

# Enclosed Breakers



# NOARK

## ABOUT US

**NOARK Electric** is a global manufacturer of low-voltage electrical components for industrial applications. We specialize in motor controls and circuit protection for original equipment manufacturers. Our mission is to provide customers with the highest quality products at an exceptional value and back them with world-class service and support. Every NOARK product is tested and certified to the highest industry standards and covered by our exclusive five-year limited warranty.

### Research and Development

The entire portfolio of high-quality NOARK products is designed for manufacturing and assembly (DFMA). Each component is developed in-house by our engineering team to meet the strictest standards and performance requirements. This dedication to excellence has led to the development of patented technology found in many of our products.

### World-class Manufacturing

After being thoroughly tested, approved and certified – each NOARK product is sent into production at our state-of-the-art manufacturing facilities. This allows us to maintain strict quality control standards throughout the manufacturing process. In addition, NOARK Electric adheres to a policy of environmental protection and sustainability.

### North American Distribution

NOARK's distribution centers are located in Pomona, CA and Kitchener, ON, with the aim of ensuring prompt and reliable deliveries of the entire product range to our customers all over North America. Our supply chain team works closely with our factories and logistics partners to ensure the availability of our products on the North American market and provide logistics services on the level which our customers expect. NOARK Electric is a subsidiary of the largest electrical manufacturing group in Asia with over 30 thousand employees and sales revenue of \$10 billion USD. We have corporate facilities in Los Angeles, Shanghai and Prague to service the requirements of individual markets and countries.

<b>140+</b> Countries	<b>300+</b> Overseas Distributors	<b>20</b> Overseas Subsidiaries	<b>22</b> Logistics Centers	<b>3</b> R & D Centers	<b>10,000,000+</b> Sq.Ft. Manufacturing Space	<b>30,000+</b> Employees Worldwide
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TABLE OF CONTENTS

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**A. Enclosed Breaker Assembly**

Overview .....4

**B. Enclosure**

Enclosure Label.....5  
Enclosure Product Selection Guide.....6  
Enclosure Products.....6

**C. Neutral Terminal**

Neutral Terminal Label.....7  
Neutral Terminal Product Selection Guide.....7  
Neutral Terminal Products.....7

**D. Fully Assembled Enclosed Breaker**

Enclosed Breaker Selection Guide.....8  
Enclosed Breaker Products  
    M1, 30-150A.....9  
    M2, 175-250A.....10  
    M3, 300-400A .....11  
    M4, 400-600A.....12  
Enclosed Breaker Dimensions.....13





## Enclosed Breakers

Overview

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### Features

NOARK's X Series enclosed molded case breakers combine a UL Listed enclosure with our M Series Molded Case Circuit Breakers and neutral terminals, when required for 4 wire systems. The components and assembly comply to UL489 and CSA C22.2 No.5 standards. Enclosed Breakers are used wherever a feeder or branch circuit breaker must be mounted independently. Enclosed breakers are suitable for Service Entrance as outlined in the National Electric Code and Canadian Electrical Code.

- Rated Current up to 600A.
- Voltage rating up to 600Vac.
- NEMA Enclosure Type 1, 12 and 3R
- Molded Case Circuit Breakers (Ex9 M Series: M1-M4)
- Neutral terminals for 3P-4W and 2P-3W systems



### Certifications

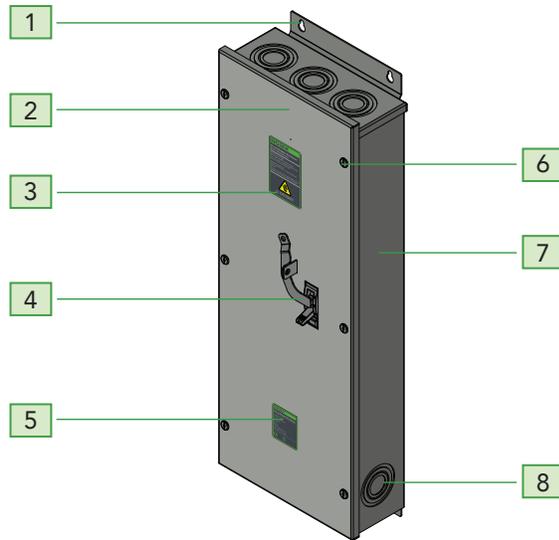
- UL 489 Listed, File No. E355392
- CSA C22.2 No. 5, File No. E355392
- EC/EN 60947-2





# Enclosed Breakers

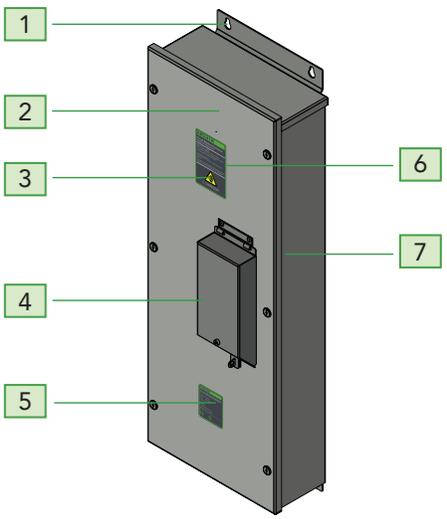
Enclosure: Label



### Type 1 Enclosure

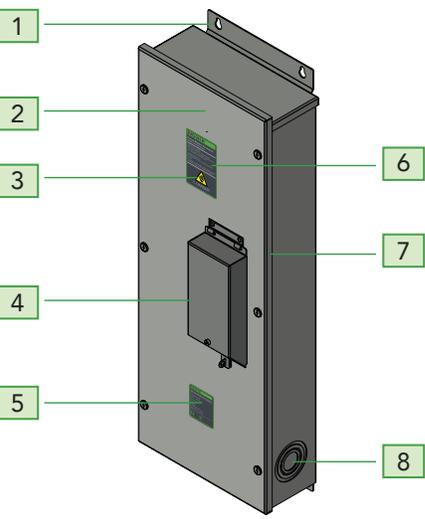
- 1. Mounting Bracket
- 2. Cover
- 3. Warning Label
- 4. Lock Bracket
- 5. Type Label
- 6. Cover Screw
- 7. Bottom Box
- 8. Knockout

### Type 12 Enclosure



- 1. Mounting Bracket
- 2. Cover
- 3. Warning Label
- 4. Rain Tight Cover
- 5. Type Label
- 6. Cover Screw
- 7. Bottom Box
- 8. Knockout

### Type 3R Enclosure

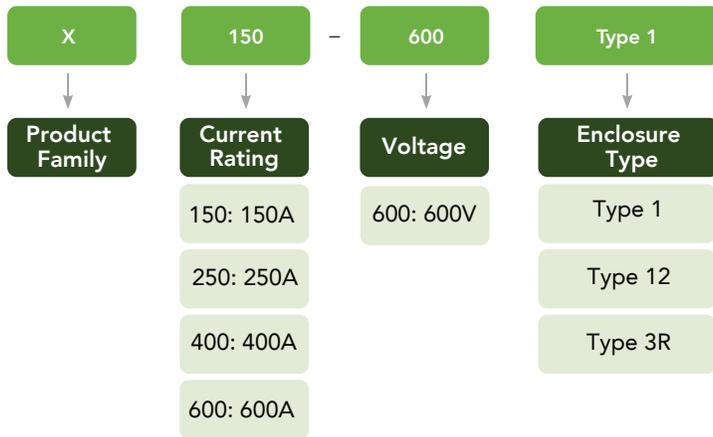


- 1. Mounting Bracket
- 2. Cover
- 3. Warning Label
- 4. Rain Tight Cover
- 5. Type Label
- 6. Cover Screw
- 7. Bottom Box
- 8. Knockout



# Enclosed Breakers

Enclosure: Product Selection Guide & Products

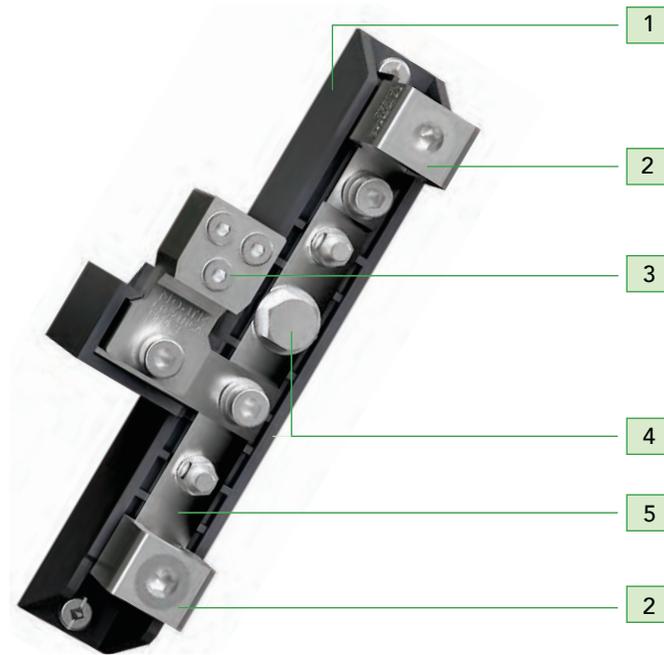


Rated Current (A)	MCCB Frame Size	Enclosure Type	Catalog Number
150	M1	Type 1	X150-600Type 1
		Type 12	X150-600Type 12
		Type 3R	X150-600Type 3R
250	M2	Type 1	X250-600Type 1
		Type 12	X250-600Type 12
		Type 3R	X250-600Type 3R
400	M3	Type 1	X400-600Type 1
		Type 12	X400-600Type 12
		Type 3R	X400-600Type 3R
600	M4	Type 1	X600-600Type 1
		Type 12	X600-600Type 12
		Type 3R	X600-600Type 3R

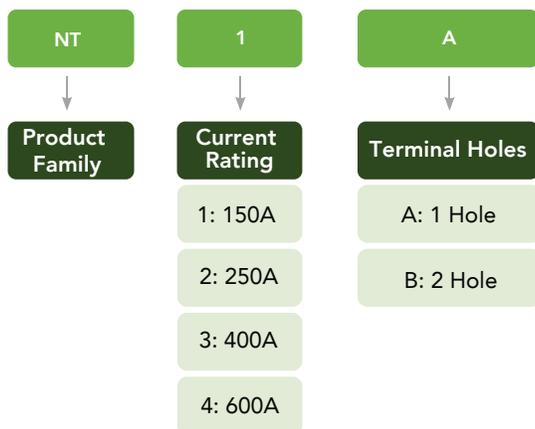


## Enclosed Breakers

Neutral Terminal: Label, Selection Guide and Products



- 1. Insulation
- 2. Main Neutral
- 3. Service ground
- 4. Bonding Screw
- 5. Busbar

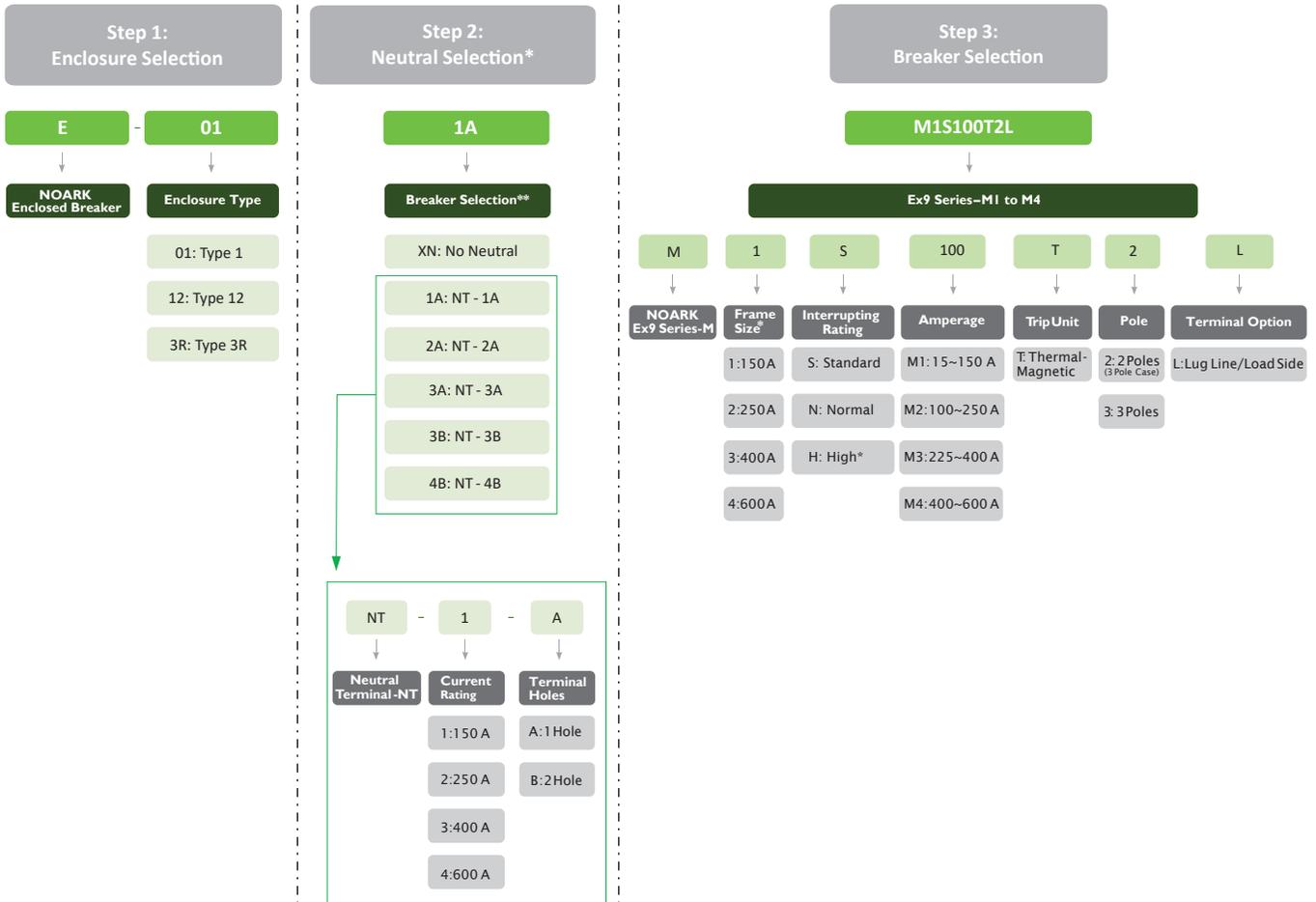


Rated Current (A)	No. of Holes	Catalog Number
150	1	NT-1A
250	1	NT-2A
400	1	NT-3A
400	2	NT-3B
600	2	NT-4B



# Fully Assembled Enclosed Breakers

## Product Selection Guide



Note: The lists of fully assembled breakers in the following pages represent the most commonly required breaker ratings. Other ampere ratings may be ordered by inserting the required breaker's catalog number after the fifth digit of this composite catalog number.

\* Not required for 3-wire systems

\*\* For a full list of available current ratings and breaker accessories, please consult NOARK's MCCB Master Catalog



## Fully Assembled Enclosed Breakers

M1, 30-150A

Enclosure	SCCR	Current Rating (A)	3P-4W, 1 Hole NT	3P-3W
Type 1	M1S 35kA@480V	30	E01-1AM1S30T3L	E01-XNM1S30T3L
		60	E01-1AM1S60T3L	E01-XNM1S60T3L
		100	E01-1AM1S100T3L	E01-XNM1S100T3L
		150	E01-1AM1S150T3L	E01-XNM1S150T3L
	M1N 65kA@480V	30	E01-1AM1N30T3L	E01-XNM1N30T3L
		60	E01-1AM1N60T3L	E01-XNM1N60T3L
		100	E01-1AM1N100T3L	E01-XNM1N100T3L
		150	E01-1AM1N150T3L	E01-XNM1N150T3L
	M1H 100kA@480V	30	E01-1AM1H30T3L	E01-XNM1H30T3L
		60	E01-1AM1H60T3L	E01-XNM1H60T3L
		100	E01-1AM1H100T3L	E01-XNM1H100T3L
		150	E01-1AM1H150T3L	E01-XNM1H150T3L

Enclosure	SCCR	Current Rating (A)	3P-4W, 1 Hole NT	3P-3W
Type 12	M1S 35kA@480V	30	E12-1AM1S30T3L	E12-XNM1S30T3L
		60	E12-1AM1S60T3L	E12-XNM1S60T3L
		100	E12-1AM1S100T3L	E12-XNM1S100T3L
		150	E12-1AM1S150T3L	E12-XNM1S150T3L
	M1N 65kA@480V	30	E12-1AM1N30T3L	E12-XNM1N30T3L
		60	E12-1AM1N60T3L	E12-XNM1N60T3L
		100	E12-1AM1N100T3L	E12-XNM1N100T3L
		150	E12-1AM1N150T3L	E12-XNM1N150T3L
	M1H 100kA@480V	30	E12-1AM1H30T3L	E12-XNM1H30T3L
		60	E12-1AM1H60T3L	E12-XNM1H60T3L
		100	E12-1AM1H100T3L	E12-XNM1H100T3L
		150	E12-1AM1H150T3L	E12-XNM1H150T3L

Enclosure	SCCR	Current Rating (A)	3P-4W, 1 Hole NT	3P-3W
Type 3R	M1S 35kA@480V	30	E3R-1AM1S30T3L	E3R-XNM1S30T3L
		60	E3R-1AM1S60T3L	E3R-XNM1S60T3L
		100	E3R-1AM1S100T3L	E3R-XNM1S100T3L
		150	E3R-1AM1S150T3L	E3R-XNM1S150T3L
	M1N 65kA@480V	30	E3R-1AM1N30T3L	E3R-XNM1N30T3L
		60	E3R-1AM1N60T3L	E3R-XNM1N60T3L
		100	E3R-1AM1N100T3L	E3R-XNM1N100T3L
		150	E3R-1AM1N150T3L	E3R-XNM1N150T3L
	M1H 100kA@480V	30	E3R-1AM1H30T3L	E3R-XNM1H30T3L
		60	E3R-1AM1H60T3L	E3R-XNM1H60T3L
		100	E3R-1AM1H100T3L	E3R-XNM1H100T3L
		150	E3R-1AM1H150T3L	E3R-XNM1H150T3L



## Fully Assembled Enclosed Breakers

M2, 175-250A

Enclosure	SCCR	Current Rating (A)	3P-4W, 1 Hole NT	3P-3W
Type 1	M2S 35kA@480V	175	E01-2AM2S175T3L	E01-XNM2S175T3L
		200	E01-2AM2S200T3L	E01-XNM2S200T3L
		225	E01-2AM2S225T3L	E01-XNM2S225T3L
		250	E01-2AM2S250T3L	E01-XNM2S250T3L
	M2N 65kA@480V	175	E01-2AM2N175T3L	E01-XNM2N175T3L
		200	E01-2AM2N200T3L	E01-XNM2N200T3L
		225	E01-2AM2N225T3L	E01-XNM2N225T3L
		250	E01-2AM2N250T3L	E01-XNM2N250T3L
	M2H 100kA@480V	175	E01-2AM2H175T3L	E01-XNM2H175T3L
		200	E01-2AM2H200T3L	E01-XNM2H200T3L
		225	E01-2AM2H225T3L	E01-XNM2H225T3L
		250	E01-2AM2H250T3L	E01-XNM2H250T3L

Enclosure	SCCR	Current Rating (A)	3P-4W, 1 Hole NT	3P-3W
Type 12	M2S 35kA@480V	175	E12-2AM2S175T3L	E12-XNM2S175T3L
		200	E12-2AM2S200T3L	E12-XNM2S200T3L
		225	E12-2AM2S225T3L	E12-XNM2S225T3L
		250	E12-2AM2S250T3L	E12-XNM2S250T3L
	M2N 65kA@480V	175	E12-2AM2N175T3L	E12-XNM2N175T3L
		200	E12-2AM2N200T3L	E12-XNM2N200T3L
		225	E12-2AM2N225T3L	E12-XNM2N225T3L
		250	E12-2AM2N250T3L	E12-XNM2N250T3L
	M2H 100kA@480V	175	E12-2AM2H175T3L	E12-XNM2H175T3L
		200	E12-2AM2H200T3L	E12-XNM2H200T3L
		225	E12-2AM2H225T3L	E12-XNM2H225T3L
		250	E12-2AM2H250T3L	E12-XNM2H250T3L

Enclosure	SCCR	Current Rating (A)	3P-4W, 1 Hole NT	3P-3W
Type 3R	M2S 35kA@480V	175	E3R-2AM2S175T3L	E3R-XNM2S175T3L
		200	E3R-2AM2S200T3L	E3R-XNM2S200T3L
		225	E3R-2AM2S225T3L	E3R-XNM2S225T3L
		250	E3R-2AM2S250T3L	E3R-XNM2S250T3L
	M2N 65kA@480V	175	E3R-2AM2N175T3L	E3R-XNM2N175T3L
		200	E3R-2AM2N200T3L	E3R-XNM2N200T3L
		225	E3R-2AM2N225T3L	E3R-XNM2N225T3L
		250	E3R-2AM2N250T3L	E3R-XNM2N250T3L
	M2H 100kA@480V	175	E3R-2AM2H175T3L	E3R-XNM2H175T3L
		200	E3R-2AM2H200T3L	E3R-XNM2H200T3L
		225	E3R-2AM2H225T3L	E3R-XNM2H225T3L
		250	E3R-2AM2H250T3L	E3R-XNM2H250T3L



# Fully Assembled Enclosed Breakers

M3, 300-400A

Enclosure	SCCR	Current Rating (A)	3P-4W, 1 Hole NT	3P-4W, 2 Hole NT	3P-3W
Type 1	M3S 35kA@480V	300	E01-3AM3S300T3L	E01-3BM3S300T3L	E01-XNM3S300T3L
		350	E01-3AM3S350T3L	E01-3BM3S350T3L	E01-XNM3S350T3L
		400	E01-3AM3S400T3L	E01-3BM3S400T3L	E01-XNM3S400T3L
	M3N 65kA@480V	300	E01-3AM3N300T3L	E01-3BM3N300T3L	E01-XNM3N300T3L
		350	E01-3AM3N350T3L	E01-3BM3N350T3L	E01-XNM3N350T3L
		400	E01-3AM3N400T3L	E01-3BM3N400T3L	E01-XNM3N400T3L
	M3H 100kA@480V	300	E01-3AM3H300T3L	E01-3BM3H300T3L	E01-XNM3H300T3L
		350	E01-3AM3H350T3L	E01-3BM3H350T3L	E01-XNM3H350T3L
		400	E01-3AM3H400T3L	E01-3BM3H400T3L	E01-XNM3H400T3L

Enclosure	SCCR	Current Rating (A)	3P-4W, 1 Hole NT	3P-4W, 2 Hole NT	3P-3W
Type 12	M3S 35kA@480V	300	E12-3AM3S300T3L	E12-3BM3S300T3L	E12-XNM3S300T3L
		350	E12-3AM3S350T3L	E12-3BM3S350T3L	E12-XNM3S350T3L
		400	E12-3AM3S400T3L	E12-3BM3S400T3L	E12-XNM3S400T3L
	M3N 65kA@480V	300	E12-3AM3N300T3L	E12-3BM3N300T3L	E12-XNM3N300T3L
		350	E12-3AM3N350T3L	E12-3BM3N350T3L	E12-XNM3N350T3L
		400	E12-3AM3N400T3L	E12-3BM3N400T3L	E12-XNM3N400T3L
	M3H 100kA@480V	300	E12-3AM3H300T3L	E12-3BM3H300T3L	E12-XNM3H300T3L
		350	E12-3AM3H350T3L	E12-3BM3H350T3L	E12-XNM3H350T3L
		400	E12-3AM3H400T3L	E12-3BM3H400T3L	E12-XNM3H400T3L

Enclosure	SCCR	Current Rating (A)	3P-4W, 1 Hole NT	3P-4W, 2 Hole NT	3P-3W
Type 3R	M3S 35kA@480V	300	E3R-3AM3S300T3L	E3R-3BM3S300T3L	E3R-XNM3S300T3L
		350	E3R-3AM3S350T3L	E3R-3BM3S350T3L	E3R-XNM3S350T3L
		400	E3R-3AM3S400T3L	E3R-3BM3S400T3L	E3R-XNM3S400T3L
	M3N 65kA@480V	300	E3R-3AM3N300T3L	E3R-3BM3N300T3L	E3R-XNM3N300T3L
		350	E3R-3AM3N350T3L	E3R-3BM3N350T3L	E3R-XNM3N350T3L
		400	E3R-3AM3N400T3L	E3R-3BM3N400T3L	E3R-XNM3N400T3L
	M3H 100kA@480V	300	E3R-3AM3H300T3L	E3R-3BM3H300T3L	E3R-XNM3H300T3L
		350	E3R-3AM3H350T3L	E3R-3BM3H350T3L	E3R-XNM3H350T3L
		400	E3R-3AM3H400T3L	E3R-3BM3H400T3L	E3R-XNM3H400T3L



# Fully Assembled Enclosed Breakers

M4, 400-600A

Enclosure	SCCR	Current Rating (A)	3P-4W, 2 Hole NT	3P-3W
Type 1	M4S 35kA@480V	400	E01-4BM4S400T3L	E01-XNM4S400T3L
		500	E01-4BM4S500T3L	E01-XNM4S500T3L
		600	E01-4BM4S600T3L	E01-XNM4S600T3L
	M4N 65kA@480V	400	E01-4BM4N400T3L	E01-XNM4N400T3L
		500	E01-4BM4N500T3L	E01-XNM4N500T3L
		600	E01-4BM4N600T3L	E01-XNM4N600T3L
	M4H 100kA@480V	400	E01-4BM4H400T3L	E01-XNM4H400T3L
		500	E01-4BM4H500T3L	E01-XNM4H500T3L
		600	E01-4BM4H600T3L	E01-XNM4H600T3L

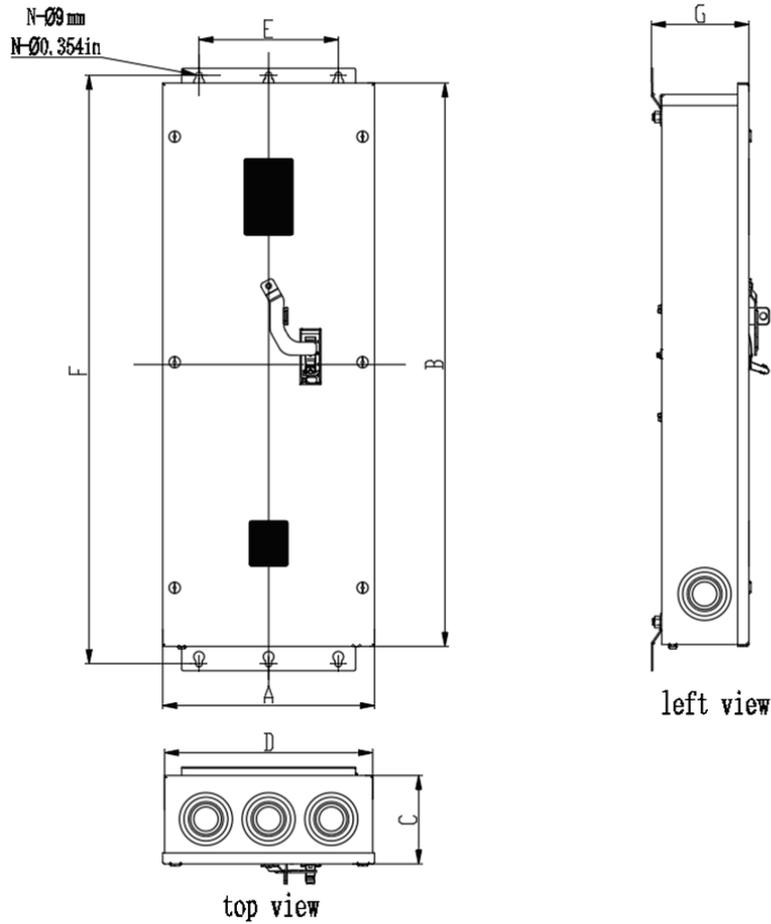
Enclosure	SCCR	Current Rating (A)	3P-4W, 2 Hole NT	3P-3W
Type 12	M4S 35kA@480V	400	E12-4BM4S400T3L	E12-XNM4S400T3L
		500	E12-4BM4S500T3L	E12-XNM4S500T3L
		600	E12-4BM4S600T3L	E12-XNM4S600T3L
	M4N 65kA@480V	400	E12-4BM4N400T3L	E12-XNM4N400T3L
		500	E12-4BM4N500T3L	E12-XNM4N500T3L
		600	E12-4BM4N600T3L	E12-XNM4N600T3L
	M4H 100kA@480V	400	E12-4BM4H400T3L	E12-XNM4H400T3L
		500	E12-4BM4H500T3L	E12-XNM4H500T3L
		600	E12-4BM4H600T3L	E12-XNM4H600T3L

Enclosure	SCCR	Current Rating (A)	3P-4W, 2 Hole NT	3P-3W
Type 3R	M4S 35kA@480V	400	E3R-4BM4S400T3L	E3R-XNM4S400T3L
		500	E3R-4BM4S500T3L	E3R-XNM4S500T3L
		600	E3R-4BM4S600T3L	E3R-XNM4S600T3L
	M4N 65kA@480V	400	E3R-4BM4N400T3L	E3R-XNM4N400T3L
		500	E3R-4BM4N500T3L	E3R-XNM4N500T3L
		600	E3R-4BM4N600T3L	E3R-XNM4N600T3L
	M4H 100kA@480V	400	E3R-4BM4H400T3L	E3R-XNM4H400T3L
		500	E3R-4BM4H500T3L	E3R-XNM4H500T3L
		600	E3R-4BM4H600T3L	E3R-XNM4H600T3L



# Enclosed Breakers

Dimension: Type 1 Enclosure



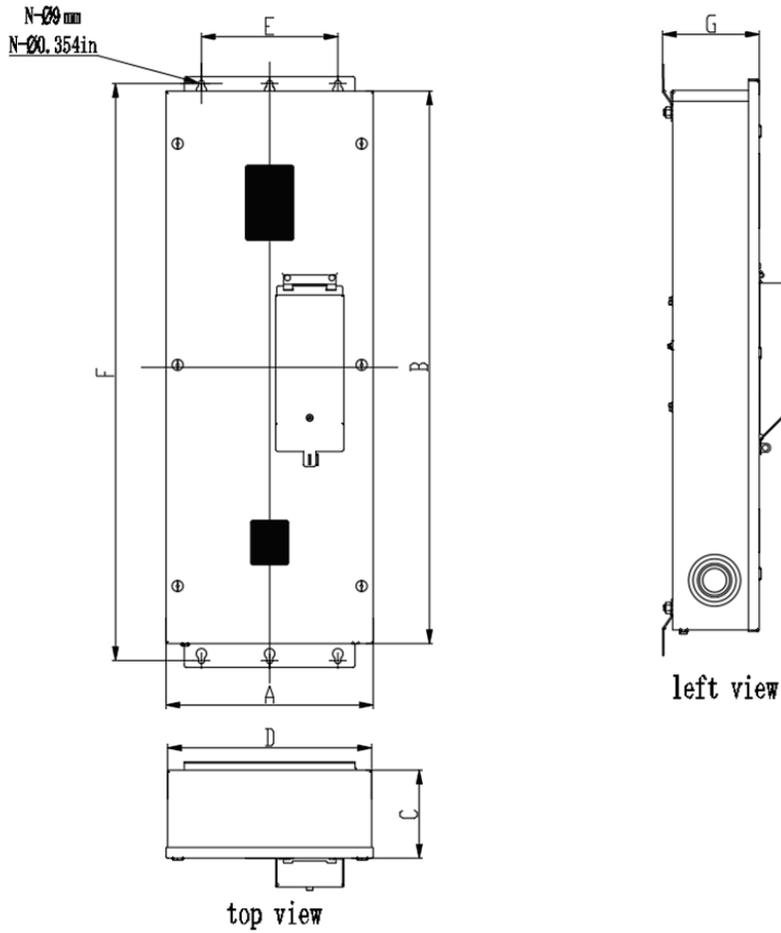
Enclosure Type	Current Rating	A / in (mm)	B / in (mm)	C / in (mm)	D / in (mm)	E / in (mm)	F / in (mm)	G / in (mm)	N
Type 1	150A	12 (304)	32 (812.8)	5 (127.5)	11.8 (299)	7.9 (200)	33 (838.8)	5.5 (139.8)	4
	250A								
	400A	22 (558.5)	48 (1219.2)	7 (178.3)	21 (533)	15.7 (400)	49.2 (1250.1)	7.5 (190.6)	6
	600A								

Note: N means 4 mounting holes when the current is 250A or less and 6 mounting holes for other current levels.



# Enclosed Breakers

Dimension: Type 12 Enclosure



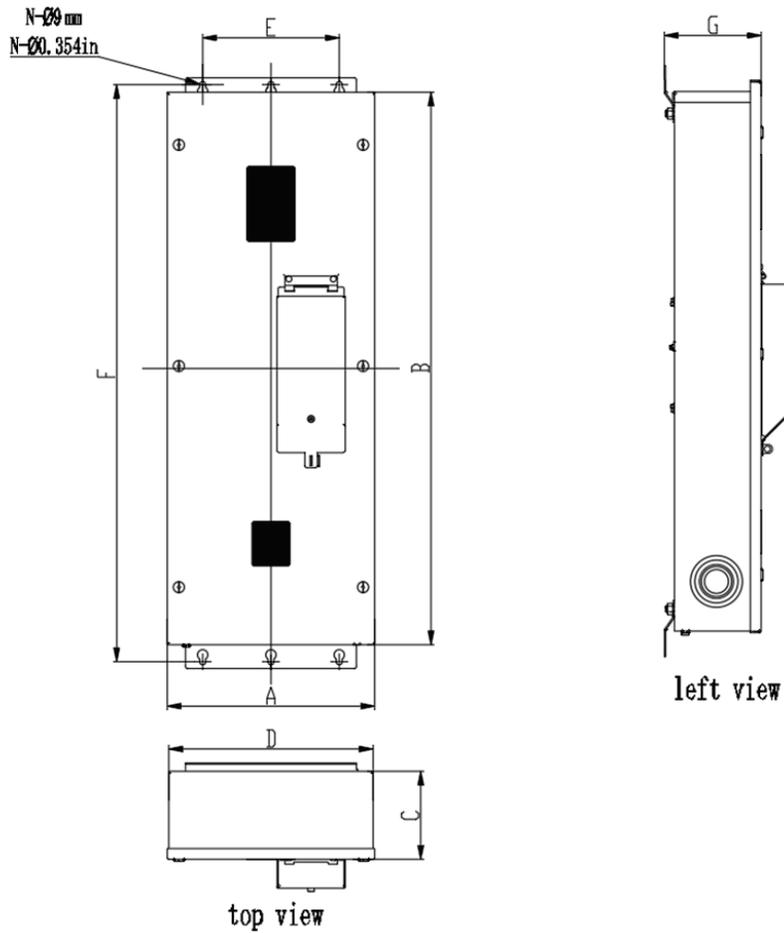
Enclosure Type	Current Rating	A / in (mm)	B / in (mm)	C / in (mm)	D / in (mm)	E / in (mm)	F / in (mm)	G / in (mm)	N
Type 12	150A	12 (304)	32 (812.8)	5.1 (129.5)	11.8 (299)	7.9 (200)	33 (838.8)	5.6 (141.8)	4
	250A								
	400A	22 (558.5)	48 (1219.2)	7.1 (180.3)	21 (533)	15.7 (400)	49.2 (1250.1)	7.6 (192.6)	6
	600A								

Note: N means 4 mounting holes when the current is 250A or less and 6 mounting holes for other current levels.



# Enclosed Breakers

Dimension: Type 3R Enclosure



Enclosure Type	Current Rating	A / in (mm)	B / in (mm)	C / in (mm)	D / in (mm)	E / in (mm)	F / in (mm)	G / in (mm)	N
Type 3R	150A	12 (304)	32 (812.8)	5.1 (129.5)	11.8 (299)	7.9 (200)	33 (838.8)	5.6 (141.8)	4
	250A								
	400A	22 (558.5)	48 (1219.2)	7.1 (180.3)	21 (533)	15.7 (400)	49.2 (1250.1)	7.6 (192.6)	6
	600A								

Note: N means 4 mounting holes when the current is 250A or less and 6 mounting holes for other current levels.