

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 IEC 60947-2, EN 60947-2 & IS/IEC 60947-2. The products conform to international standards, carry CE 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.

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
- Wide variety of snap fit accessories*



Compact

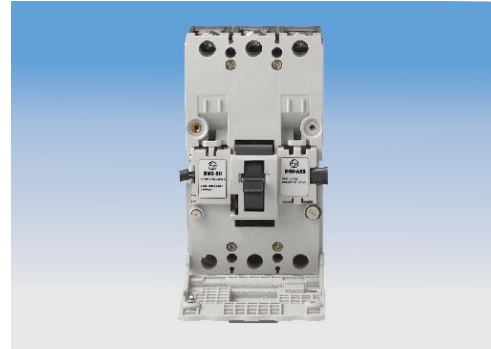
- Compact size
- Common depth upto 250A

* For DU100D / DU100H / DU250C / DU250 / DU400N

SALIENT FEATURES

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: The internal accessories are housed in insulated casings to ensure first level of insulation. And when the front cover is opened for fixing internal accessories, the MCCB is totally insulated, thus ensuring double insulation*



Internal Accessories

- Auxiliary contacts
- Trip alarm contacts
- Combined Auxiliary + Trip alarm contacts*
- Shunt release
- Under Voltage release*
- All accessories are Snap fit type*

External Accessories

- Direct & Extended* ROM with Padlocking
- Spreader links
- SS Enclosure**
- GF module for earth fault protection



Easy to Install

- 45mm door cutout upto 250A
- Optional DIN rail mounting available**

* For DU100D / DU100H / DU250C / DU250 / DU400N

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

TECHNICAL SPECIFICATIONS

DU Series

Technical Parameters		Specification		
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_o (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 a.c.	25		
	415V a.c.	10		
	250V d.c. (2P in series) L/R<15 msec	5	-	
	250V d.c. (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	6000
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		
Mounting Depth (mm)		60		
Weight (2/3/4 Pole) (kg)		0.56/0.68	0.66/0.8	0.68

* Capacitor ratings given assuming use of capacitor duty contactor - MO C

TECHNICAL SPECIFICATIONS

DU Series

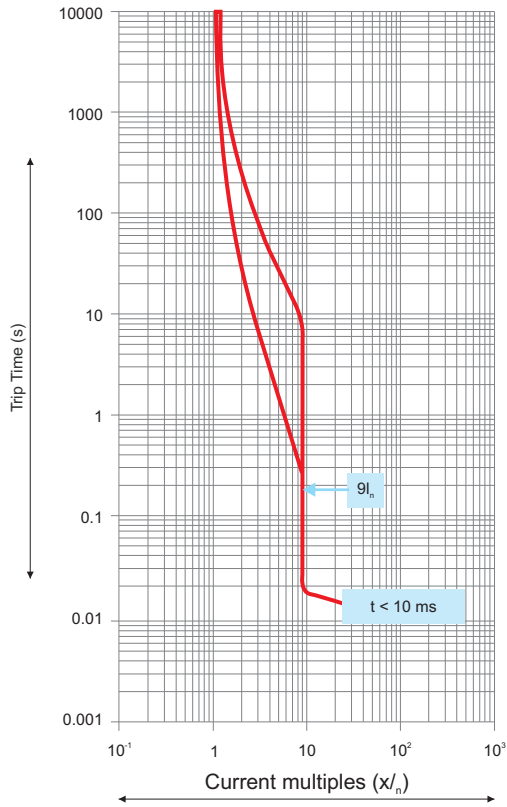
Technical Parameters		Specification				
Type Designation		DU100D	DU100H	DU250C	DU250	DU400N
No. of Poles		3/4	2/3/4	3/4		3/4
Rated Current	I_n (A)	20, 25, 32, 40, 50, 63, 80, 100	20, 25, 32, 40, 50, 63, 80, 100	125, 160, 200, 250		320, 400
Impulse withstand voltage	U_{mp} (kV) AC	6				8
Rated operational voltage	U_o (V) AC	415				690
Rated insulation voltage	U_i (V) AC	690				800
Operational frequency (Hz)		50 / 60				
Utilisation Category		A				
Reference Temperature		40°C				
Operating Temperature		-5°C to + 55°C				
Standard		IS/IEC60947-2, EN60947-2, IEC60947-2				
I_{cu} (kA)	240V a.c.	32	65	65	65	65
	415V a.c.	18	30	25	36	50
	250V d.c. (2P in series) L/R<15 msec	-	15	-	-	-
	250V d.c (3P in series) L/R<15 msec	15	20	15	15	15
	500V d.c. (3P in series) L/R<15 msec	10	15**	5	5	5
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*		upto 95 kVAr*		upto 150 kVAr*
Mechanical Life	No. of operations	30000		10000		10000
Electrical Life	No. of operations	4000		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
Mounting Depth (mm)		60		60		111
Weight (2/3/4 Pole) (kg)		0.73/1	0.6/0.73/1	1.45/1.8		4/5

* Capacitor ratings given assuming use of capacitor duty contactor - MO C

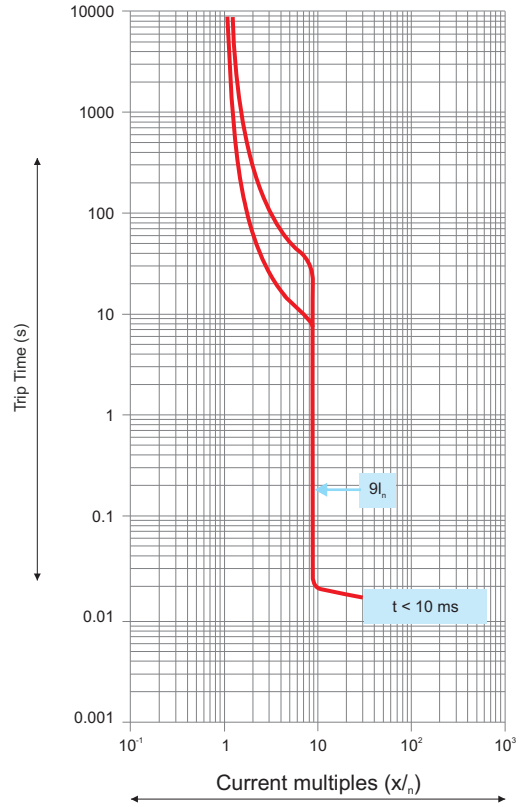
** 10 kA at 500V d.c. (2P in series) L/R<15 msec

I-T CHARACTERISTIC CURVES

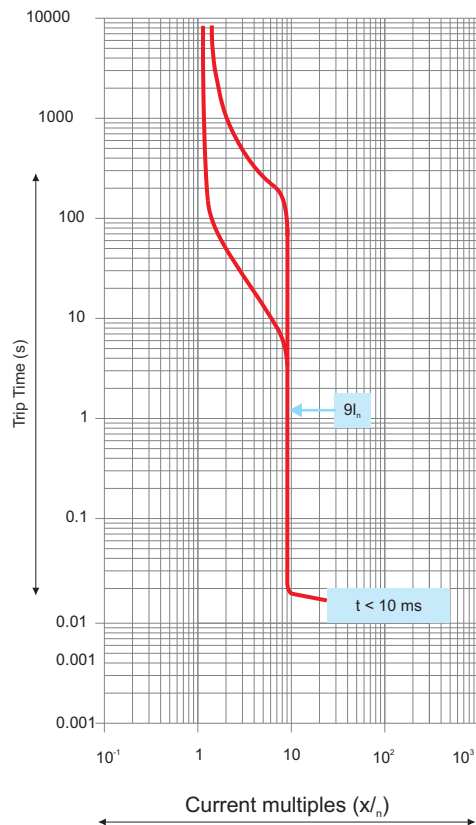
**DU100/DU125U/DU100B/
DU100D/DU100H**



DU250C/DU250

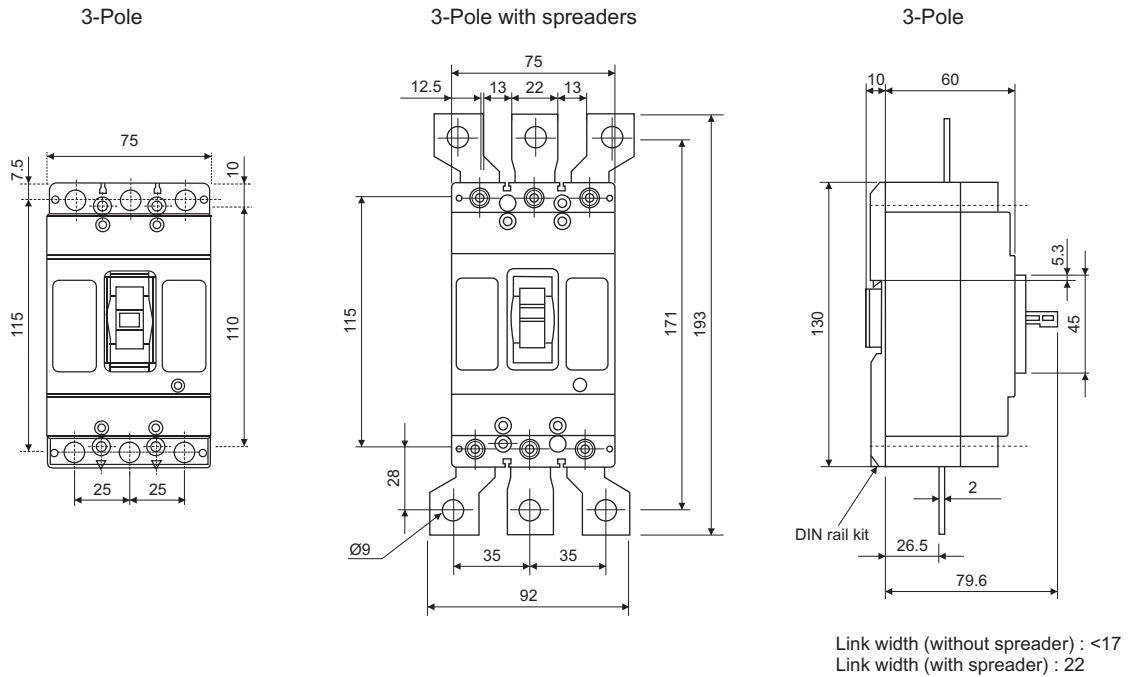


DU400N



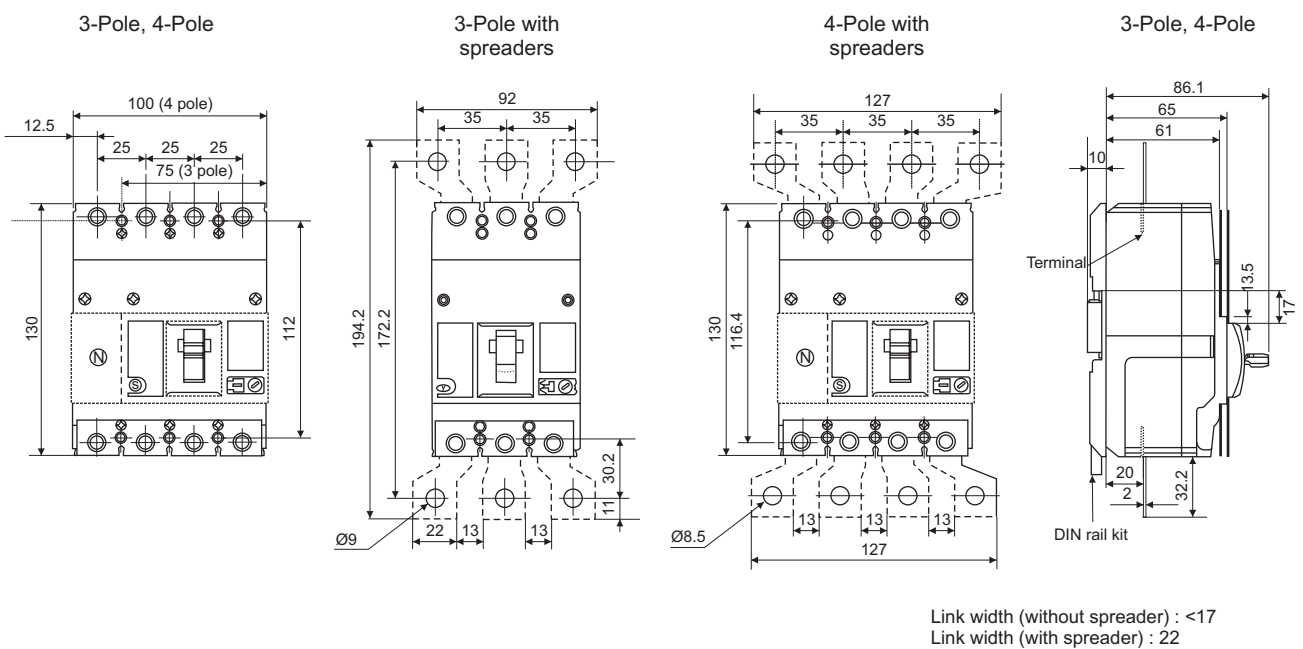
DIMENSIONS

DU100/DU125U/DU100B



Note: For 2-Pole MCCB, refer 3-Pole dimensions. Spreader links are available as spare. It is recommended to use spreader links for enhancing termination capacity.

DU100D/DU100H

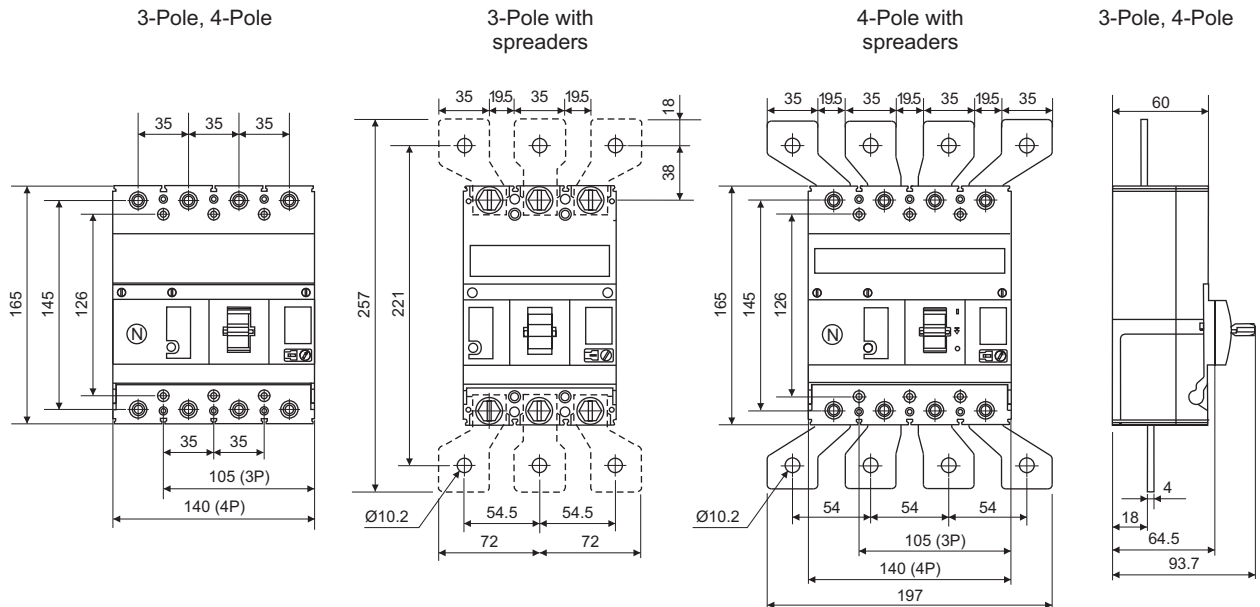


Note: For 2-Pole MCCB, refer 3-Pole dimensions. Spreader links are available as spare. It is recommended to use spreader links for enhancing termination capacity.

All dimensions are in mm

DIMENSIONS

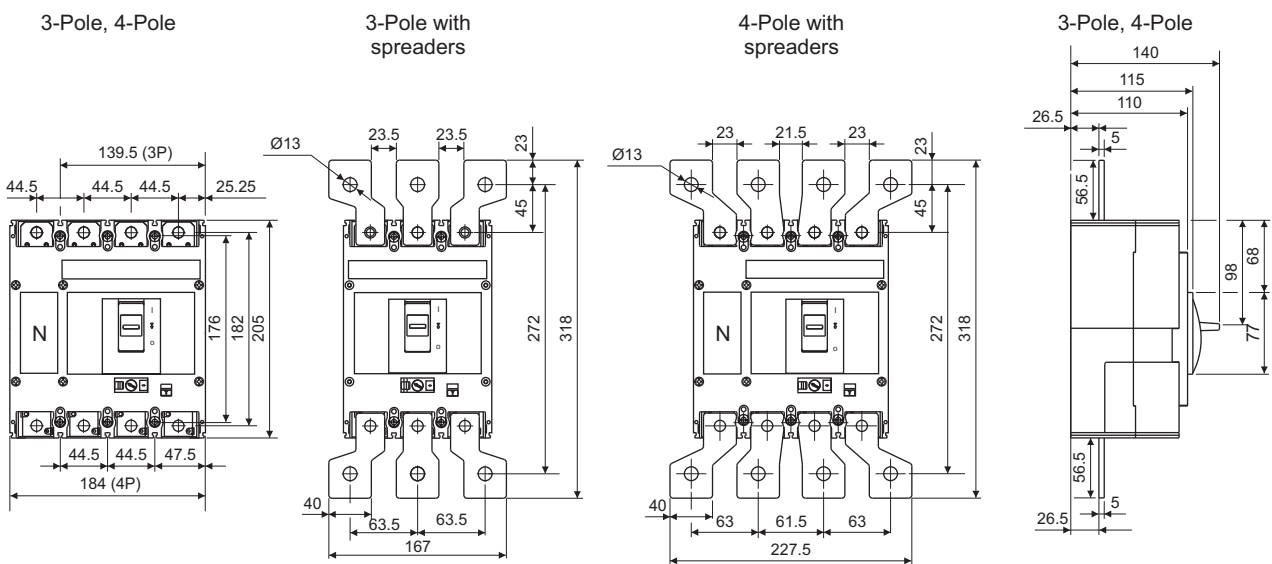
DU250C/DU250



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.

DU400N

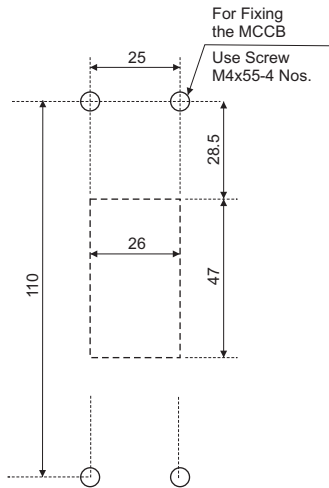


Link width (without spreader) : <32 mm
 Link width (with spreader) : 40 mm

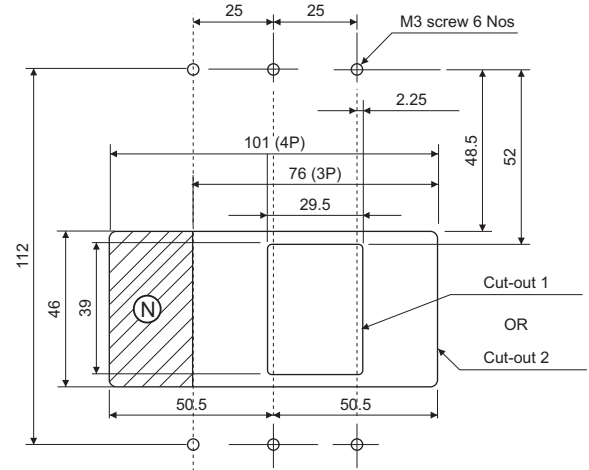
Note: Spreaders are available as spare. It is recommended to use spreader links for enhancing termination capacity.

PANEL CUT-OUT DIMENSIONS

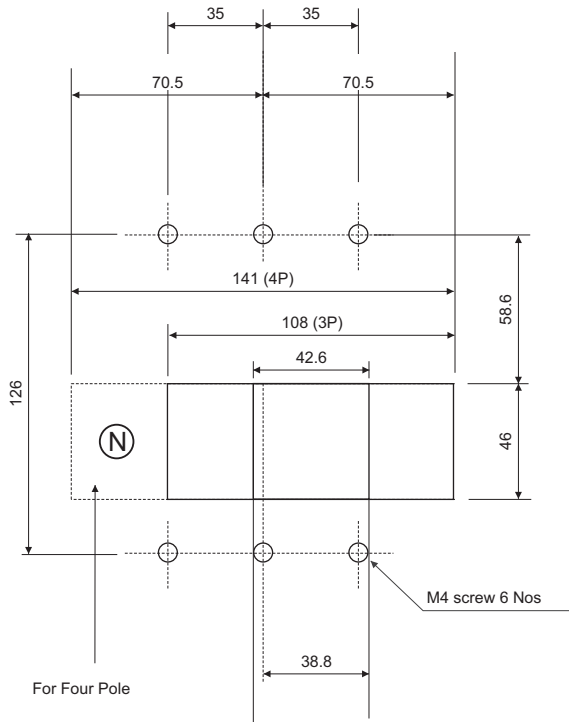
DU100/DU125U/DU100B



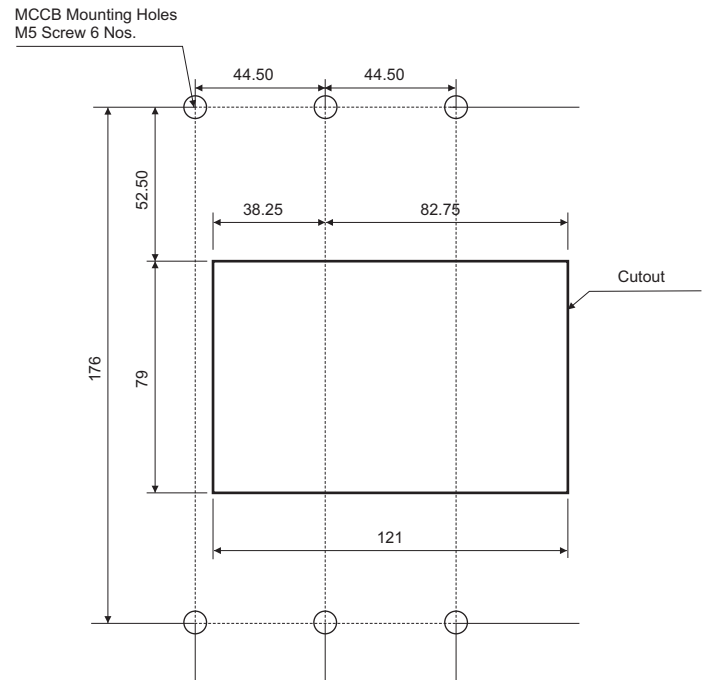
DU100D/DU100H



DU250C/DU250

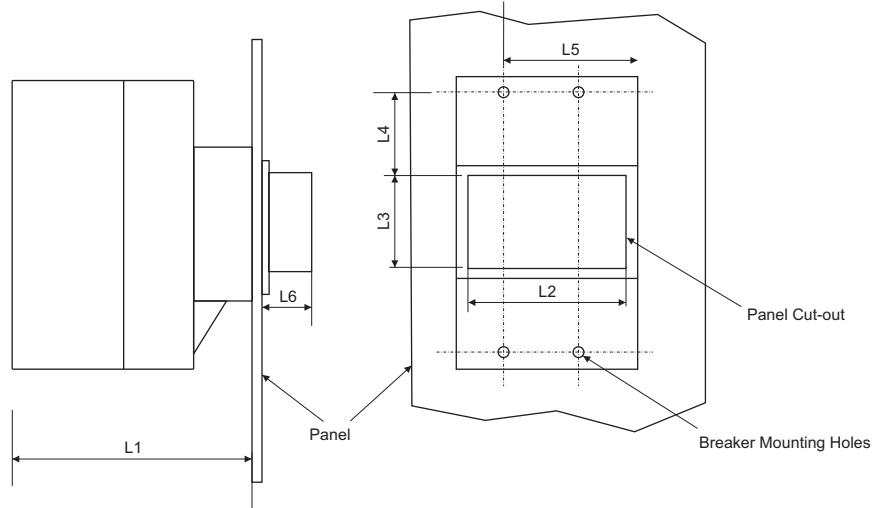


DU400N



ROM MOUNTING DIMENSIONS

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

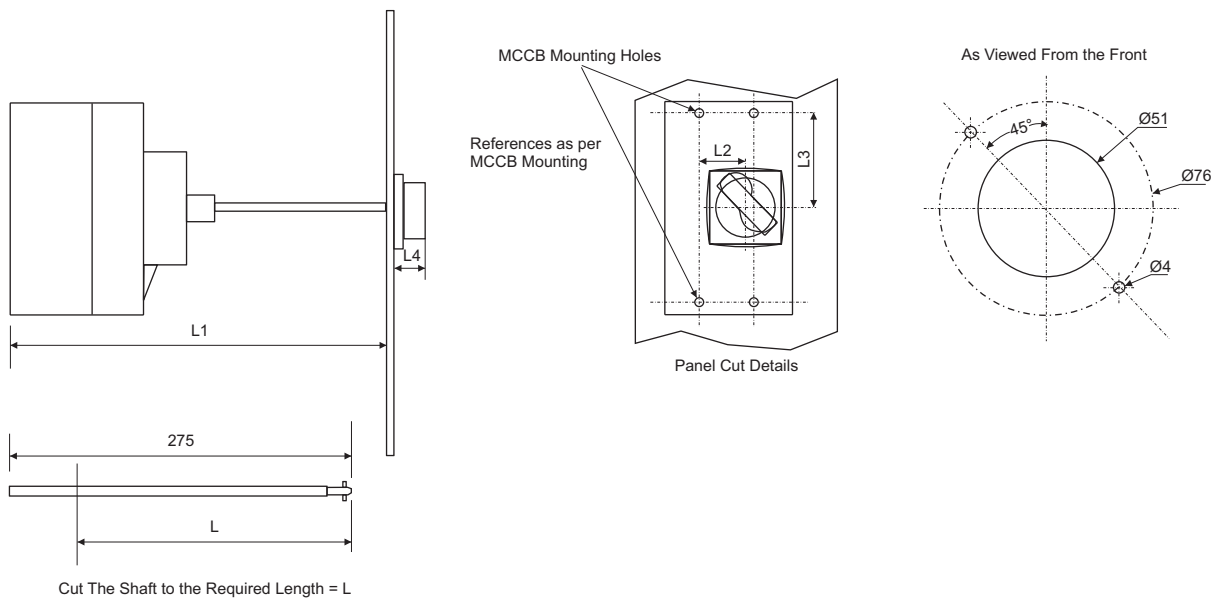


Type	L1	L2	L3	L4	L5	L6
DU100D/DU100H	96.5	58	52	43.5	37	85
DU250C/DU250	96.5	75	52	56.5	54	77
DU400N	146	121	87	49	82.5	95

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 / DU250C / DU250 / DU400)

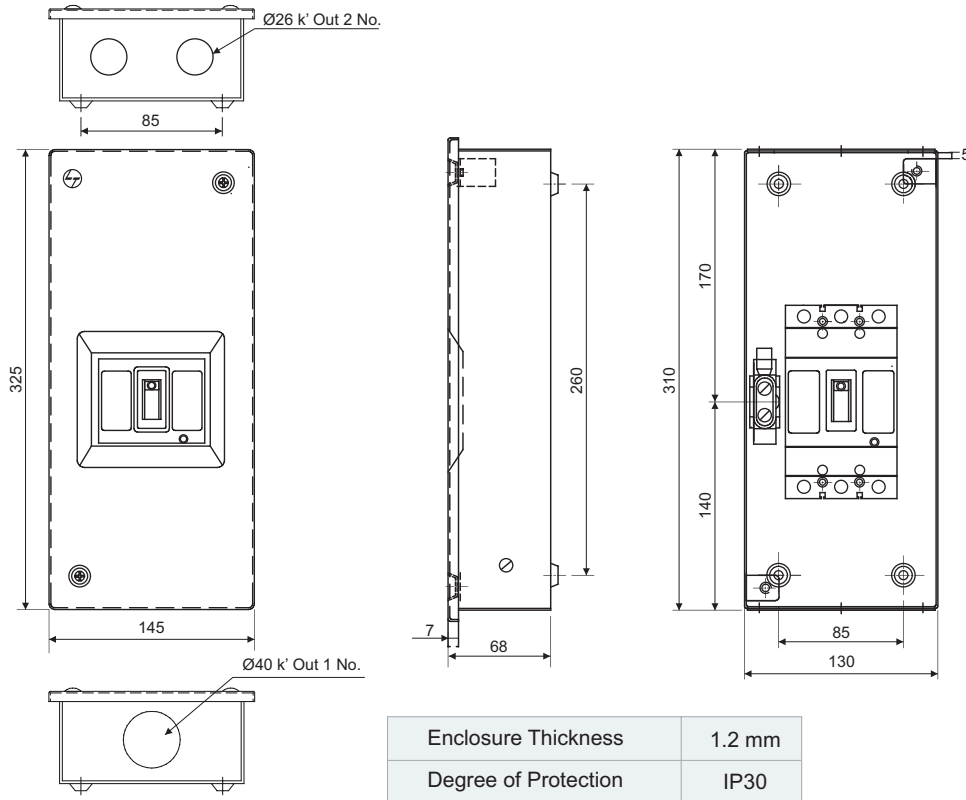


Type	L1	L	L2	L3
DU100D/DU100H	169	L1-119	7.5	69.5
DU250C/DU250	169	L1-119	24.5	81.7
DU400N	233	L1-183	39	92

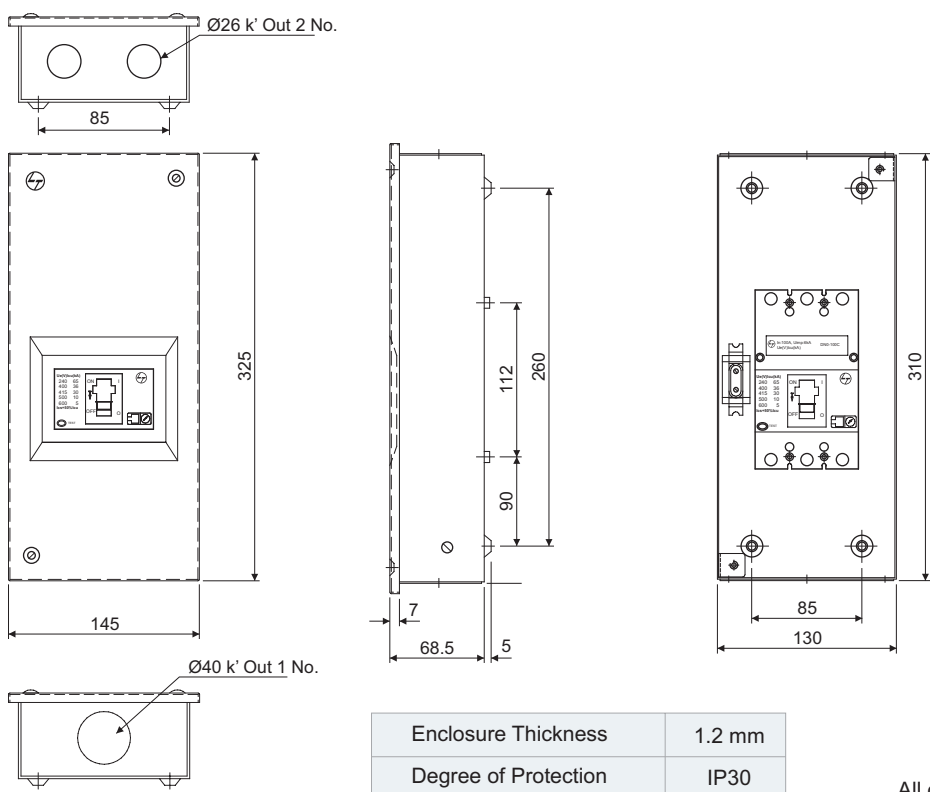
L = Length of Shaft required for Panel Depth L1 (mm)
 L1 = Min. Panel depth (mm)
 L4 = Depth outside the panel

SS ENCLOSURE MOUNTING DIMENSIONS

DU100 / DU125U / DU100B



DU100D/DU100H



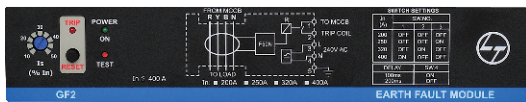
All dimensions are in mm

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 (In)
- 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.

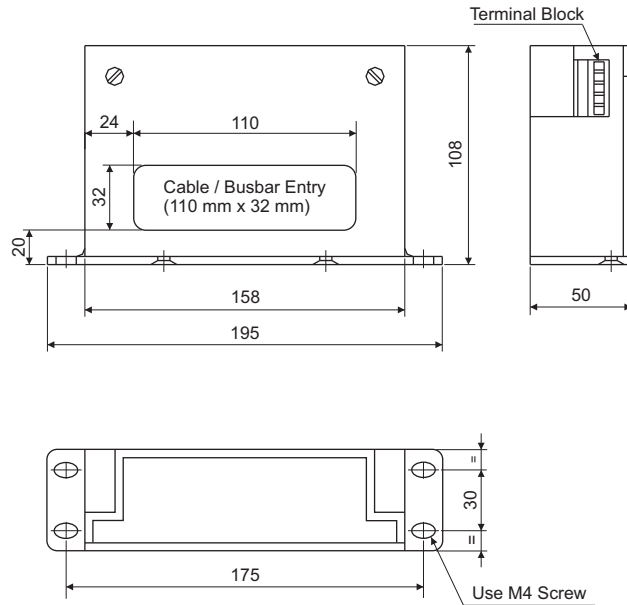
Technical Data

Specification	Type GF1 / GF2 / GF11
Current Setting Range, Is (Is=x In)	10% to 50% In in step of 10%
Auxiliary Supply	240V AC ±20%
Time Delay (ms)	100 / 200ms Field selectable
Pick-up Accuracy	±10%Is
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

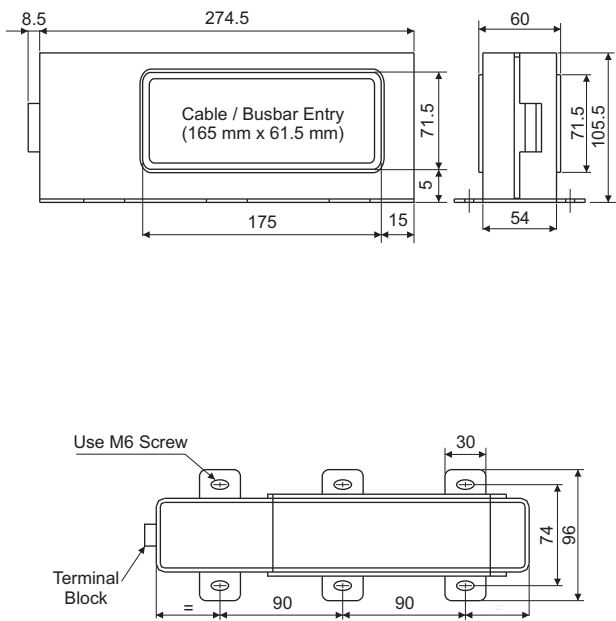
Note : Please check GF module window size & MCCB busbar width with spreaders / without spreaders before selection of GF Module. Please contact nearest branch office for further information.

GROUND FAULT MODULE: OVERALL DIMENSIONS

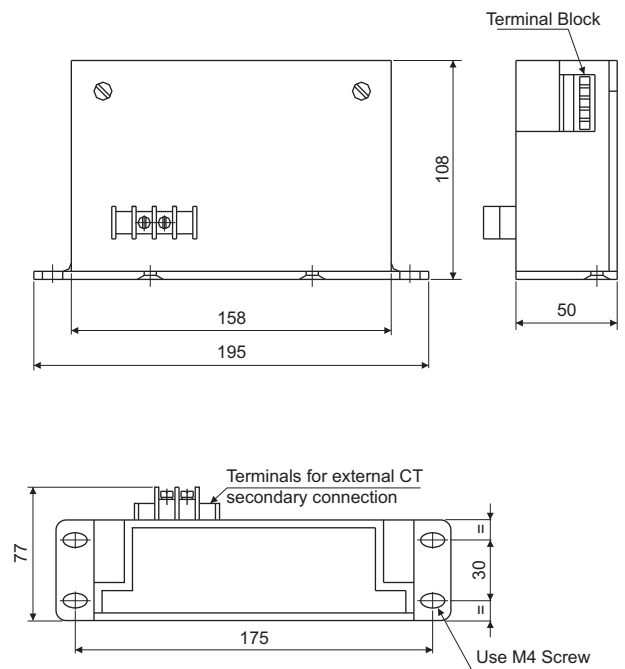
GF1



GF2



GF11



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Product improvement is a continuous process. For the latest information and special applications, please contact any of our offices listed here.



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