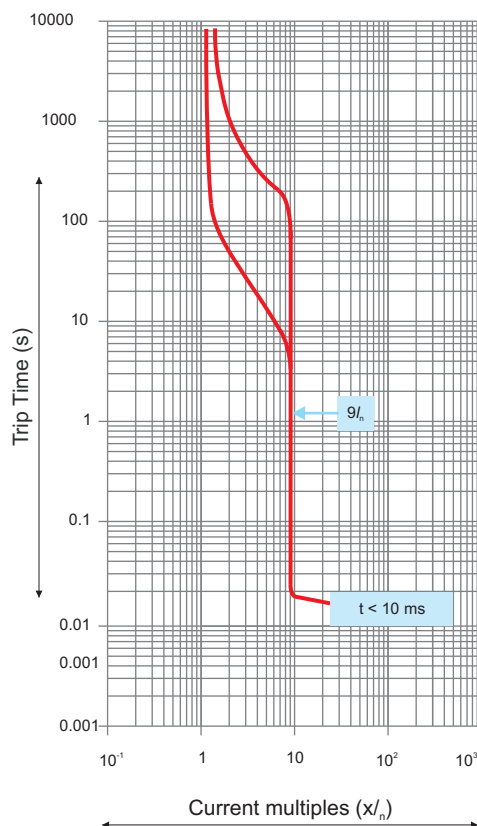
DU100 / DU125U / DU100B /
DU100D / DU125D / DU100H / DU125H



DU250C / DU250



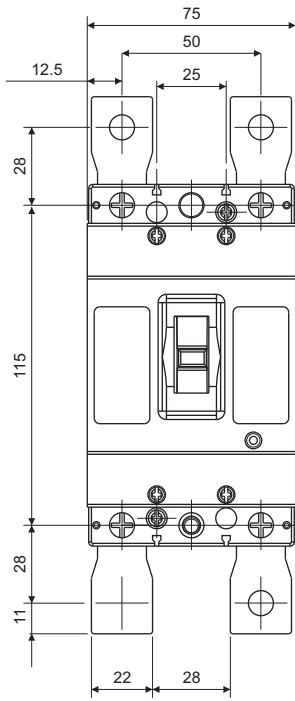
DU400N



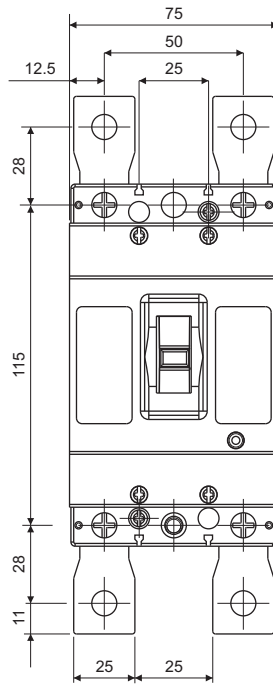
DIMENSIONS

DU100 / DU125U / DU100B

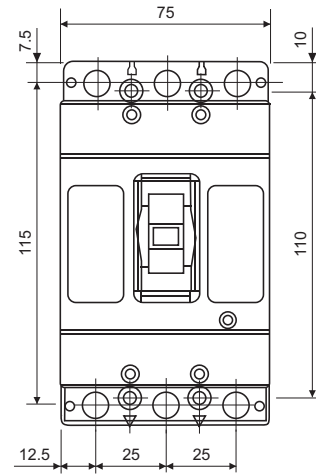
DU100 2-Pole



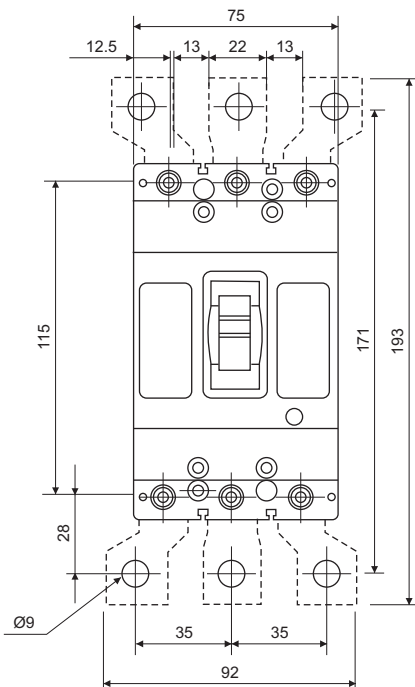
DU125U 2-Pole



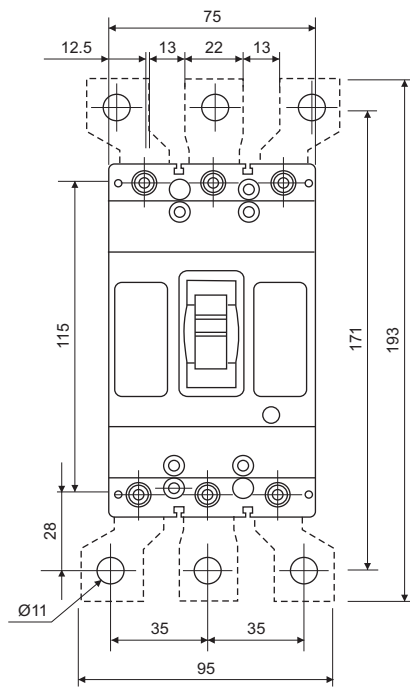
3-Pole



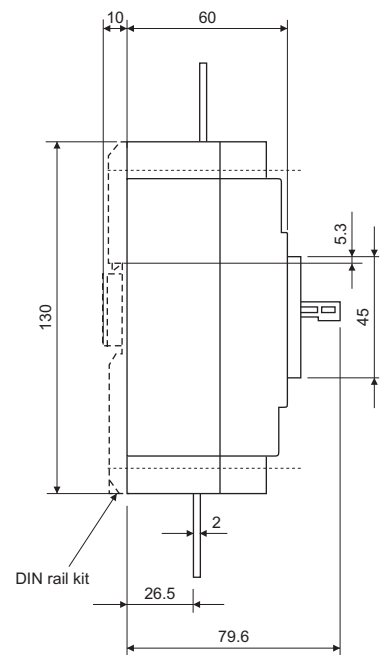
DU100/DU100B
3-Pole with Spreaders



DU125U
3-Pole with Spreaders



2-Pole, 3-Pole



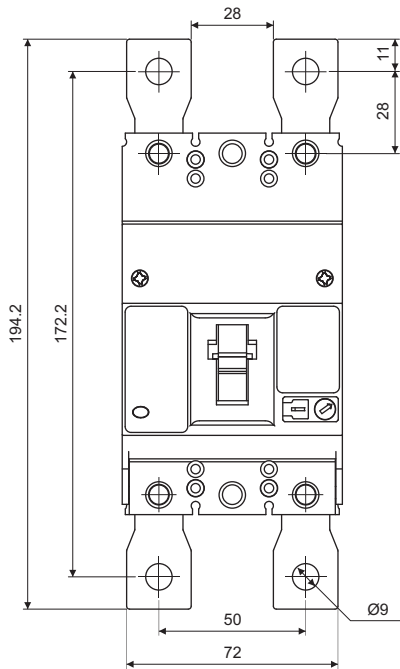
Link width (without spreader) : $\leq 17\text{mm}$
Link width (with spreader) : 22mm

Note: Spreader links are available as spare.
It is recommended to use spreader links for enhancing termination capacity.

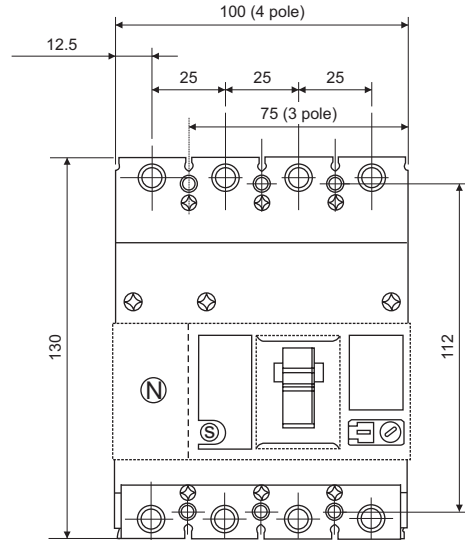
DIMENSIONS

DU100D / DU125D / DU100H / DU125H

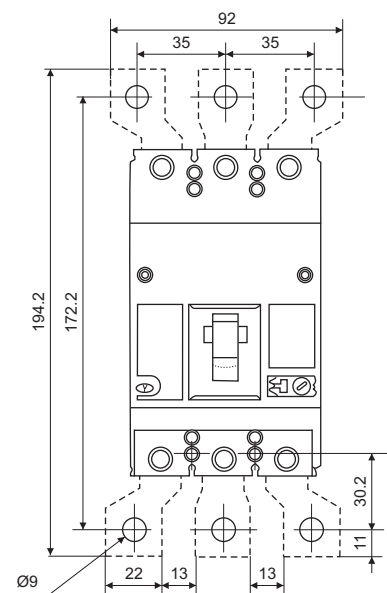
2-Pole



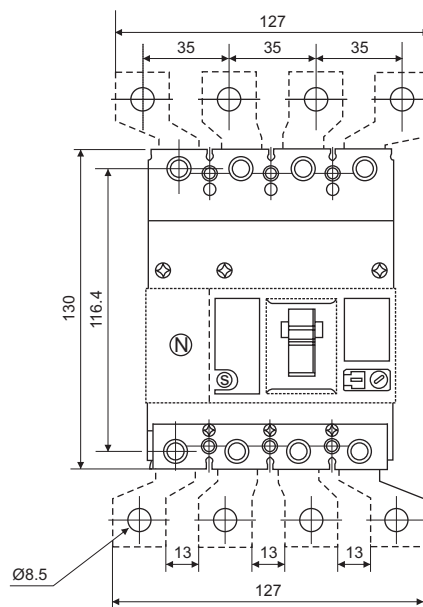
3-Pole, 4-Pole



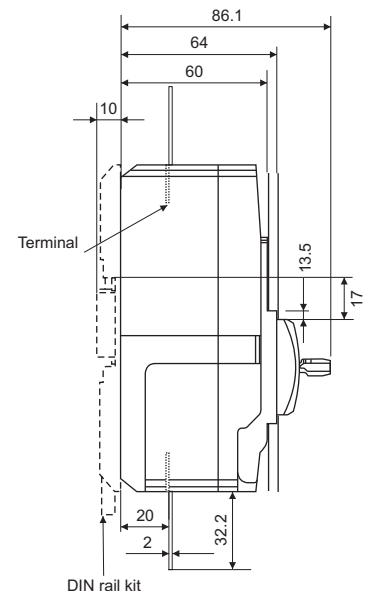
3-Pole
with Spreaders



4-Pole
with Spreaders



2-Pole, 3-Pole, 4-Pole

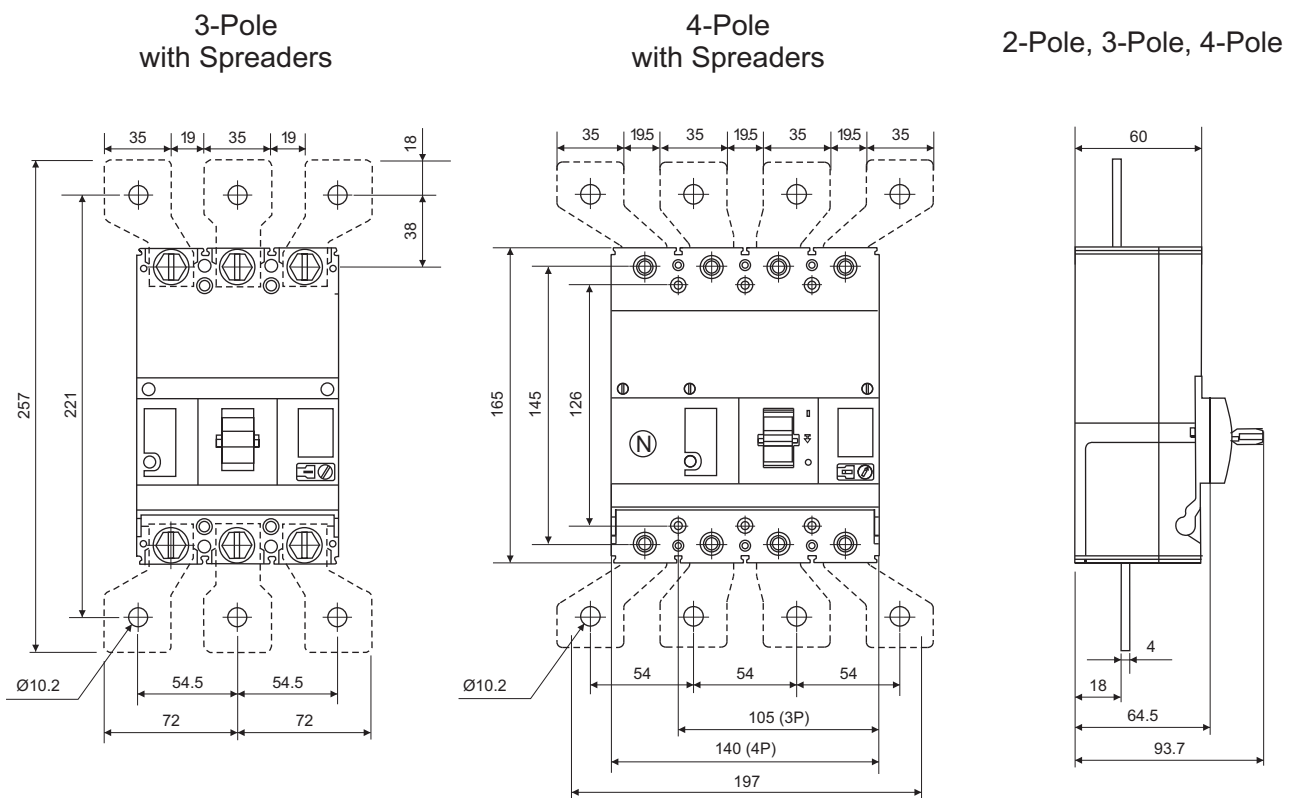
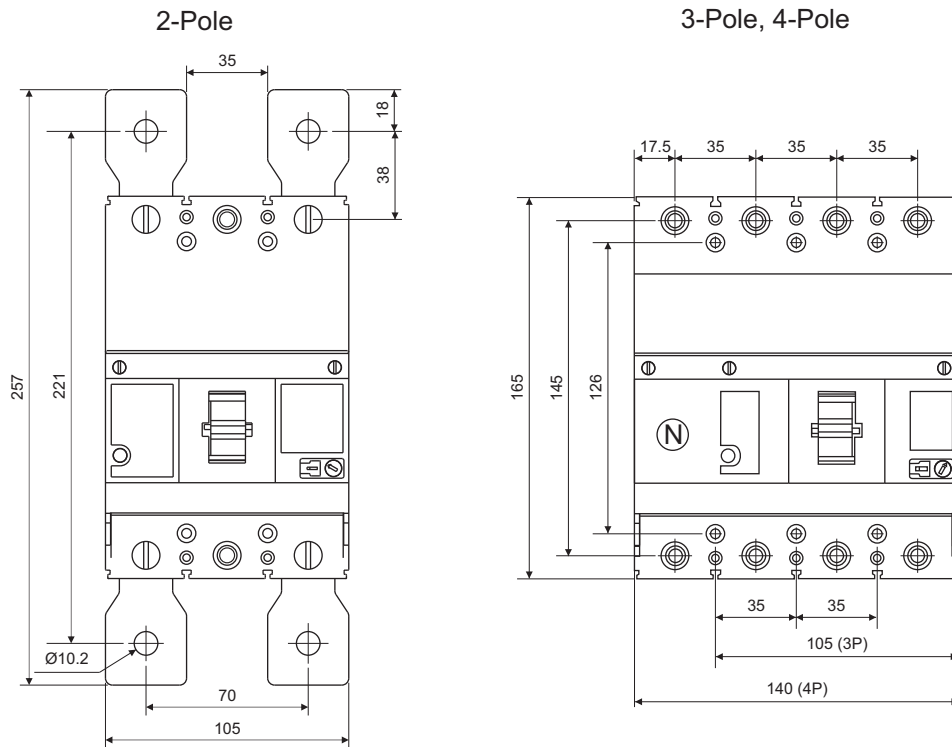


Link width (without spreader) : $\leq 17\text{mm}$
 Link width (with spreader) : 22mm

Note: Spreader links are available as spare.
 It is recommended to use spreader links for enhancing termination capacity.
 Please use 125A MCCB with its recommended Spreader only.

DIMENSIONS

DU250C / DU250

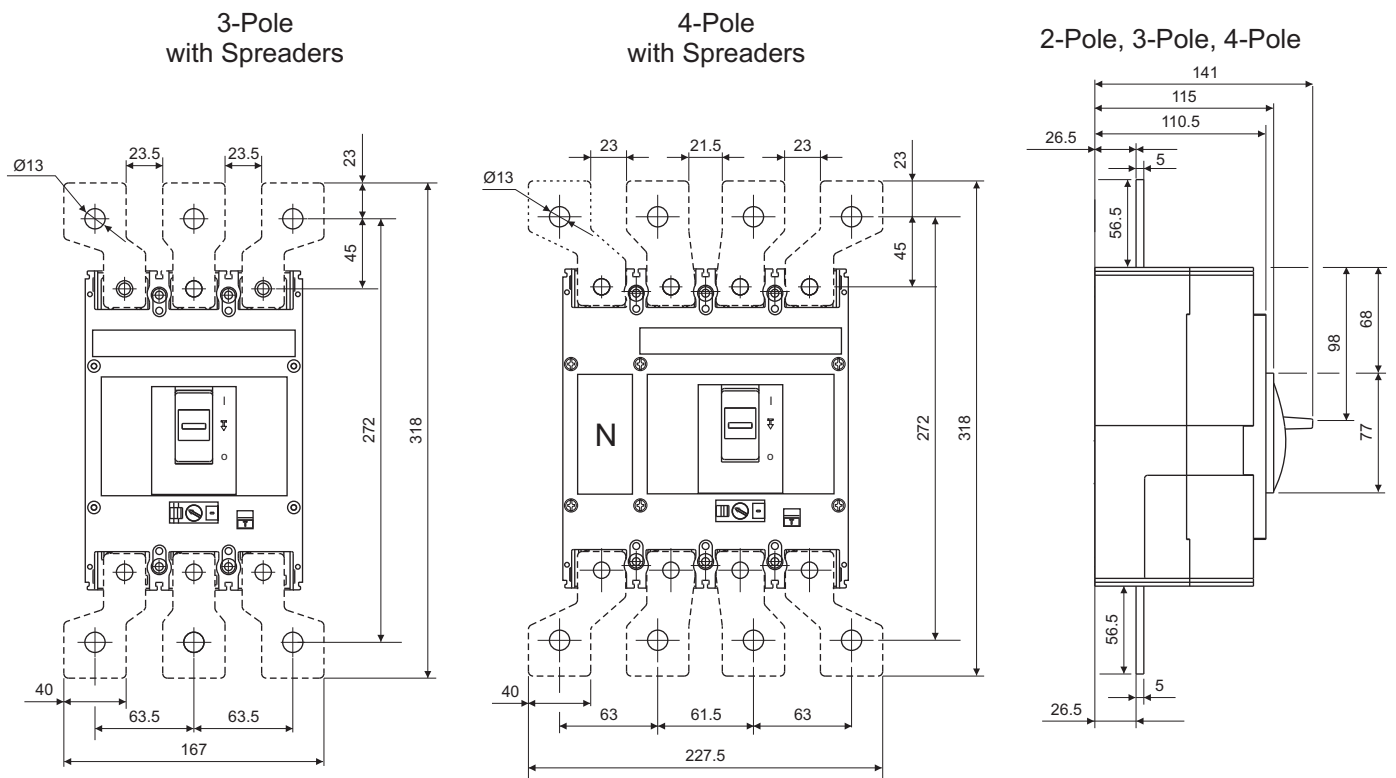
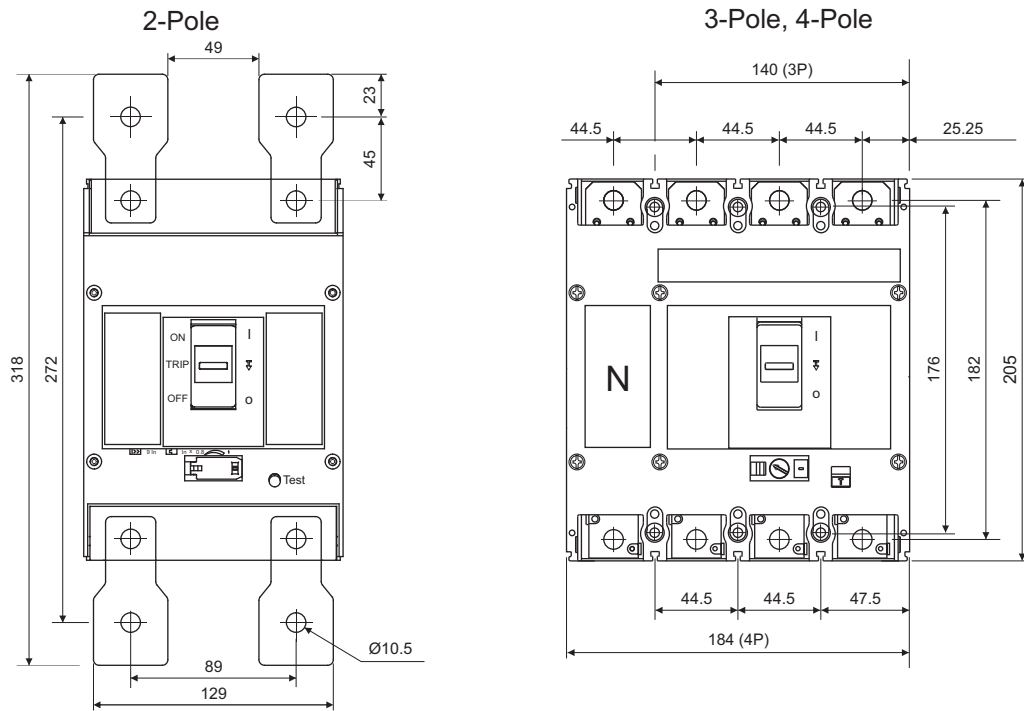


Link width (without spreader) : ≤ 26 mm
 Link width (with spreader) : 35 mm

Note: Spreader links are available as spare. It is recommended to use spreader links for enhancing termination capacity.

DIMENSIONS

DU400N

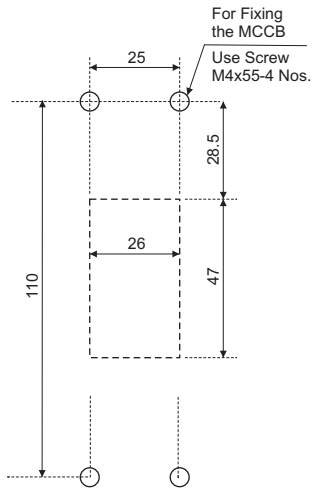


Link width (without spreader) : ≤ 32 mm
 Link width (with spreader) : 40 mm

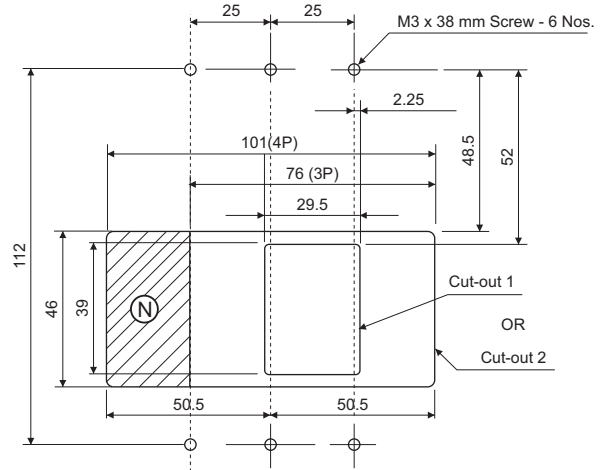
Note: Spreaders are available as spare. It is recommended to use spreader links for enhancing termination capacity.

PANEL CUT-OUT DIMENSIONS

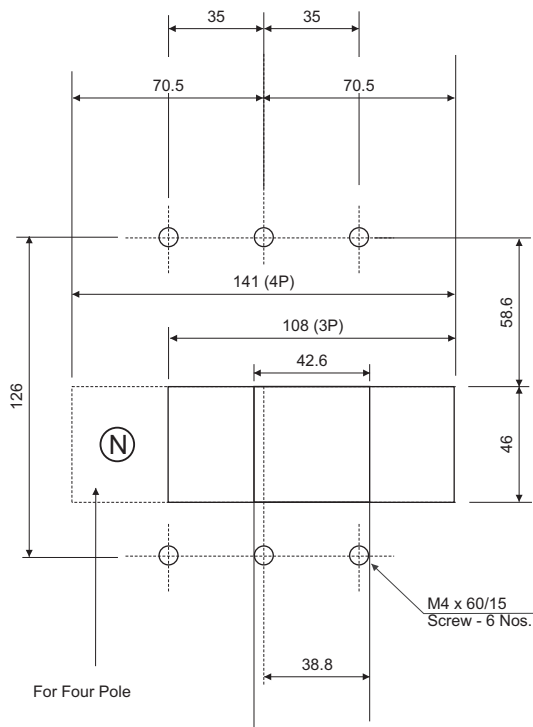
DU100 / DU125U / DU100B



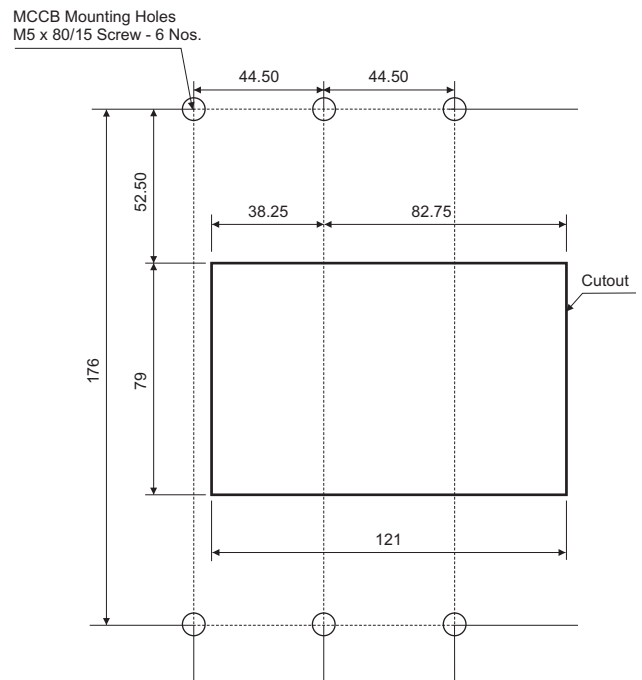
DU100D / DU125D / DU100H / DU125H



DU250C / DU250

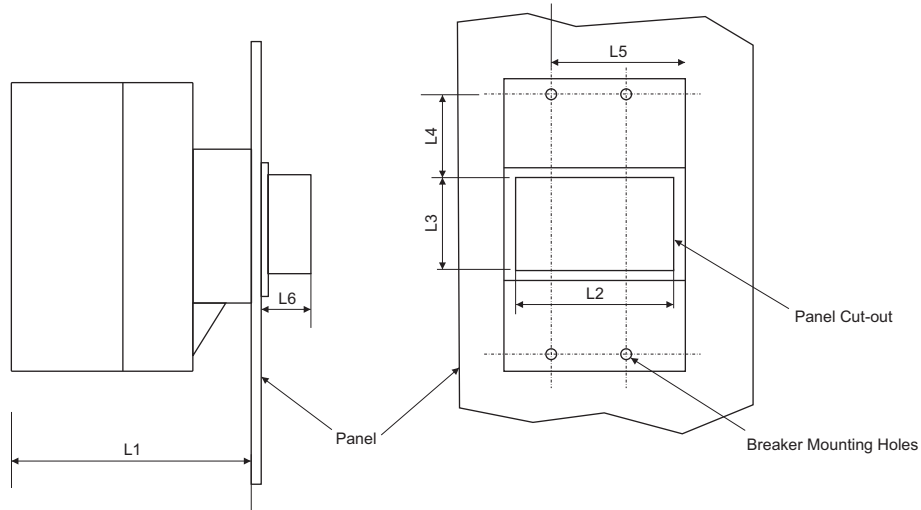


DU400N



ROM MOUNTING DIMENSIONS

Direct ROM (DU100D / DU125D / DU100H / DU125H / DU250C / DU250 / DU400N)

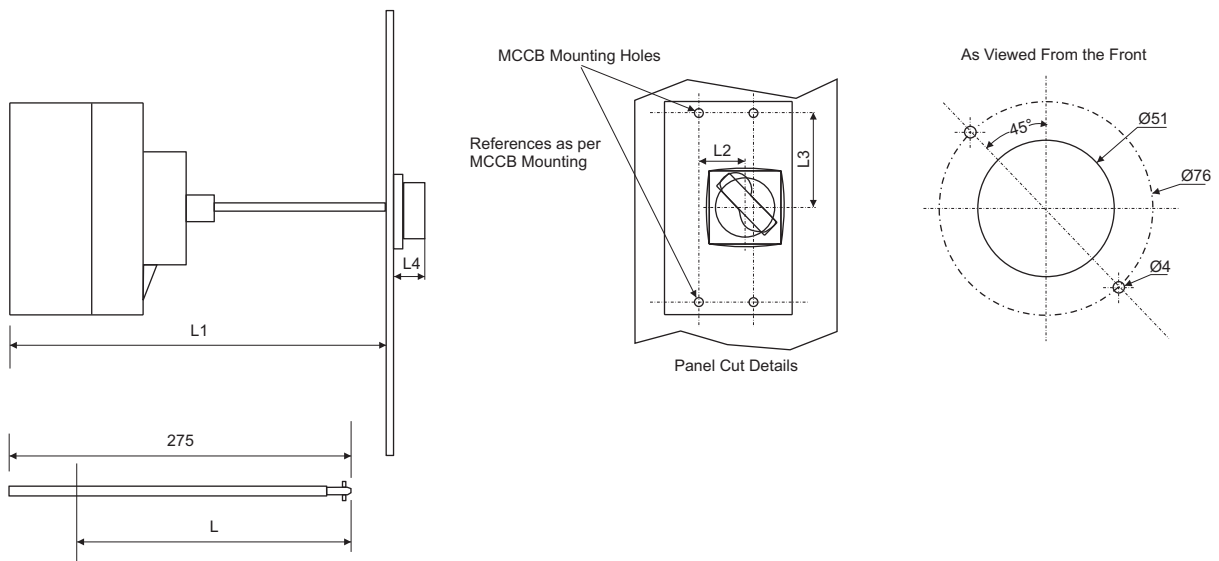


Type	L1	L2	L3	L4	L5	L6
DU100D/DU125D/DU100H/DU125H	96.5	58	52	43.5	37	85
DU250C/DU250	96.5	73	52	56.5	54	77
DU400N	145	121	87	41	82	95

L1 = Mounting Depth
L2/L3 = Panel Cut-out
L4/L5 = Breaker Mounting Reference
L6 = Depth outside the panel

Note : For DU100/DU125U/DU100B Direct ROM dimensions please refer product insert

Extended ROM (DU100D / DU125D / DU100H / DU125H / DU250C / DU250 / DU400)



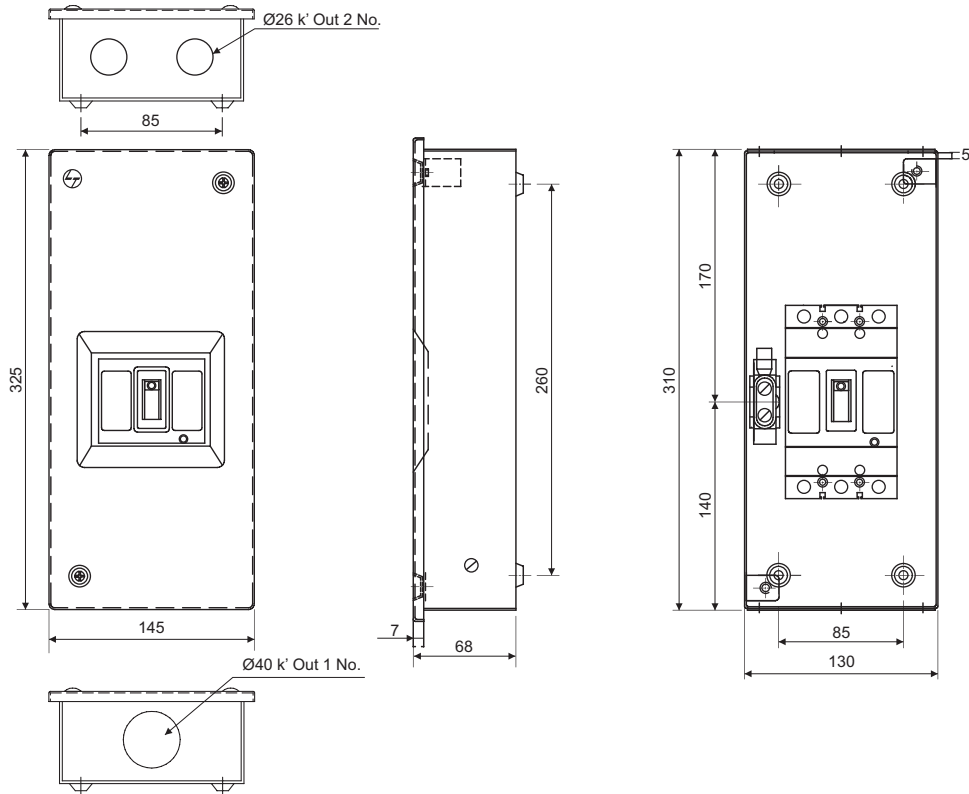
Cut The Shaft to the Required Length = L

Type	L1	L	L2	L3
DU100	157	L1-107	7	51
DU100D/DU125D/DU100H/DU125H	169	L1-119	7.5	69.5
DU250C/DU250	169	L1-119	24.5	81.7
DU400N	233	L1-183	39	93

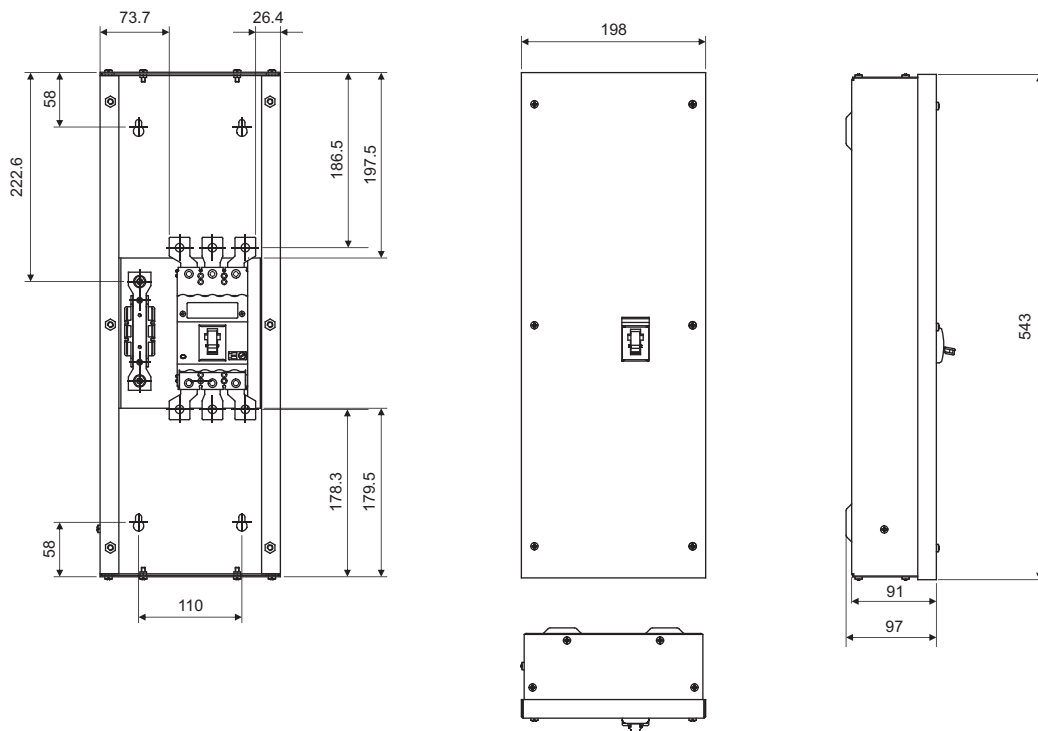
L = Length of Shaft required for
Panel Depth L1 (mm)
L1 = Min. Panel depth (mm)
L4 = Depth outside the panel

SS ENCLOSURE MOUNTING DIMENSIONS

DU100 / DU125U / DU100B

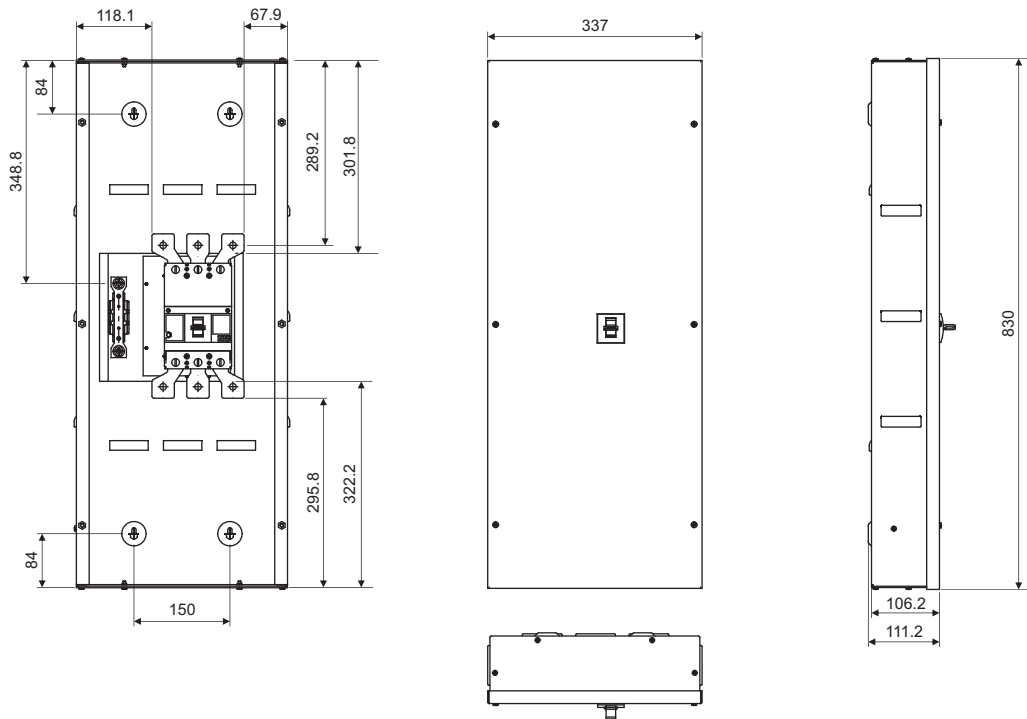


Size I Enclosure for DU100D/DU125D/DU100H/DU125H



SS ENCLOSURE MOUNTING DIMENSIONS

Size II Enclosure for DU250/DU250C



MCCB Enclosures

- Enclosures with superior aesthetics
- Common Enclosure for 3 & 4 pole
- In-Built Neutral Link for TPN system
- Generous space for cable termination
- Effortless installation



Lavish home for your MCCB



GROUND FAULT MODULE

Ground Fault Modules are of Types GF1, GF2 and GF11. These modules are to be used with MCCBs for ground fault protection. The principle of operation is based on detection of the residual current in the system. They combine safety and versatility, conforming to the high performance standards, the characteristic of all L&T products.



Ground Fault Module GF1
GF1 is suitable upto 200A MCCBs



Ground Fault Module GF2
GF2 is suitable upto
250A to 400A MCCBs



Ground Fault Module GF11
GF11 is suitable upto 800A MCCBs

Features

- Compact in size
- Solid state design
- Built-in moulded CBCT for GF1 & GF2. External CTs are to be used for GF11
- Suitable for both 3 Phase 3 wire & 3 Phase 4 wire systems. In case of 3 phase 4 wire system, the natural cable/twisted link should also be passed through the CBCT along with the 3 Phase links / cables
- Built-in test facility
- Selection facility for nominal current rating (I_n)
- Earth fault setting is adjustable from 10% to 50% of set current
- Selectable trip times (100ms, 200ms)
- Manual reset for positive fault acknowledgment
- Potential free NO contact to trip MCCB (through 240V shunt release)
- Window dimensions suitable for Cable / Link connection in GF1 and GF2

Note: MCCBs need to be fitted with 110V / 240V as shunt release for Ground Fault Module operation.

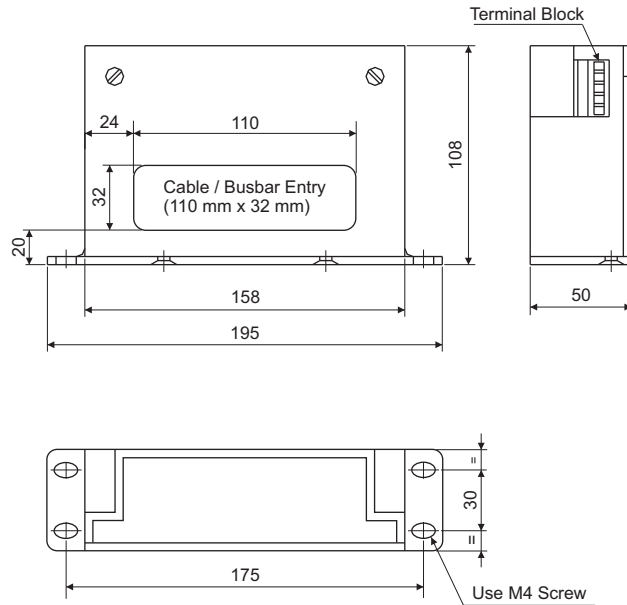
Technical Data

Specification	Type GF1 / GF2 / GF11
Current Setting Range, I_s ($I_s = x I_n$)	10% to 50% I_n in step of 10%
Auxiliary Supply	240V AC $\pm 20\%$
Time Delay (ms)	100 / 200ms Field selectable
Pick-up Accuracy	$\pm 10\% I_s$
Output Contact	1 NO contact manual reset type contact rating 5A 240V AC
Indication	a) Power on LED b) Trip LED (manual reset)
Operating Temperature	+10°C to +55°C
Insulation	2kV 50Hz for one minute across independent circuit 1kV 50Hz for one minute across open contacts
Mounting	Baseplate mounting type
Window for Cable / Busbar Entry (mm ²)	GF1 - 110 x 32 GF2 - 165 x 61.5
Weight (kg)	GF1 - 1.2, GF2 - 2.2, GF11 - 0.9

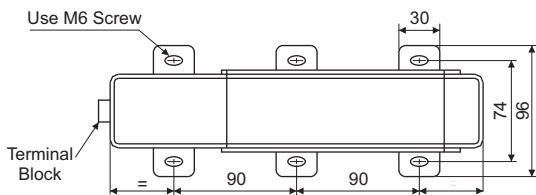
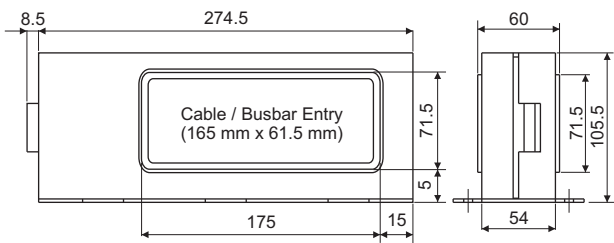
Note : Please check GF module window size & MCCB busbar width with spreaders / without spreaders before selection of GF Module. Please contact nearest branch office for further information.

GROUND FAULT MODULE: OVERALL DIMENSIONS

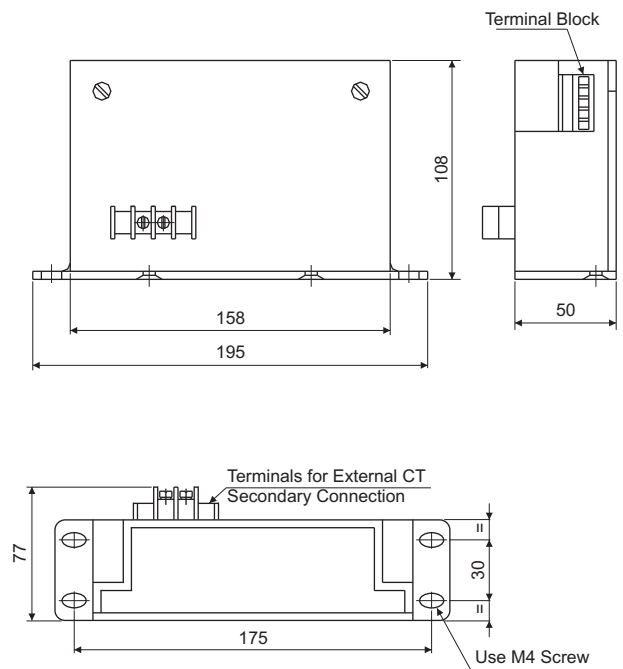
GF1



GF2



GF11



Get the Switchgear Training Edge!

Aimed at maximizing productivity, conserving energy, minimizing costs and enhancing safety, our Electrical & Automation training programmes have benefitted over 1.35 Lakh professionals in the last 28 years. These training programmes are highly beneficial as they provide right exposure and impart knowledge on selection, installation, maintenance and testing of Electrical & Automation Products.

So gain the advantage and go the extra mile with:

- 22 courses on contemporary topics
- Courses applicable to all switchgear brands
- Training Centers in Pune, Lucknow, Coonoor, Vadodara, Delhi & Kolkata
- Blend of theory and practical experience

The typical training programmes cover:

- Low Voltage & Medium Voltage Switchgear
- Switchboard Electrical Design
- AC Drives & Building Management Solutions
- Protective Relays & Earthing
- Power Quality Solutions

Please contact any of the training centres for participation and detailed training programme schedule.



Pune

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E-mail: stc-pune@Lntebg.com



Lucknow

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Coonoor

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Vadodara

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e-mail: esp-bho@LNTEBG.com

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