

NOARK

Catalog

Molded Case Circuit Breakers Molded Case Switches

Ex9M Series

Ex9M2S



Ex9M1S



Your Industrial Motor Controls Specialist

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www.westshorecontrols.com

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NOARK Electric

Electrical Equipment Supplier for Distribution and Control



NOARK Electric is a global supplier of electrical distribution and control products that address a variety of customer needs, ranging from components to intelligent system solutions. Our global product lines include: circuit breakers, contactors, relays and intelligent control. Based in Shanghai, China, NOARK Electric was established in 2007 and covers the globe with regional headquarters in North America and Europe.

Globally, NOARK Electric serves the industrial, commercial, utility and residential markets. In North America, NOARK Electric focuses primarily on industrial OEMs, users and associated channel partners. Our motto is "Excellent Product...Exceptional Value," which NOARK Electric delivers to our customer by maintaining local inventory, providing local sales, customer service and support and manufacturing quality, and aggressively priced products backed by a five-year limited warranty.

Quality Product

- Backed by a 5-year limited warranty*



Exceptional Value

- Reduce the cost of products
- Improve profitability
- Increase margins

Local Support and Local Inventory

- Superb customer service
- Knowledgeable technical support
- Dedicated sales force
- Well-stocked inventory
- North American headquarters

**Limited warranty*

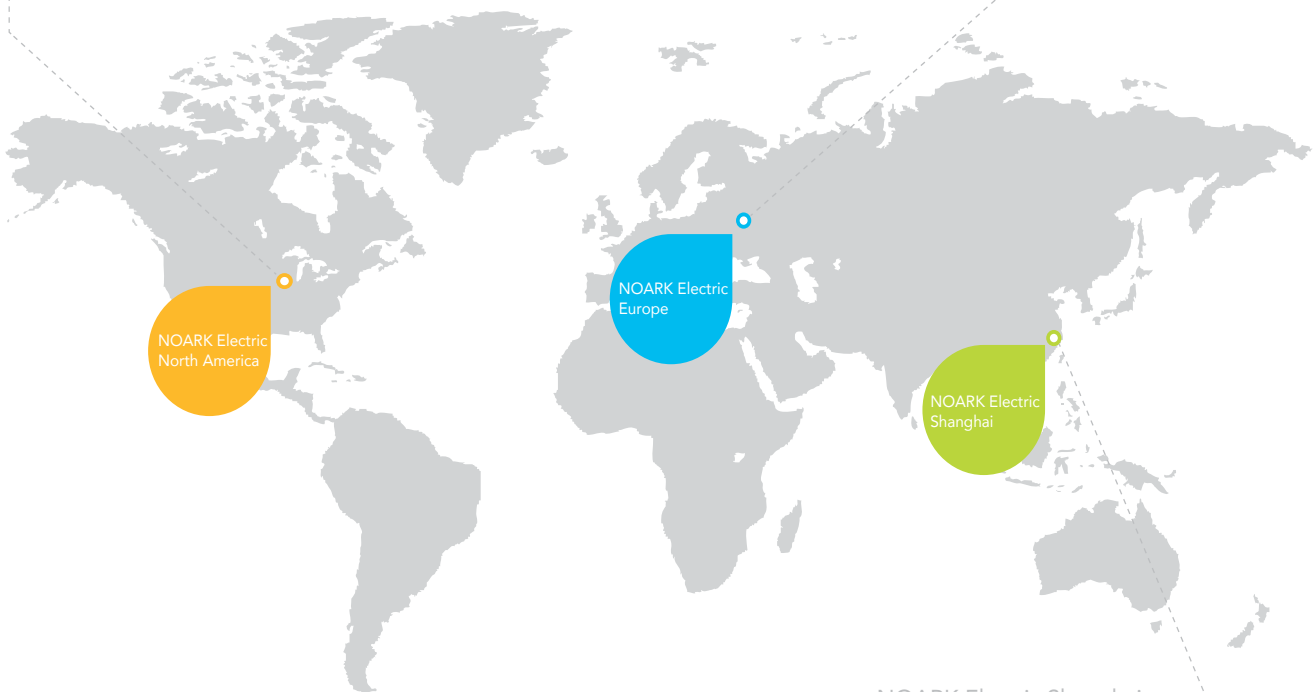
NOARK Electric

International Locations in North America, Europe and China



NOARK Electric North America

NOARK Electric Europe



NOARK Electric Shanghai



Molded Case Circuit Breakers and Switches

M1-M4 Product Lineup



Auxiliary/Alarm Contact (AX/AL)
(C41/42)



Handle Lock (KLK)
(C39)



Mechanical Interlock (MIT)
(C38)



Motor Operator (MOD)
(C40)



Under-Voltage Trip (UVT)
(C42)



Rotary Handle (RHD)
Close Coupled (C38)



Shunt Trip (SHT)
(C41)



Molded Case Circuit Breaker (A5-25)
Molded Case Switch (B27-38)



Extended Rotary Handle (ERH)
Through the Door (C39)



Plug-In Base (PIA)
(C43)



Terminal Lugs (LTC)
(C43)



Rear Connection Kit (RCP)
(C44)



Draw-Out Base (DOB)
Breaker/Switch sold separately
(C44)

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MOLDED CASE CIRCUIT BREAKERS



M1-M4

Features

Series M Molded Case Circuit Breakers, 15 – 600A

NOARK Electric offers a complete range of Molded Case Circuit Breakers in four frame sizes: 100AF, 225AF, 400AF and 600AF. Each frame offers a choice of interrupting ratings at voltages ranging from 240VAC to 690VAC and 250VDC to 600VDC.

The M series is truly a global product; conforming to international standards that include UL 489/CSA C22.2 No 5.1 and IEC 60947-2.



- Field installable accessories
 - ✓ Auxiliary and Alarm Contacts
 - ✓ Shunt and Undervoltage Trips
 - ✓ Interlocks
 - ✓ Handles
 - ✓ Motor Operator
- Variety of connection and mounting configurations
 - ✓ Lug-In/Lug-Out
 - ✓ Rear Connection
 - ✓ Plug-In Base
 - ✓ Draw-Out Base
- Fixed trip units
 - ✓ Adjustable current
 - ✓ Fixed and adjustable magnetic
- NOARK Electric's patented arc extinguishing design
- Current limiting

Molded Case Circuit Breakers

M1-M4 National and International Standards

Main and Branch Circuit Protection

UL 489 / CSA C22.2 No.5 / IEC 60947-2

<p>Standard for molded case circuit breakers (MCCB) for feeder and branch circuit protection.</p>	 
<ul style="list-style-type: none"> • Canadian Standards Association (CSA) C22.2 No. 5-02 standard for branch circuit protection. • UL 489 standard for connection terminals which allows the user to apply field wiring directly to the breaker. • IEC 60947-2 standard for industrial applications of circuit protection. 	

RoHS

<ul style="list-style-type: none"> • These devices are RoHS compliant. 	
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Breakers have UL 489 rated connectors which means the breakers can be wired directly to the load without the need for terminal strips.

Molded Case Circuit Breakers

M1-M4 Product Selection Guide

Labeling

M1S

Circuit Breaker
Interruptor Automático
Disjoncteur
480-600V/347V~50/60Hz
UL489/CSA C22.2
Interrupting Rating
Valor de Interrupción
Valeur d'interruption
240V ~ 50kA
480V ~ 22kA
600V ~ 10kA
280V ~ 25kA(2P)
500V ~ 20kA(2P)
600V ~ 25kA(3P)
600V ~ 20kA(3P)

IEC60847-2
U=800V Uimp=8kV
Ics=100%Icu
220/240V ~ 50kA
380/415V ~ 50kA
660/690V ~ 5kA
500V ~ 25kA(3P)

M4N

Circuit Breaker
Interruptor Automático
Disjoncteur
600V ~ 50/60Hz
UL489/CSA C22.2
Interrupting Rating
Valor de Interrupción
Valeur d'interruption
240V ~ 100kA
480V ~ 65kA
600V ~ 18kA
500V ~ 50kA(2P)
600V ~ 50kA(3P)

IEC60847-2
U=800V Uimp=8kV
Ics=100%Icu
220/240V ~ 100kA
380/415V ~ 100kA
660/690V ~ 15kA
500V ~ 50kA(3P)

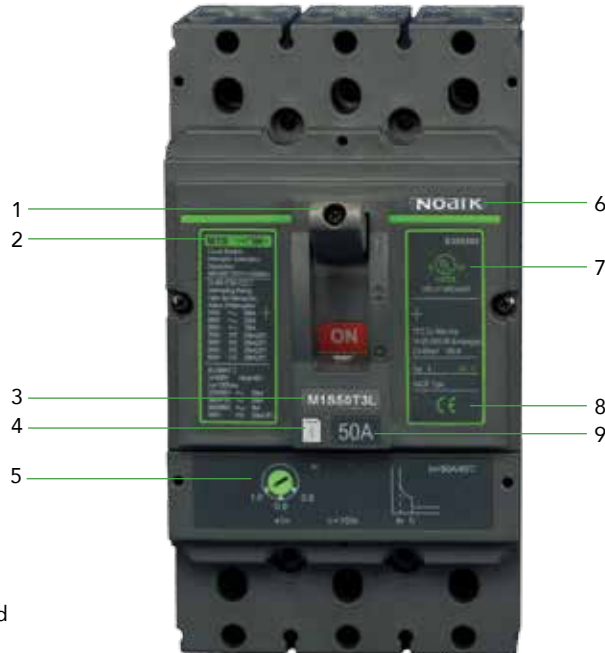
E355392

CIRCUIT BREAKER

75°C Cu Wire Only
14-30 AWG 89 lb-in/pulg/po
2.5-95mm² 10N.m

Cat. A 40°C

HACR Type



- 1 Handle
- 2 Product Series
- 3 Product Selection
- 4 Test Button
- 5 Adjustable Current Setting (M1) or Adjustable Current and Magnetic Setting (M2-M4)

- 6 Brand
- 7 UL Listed Mark
- 8 CE Mark
- 9 AC Coil Voltage

Product Selection Guide

M	1	S	100	T	3	L
NOARK Ex9M Series	Frame Size	Interrupting Rating	Amperage	Trip Unit	Poles	Terminal
	1: 100A	S: M1/M2: 50 kA @ 240 Vac M3/M4: 65 kA @ 240 Vac	M1: 15~100A	T: Thermal-Magnetic	2: 2 Poles	Blank: Bus Bar Connection
	2: 225A	N: 100 kA @ 240 Vac	M2: 100~225A		3: 3 Poles	L: Line/Load Box Lugs
	3: 400A		M3: 225~400A			P: Plug-In
	4: 600A		M4: 400~600A			D: Draw-Out
						R: Rear Connection

Molded Case Circuit Breakers

M1-M4 Specifications

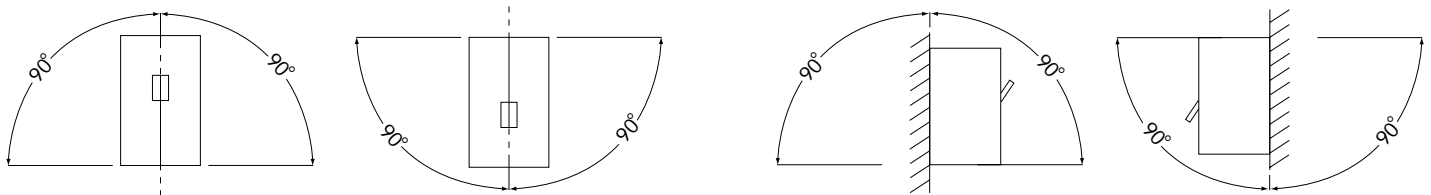
		M1		M2		M3		M4	
Maximum Rated Current (Amperes)		15~100		100~225		225~400		400~600	
Number of Poles		2, 3		2, 3		2, 3		2, 3	
Breaker Type		S	N	S	N	S	N	S	N
Interrupting Capacity (kA rms) Vac 50/60 Hz									
Circuit Breaker Ratings UL 489 CSA C22.2 (kA rms) Vac 50/60 Hz	240 Vac	50	100	50	100	65	100	65	100
	480 Vac	22	35	25	42	35	50	42	65
	600Y/347 Vac	10		10		10	14	14	18
	600 Vac	-		-		-		-	
	250 Vdc 2 Poles 500 Vdc 3 Poles	25	50	-		-		-	
Circuit Breaker Ratings IEC 60947-2	220 / 240 Vac	50	100	50	100	65	100	65	100
	380 / 415 Vac								
Ultimate Breaking Capacity (Icu = 100% Ics) (kA rms)	660 / 690 Vac	5	8	6	10	10	15	12	15
	500 Vdc 3 Poles	25	50	25	50	-		-	
	500 Vdc 2 Poles	-		-		35	50	50	
Current Rating @ 40° C		15~100A		100~225A		225~400A		400~600A	
Thermal-Magnetic Trip Units (Fixed)	A = Adjustable T = Thermal F = Fixed M = Magnetic	AT / FM		AT / AM		AT / AM		AT / AM	
Accessories									
Shunt Trip		■		■		■		■	
Under-Voltage Trip		■		■		■		■	
Auxiliary Switch		■		■		■		■	
Alarm Switch		■		■		■		■	
Motor Operator		■		■		■		■	
Handle Operator		■		■		■		■	
Mechanical Interlock		■		■		■		■	
Handle Padlock Attachment		■		■		■		■	
Terminal Kits		■		■		■		■	
Terminal Cover		■		■		■		■	
Connection									
Bus Bar Connection		■		■		■		■	
Lug-Lug Connection		■		■		■		■	
Plug-In Style		■		■		■		-	
Rear Connection		■		■		■		■	
Draw-Out Style		-		-		■		■	

Molded Case Circuit Breakers

M1-M4 Specifications

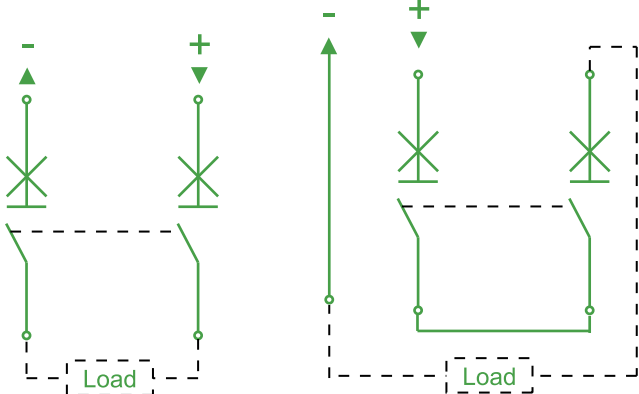
		M1	M2	M3	M4
Insulation Voltage (Vi)		800 V	800 V	800 V	800 V
Impulse Withstand Voltage (Vimp)		8 kV	8 kV	8 kV	8kV
Operational Voltage (Ve)	IEC	690 V	690 V	690 V	690 V
	UL	480~600Y/347 V	480~600Y/347 V	600 V	600 V
IEC Ics	(%Icu)	100%	100%	100%	100%
Utilization Category		A	A	A	A
Mechanical Operating Cycles		10000	10000	8000	8000
Electrical Operating Cycles		6000	6000	5000	5000
Weight of Unit (kg)	2 Poles	1.44	1.7	4.07	9.5
	3 Poles	1.67	2.0	6.1	11.5
Cable Connection	Wire	75°C Cu Wire Only 14-3/0 AWG 2.5-95 mm ²	75°C Cu Wire Only 8 AWG - 350 kcmil 10-185 mm ²	Single Hole	75°C Cu Wire Only 3/0 AWG - 500 kcmil 95-240 mm ²
				Double Hole	75°C Cu Wire Only 3 AWG - 250 kcmil 35-120 mm ²
Lugs		89 lb-in/plug/po 10 Nm	230 lb-in/plug/po 26 Nm	310 lb-in/plug/po 35 Nm	310 lb-in/plug/po 35 Nm

Approved Mounting Positions (Reverse Feed Allowed)

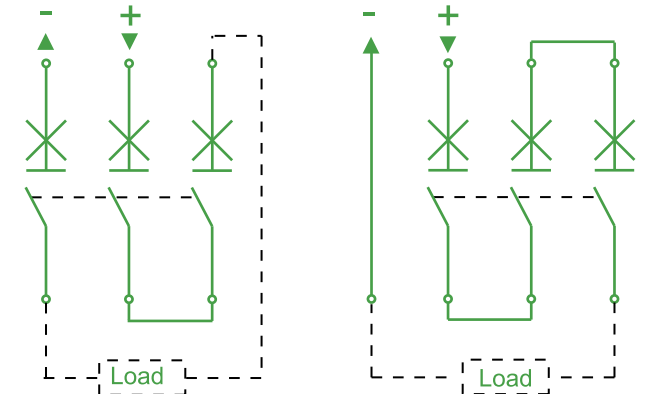


Interrupting Polarity for DC Application

2 Pole



3 Pole

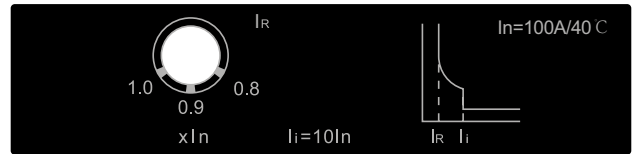


Molded Case Circuit Breakers

M1 Trip Unit

Adjustable Thermal, Fixed Magnetic

- Adjustable Thermal:
15~100A rated current
Adjustable: 0.8~1 x I_n
- Fixed Magnetic:
150~1000A tripping current



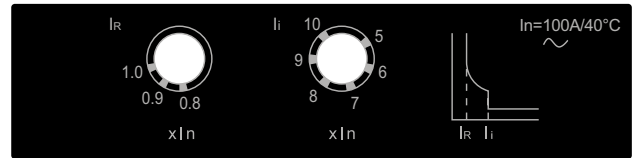
		M1													
		I _r	15A	20A	25A	30A	35A	40A	45A	50A	60A	70A	80A	90A	100A
Adjustable Thermal Overload Protection	0.8 x I _n		12	16	20	24	28	32	36	40	48	56	64	72	80
	0.9 x I _n		13.5	18	22.5	27	31.5	36	40.5	45	54	63	72	81	90
	1.0 x I _n		15	20	25	30	35	40	45	50	60	70	80	90	100
Fixed Magnetic Short Circuit Protection	I _r	I _m	15A	20A	25A	30A	35A	40A	45A	50A	60A	70A	80A	90A	100A
	0.8 x I _n	Fixed 10 x I _n	150	200	250	300	350	400	450	500	600	700	800	720	800
	0.9 x I _n		576	640											
1.0 x I _n	460.8		512												

Molded Case Circuit Breakers

M2-M4 Trip Unit

Adjustable Thermal, Adjustable Magnetic

- Adjustable Thermal:
100~600A rated current
Adjustable: 0.8~1 x I_n
- Adjustable Magnetic:
1000~6000A tripping current
Adjustable: 5~10 x I_n
- Applicable to M2/225AF, M3/400AF, M4/600AF



			M2							
Adjustable Thermal Overload Protection	I _r		100	125	150	175	200	225		
	0.8 x I _n		80	100	120	140	160	180		
	0.9 x I _n		90	112.5	135	157.5	180	202.5		
	1.0 x I _n		100	125	150	175	200	225		
Adjustable Magnetic Short Circuit Protection	I _r	I _m	100	125	150	175	200	225		
		5 x I _n	500	625	750	875	1000	1125		
		6 x I _n	600	750	900	1050	1200	1350		
		7 x I _n	700	875	1050	1225	1400	1575		
		8 x I _n	800	1000	1200	1400	1600	1800		
		9 x I _n	900	1125	1350	1575	1800	2025		
		10 x I _n	1000	1250	1500	1750	2000	2250		
			M3					M4		
Adjustable Thermal Overload Protection	I _r		225	250	300	350	400	400	500	600
	0.8 x I _n		180	200	240	280	320	320	400	480
	0.9 x I _n		202.5	225	270	315	360	360	450	540
	1.0 x I _n		225	250	300	350	400	400	500	600
Adjustable Magnetic Short Circuit Protection	I _r	I _m	225	250	300	350	400			
		5 x I _n	1125	1250	1500	1750	2000	2000	2500	3000
		6 x I _n	1350	1500	1800	2100	2400	2400	3000	3600
		7 x I _n	1575	1750	2100	2450	2800	2800	3500	4200
		8 x I _n	1800	2000	2400	2800	3200	3200	4000	4800
		9 x I _n	2025	2250	2700	3150	3600	3600	4500	5400
		10 x I _n	2250	2500	3000	3500	4000	4000	5000	6000

Molded Case Circuit Breakers

M1 Bus Bar Connection

- Bus Bar Connction MCCB not sold with Bus Bar* or Terminal Lugs



Rated Amperage	2 Poles		3 Poles	
	Adjustable Thermal • Fixed Magnetic		Adjustable Thermal • Fixed Magnetic	
	Product	Part Number	Product	Part Number
	Bus Bar Connection		Bus Bar Connection	
M1S	15	M1S15T2 1100105	M1S15T3 1100001	
	20	M1S20T2 1100106	M1S20T3 1100002	
	25	M1S25T2 1100107	M1S25T3 1100003	
	30	M1S30T2 1100108	M1S30T3 1100004	
	35	M1S35T2 1100109	M1S35T3 1100005	
	40	M1S40T2 1100110	M1S40T3 1100006	
	45	M1S45T2 1100111	M1S45T3 1100007	
	50	M1S50T2 1100112	M1S50T3 1100008	
	60	M1S60T2 1100113	M1S60T3 1100009	
	70	M1S70T2 1100114	M1S70T3 1100010	
	80	M1S80T2 1100115	M1S80T3 1100011	
90	M1S90T2 1100116	M1S90T3 1100012		
100	M1S100T2 1100117	M1S100T3 1100013		
M1N	15	M1N15T2 1100118	M1N15T3 1100014	
	20	M1N20T2 1100119	M1N20T3 1100015	
	25	M1N25T2 1100120	M1N25T3 1100016	
	30	M1N30T2 1100121	M1N30T3 1100017	
	35	M1N35T2 1100122	M1N35T3 1100018	
	40	M1N40T2 1100123	M1N40T3 1100019	
	45	M1N45T2 1100124	M1N45T3 1100020	
	50	M1N50T2 1100125	M1N50T3 1100021	
	60	M1N60T2 1100126	M1N60T3 1100022	
	70	M1N70T2 1100127	M1N70T3 1100023	
	80	M1N80T2 1100128	M1N80T3 1100024	
90	M1N90T2 1100129	M1N90T3 1100025		
100	M1N100T2 1100130	M1N100T3 1100026		

For accessories, see pages C37-50.

*NOTE: Bus Bar Connection not available through NOARK Electric.

Molded Case Circuit Breakers

M1 Lug-In/Lug-Out Connection

- Lug-Lug Connection MCCB sold with Terminal Lugs



Rated Amperage	2 Poles		3 Poles	
	Adjustable Thermal • Fixed Magnetic		Adjustable Thermal • Fixed Magnetic	
	Product	Part Number	Product	Part Number
	Lug-In/Lug-Out Connection		Lug-In/Lug-Out Connection	
M1S	15	M1S15T2L 1100131	M1S15T3L 1100027	
	20	M1S20T2L 1100132	M1S20T3L 1100028	
	25	M1S25T2L 1100133	M1S25T3L 1100029	
	30	M1S30T2L 1100134	M1S30T3L 1100030	
	35	M1S35T2L 1100135	M1S35T3L 1100031	
	40	M1S40T2L 1100136	M1S40T3L 1100032	
	45	M1S45T2L 1100137	M1S45T3L 1100033	
	50	M1S50T2L 1100138	M1S50T3L 1100034	
	60	M1S60T2L 1100139	M1S60T3L 1100035	
	70	M1S70T2L 1100140	M1S70T3L 1100036	
	80	M1S80T2L 1100141	M1S80T3L 1100037	
90	M1S90T2L 1100142	M1S90T3L 1100038		
100	M1S100T2L 1100143	M1S100T3L 1100039		
M1N	15	M1N15T2L 1100144	M1N15T3L 1100040	
	20	M1N20T2L 1100145	M1N20T3L 1100041	
	25	M1N25T2L 1100146	M1N25T3L 1100042	
	30	M1N30T2L 1100147	M1N30T3L 1100043	
	35	M1N35T2L 1100148	M1N35T3L 1100044	
	40	M1N40T2L 1100149	M1N40T3L 1100045	
	45	M1N45T2L 1100150	M1N45T3L 1100046	
	50	M1N50T2L 1100151	M1N50T3L 1100047	
	60	M1N60T2L 1100152	M1N60T3L 1100048	
	70	M1N70T2L 1100153	M1N70T3L 1100049	
	80	M1N80T2L 1100154	M1N80T3L 1100050	
90	M1N90T2L 1100155	M1N90T3L 1100051		
100	M1N100T2L 1100156	M1N100T3L 1100052		

For accessories, see pages C37-50.

Molded Case Circuit Breakers

M1 Plug-In Style

- Plug-In Style MCCB sold with Terminal Lugs and Plug-In Base



Rated Amperage	2 Poles		3 Poles	
	Adjustable Thermal • Fixed Magnetic		Adjustable Thermal • Fixed Magnetic	
	Product	Part Number	Product	Part Number
	Plug-In Style		Plug-In Style	
M1S	15	M1S15T2P 1100157	M1S15T3P 1100053	
	20	M1S20T2P 1100158	M1S20T3P 1100054	
	25	M1S25T2P 1100159	M1S25T3P 1100055	
	30	M1S30T2P 1100160	M1S30T3P 1100056	
	35	M1S35T2P 1100161	M1S35T3P 1100057	
	40	M1S40T2P 1100162	M1S40T3P 1100058	
	45	M1S45T2P 1100163	M1S45T3P 1100059	
	50	M1S50T2P 1100164	M1S50T3P 1100060	
	60	M1S60T2P 1100165	M1S60T3P 1100061	
	70	M1S70T2P 1100166	M1S70T3P 1100062	
	80	M1S80T2P 1100167	M1S80T3P 1100063	
90	M1S90T2P 1100168	M1S90T3P 1100064		
100	M1S100T2P 1100169	M1S100T3P 1100065		
M1N	15	M1N15T2P 1100170	M1N15T3P 1100066	
	20	M1N20T2P 1100171	M1N20T3P 1100067	
	25	M1N25T2P 1100172	M1N25T3P 1100068	
	30	M1N30T2P 1100173	M1N30T3P 1100069	
	35	M1N35T2P 1100174	M1N35T3P 1100070	
	40	M1N40T2P 1100175	M1N40T3P 1100071	
	45	M1N45T2P 1100176	M1N45T3P 1100072	
	50	M1N50T2P 1100177	M1N50T3P 1100073	
	60	M1N60T2P 1100178	M1N60T3P 1100074	
	70	M1N70T2P 1100179	M1N70T3P 1100075	
	80	M1N80T2P 1100180	M1N80T3P 1100076	
90	M1N90T2P 1100181	M1N90T3P 1100077		
100	M1N100T2P 1100182	M1N100T3P 1100078		

For accessories, see pages C37-50.

Molded Case Circuit Breakers

M1 Rear Connection

- Rear Connection MCCB sold with Terminal Lugs and Rear Connection Kit



Rated Amperage	2 Poles		3 Poles		
	Adjustable Thermal • Fixed Magnetic		Adjustable Thermal • Fixed Magnetic		
	Product	Part Number	Product	Part Number	
	Rear Connection		Rear Connection		
M1S	15	M1S15T2R	1100183	M1S15T3R	1100079
	20	M1S20T2R	1100184	M1S20T3R	1100080
	25	M1S25T2R	1100185	M1S25T3R	1100081
	30	M1S30T2R	1100186	M1S30T3R	1100082
	35	M1S35T2R	1100187	M1S35T3R	1100083
	40	M1S40T2R	1100188	M1S40T3R	1100084
	45	M1S45T2R	1100189	M1S45T3R	1100085
	50	M1S50T2R	1100190	M1S50T3R	1100086
	60	M1S60T2R	1100191	M1S60T3R	1100087
	70	M1S70T2R	1100192	M1S70T3R	1100088
	80	M1S80T2R	1100193	M1S80T3R	1100089
90	M1S90T2R	1100194	M1S90T3R	1100090	
100	M1S100T2R	1100195	M1S100T3R	1100091	
M1N	15	M1N15T2R	1100196	M1N15T3R	1100092
	20	M1N20T2R	1100197	M1N20T3R	1100093
	25	M1N25T2R	1100198	M1N25T3R	1100094
	30	M1N30T2R	1100199	M1N30T3R	1100095
	35	M1N35T2R	1100200	M1N35T3R	1100096
	40	M1N40T2R	1100201	M1N40T3R	1100097
	45	M1N45T2R	1100202	M1N45T3R	1100098
	50	M1N50T2R	1100203	M1N50T3R	1100099
	60	M1N60T2R	1100204	M1N60T3R	1100100
	70	M1N70T2R	1100205	M1N70T3R	1100101
	80	M1N80T2R	1100206	M1N80T3R	1100102
90	M1N90T2R	1100207	M1N90T3R	1100103	
100	M1N100T2R	1100208	M1N100T3R	1100104	

For accessories, see pages C37-50.

Molded Case Circuit Breakers

M2 Bus Bar Connection and Lug-In/Lug-Out Connection

- Bus Bar Connection MCCB not sold with Bus Bar* or Terminal Lugs
- Lug-Lug Connection MCCB sold with Terminal Lugs



Rated Amperage	2 Poles		3 Poles		
	Adjustable Thermal • Adjustable Magnetic		Adjustable Thermal • Adjustable Magnetic		
	Product	Part Number	Product	Part Number	
	Bus Bar Connection		Bus Bar Connection		
M2S	100	M2S100T2	1100257	M2S100T3	1100209
	125	M2S125T2	1100258	M2S125T3	1100210
	150	M2S150T2	1100259	M2S150T3	1100211
	175	M2S175T2	1100260	M2S175T3	1100212
	200	M2S200T2	1100261	M2S200T3	1100213
	225	M2S225T2	1100262	M2S225T3	1100214
M2N	100	M2N100T2	1100263	M2N100T3	1100215
	125	M2N125T2	1100264	M2N125T3	1100216
	150	M2N150T2	1100265	M2N150T3	1100217
	175	M2N175T2	1100266	M2N175T3	1100218
	200	M2N200T2	1100267	M2N200T3	1100219
	225	M2N225T2	1100268	M2N225T3	1100220
	Lug-In/Lug-Out Connection		Lug-In/Lug-Out Connection		
M2S	100	M2S100T2L	1100269	M2S100T3L	1100221
	125	M2S125T2L	1100270	M2S125T3L	1100222
	150	M2S150T2L	1100271	M2S150T3L	1100223
	175	M2S175T2L	1100272	M2S175T3L	1100224
	200	M2S200T2L	1100273	M2S200T3L	1100225
	225	M2S225T2L	1100274	M2S225T3L	1100226
M2N	100	M2N100T2L	1100275	M2N100T3L	1100227
	125	M2N125T2L	1100276	M2N125T3L	1100228
	150	M2N150T2L	1100277	M2N150T3L	1100229
	175	M2N175T2L	1100278	M2N175T3L	1100230
	200	M2N200T2L	1100279	M2N200T3L	1100231
	225	M2N225T2L	1100280	M2N225T3L	1100232

For accessories, see pages C37-50.

Molded Case Circuit Breakers

M2 Plug-In Style and Rear Connection

- Plug-In Style MCCB sold with Terminal Lugs and Plug-In Base
- Rear Connection MCCB sold with Terminal Lugs and Rear Connection Kit



Rated Amperage	2 Poles		3 Poles		
	Adjustable Thermal • Adjustable Magnetic		Adjustable Thermal • Adjustable Magnetic		
	Product	Part Number	Product	Part Number	
	Plug-In Style		Plug-In Style		
M2S	100	M2S100T2P	1100281	M2S100T3P	1100233
	125	M2S125T2P	1100282	M2S125T3P	1100234
	150	M2S150T2P	1100283	M2S150T3P	1100235
	175	M2S175T2P	1100284	M2S175T3P	1100236
	200	M2S200T2P	1100285	M2S200T3P	1100237
	225	M2S225T2P	1100286	M2S225T3P	1100238
M2N	100	M2N100T2P	1100287	M2N100T3P	1100239
	125	M2N125T2P	1100288	M2N125T3P	1100240
	150	M2N150T2P	1100289	M2N150T3P	1100241
	175	M2N175T2P	1100290	M2N175T3P	1100242
	200	M2N200T2P	1100291	M2N200T3P	1100243
	225	M2N225T2P	1100292	M2N225T3P	1100244
	Rear Connection		Rear Connection		
M2S	100	M2S100T2R	1100293	M2S100T3R	1100245
	125	M2S125T2R	1100294	M2S125T3R	1100246
	150	M2S150T2R	1100295	M2S150T3R	1100247
	175	M2S175T2R	1100296	M2S175T3R	1100248
	200	M2S200T2R	1100297	M2S200T3R	1100249
	225	M2S225T2R	1100298	M2S225T3R	1100250
M2N	100	M2N100T2R	1100299	M2N100T3R	1100251
	125	M2N125T2R	1100300	M2N125T3R	1100252
	150	M2N150T2R	1100301	M2N150T3R	1100253
	175	M2N175T2R	1100302	M2N175T3R	1100254
	200	M2N200T2R	1100303	M2N200T3R	1100255
	225	M2N225T2R	1100304	M2N225T3R	1100256

For accessories, see pages C37-50.

NOTE: Bus Bar Connection not available through NOARK Electric.

Molded Case Circuit Breakers

M3 Bus Bar Connection and Lug-In/Lug-Out Connection

- Bus Bar Connection MCCB not sold with Bus Bar* or Terminal Lugs
- Lug-Lug Connection MCCB sold with Terminal Lugs



Rated Amperage	2 Poles		3 Poles		
	Adjustable Thermal • Adjustable Magnetic		Adjustable Thermal • Adjustable Magnetic		
	Product	Part Number	Product	Part Number	
	Bus Bar Connection		Bus Bar Connection		
M3S	225	M3S225T2	1100305	M3S225T3	1100355
	250	M3S250T2	1100306	M3S250T3	1100356
	300	M3S300T2	1100307	M3S300T3	1100357
	350	M3S350T2	1100308	M3S350T3	1100358
	400	M3S400T2	1100309	M3S400T3	1100359
M3N	225	M3N225T2	1100310	M3N225T3	1100360
	250	M3N250T2	1100311	M3N250T3	1100361
	300	M3N300T2	1100312	M3N300T3	1100362
	350	M3N350T2	1100313	M3N350T3	1100363
	400	M3N400T2	1100314	M3N400T3	1100364
	Lug-In/Lug-Out Connection		Lug-In/Lug-Out Connection		
M3S	225	M3S225T2L	1100315	M3S225T3L	1100365
	250	M3S250T2L	1100316	M3S250T3L	1100366
	300	M3S300T2L	1100317	M3S300T3L	1100367
	350	M3S350T2L	1100318	M3S350T3L	1100368
	400	M3S400T2L	1100319	M3S400T3L	1100369
M3N	225	M3N225T2L	1100320	M3N225T3L	1100370
	250	M3N250T2L	1100321	M3N250T3L	1100371
	300	M3N300T2L	1100322	M3N300T3L	1100372
	350	M3N350T2L	1100323	M3N350T3L	1100373
	400	M3N400T2L	1100324	M3N400T3L	1100374

For accessories, see pages C37-50.

NOTE: Bus Bar Connection not available through NOARK Electric.

Molded Case Circuit Breakers

M3 Plug-In Style, Rear Connection and Draw-Out Style

- Plug-In Style MCCB sold with Terminal Lugs and Plug-In Base
- Rear Connection MCCB sold with Terminal Lugs and Rear Connection Kit
- Draw-Out Style MCCB sold with Terminal Lugs and Draw-Out Base



Rated Amperage	2 Poles		3 Poles	
	Adjustable Thermal • Adjustable Magnetic		Adjustable Thermal • Adjustable Magnetic	
	Product	Part Number	Product	Part Number
	Plug-In Style		Plug-In Style	
M4S	225	M3S225T2P 1100325	M3S225T3P 1100375	
	250	M3S250T2P 1100326	M3S250T3P 1100376	
	300	M3S300T2P 1100327	M3S300T3P 1100377	
	350	M3S350T2P 1100328	M3S350T3P 1100378	
	400	M3S400T2P 1100329	M3S400T3P 1100379	
M3N	225	M3N225T2P 1100330	M3N225T3P 1100380	
	250	M3N250T2P 1100331	M3N250T3P 1100381	
	300	M3N300T2P 1100332	M3N300T3P 1100382	
	350	M3N350T2P 1100333	M3N350T3P 1100383	
	400	M3N400T2P 1100334	M3N400T3P 1100384	
	Rear Connection		Rear Connection	
M3S	225	M3S225T2R 1100335	M3S225T3R 1100385	
	250	M3S250T2R 1100336	M3S250T3R 1100386	
	300	M3S300T2R 1100337	M3S300T3R 1100387	
	350	M3S350T2R 1100338	M3S350T3R 1100388	
	400	M3S400T2R 1100339	M3S400T3R 1100389	
M3N	225	M3N225T2R 1100340	M3N225T3R 1100390	
	250	M3N250T2R 1100341	M3N250T3R 1100391	
	300	M3N300T2R 1100342	M3N300T3R 1100392	
	350	M3N350T2R 1100343	M3N350T3R 1100393	
	400	M3N400T2R 1100344	M3N400T3R 1100394	
	Draw-Out Style		Draw-Out Type	
M3S	225	M3S225T2D 1100345	M3S225T3D 1100395	
	250	M3S250T2D 1100346	M3S250T3D 1100396	
	300	M3S300T2D 1100347	M3S300T3D 1100397	
	350	M3S350T2D 1100348	M3S350T3D 1100398	
	400	M3S400T2D 1100349	M3S400T3D 1100399	
M3N	225	M3N225T2D 1100350	M3N225T3D 1100400	
	250	M3N250T2D 1100351	M3N250T3D 1100401	
	300	M3N300T2D 1100352	M3N300T3D 1100402	
	350	M3N350T2D 1100353	M3N350T3D 1100403	
	400	M3N400T2D 1100354	M3N400T3D 1100404	

For accessories, see pages C37-50.

Molded Case Circuit Breakers

M4 Bus Bar Connection and Lug-In/Lug-Out Connection

- Bus Bar Connection MCCB not sold with Bus Bar* or Terminal Lugs
- Lug-Lug Connection MCCB sold with Terminal Lugs



Rated Amperage	2 Poles		3 Poles	
	Adjustable Thermal • Adjustable Magnetic		Adjustable Thermal • Adjustable Magnetic	
	Product	Part Number	Product	Part Number
	Bus Bar Connection		Bus Bar Connection	
M4S	400	M4S400T2 1100429	M4S400T3 1100405	
	500	M4S500T2 1100430	M4S500T3 1100406	
	600	M4S600T2 1100431	M4S600T3 1100407	
M4N	400	M4N400T2 1100432	M4N400T3 1100408	
	500	M4N500T2 1100433	M4N500T3 1100409	
	600	M4N600T2 1100434	M4N600T3 1100410	
	Lug-In/Lug-Out Connection		Lug-In/Lug-Out Connection	
M4S	400	M4S400T2L 1100435	M4S400T3L 1100411	
	500	M4S500T2L 1100436	M4S500T3L 1100412	
	600	M4S600T2L 1100437	M4S600T3L 1100413	
M4N	400	M4N400T2L 1100438	M4N400T3L 1100414	
	500	M4N500T2L 1100439	M4N500T3L 1100415	
	600	M4N600T2L 1100440	M4N600T3L 1100416	

For accessories, see pages C37-50.

NOTE: Bus Bar Connection not available through NOARK Electric.

Molded Case Circuit Breakers

M4 Rear Connection and Draw-Out Style

- Rear Connection MCCB sold with Terminal Lugs and Rear Connection Kit
- Draw-Out Style MCCB sold with Terminal Lugs and Draw-Out Base



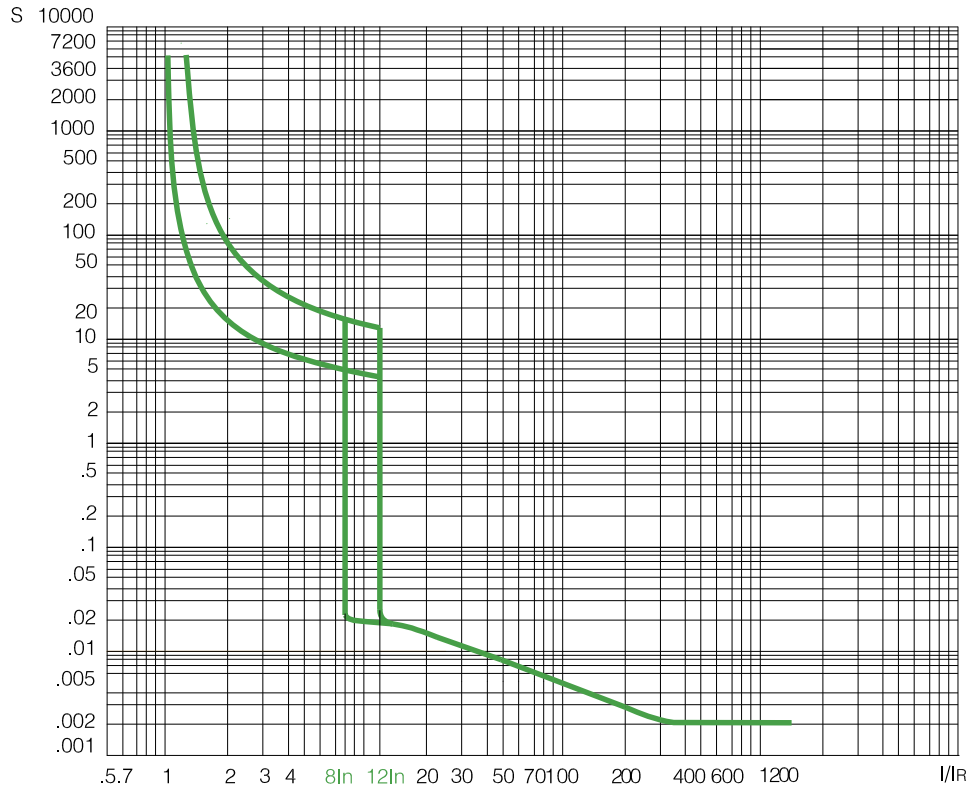
Rated Amperage	2 Poles		3 Poles	
	Adjustable Thermal • Adjustable Magnetic		Adjustable Thermal • Adjustable Magnetic	
	Product	Part Number	Product	Part Number
	Rear Connection		Rear Connection	
M4S	400	M4S400T2R 1100441	M4S400T3R 1100417	
	500	M4S500T2R 1100442	M4S500T3R 1100418	
	600	M4S600T2R 1100443	M4S600T3R 1100419	
M4N	400	M4N400T2R 1100444	M4N400T3R 1100420	
	500	M4N500T2R 1100445	M4N500T3R 1100421	
	600	M4N600T2R 1100446	M4N600T3R 1100422	
	Draw-Out Style		Draw-Out Style	
M4S	400	M4S400T2D 1100447	M4S400T3D 1100423	
	500	M4S500T2D 1100448	M4S500T3D 1100424	
	600	M4S600T2D 1100449	M4S600T3D 1100425	
M4N	400	M4N400T2D 1100450	M4N400T3D 1100426	
	500	M4N500T2D 1100451	M4N500T3D 1100427	
	600	M4N600T2D 1100452	M4N600T3D 1100428	

For accessories, see pages C37-50.

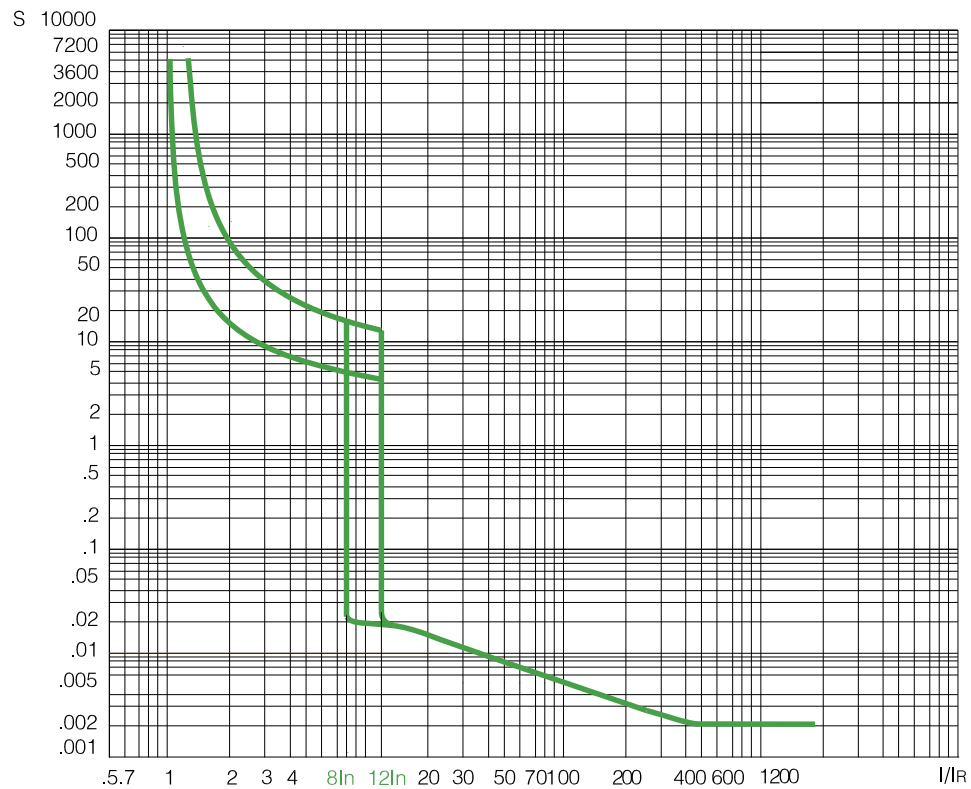
Molded Case Circuit Breakers

M1 Trip Curves

M1
(In=15/20 A)



M1
(In=25/30/35 A)

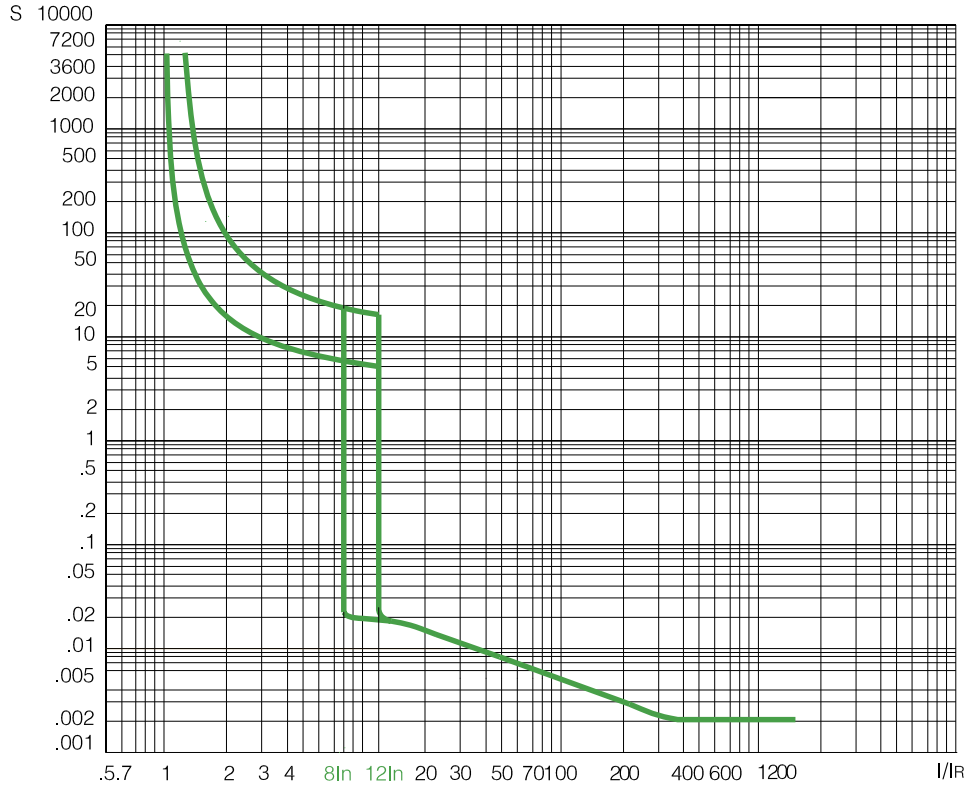


Molded Case Circuit Breakers

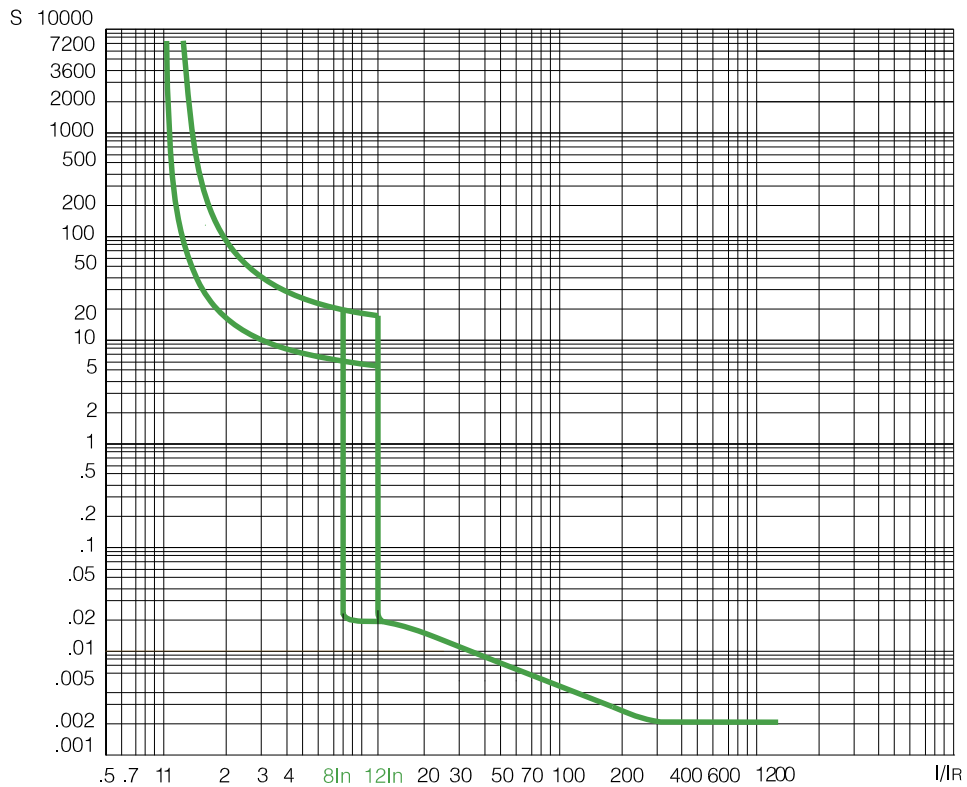
M1 Trip Curves

A

M1
(In=40/45/50/60/70 A)



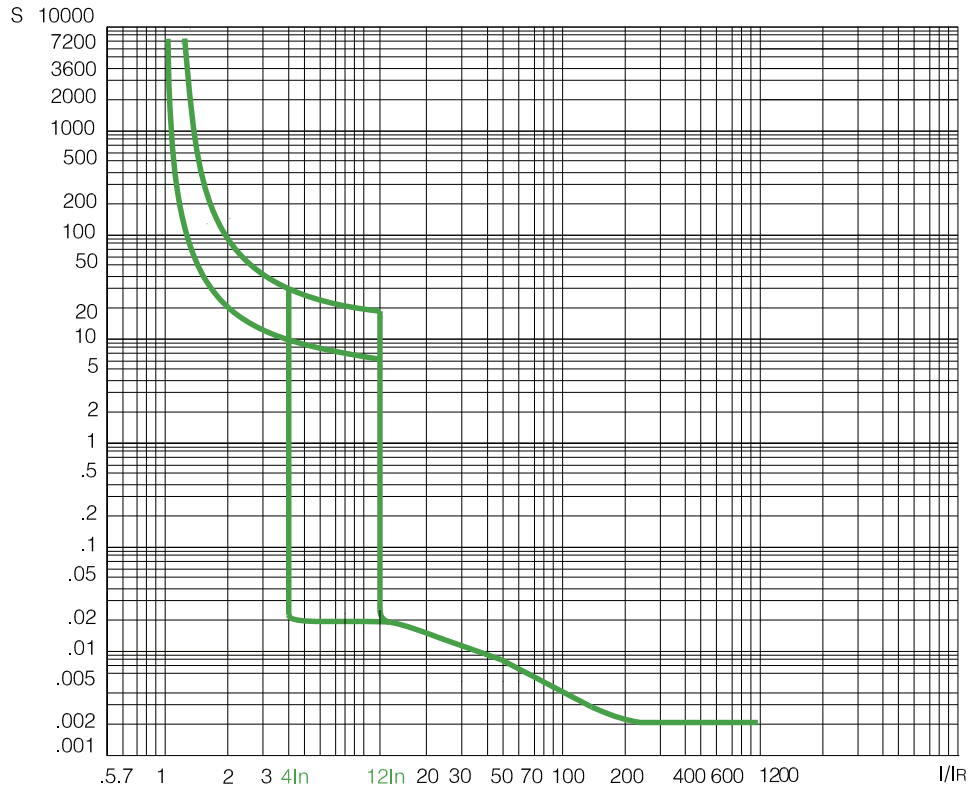
M1
(In=80/90/100 A)



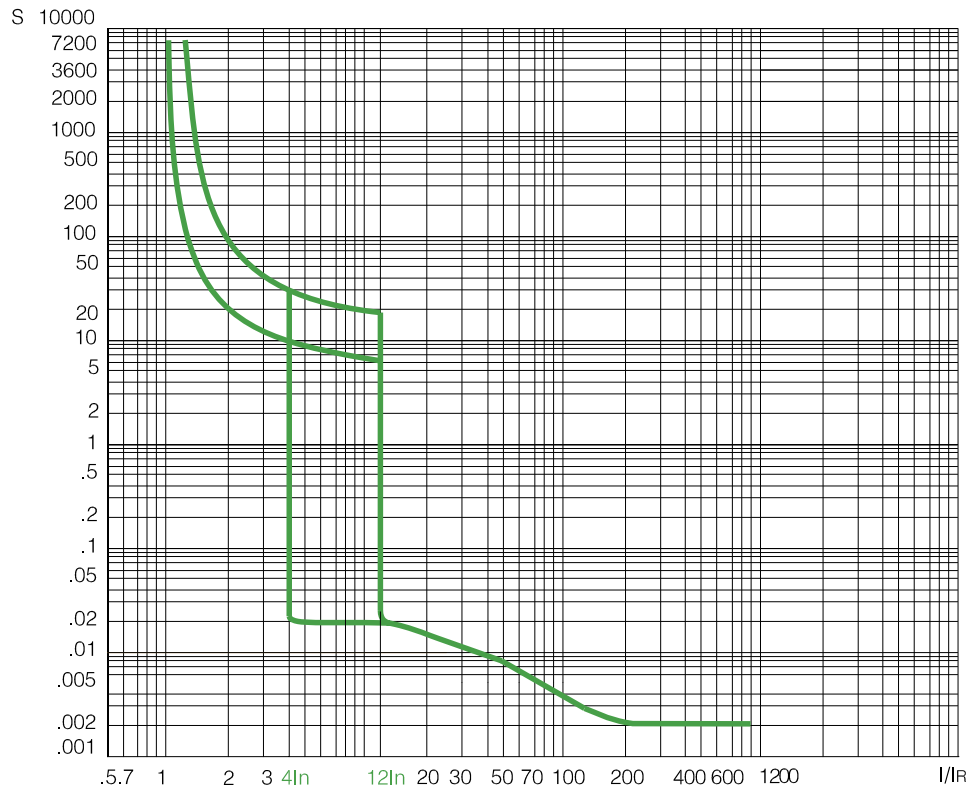
Molded Case Circuit Breakers

M2 Trip Curves

M2
(In=100/125 A)



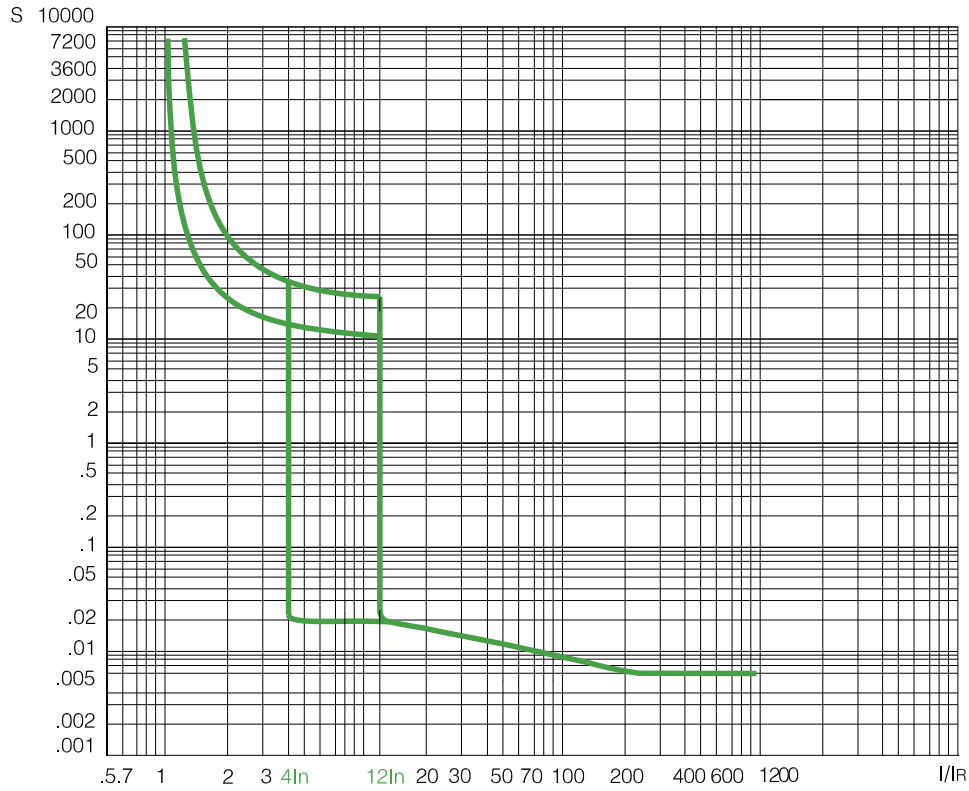
M2
(In=150/175 A)



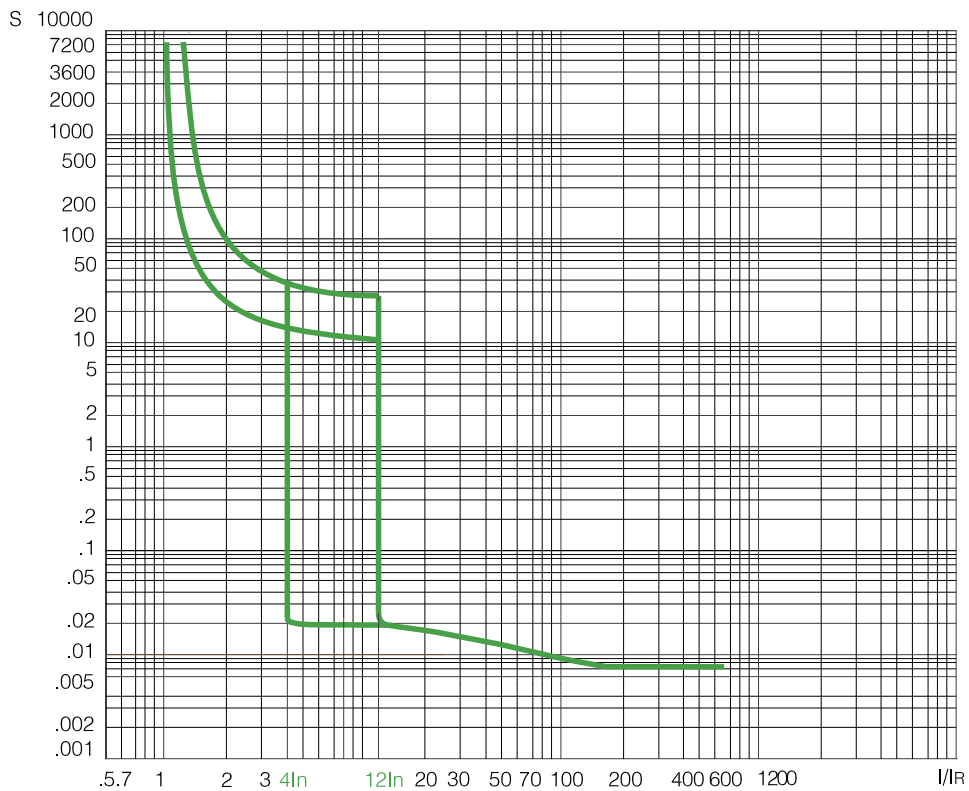
Molded Case Circuit Breakers

M3-M4 Trip Curves

M3
(In=225/250/300/
350/400 A)



M4
(In=400/500/600 A)

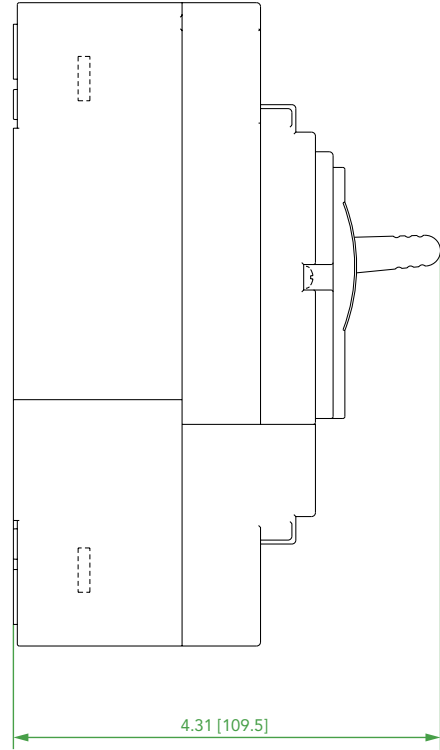
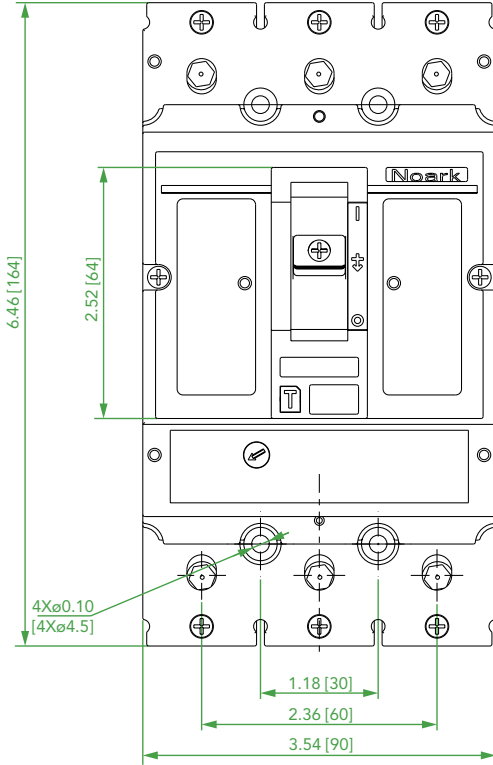


Molded Case Circuit Breakers

M1-M2 Dimensions

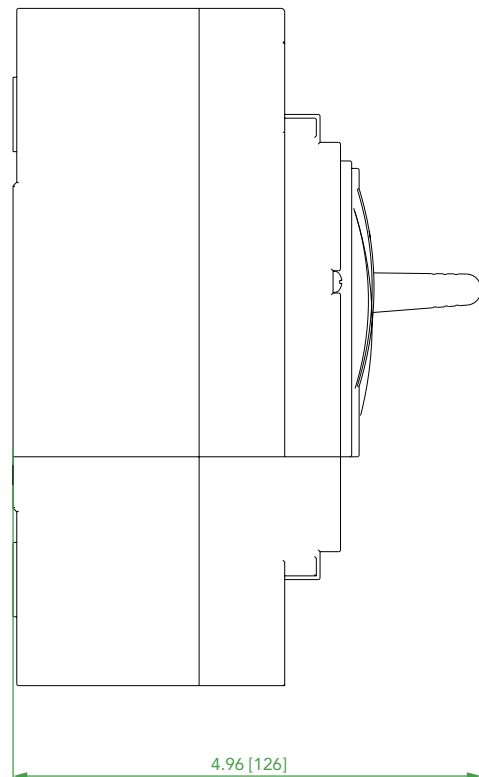
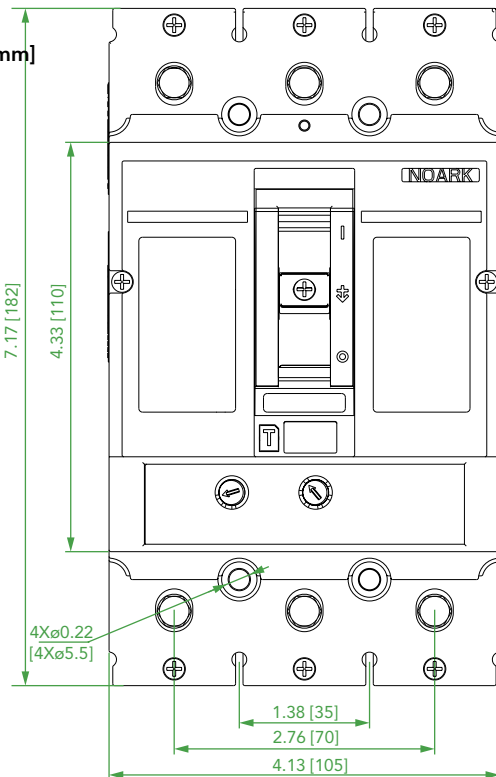
M1

Unit: in. [mm]



M2

Unit: in. [mm]

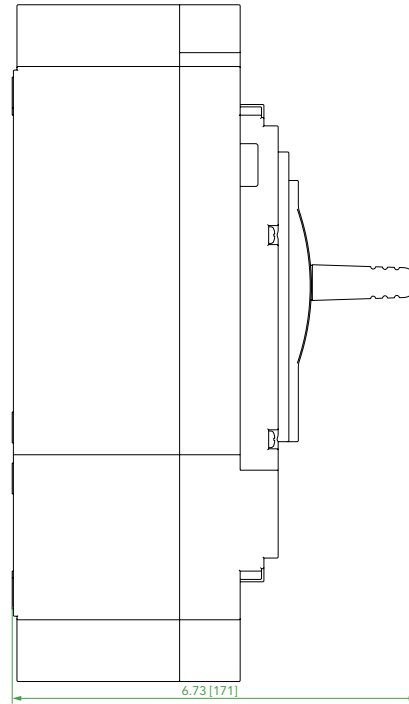
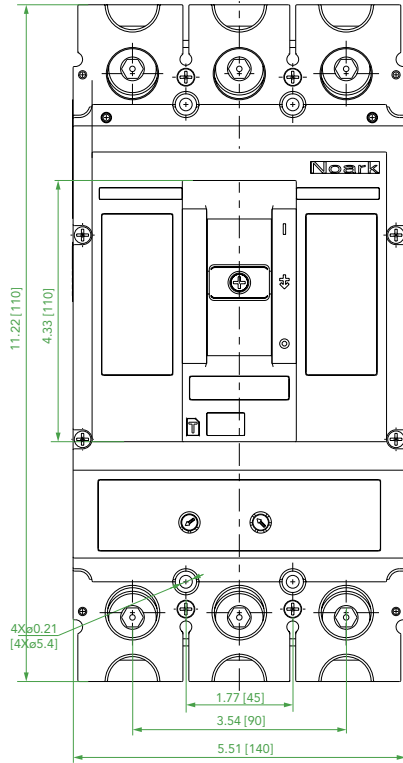


Molded Case Circuit Breakers

M3-M4 Dimensions

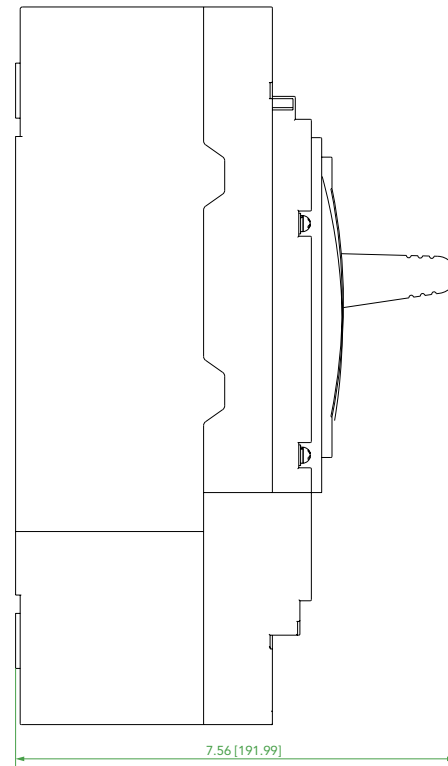
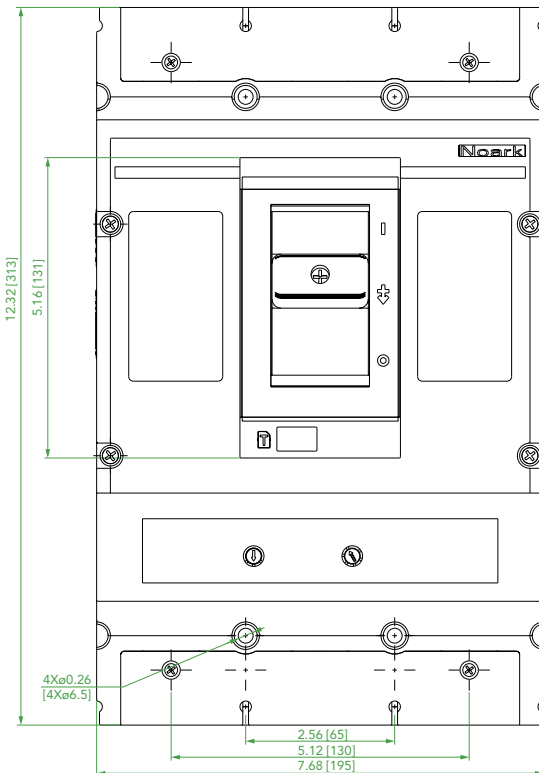
M3

Unit: in. [mm]



M4

Unit: in. [mm]



MOLDED CASE SWITCHES



UL 489

Molded Case Switches

M1-M4 Product Overview

Features

B

Series M Molded Case Switches, 100A – 600A



- Intended for use only as disconnect devices
- Overall dimensions, connection systems and accessories are the same as circuit breakers
- Molded Case Switches are constructed similarly to Molded Case Circuit Breakers, except that the switch opens instantaneously at factory-set, non-adjustable trip points

Molded Case Switches

M1-M4 National and International Standards

Main and Branch Circuit Protection

UL 489 / CSA C22.2 No.5 / IEC 60947-2

<p>Standard for molded case circuit breakers (MCCB) for feeder and branch circuit protection.</p>	 
<ul style="list-style-type: none"> • Canadian Standards Association (CSA) C22.2 No. 5-02 standard for branch circuit protection. • UL 489 standard for connection terminals which allows the user to apply field wiring directly to the breaker. • IEC 60947-2 standard for industrial applications of circuit protection. 	

RoHS

<ul style="list-style-type: none"> • These devices are RoHS compliant. 	
---	--

Breakers have UL 489 rated connectors which means the breakers can be wired directly to the load without the need for terminal strips.

Molded Case Switches

M1-M4 Options

Labeling

B

M2D

Molded Case Switch
 Interruptor en Caja Moldeada
 Interrupteur à Boîtier Moulé
 480-600V/347V ~50/60Hz

UL489 ICSA C22.2
 Use on circuits de l'arretting
 Utilise en circuits que suministran
 Utiliser dans les circuits alimentant

240V	~	100kA
480V	~	42kA
600V	~	18kA
500V	≡	59kA(2P)
600V	≡	39kA(3P)

IEC60947-3
 Ui=800V Uimp=8kV
 Ics=100%Icu
 220/240V ~ 50kA
 380/415V ~ 50kA
 660/690V ~ 6kA
 500V ≡ 25kA(3P)

M4D

Molded Case Switch
 Interruptor en Caja Moldeada
 Interrupteur à Boîtier Moulé
 600V ~50/60Hz

UL489 ICSA C22.2
 Use on circuits de l'arretting
 Utilise en circuits que suministran
 Utiliser dans les circuits alimentant

240V	~	100kA
480V	~	60kA
600V	~	18kA
500V	≡	59kA(2P)
600V	≡	50kA(3P)

IEC60947-3
 Ui=800V Uimp=8kV
 Ics=100%Icu
 220/240V ~ 100kA
 380/415V ~ 100kA
 660/690V ~ 15kA
 500V ≡ 50kA(3P)



E356396

UL AW7 LISTED
 LISTED

MOLDED CASE SWITCH

75°C Cu Wire Only
 (2/3/0AWG-400kcmil 310 lb-in/pulg/ipo
 (2/65-185mm² 35N·m

+

CE

- 1 Product Series
- 2 Handle
- 3 Test Button
- 4 Warning Label

- 6 Brand
- 7 UL Listed Mark
- 8 CE Mark
- 9 AC Coil Voltage

Product Selection Guide

M	1	D	100	3	L
NOARK Ex9M Series	Frame Rating	Protection Type	Current Rating	Poles	Installation Type
	1: 100A	D: Disconnecter	M1: 100A	2: 2 Poles	Blank: Bus Bar Connection
	2: 225A		M2: 225A	3: 3 Poles	L: Line/Load Box Lugs
	3: 400A		M3: 400A		P: Plug-In
	4: 600A		M4: 600A		D: Draw-Out
					R: Rear Connection

Molded Case Switches

M1-M4 Specifications

		M1	M2	M3	M4
Maximum Rated Current (Amperes)		100	225	400	600
Number of Poles		2, 3	2, 3	2, 3	2, 3
Breaker Type		D	D	D	D
Interrupting Capacity (kA rms) Vac 50/60 Hz					
Circuit Breaker Ratings UL 489 CSA C22.2 (kA rms) Vac 50/60 Hz	240 Vac	100	100	100	100
	480 Vac	35	42	50	65
	600Y / 347 Vac	10	10	14	18
	600 Vac	-	-		
	250 Vdc 2 Poles 500 Vdc 3 Poles	50		-	-
500 Vdc 2 Poles 600 Vdc 3 Poles	35	35	50	50	
Circuit Breaker Ratings IEC 60947-2	220 / 240 Vac	100	100	100	100
	380 / 415 Vac				
Ultimate Breaking Capacity (Icu = 100% Ics) (kA rms)	660 / 690 Vac	8	10	15	15
	500 Vdc 3 Poles	50	50	-	-
	500 Vdc 2 Poles	-	-	50	50
Current Rating @ 40° C		100A	225A	400A	600A
Accessories					
Shunt Trip		■	■	■	■
Under-Voltage Trip		■	■	■	■
Auxiliary Switch		■	■	■	■
Alarm Switch		■	■	■	■
Motor Operator		■	■	■	■
Handle Operator		■	■	■	■
Mechanical Interlock		■	■	■	■
Handle Padlock Attachment		■	■	■	■
Terminal Kits		■	■	■	■
Terminal Cover		■	■	■	■
Connection					
Bus Bar Connection		■	■	■	■
Lug-Lug Connection		■	■	■	■
Plug-In Style		■	■	■	-
Rear Connection		■	■	■	■
Draw-Out Style		-	-	■	■

Molded Case Switches

M1-M4 Specifications

		M1	M2	M3	M4
Insulation Voltage (Vi)		800 V	800 V	800 V	800 V
Impulse Withstand Voltage (Vimp)		8 kV	8 kV	8 kV	8kV
Operational Voltage (Ve)	IEC	690 V	690 V	690 V	690 V
	UL	480~600Y/347 V	480~600Y/347 V	600 V	600 V
IEC Ics	(%Icu)	100%	100%	100%	100%
Utilization Category		A	A	A	A
Mechanical Operating Cycles		10000	10000	8000	8000
Electrical Operating Cycles		6000	6000	5000	5000
Weight of Unit (kg)	2 Poles	1.44	1.7	4.07	9.5
	3 Poles	1.67	2.0	6.1	11.5
Cable Connection	Wire	75°C Cu Wire Only 14-3/0 AWG 2.5-95 mm ²	75°C Cu Wire Only 8 AWG - 350 kcmil 10-185 mm ²	Single Hole	75°C Cu Wire Only (2) 3/0 AWG - 400 kcmil (2) 95-185 mm ²
				Double Hole	
Lugs		80 lb-in/plug/po 10 Nm	230 lb-in/plug/po 26 Nm	310 lb-in/plug/po 35 Nm	310 lb-in/plug/po 35 Nm

B

Molded Case Switches

M1 & M2 Bus Bar, Lug-In/Lug-Out, Plug-In Style and Rear

- Bus Bar Connection MCS not sold with Bus Bar* or Terminal Lugs
- Lug-Lug Connection MCS sold with Terminal Lugs
- Plug-In Style MCS sold with Terminal Lugs and Plug-In Base
- Rear Connection MCS sold with Terminal Lugs and Rear Connection Kit



Rated Amperage	2 Poles		3 Poles	
	Product	Part Number	Product	Part Number
M1	Bus Bar Connection		Bus Bar Connection	
	100	M1D1002 1100457	M1D1003 1100453	
	Lug-In/Lug-Out Connection		Lug-In/Lug-Out Connection	
	100	M1D1002L 1100458	M1D1003L 1100454	
	Plug-In Type		Plug-In Type	
	100	M1D1002P 1100459	M1D1003P 1100455	
Rear Connection		Rear Connection		
100	M1D1002R 1100460	M1D1003R 1100456		

- Bus Bar Connection MCS not sold with Bus Bar* or Terminal Lugs
- Lug-Lug Connection MCS sold with Terminal Lugs
- Plug-In Style MCS sold with Terminal Lugs and Plug-In Base
- Rear Connection MCS sold with Terminal Lugs and Rear Connection Kit



Rated Amperage	2 Poles		3 Poles	
	Product	Part Number	Product	Part Number
M2	Bus Bar Connection		Bus Bar Connection	
	225	M2D2252 1100465	M2D2253 1100461	
	Lug-In/Lug-Out Connection		Lug-In/Lug-Out Connection	
	225	M2D2252L 1100466	M2D2253L 1100462	
	Plug-In Type		Plug-In Type	
	225	M2D2252P 1100467	M2D2253P 1100463	
Rear Connection		Rear Connection		
225	M2D2252R 1100468	M2D2253R 1100464		

For accessories, see pages C37-50.

NOTE: Bus Bar Connection not available through NOARK Electric.

Molded Case Switches

M3 & M4 Bus Bar, Lug-In/Lug-Out, Plug-In Style, Rear, Draw-Out Style

- Bus Bar Connection MCS not sold with Bus Bar* or Terminal Lugs
- Lug-Lug Connection MCS sold with Terminal Lugs
- Plug-In Style MCS sold with Terminal Lugs and Plug-In Base
- Rear Connection MCS sold with Terminal Lugs and Rear Connection Kit
- Draw-Out Style MCS sold with Terminal Lugs and Draw-Out Base



B

Rated Amperage	2 Poles		3 Poles	
	Product	Part Number	Product	Part Number
M3	Bus Bar Connection		Bus Bar Connection	
	400	M3D4002 1100474	M3D4003 1100469	
	Lug-In/Lug-Out Connection		Lug-In/Lug-Out Connection	
	400	M3D4002L 1100475	M3D4003L 1100470	
	Plug-In Type		Plug-In Type	
	400	M3D4002P 1100476	M3D4003P 1100471	
	Rear Connection		Rear Connection	
	400	M3D4002R 1100477	M3D4003R 1100472	
Draw-Out Style		Draw-Out Style		
400	M3D4002D 1100478	M3D4003D 1100473		

- Bus Bar Connection MCS not sold with Bus Bar* or Terminal Lugs
- Lug-Lug Connection MCS sold with Terminal Lugs
- Rear Connection MCS sold with Terminal Lugs and Rear Connection Kit
- Draw-Out Style MCS sold with Terminal Lugs and Draw-Out Base



Rated Amperage	2 Poles		3 Poles	
	Product	Part Number	Product	Part Number
M4	Bus Bar Connection		Bus Bar Connection	
	600	M4D6002 1100483	M4D6003 1100479	
	Lug-In/Lug-Out Connection		Lug-In/Lug-Out Connection	
	600	M4D6002L 1100484	M4D6003L 1100480	
	Rear Connection		Rear Connection	
	600	M4D6002R 1100485	M4D6003R 1100481	
Draw-Out Style		Draw-Out Style		
600	M4D6002D 1100486	M4D6003D 1100482		

For accessories, see pages C37-50.

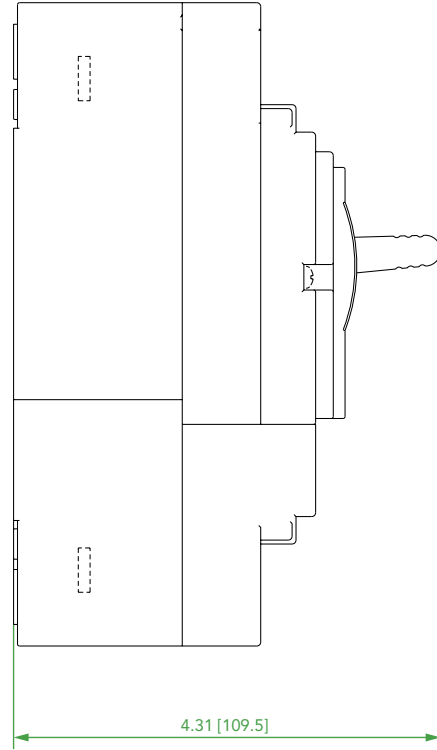
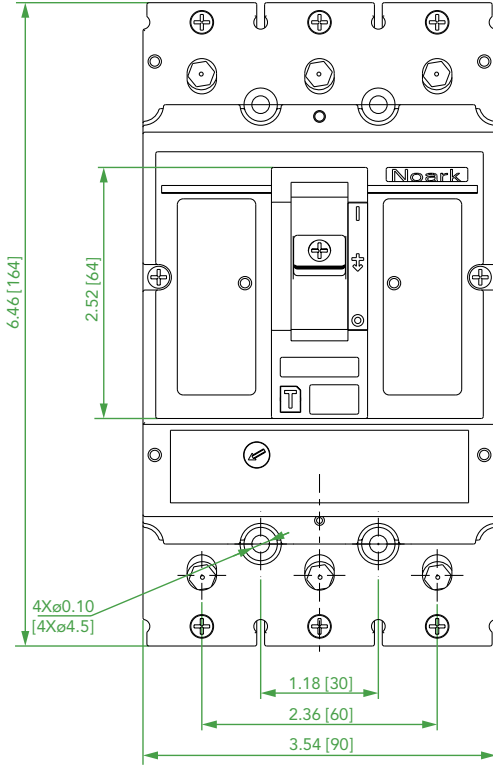
NOTE: Bus Bar Connection not available through NOARK Electric.

Molded Case Switches

M1-M2 Dimensions

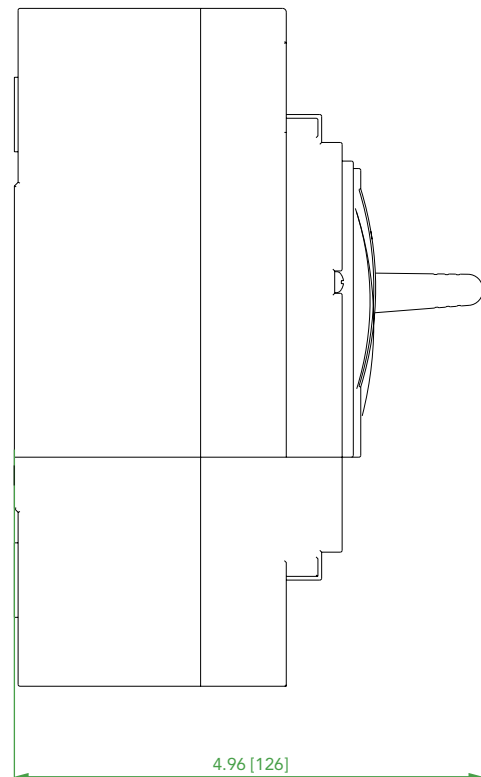
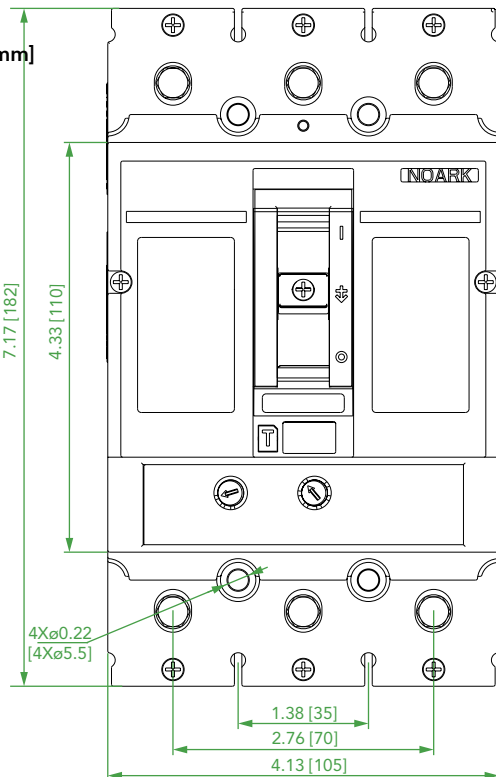
M1

Unit: in. [mm]



M2

Unit: in. [mm]

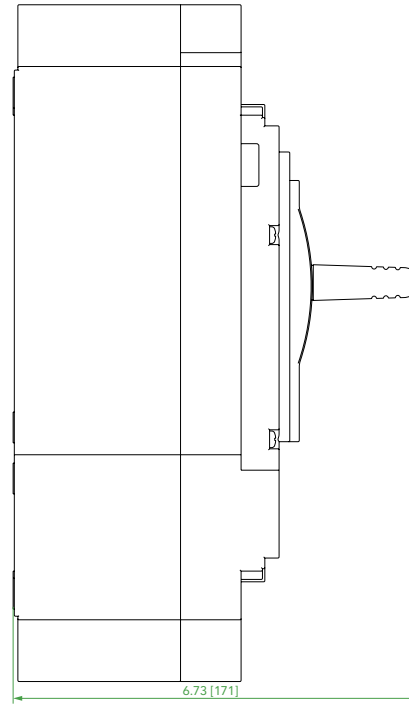
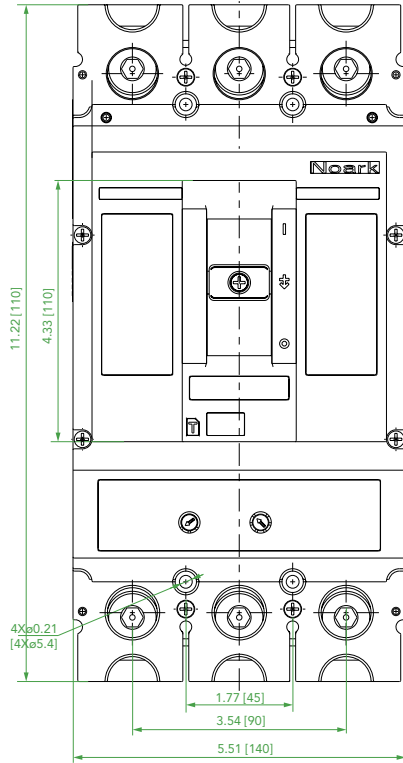


Molded Case Switches

M3-M4 Dimensions

M3

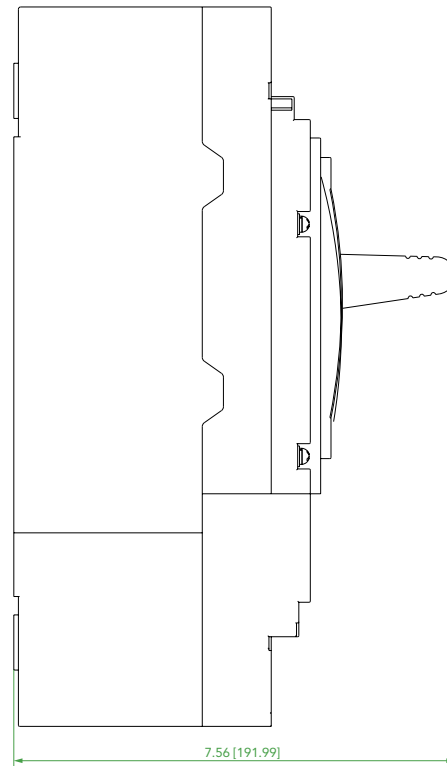
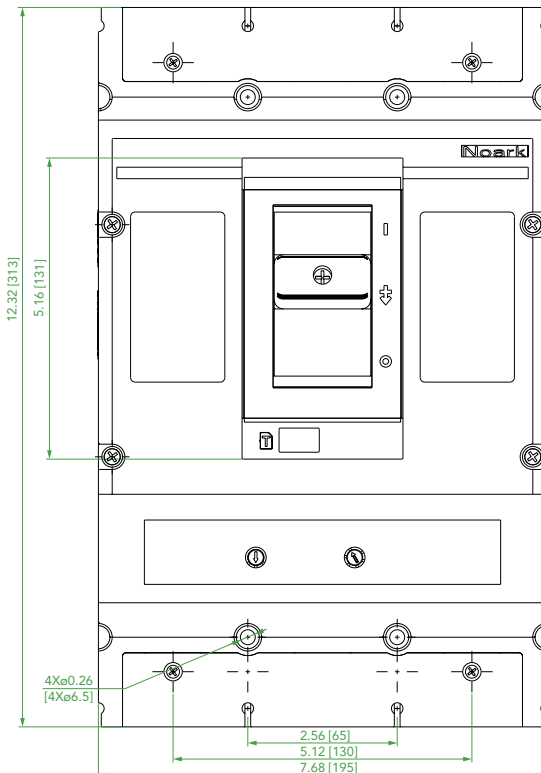
Unit: in. [mm]



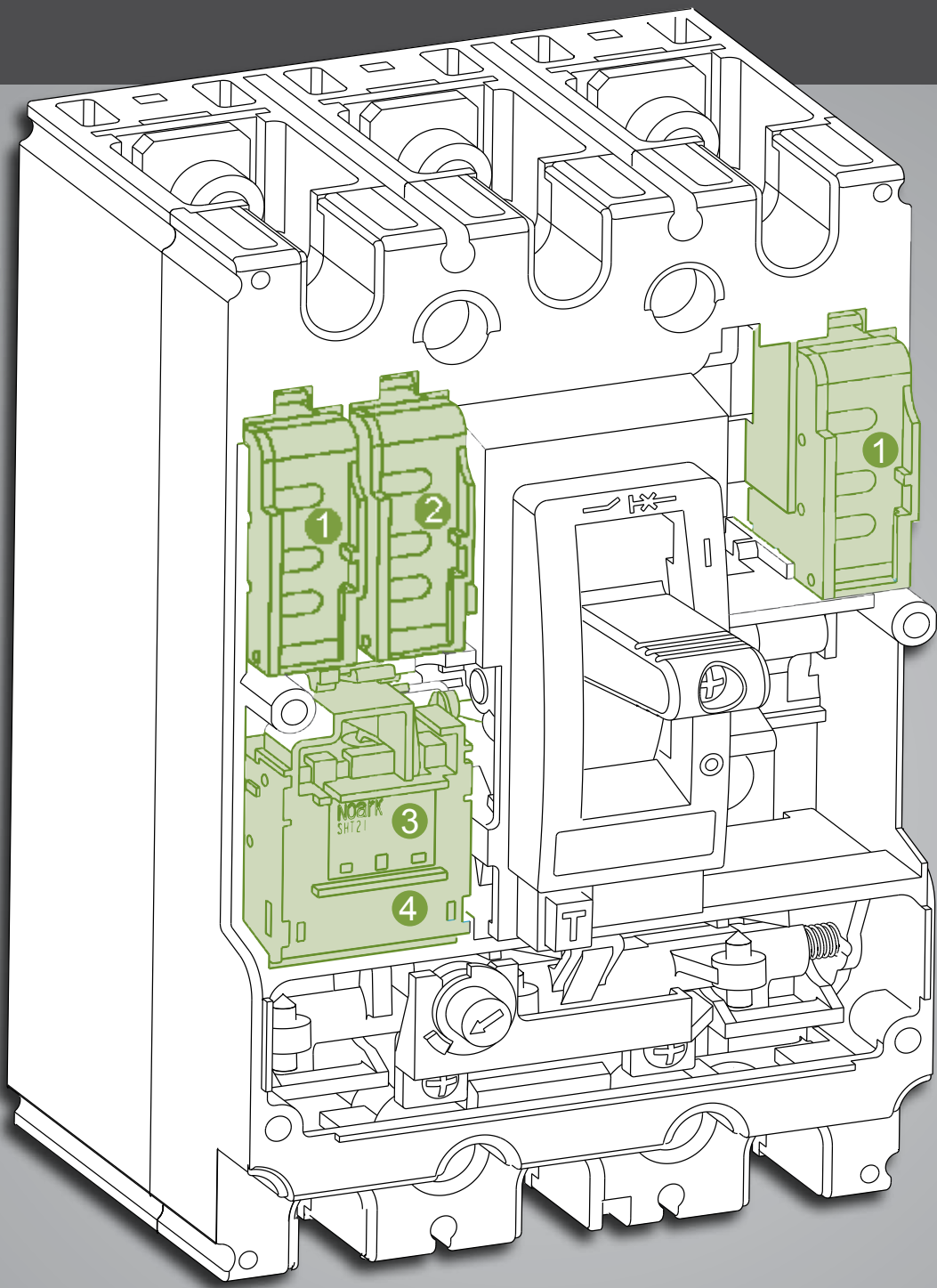
B

M4

Unit: in. [mm]



MOLDED CASE ACCESSORIES



Molded Case

Accessories Overview

Internal Accessories (Pictured Left)



1 Auxiliary Contact (AX)



3 Shunt Trip (SHT)



2 Alarm Contact (AL)



4 Under-Voltage Trip (UVT)

External Accessories



Mechanical Interlock (MIT)



Rotary Handle (RHD)
(Closed Coupled)



Handle Lock (KLK)



Extended Rotary Handle (ERH)
(Through the Door)



Motor Operator (MOD)

Connection Hardware



Terminal Lugs (LTC)



Rear Connection Kit (RCP)

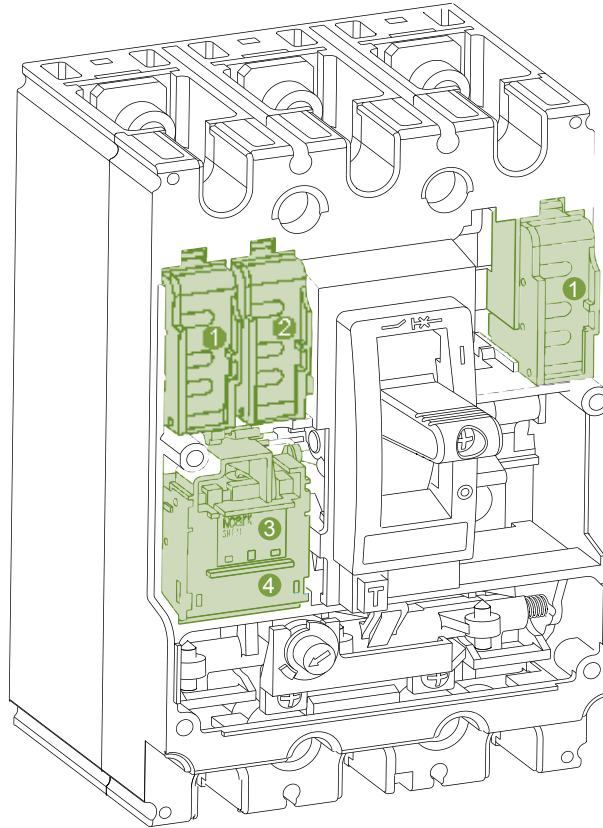


Plug-In Base (PIA)

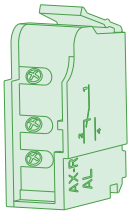


Draw-Out Base (DOB)

Molded Case Internal Accessories



Auxiliary Contact (AX)



1

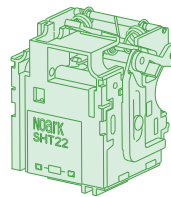
Function:

- Indicates the state of a circuit breaker (open/close)

Type:

- One NO, one NC
- Two NO, two NC

Shunt Release (SHT)



3

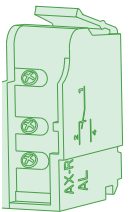
Function:

- Allows circuit breaker to be opened remotely

Type of Power Supply:

- 100-130 Vac, 220-240 Vac, 380-440 Vac, 480-500 Vac, 24 Vdc, 40-60 Vdc, 110-125 Vdc, 220-250 Vdc

Alarm Contact (AL)



2

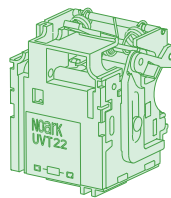
Function:

- Sends an alarm signal when the circuit breaker trips

Type:

- One NO, one NC

Under-Voltage Release (UVT)



4

Function:

- Prevents circuit breaker from closing during an under-voltage situation

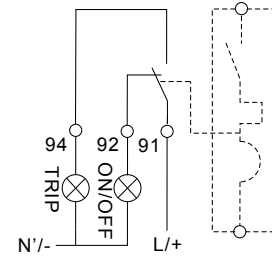
Type of Power Supply:

- 110-127 Vac, 220-240 Vac, 380-440 Vac, 24-30 Vdc, 48 Vdc, 60 Vdc, 110-125 Vdc, 220-250 Vdc

Molded Case Internal Accessories



AX	21	N
Description	Type	Certification
Auxiliary Contact	21: for M1, M2, M3 & M4	N: UL 489

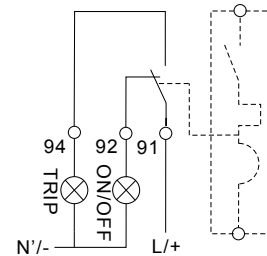


Accessory Description	Product	Part Number
Auxiliary Contact	AX21N	1100553

- Rated Operational Voltage: 240/480 Vac
- Rated Operational Current: 5/2A
- Rated Operational Voltage: 110/220 Vdc
- Rated Operational Current: 0.25/0.25 Vdc



AL	21	N
Description	Type	Certification
Alarm Contact	21: for M1, M2, M3 & M4	N: UL 489



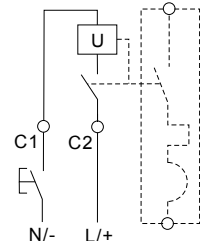
Accessory Description	Product	Part Number
Alarm Contact	AL21N	1100554

- Rated Operational Voltage: 240/480 Vac
- Rated Operational Current: 5/2A
- Rated Operational Voltage: 110/220 Vdc
- Rated Operational Current: 0.25/0.25 Vdc

Molded Case Internal Accessories



SHT	21	N	A
Description	Type	Certification	Control Voltage
Shunt Trip	21: for M1 22: for M2 & M3 24: for M4	N: UL 489	A: 100-130 Vac B: 220-240 Vac C: 380-440 Vac D: 480-500 Vac E: 24 Vdc F: 48-60 Vdc G: 110-125 Vdc H: 220-250 Vdc



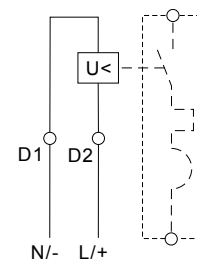
- Response Voltage, Pick-Up: Us 30-70%
- Opening Time: Interrupts Automatically $\geq 20\text{ms}$, $\leq 60\text{ms}$

Accessory Description	MCCB	Voltage	Product	Part Number
Shunt Trip	M1	100-130 Vac	SHT21NA	1100505
		220-240 Vac	SHT21NB	1100506
		380-440 Vac	SHT21NC	1100507
		480-500 Vac	SHT21ND	1100508
		24 Vdc	SHT21NE	1100509
		48-60 Vdc	SHT21NF	1100510
		110-125 Vdc	SHT21NG	1100511
		220-250 Vdc	SHT21NH	1100512
	M2-M3	100-130 Vac	SHT22NA	1100513
		220-240 Vac	SHT22NB	1100514
		380-440 Vac	SHT22NC	1100515
		480-500 Vac	SHT22ND	1100516
		24 Vdc	SHT22NE	1100517
		48-60 Vdc	SHT22NF	1100518
		110-125 Vdc	SHT22NG	1100519
		220-250 Vdc	SHT22NH	1100520
	M4	100-130 Vac	SHT24NA	1100521
		220-240 Vac	SHT24NB	1100522
		380-440 Vac	SHT24NC	1100523
		480-500 Vac	SHT24ND	1100524
		24 Vdc	SHT24NE	1100525
		48-60 Vdc	SHT24NF	1100526
		110-125 Vdc	SHT24NG	1100527
		220-250 Vdc	SHT24NH	1100528

Molded Case Internal Accessories



UVT	21	N	A
Description	Type	Certification	Control Voltage
Under-Voltage Trip	21: for M1 22: for M2 & M3 24: for M4	N: UL 489	A: 110-127 Vac B: 220-240 Vac C: 380-440 Vac D: 24-30 Vdc E: 48 Vdc F: 60 Vdc G: 110-125 Vdc H: 220-250 Vdc

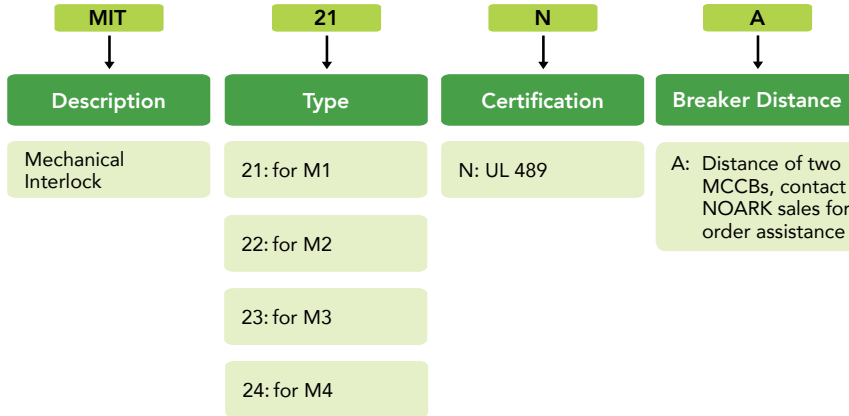


- Response Voltage, Drop: Us 35-70%
- Response Voltage, Pick-Up: Us 85-110%
- Opening Time: Interrupts Automatically $\geq 20\text{ms}$, $\leq 60\text{ms}$

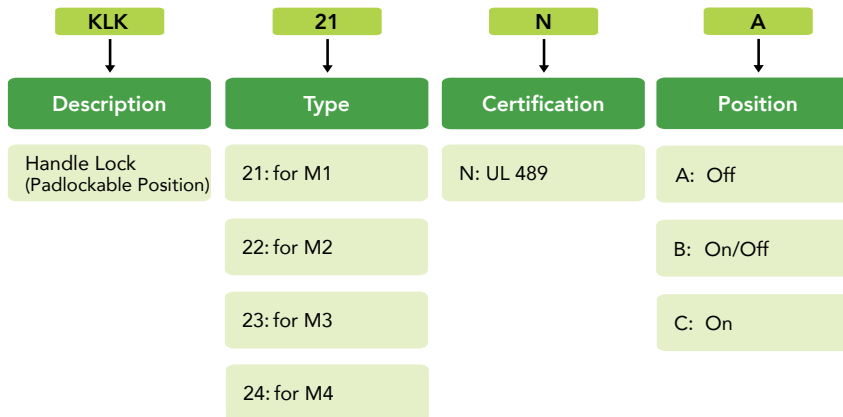
Accessory Description	MCCB	Voltage	Product	Part Number
Under-Voltage Trip	M1	110-127 Vac	UVT21NA	1100529
		220-240 Vac	UVT21NB	1100530
		380-440 Vac	UVT21NC	1100531
		24-30 Vdc	UVT21ND	1100532
		48 Vdc	UVT21NE	1100533
		60 Vdc	UVT21NF	1100534
		110-125 Vdc	UVT21NG	1100535
		220-250 Vdc	UVT21NH	1100536
	M2-M3	110-127 Vac	UVT22NA	1100537
		220-240 Vac	UVT22NB	1100538
		380-440 Vac	UVT22NC	1100539
		24-30 Vdc	UVT22ND	1100540
		48 Vdc	UVT22NE	1100541
		60 Vdc	UVT22NF	1100542
		110-125 Vdc	UVT22NG	1100543
		220-250 Vdc	UVT22NH	1100544
	M4	110-127 Vac	UVT24NA	1100545
		220-240 Vac	UVT24NB	1100546
		380-440 Vac	UVT24NC	1100547
		24-30 Vdc	UVT24ND	1100548
		48 Vdc	UVT24NE	1100549
		60 Vdc	UVT24NF	1100550
		110-125 Vdc	UVT24NG	1100551
		220-250 Vdc	UVT24NH	1100552



Molded Case External Accessories

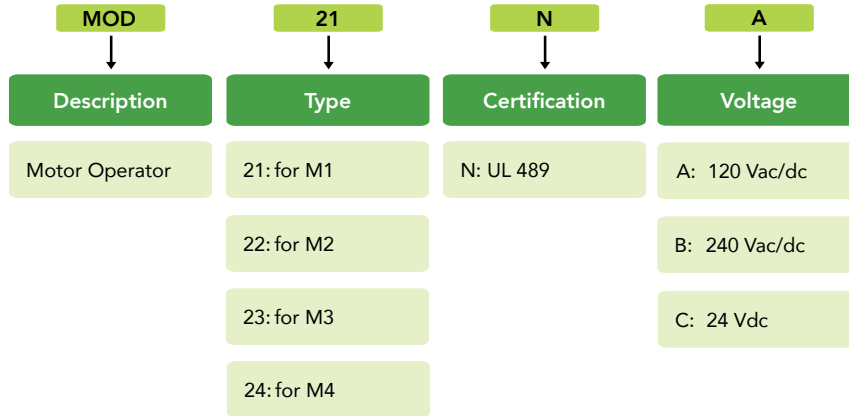


Accessory Description	MCCB	Product	Part Number
Mechanical Interlock	M1	MIT21NA	1100596
	M2	MIT22NA	1100599
	M3	MIT23NA	1100602
	M4	MIT24NA	1100605



Accessory Description	MCCB	Position	Product	Part Number
Handle Lock	M1	Off	KLK21NA	1100575
		On/Off	KLK21NB	1100576
		On	KLK21NC	1100577
	M2	Off	KLK22NA	1100578
		On/Off	KLK22NB	1100579
		On	KLK22NC	1100580
	M3	Off	KLK23NA	1100581
		On/Off	KLK23NB	1100582
		On	KLK23NC	1100583
	M4	Off	KLK24NA	1100584
		On/Off	KLK24NB	1100585
		On	KLK24NC	1100586

Molded Case External Accessories



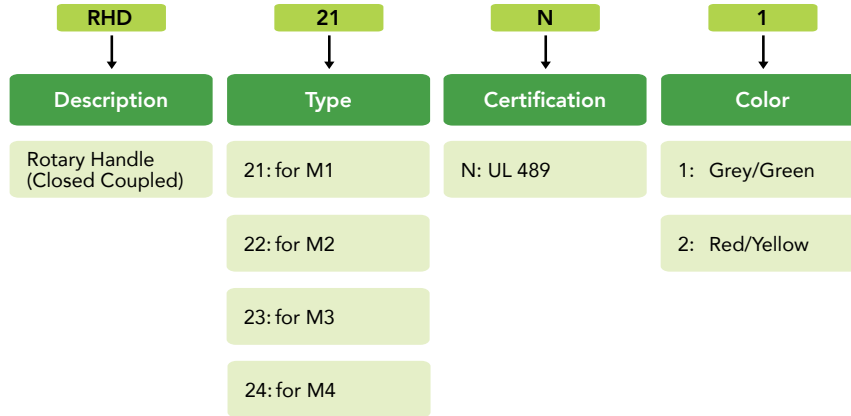
C

Accessory Description	MCCB	Voltage	Product	Part Number
Motor Operator	M1	120 Vac/dc	MOD21NA	1100563
		240 Vac/dc	MOD21NB	1100564
		24 Vdc	MOD21NC	1100565
	M2	120 Vac/dc	MOD22NA	1100566
		240 Vac/dc	MOD22NB	1100567
		24 Vdc	MOD22NC	1100568
	M3	120 Vac/dc	MOD23NA	1100569
		240 Vac/dc	MOD23NB	1100570
		24 Vdc	MOD23NC	1100571
	M4	120 Vac/dc	MOD24NA	1100572
		240 Vac/dc	MOD24NB	1100573
		24 Vdc	MOD24NC	1100574

Molded Case External Accessories

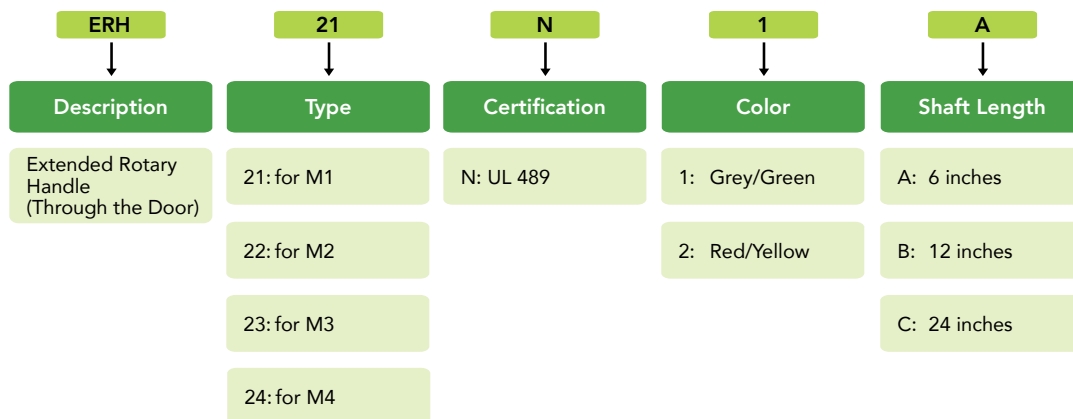


- Grey/Green
- IP 55 / NEMA 12



Accessory Description		MCCB	Product	Part Number
Rotary Handle (Closed Coupled)	Grey/Green	M1	RHD21N1	1100555
		M2	RHD22N1	1100556
		M3	RHD23N1	1100557
		M4	RHD24N1	1100558
	Red/Yellow	M1	RHD21N2	1100613
		M2	RHD22N2	1100614
		M3	RHD23N2	1100615
		M4	RHD24N2	1100616

Molded Case External Accessories

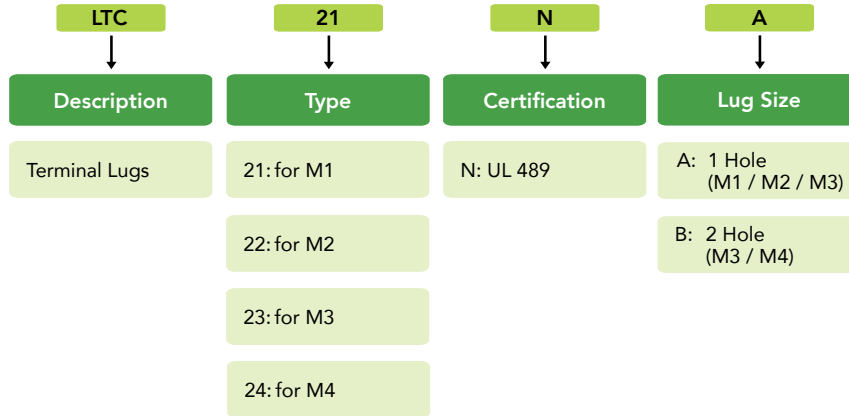


- Grey/Green or Yellow/Red
- IP 55 / NEMA 12

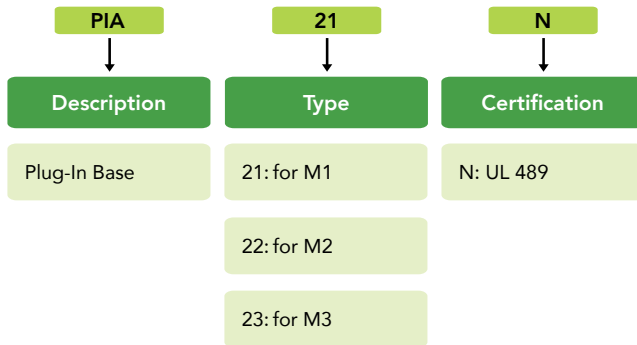
Accessory Description		MCCB	Shaft Length	Product	Part Number
Extended Rotary Handle (Through the Door)	Grey/Green	M1	6 inches	ERH21N1A	1100559
			12 inches	ERH21N1B	1100617
			24 inches	ERH21N1C	1100621
		M2	6 inches	ERH22N1A	1100560
			12 inches	ERH22N1B	1100618
			24 inches	ERH22N1C	1100622
		M3	6 inches	ERH23N1A	1100561
			12 inches	ERH23N1B	1100619
			24 inches	ERH23N1C	1100623
		M4	6 inches	ERH24N1A	1100562
			12 inches	ERH24N1B	1100620
			24 inches	ERH24N1C	1100624
	Red/Yellow	M1	6 inches	ERH21N2A	1100625
			12 inches	ERH21N2B	1100629
			24 inches	ERH21N2C	1100633
		M2	6 inches	ERH22N2A	1100626
			12 inches	ERH22N2B	1100630
			24 inches	ERH22N2C	1100634
		M3	6 inches	ERH23N2A	1100627
			12 inches	ERH23N2B	1100631
			24 inches	ERH23N2C	1100635
		M4	6 inches	ERH24N2A	1100628
			12 inches	ERH24N2B	1100632
			24 inches	ERH24N2C	1100636

C

Molded Case Connection Hardware

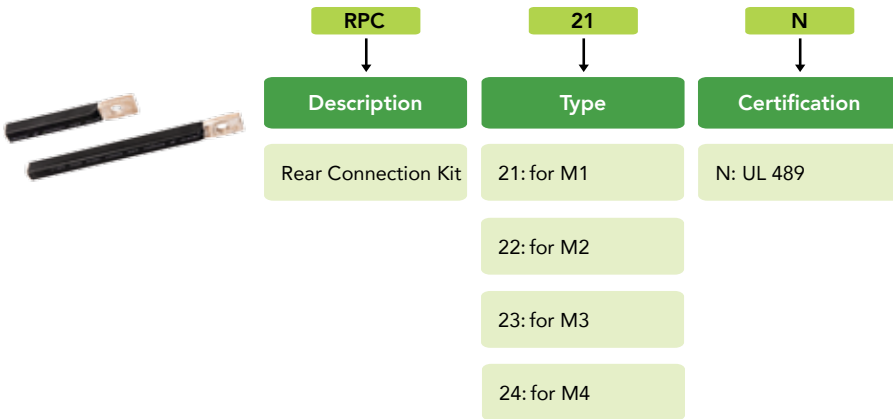


Accessory Description	MCCB	Voltage	Product	Part Number
Terminal Lugs	M1	1 Hole	LTC21NA	1100608
	M2	1 Hole	LTC22NA	1100609
	M3	1 Hole	LTC23NA	1100610
		2 Holes	LTC23NB	1100611
M4	2 Holes	LTC24NB	1100612	

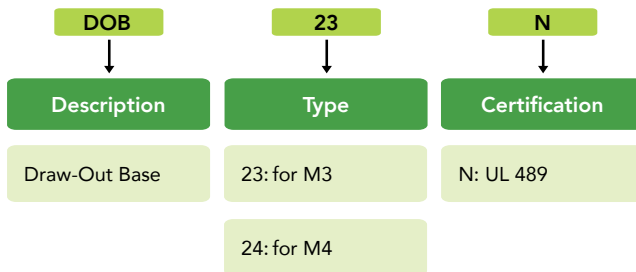


Accessory Description	MCCB	Product	Part Number
Plug-In Base (3 pole only)	M1	PIA21N	1100591
	M2	PIA22N	1100592
	M3	PIA23N	1100593

Molded Case Connection Hardware



Accessory Description	MCCB	Product	Part Number
Rear Connection Kit	M1	RCP21N	1100587
	M2	RCP22N	1100588
	M3	RCP23N	1100589
	M4	RCP24N	1100590



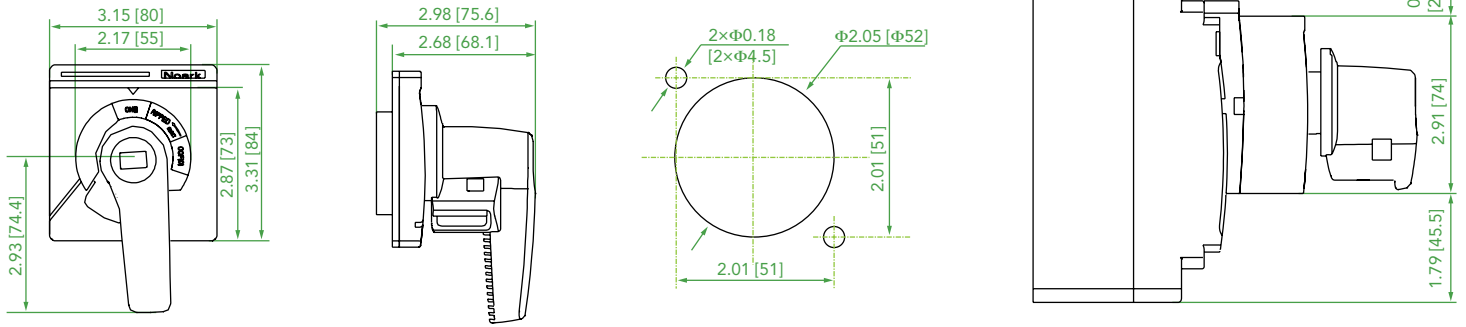
Accessory Description	MCCB	Product	Part Number
Draw-Out Base	M3	DOB23N	1100594
	M4	DOB24N	1100595

NOTE: Molded Case Circuit Breaker/Switch sold separately.

Molded Case Accessory Dimensions

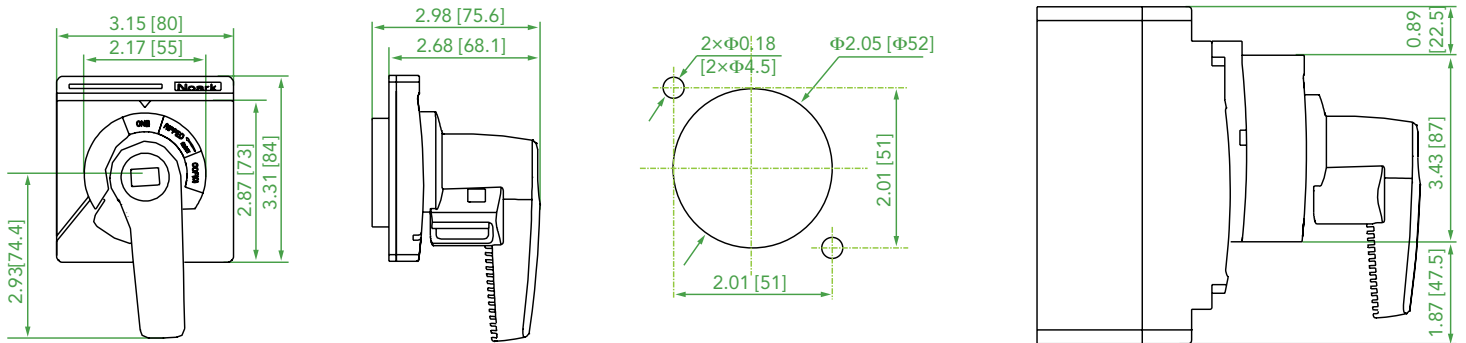
M1

Manual Operating Mechanism
Unit: in. [mm]



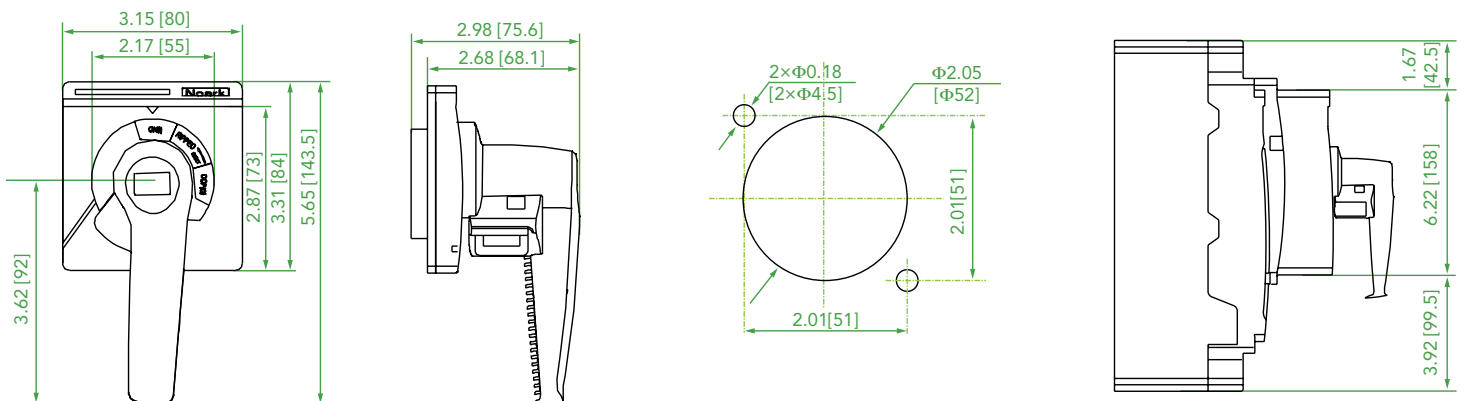
M2

Manual Operating Mechanism
Unit: in. [mm]



M3

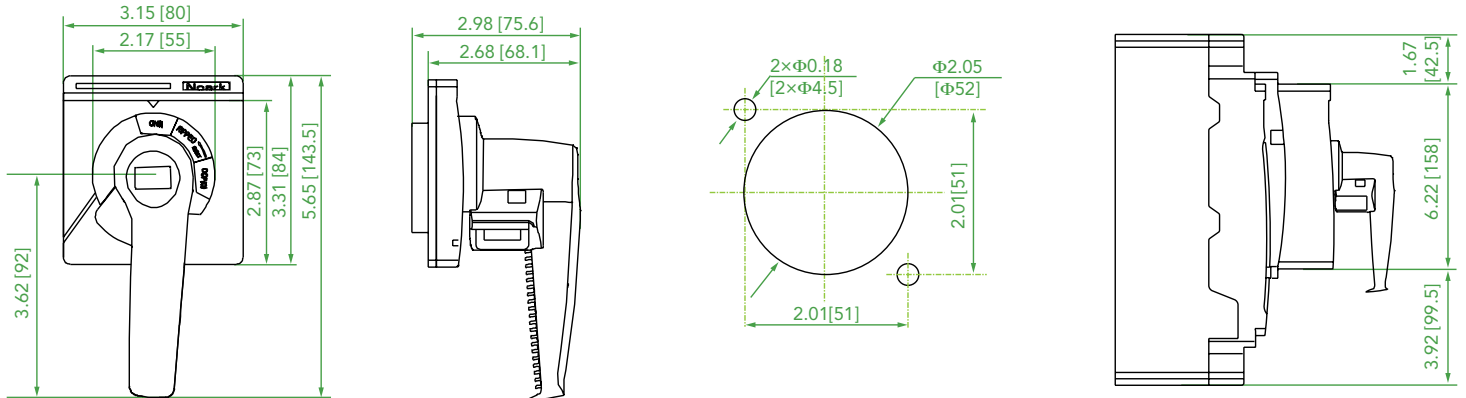
Manual Operating Mechanism
Unit: in. [mm]



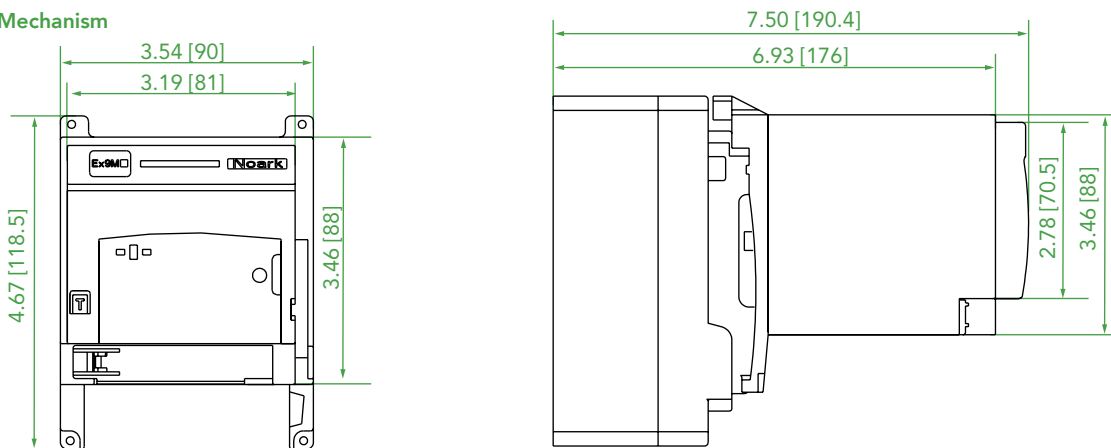
Molded Case

Accessory Dimensions

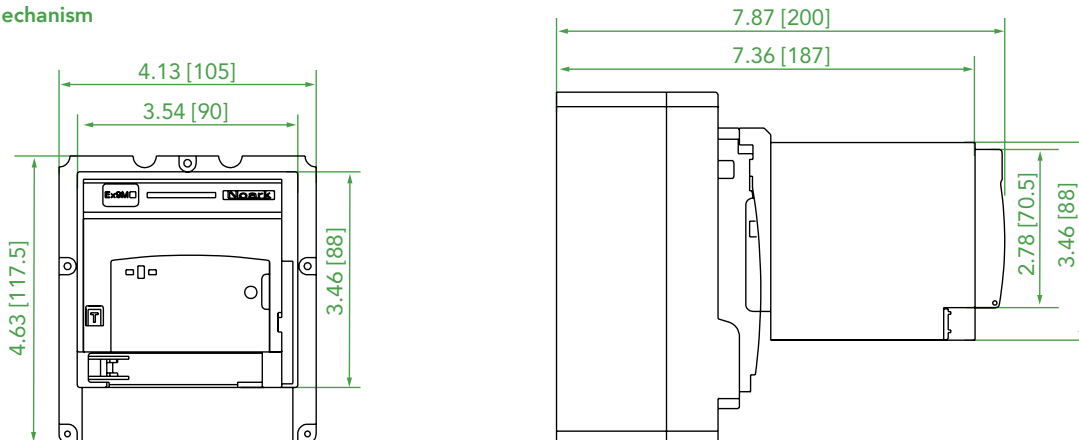
M4
Manual Operating Mechanism
Unit: in. [mm]



M1
Electro-Control Mechanism
Unit: in. [mm]



M2
Electro-Control Mechanism
Unit: in. [mm]

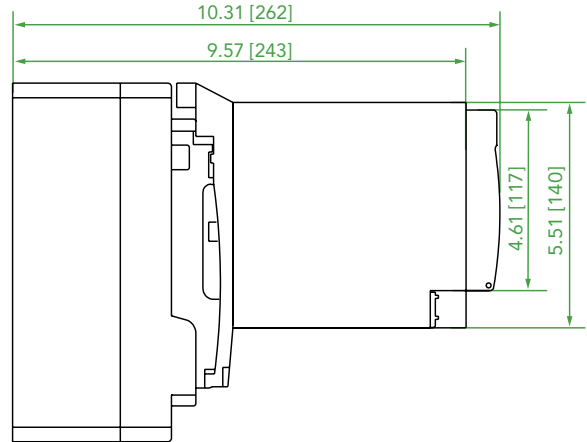
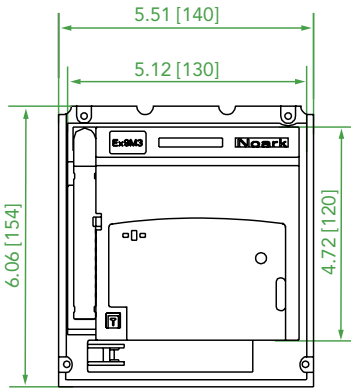


Molded Case Accessory Dimensions

M3

Electro-Control Mechanism

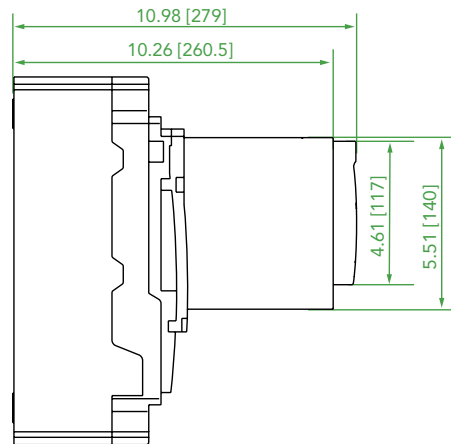
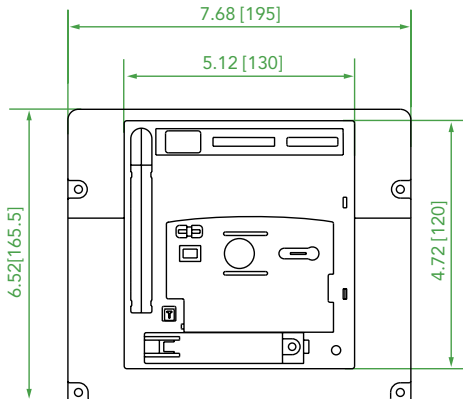
Unit: in. [mm]



M4

Electro-Control Mechanism

Unit: in. [mm]



Molded Case Connection Dimensions

Lug Lug Connection

Unit: in. [mm]



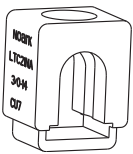
M1 75° C Cu wire only
14-3/0 AWG
89 in-lb/pulg/po
2.5~95 mm²
10 Nm



M3 75° C Cu wire only
3/0 AWG - 500 kcmil
310 in-lb/pulg/po
95~240 mm²
35 Nm



M4 75° C Cu wire only
(2) 3/0 AWG - 400 kcmil
310 in-lb/pulg/po
(2) 95~185 mm²
35 Nm



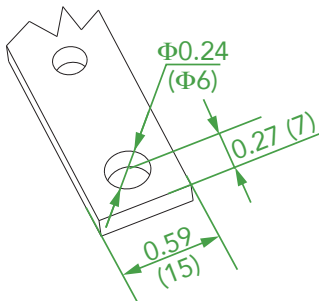
M2 75° C Cu wire only
8 AWG - 350 kcmil
230 in-lb/pulg/po
10~185 mm²
26 Nm



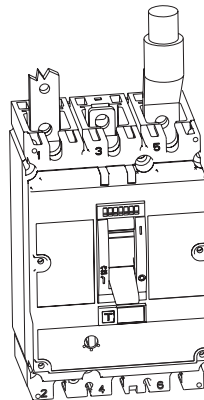
M3 75° C Cu wire only
3 AWG - 250 kcmil
310 in-lb/pulg/po
35~120 mm²
35 Nm

Bus Bar & Plug-In Connection

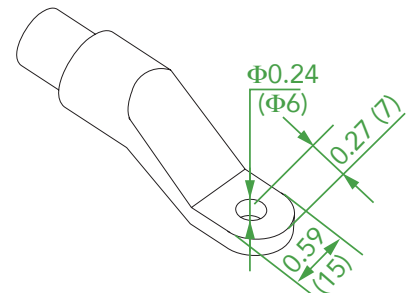
Unit: in. [mm]



Bus Bar Connection
Copper



Distance Between Poles
1.18 (30)



Plug-In Style
Copper Cable

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