

ENCLOSED MOTOR PROTECTION CIRCUIT BREAKERS



When you need reliable overload and short circuit protection for your motor control application, look to c3controls. Our Series E330 Enclosed Motor Protection Circuit Breakers are ideal for use in multi-motor applications – providing space, labor, and cost savings. The ABS plastic enclosure is rated IP55 and is CE certified, making them suitable for use anywhere in the world.

Section 10

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PROVEN



Conformity to Standards:
MOTOR PROTECTION CIRCUIT BREAKERS
 UL 508, 60947-4-1
 CSA C22.2 No. 14
 IEC 60947-1, 60947-4-1

ENCLOSURES
 IEC 60529

Certifications:

UL File #: E187641 (Guide NLRV, NLRV7), E312106 (Guide NKJH, NKJH7)

CE Marked (per EU Low Voltage Directive 2006/95/EC and RoHS Directive 2011/65/EU)

CE Marked (per EU Low Voltage Directive 2006/95/EC and RoHS Directive 2011/65/EU)

Visit www.c3controls.com to download product certifications.

ENCLOSED MOTOR PROTECTION CIRCUIT BREAKERS

c3controls offers a comprehensive line of Motor Control products designed and manufactured to meet the needs of the machine builder. We promise durable products at a price that gives you an edge, and we guarantee same-day shipping. Check out all the features of our Series E330 Enclosed Motor Protection Circuit Breakers below!

DELIVERING SUPERIOR PRODUCT QUALITY AND MANUFACTURING EXCELLENCE

✓ Proven	Our Series 330 Motor Protection Circuit Breakers are UL Listed and CE marked and our enclosures are CE marked meeting global standards requirements.	
✓ Self-Protected	Our self-protected devices eliminate the need for upstream fuses and circuit breakers, and they provide reliable motor protection.	
✓ Ratings	Compact size – Series 330 Motor Protection Circuit Breakers are only 45mm (1-49/64") wide up to 20HP @ 460V (15kW @ 400V).	
✓ Visible Markings	High visibility labels and markings; dual IEC and NEMA terminal markings for ease of wiring anywhere in the world.	
✓ Convenient	Factory assembly of a Series 330-T25S Motor Protection Circuit Breaker and ABS Plastic Enclosure, and configured accessories provide the convenience of a single catalog number simplifying bill of material and ordering.	
✓ Space Savings	Control panel sizes can be reduced because the short circuit protection provided by the Series 330 enables individual motor branch circuit fuses or circuit breakers and overload relays to be eliminated.	
✓ Added Safety	IP20 guarded terminals with dual terminal markings prevent accidental contact with live parts.	
✓ Reliability	Series 330 Motor Protection Circuit Breakers provide reliable and accurate Trip Class 10 protection against overload and phase-loss conditions.	
✓ 36-Month Warranty*	Every product is backed by our 36-Month Warranty—giving you confidence in the quality, reliability, and performance of components designed for the most demanding applications.	
✓ Guaranteed Same-Day Shipping*	Product availability reduces inventory, and improves cash-flow—saving you money. With c3controls any order for standard catalog items received by 6:00pm ET is guaranteed to ship same-day.	
✓ Advantage Pricing	Our approach to product development, manufacturing, and focus on servicing the OEM and Electrical Equipment Builder reduces cost. The result—the best value in the industry.	

*See c3controls Terms & Conditions

“In an economy where nearly everyone is cutting quality and raising costs, c3controls is still offering an excellent range of products. We’ve never had a quality control issue and anytime we place an order we know it will be on the truck for delivery that afternoon. When there’s a need for a part no one else provides, c3controls always seems to have it, and they make getting it easy.”

Jason Clark, Senior Engineer • **Plant Power & Control Systems**

Frame Size 1



Frame Size 2



UNIQUE PRODUCT LINE FEATURES

CUSTOM FIT ENCLOSURE DESIGN



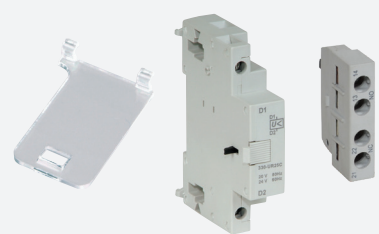
ABS Plastic enclosure designed specifically for the motor protection circuit breaker with integrated ground and neutral connections, and four knock outs.

PADLOCKABLE SWITCHES



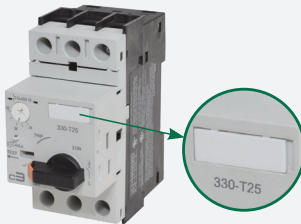
Handle can be padlocked in the "OFF" position with up to three padlocks for extra safety during maintenance.

SNAP-ON ACCESSORIES



Snap-on side mounted accessories easily install on Series 330 Motor Protection Circuit Breakers without the use of tools, lowering assembly and installation costs.

REMOVABLE MARKINGS



Removable/replaceable identification marker, standard on all c3controls Series 330 Motor Protection Circuit Breakers, simplifies troubleshooting.

ADDED SAFETY



Our door interlock allows entry into the enclosure only when the switch is in the OFF position, while our pistol operating handles include a concealed "defeater mechanism" that must be operated with a tool and allows entry when the switch is in the ON position.

**FIND IT
FAST**

Enclosed Motor Protection
Circuit Breakers



- Certifications
- Specifications
- Dimension Drawings
- Installation Instructions
- Easy to Buy

www.c3controls.com

Motor Control Device Solutions

c3controls motor control devices are the perfect solution for manufacturers who want proper motor control and superior motor protection without having to overpay or compromise on quality. In fact, we engineer so much performance and flexibility into our products, we can deliver a remarkably better value than our competitors.

c3controls
products deliver
like no other.



Seamless Compatibility

Contactors, overload relays and motor protection circuit breakers are designed by c3controls to work together, with common connections and accessories, resulting in a high functioning compact starter.

LEADING THE INDUSTRY
with our compact miniature 10HP
contactors and control relays.
One frame size (AC or DC)—28%
reduction in panel area.

Compact

The small size of c3controls motor control devices, plus features like common accessories, enable assembly into smaller control panels for lower installed costs.

Reliable Protection

Contactors provide the repeated on/off switching for the motor and are designed for motor, actuator, solenoid, and other power switching applications. Overload relays provide Trip Class 10 protection against overload and phase-loss conditions, and have ambient temperature compensation for motor protection in high temperature environments.

Ensures the protection of
equipment and user.

Motor protection circuit breakers provide overload, phase-loss and short circuit protection, and can be used by themselves as manual motor controllers or with contactors in group motor installations, and can achieve Type 2 coordination for optimum performance.

Type E self-protected combination manual motor controllers provide disconnecting means, branch circuit protection, motor control and motor overload protection all in a single device.



Proven

Our motor control devices are UL Listed and CE marked, meeting global standards requirements for use anywhere in the world.

NFPA 70 - National Electrical Code (NEC)

Understanding what functions are needed in your motor control circuit is critical when selecting motor control devices. Engineers benefit from the standards and codes established to ensure safety and protection to personnel and equipment.

More than just knowing the standards, c3controls, as a manufacturer of motor control products, has the application expertise you need to select the right products.

c3controls & Article 430 - Motors, Motor Circuits and Controllers					
	To Supply	NEC Part	c3controls Product Series		
Motor disconnecting means		Part IX			
			330	630	Type E 330 630
Motor branch-circuit, short circuit, and ground-fault protection		Part IV			
					Type E 330 630
Motor circuit conductor		Part II			
Motor controller		Part VII			
			300/310 330 620 630	Type E 330 630	
Motor control circuits		Part VI			
Motor overload protection		Part III			
			320 330 620 630	Type E 330 630	
Motor		Part I			

Our motor control products align with Article 430 Part VII, Motor Controller, of the NFPA 70, the National Electrical Code.

IT'S EASY TO BUILD YOUR OWN ENCLOSED MOTOR PROTECTION CIRCUIT BREAKER

Simply pick the code number from each of the sections below and combine them to build your part number.

Enclosed Motor Protection Circuit Breakers

E330 - - E - /
I II III IV V VI VII

Example: To build one of our most popular Enclosed MPCBs, the part number would be **E330 + II + III + E + V + VI + VII** or **E330-T2U10-ABS1ERY-F11**



I. OPERATOR TYPE

CODE	DESCRIPTION	LIST
E330	32A Motor Protection Circuit Breaker with Thermal and Magnetic Trip Elements	\$ 18.00

DISCOUNT
SCHEDULE **H**

II. MOTOR PROTECTION CIRCUIT BREAKERS (THERMAL AND MAGNETIC TRIP ELEMENTS)

CODE	RATED OPER. CURRENT (A)	ADJUSTMENT RANGE (A)	MAGNETIC TRIP CURRENT (A)	ULTIMATE INTERRUPTING CURRENT (Icu) (kA)		RATINGS FOR SWITCHING AC MOTORS*								MOTOR PROTECTION CIRCUIT BREAKER CAT. NO.	LIST
						3 PHASE kW (50Hz)				3 PHASE HP (60Hz)					
				400V	480V	230V	400/415V	500V	690V	200V	230V	460V	575V		
T2C16	0.16	0.10 ~ 0.16	2.1	100	100	—	—	—	0.06	—	—	—	—	330-T25S2C16	\$122.00
T2C25	0.25	0.16 ~ 0.25	3.3	100	100	—	0.06	0.06	0.12	—	—	—	—	330-T25S2C25	\$122.00
T2C40	0.40	0.25 ~ 0.40	5.2	100	100	—	0.09	0.12	0.18	—	—	—	—	330-T25S2C40	\$132.00
T2C63	0.63	0.40 ~ 0.63	8.2	100	100	0.06	0.12	0.25	0.25	—	—	—	1/4	330-T25S2C63	\$136.00
T2D10	1.0	0.63 ~ 1.0	13	100	100	0.12	0.25	0.37	0.55	—	—	1/2	1/2	330-T25S2D10	\$139.00
T2D16	0.6	1.0 ~ 1.6	21	100	100	0.18	0.55	0.75	1.1	1/4	1/3	3/4	1	330-T25S2D16	\$139.00
T2D25	2.5	1.6 ~ 2.5	33	100	100	0.37	0.75	1.1	1.5	1/2	1/2	1-1/2	1-1/2	330-T25S2D25	\$139.00
T2D40	4.0	2.5 ~ 4.0	52	100	100	0.75	1.5	2.2	3	3/4	1	2	3	330-T25S2D40	\$139.00
T2D63	6.3	4.0 ~ 6.3	82	100	100	1.1	2.2	3	4	1-1/2	1-1/2	3	5	330-T25S2D63	\$148.00
T2U10	10	6.3 ~ 10	130	100	42	2.2	4	4	7.5	3	3	7-1/2	10	330-T25S2U10	\$154.00
T2U16	16	10 ~ 16	208	50	10	3.7	7.5	9	12.5	5	5	10	15	330-T25S2U16	\$170.00
T2U20	20	16 ~ 20	260	50	10	3.7	9	12.5	15	5	7-1/2	15	20	330-T25S2U20	\$185.00
T2U25	25	20 ~ 25	325	50	10	5.5	12.5	15	22	7-1/2	7-1/2	15	20	330-T25S2U25	\$218.00
T2U32	32	25 ~ 32	416	50	10	7.5	15	18.5	30	10	10	20	25	330-T25S2U32	\$218.00

*NOTE: HP and kW ratings shown in the table above are for reference. The final selection of the motor protection circuit breaker must be based on the actual motor full load current.

III. ENCLOSURE TYPE

CODE	DESCRIPTION	DIMENSION REF.	CAT. NO.	LIST
ABS1	ABS Plastic	1	330-BABS1	\$ 63.00
ABS2	ABS Plastic	2	330-BABS2	\$ 78.00

IV. OPERATING HANDLE TYPE

CODE	FOR ENCLOSURE TYPE	DIMENSION REF.	DESCRIPTION
E	ABS	1, 2	Round (IP55)

AVAILABLE FRAME SIZES AND HANDLE
COLOR OPTIONS FOR ENCLOSED MOTOR
PROTECTION CIRCUIT BREAKERS



Frame Size 1

Frame Size 2

SOME OF OUR POPULAR CONFIGURATIONS:

ENCLOSED IEC MOTOR PROTECTION CIRCUIT BREAKERS

CATALOG NUMBER	DESCRIPTION	LIST
E330-T2D63-ABS1ERY	Enclosed Motor Protection Circuit Breaker, Thermal and Magnetic Version, 4.0 ~ 6.3A Adj. Range, ABS Box Dimension 1, Round (IP55) Red/Yellow Handle	\$230.00
E330-T2D63-ABS1EBG	Enclosed Motor Protection Circuit Breaker, Thermal and Magnetic Version, 4.0 ~ 6.3A Adj. Range, ABS Box Dimension 1, Round (IP55) Black/Grey Handle	\$230.00
E330-T2D63-ABS1ERY-F11	Enclosed Motor Protection Circuit Breaker, Thermal and Magnetic Version, 4.0 ~ 6.3A Adj. Range, ABS Box Dimension 1, Round (IP55) Red/Yellow Handle, Front Mounted 1 NO + 1 NC Auxiliary	\$250.00
E330-T2U10-ABS1ERY-F11	Enclosed Motor Protection Circuit Breaker, Thermal and Magnetic Version, 6.3 ~ 10A Adj. Range, ABS Box Dimension 1, Round (IP55) Red/Yellow Handle, Front Mounted 1 NO + 1 NC Auxiliary	\$256.00

ENCLOSED MOTOR PROTECTION CIRCUIT BREAKER (CONT.)**V. HANDLE COLOR**

CODE	COLOR
BG	Black/Grey
RY	Red/Yellow

VI. FRONT MOUNTED OPTIONS

CODE	FOR ENCLOSURE DIMENSION REF.	DESCRIPTION	CAT. NO.	LIST
(Blank)	—	None	—	—
F11	1, 2	Front Mounted 1 NO and 1 NC	330-FA11S25	\$ 21.00

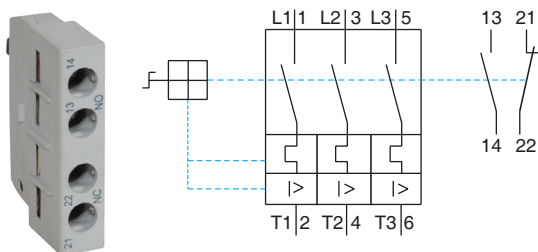
VII. SIDE MOUNTED OPTIONS

CODE	FOR ENCLOSURE DIMENSION REF.	DESCRIPTION	CAT. NO.	LIST
(Blank)	—	None	—	—
S11	1, 2	Side Mounted 1 Normally Open and 1 Normally Closed	330-SA11S25	\$ 21.00
S20	1, 2	Side Mounted 2 Normally Open	330-SA20S25	\$ 21.00
SR25XC	2	Shunt Release Module 20 ~ 24V 50/60Hz	330-SR25XC	\$ 50.00
SR25XJ	2	Shunt Release Module 40 ~ 48V 50/60Hz	330-SR25XJ	\$ 50.00
SR25XAH	2	Shunt Release Module 100 ~ 127V 50/60Hz	330-SR25XAH	\$ 50.00
SR25XF	2	Shunt Release Module 200 ~ 240V 50/60Hz	330-SR25XF	\$ 50.00
SR25XQ	2	Shunt Release Module 365 ~ 440V 50/60Hz	330-SR25XQ	\$ 50.00
UR25C	2	Undervoltage Release Module 20V 50Hz / 24V 60Hz	330-UR25C	\$ 50.00
UR25XC	2	Undervoltage Release Module 24V 50/60Hz	330-UR25XC	\$ 50.00
UR25H	2	Undervoltage Release Module 24V 50Hz / 28V 60Hz	330-UR25H	\$ 50.00
UR25AG	2	Undervoltage Release Module 95V 50Hz / 110V 60Hz	330-UR25AG	\$ 50.00
UR25D	2	Undervoltage Release Module 110V 50Hz / 120V 60Hz	330-UR25D	\$ 50.00
UR25AH	2	Undervoltage Release Module 110 ~ 115V 50Hz / 127V 60Hz	330-UR25AH	\$ 50.00
UR25L	2	Undervoltage Release Module 180V 50Hz / 208V 60Hz	330-UR25L	\$ 50.00
UR25AJ	2	Undervoltage Release Module 190V 50Hz / 220V 60Hz	330-UR25AJ	\$ 50.00
UR25F	2	Undervoltage Release Module 208V 50Hz / 240V 60Hz	330-UR25F	\$ 50.00
UR25P	2	Undervoltage Release Module 230 ~ 240V 50Hz / 277V 60Hz	330-UR25P	\$ 50.00
UR25AL	2	Undervoltage Release Module 325V 50Hz / 380V 60Hz	330-UR25AL	\$ 50.00
UR25Q	2	Undervoltage Release Module 380V 50Hz / 440V 60Hz	330-UR25Q	\$ 50.00
UR25R	2	Undervoltage Release Module 400 ~ 415V 50Hz / 480V 60Hz	330-UR25R	\$ 50.00
UR25T	2	Undervoltage Release Module 500V 50Hz / 600V 60Hz	330-UR25T	\$ 50.00

UNIQUE PRODUCT FEATURES

1. The 330 Motor Protection Circuit Breaker Enclosure Accessory is a custom fit enclosure design specifically for the Motor Protection Circuit Breaker, allowing superior performance.
2. ABS Plastic enclosure has integrated ground and neutral connections, and four (4) standard PG16 knock outs (2 on the top and 2 on the bottom).
3. ABS Plastic enclosure handle can be padlocked in the "OFF" position with up to three padlocks for extra safety and the security needed during maintenance activities.
4. The lift off ABS Plastic enclosure has an IP55 environmental rating and is CE certified. Enclosure is interlocked with device and cannot be removed when in the "ON" position.

FRONT MOUNTED AUXILIARY CONTACTS

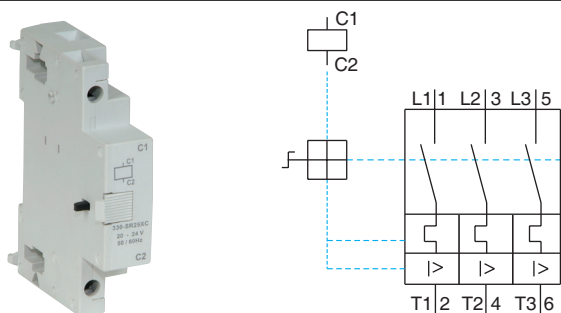


Our front mounted auxiliary contacts do not add depth to the motor protection circuit breaker and installs within its foot print – no extra panel area is required. IP20 guarded terminals protect against accidental contact with live parts. These contacts snap-on and install without the use of tools. NOTE: See chart below for maximum number of front mounted auxiliary contacts. See MPCB Section 9 Page 10 for front mounted auxiliary contact part number and ordering information.

MAXIMUM NUMBER OF FRONT OR SIDE MOUNTED AUXILIARY CONTACTS

MOTOR PROTECTION CIRCUIT BREAKER	MAXIMUM NUMBER
330-T25S2, 330-M25S2	8 (one front mounted auxiliary contact module, one side mounted auxiliary contact module, and one side mounted trip indicating auxiliary contact module.)

SHUNT RELEASE MODULES



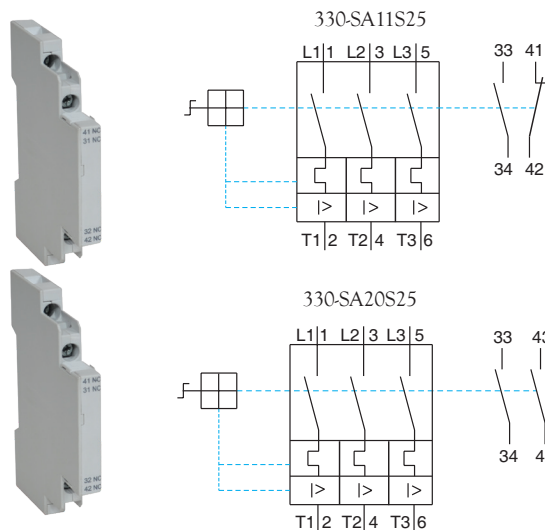
The shunt release module enables the motor protection circuit breaker to be turned “OFF” from a remote location. Snaps-on and installs on the right side of the motor protection circuit breaker without the use of tools. IP20 guarded terminals protect against accidental contact with live parts. Wide range of 50/60Hz operating voltages. Can be used in conjunction with front mounted and side mounted auxiliary contacts. See MPCB Section 9 Page 11 for shunt release module part number and ordering information.

ADJUSTMENT SCALE COVER



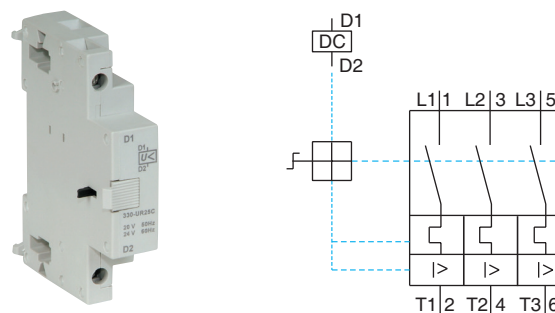
The adjustment scale cover prevents inadvertent or unauthorized adjustment of the full load current dial setting of the motor protection circuit breaker. See MPCB Section 9 Page 12 for adjustment scale cover part number and ordering information.

SIDE MOUNTED AUXILIARY CONTACTS



Our side mounted auxiliary contacts feature IP20 guarded terminals to protect against accidental contact with live parts. These contacts snap-on to the left side of the motor protection circuit breaker and install without the use of tools. NOTE: See chart at left for maximum number of side mounted auxiliary contacts. See MPCB Section 9 Page 10 for side mounted auxiliary contact part number and ordering information.

UNDERVOLTAGE RELEASE MODULES



The undervoltage release module automatically trips the motor protection circuit breaker when the supply voltage is less than 70 - 35% of the rated voltage of the undervoltage release module. Undervoltage release modules are ideal to ensure motors do not automatically restart after a power outage when the motor protection circuit breaker is being used by itself as a manual motor controller. Snaps-on and installs on the right side of the motor protection circuit breaker without the use of tools. IP20 guarded terminals to protect against accidental contact with live parts. Wide range of 50/60Hz operating voltages. Can be used in conjunction with front mounted and side mounted auxiliary contacts. See MPCB Section 9 Page 11 for undervoltage release module part number and ordering information.

DISCOUNT
SCHEDULE

H

SPECIFICATIONS:

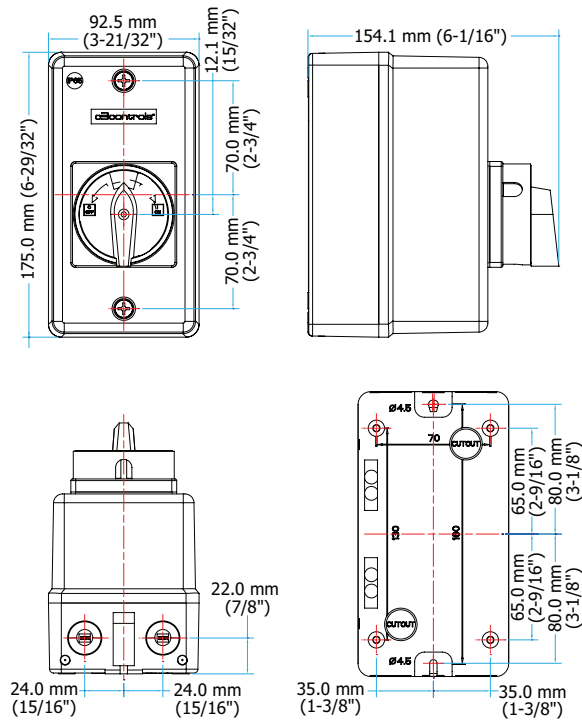
SERIES E330 ENCLOSED MOTOR PROTECTION CIRCUIT BREAKER SPECIFICATIONS

		SWITCH CURRENT RATING CODE													
	UNITS	T2C16	T2C25	T2C40	T2C63	T2D10	T2D16	T2D25	T2D40	T2D63	T2U10	T2U16	T2U20	T2U25	T2U32
ELECTRICAL GENERAL		For detailed motor protection circuit breaker specifications by catalog number, see Section 9 Page 13													
Rated Operating Frequency	Hz	50/60													
ELECTRICAL UL/CSA APPLICATIONS		For detailed motor protection circuit breaker specifications by catalog number, see Section 9 Page 13													
Rated Operating Voltage, Ue	VAC	600													
Short Circuit Current Ratings @ 480V AC	kA	50	50	50	50	50	50	50	50	50	50	50	50	50	50
Maximum Fuse or Circuit Breaker Size ^①	kA	450	450	450	450	450	450	450	450	450	450	450	450	450	450
Short Circuit Current Ratings @ 600V AC	kA	25	25	25	25	25	25	25	25	25	25	25	25	25	25
Maximum Fuse or Circuit Breaker Size ^①	kA	450	450	450	450	450	450	450	450	450	450	450	450	450	450
ELECTRICAL IEC APPLICATIONS		For detailed motor protection circuit breaker specifications by catalog number, see Section 9 Page 14													
Rated Insulation Voltage, Ui	V	690													
Rated Impulse Voltage, Uimp	kV	6													
Rated Operating Voltage, Ue	VAC	690													
MECHANICAL		For detailed motor protection circuit breaker specifications by catalog number, see Section 9 Page 14													
ENVIRONMENTAL		For detailed motor protection circuit breaker specifications by catalog number, see Section 9 Page 14													
Ambient Operating Temperature	°C / °F	-20 to +55 / -4 to +131													
Ambient Storage Temperature	°C / °F	-50 to +80 / -58 to +176													
Altitude	m / ft.	2,000 / 6,562													
CONSTRUCTION - GENERAL		For detailed motor protection circuit breaker specifications by catalog number, see Section 9 Page 15													
Number of Poles		3													
Pollution Degree		3													
Trip Class		10													
INGRESS PROTECTION															
Main Terminals (with conductors connected)		IP20													
Operating Handle															
Code E		IP55													
Enclosure															
Code ABS		IP55													
CONSTRUCTION - CONDUCTOR CROSS SECTIONS		For detailed motor protection circuit breaker specifications by catalog number, see Section 9 Page 15													
ROHS COMPLIANCE		For RoHS compliance documentation by product, refer to www.c3controls.com													

^① Not to exceed the maximum fuse/circuit breaker size. Per the National Electrical Code.

MOTOR PROTECTION CIRCUIT BREAKER ENCLOSURES

FRAME SIZE 1



FRAME SIZE 2

