

Product Overview

Bulletin 140MT Motor Protection Circuit Breakers (MPCBs) or Motor Protective Switching Devices (MPSDs) are UL Listed as Manual, Self-Protected Combination Motor Controllers (Type E) and Manual Motor Controllers (with approvals for Suitable as Motor Disconnect and Suitable for use in Group Installation).

When UL/CSA Listed as Manual, Self-Protected Combination Motor Controllers, the 140MT MPCBs provide all of the necessary NEC/CEC requirements for the protection and control of individual motor branch circuits without additional branch circuit protective devices.

According to UL 60947-4-1, CSA C22.2 No.60947-4-1, these devices may provide the following control and protection functions.

- Disconnect for motor branch circuit
- Short-circuit protection (magnetic protection)
- Overload protection (thermal protection)
- Manual switching (motor control means)

Group motor installations eliminate the need for individual branch short-circuit protective devices for each motor circuit, reducing panel space, installation and wiring time, and costs. There is only one Branch Circuit Protective Device (BCPD) for the "Group". Bulletin 140MT devices are also UL Listed for Tap Conductor protection in group installations, which helps reduce conductor sizing.

According to UL 60947-4-1, CSA C22.2 No.60947-4-1, these devices these devices certified for group motor installation may provide the following control and protection functions.

- Disconnect for motor branch circuit
- Overload protection (thermal protection)
- Manual switching (motor control means)

Bulletin 140MT devices meet requirement of MPSDs according to IEC 60947-4-1 and Circuit Breakers according to the IEC 60947-2 standard for application outside of North America. These devices provide the following functions.

- Disconnect for motor branch circuit
- Short-circuit protection (magnetic protection)
- Overload protection (thermal protection)
- Manual switching (motor control means)

Bulletin 140MT devices provide Trip Class 10 overload protection and phase loss sensitivity protection. These are suitable for single- and three- phase applications.

Cat. No. 140MT-D9V devices can also be applied at the output of a variable frequency drive (VFD) in multi-motor applications.

Application Diagrams

Group Installation with MPCBs

There is only one BCPD for the "Group".

Group installation has been successfully used for many years in the U.S. and Canada. It allows "two or motors or one or more motors and other loads to be connected to the same branch-circuit...". The most restrictive part of the conditions specified for Group Installation is the requirement for the protection of the conductors for each motor circuit. In the U.S. NEC for 2002, a new rule for the conductor sizing was added for devices that are listed and marked "Suitable for use as Tap Conductor Protection".

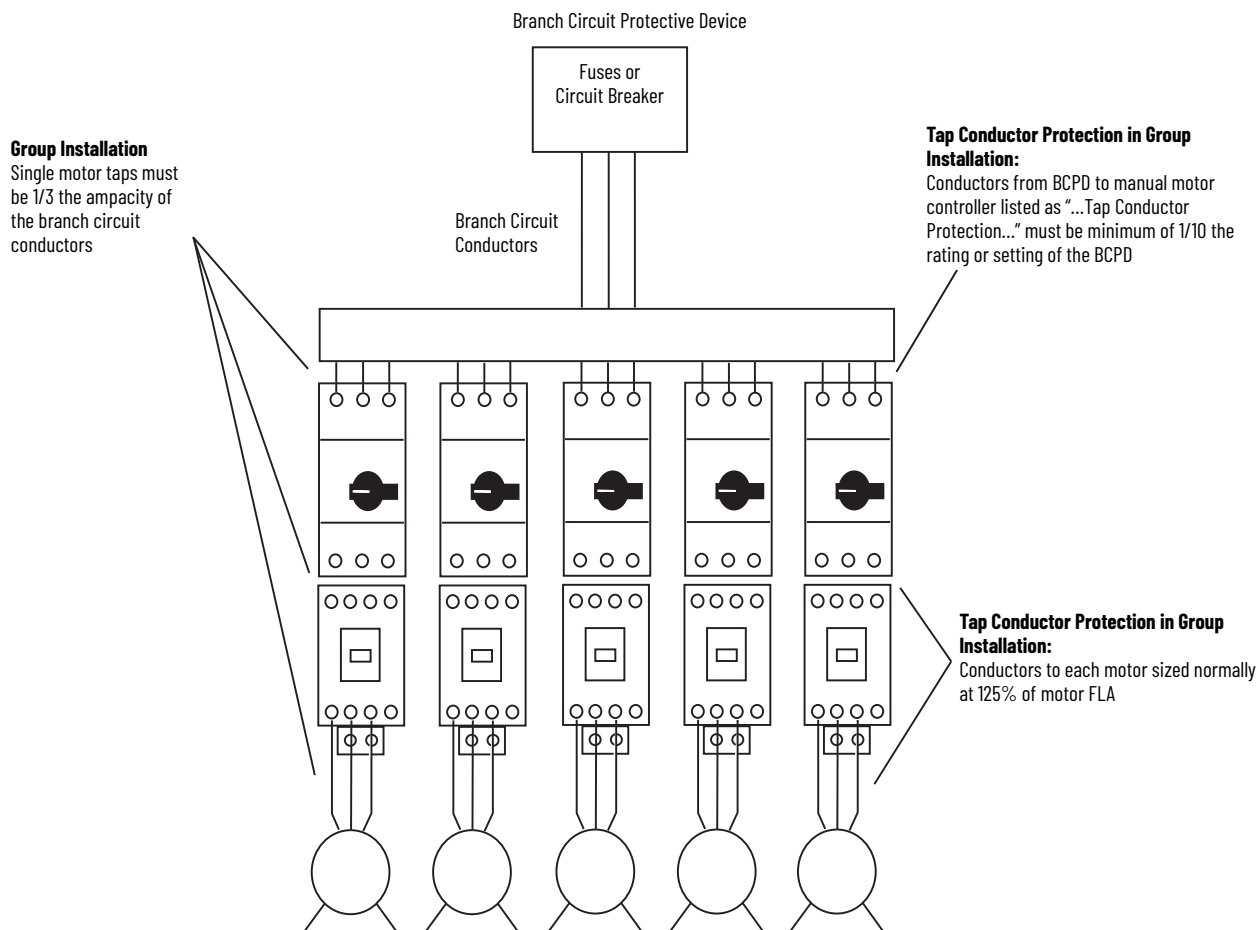
[Figure 8](#) shows an example that illustrates installations involving multiple motors with a single BCPD protecting the entire "Group".

Bulletin 140MT MPCBs are UL/CSA Listed for Group Installation: conductors from the BCPD to each motor must be a minimum of 1/3 the ampacity of the Branch Circuit conductors.



Bulletin 140MT MPCBs are UL/CSA Listed for Tap conductor Protection in Group Installations: conductors from the BCPD to manual motor controller listed as "...Tap Conductor Protection..." must be minimum of 1/10 the rating or setting of the BCPD. Conductors from the controller to the motor must be 125% of the motor FLA.

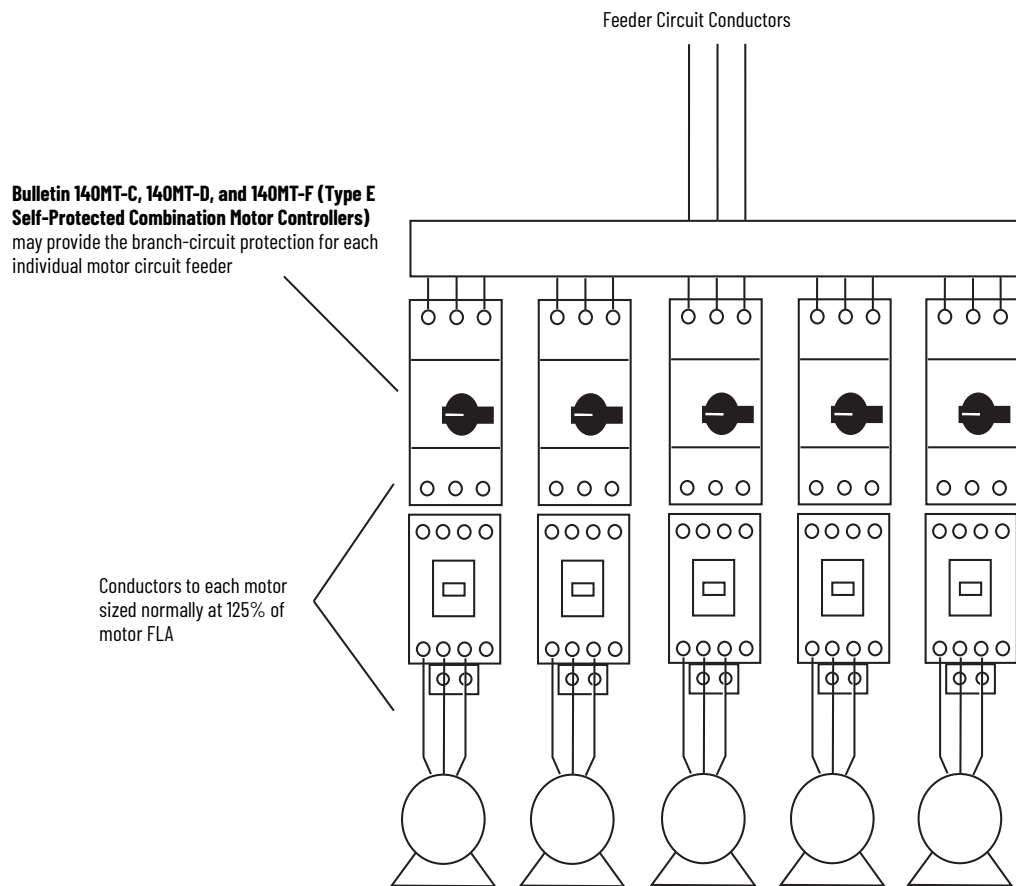
Figure 8 - Group Installation with MPCBs



Multiple Motor Installation with MPCBs

Each Motor has an Individual BCPD.

Bulletin 140MT MPCBs are UL/CSA Listed as Type E Manual Self-Protected Combination Motor Controllers or UL/CSA Listed as Circuit Breakers. These UL/CSA Listings allow the Bulletin 140MT MPCBs to provide the branch-circuit, short-circuit protection (as well as overload protection) for each individual motor circuit. Additional short-circuit protection is not required for the protection of the individual motor circuits, leaving only the requirement for protection of the feeder circuit conductors by an upstream protective device. [Figure 9](#) shows an example that illustrates installations involving multiple motors, each with its own BCPD.

Figure 9 - Multiple Motor Installation with MPCBs

Catalog Number Explanation

C- and D-Frame Devices

140MT - C 3 E - B63 - KN - MT - XC - GK
a b c d e f g h i

a		b		c		d		e	
Bulletin Number		Current Rating/ Frame Size		Interrupting Rating/ Breaking Capacity		Function		Current Range	
Code	Description	Code	Description	Code	Description	Code	Description	Code	Description
140MT	140MT Motor Protective Switching Device (Thermal)	C	32 A, Frame C	3	Normal break	E	Adjustable Thermal/Fixed Magnetic ($14 \times I_n$) MPCB	A	0.10 (example: A16 = 0.16 A)
		D	40 A, Frame D	9	High break	N	Fixed Magnetic ($14 \times I_n$) MCP	B	1.0 (example: B16 = 1.6 A)
						T	Adjustable Thermal/Fixed Magnetic ($18...22 \times I_n$) MPCB	C	10 (example: C16 = 16 A)
						V	Fixed Magnetic (application at output of VFD multi-motor)		

f		g		h		i	
Knob and Adapters		Mounting Type		Auxiliary Contacts ⁽¹⁾		Undervoltage and Shunt Trips	
Code	Description	Code	Description	Bottom Front		Code	Description
KN	Black lockable knob	MT	Standard busbar mount, top	1st Code	Description	Undervoltage Trip Units	
KY	Red/yellow lockable knob			X	No contact	GK	24V, 50 Hz
KB	Blue lockable knob (C-Frame only)			B	1 N.O.	GD	110V, 50 Hz/120V, 60 Hz
TE	Normal break			C	1 N.O. + 1 N.C.	GF	220...230V, 50 Hz
				D	2 N.O.	GA	240...260V, 60 Hz
				R	1 N.C. + 1 N.O. (SC+OL)	GN	380...400V, 50 Hz
				S	1 N.O. + 1 N.O. (SC+OL)	GB	480V, 60 Hz/415V, 50 Hz
				M	1 N.O. + 1 N.C. (SC+OL)	Shunt Trip Units	
				N	1 N.O. (SC+OL) + 1 N.O. (SC)	PK	24V, 50 Hz
				Right Side		PD	110V, 50 Hz / 120V 60 Hz
				2nd Code	Description	PF	220...230V, 50 Hz
				X	No contact	PA	240...260V, 60 Hz
				C	1 N.O. + 1 N.C.	PT	240V, 50 Hz/277V, 60 Hz
				D	2 N.C.	PN	380...400V, 50 Hz
				E	2 N.C.	PB	480V, 60 Hz/415V, 50 Hz
						PZJ	24V DC

(1) Choose up to two auxiliary contacts. Use the first character in the code to specify the front mounted auxiliary contact; use the second character to specify the right side-mounted auxiliary contact. Example: code -XC is for no front-mounted contact, and a side-mounted auxiliary contact with 1 N.O. and 1 N.C. contact.

F-Frame Devices

140MT - F 9 E - C10
a b c d e

a		b		c		d		e	
Bulletin Number		Current Rating/ Frame Size		Interrupting Rating/ Breaking Capacity		Function		Current Range	
Code	Description	Code	Description	Code	Description	Code	Description	Code	Description
140MT	140MT Motor Protection Circuit Breaker	F	45 A, Frame F	9	High break	E	Adjustable Thermal/Fixed Magnetic ($15 \times I_n$) MPCB	C	10 (example: C16 = 16 A)
						N	Fixed Magnetic ($15 \times I_n$) MCP		
						T	Adjustable Thermal/Fixed Magnetic ($19...22 \times I_n$) MPCB		

Product Selection

Selection Using Current and Hp/kW Ratings

Table 27 - Motor Protective Switching Devices

Rated Operational Current (I_e) [A]	Motor Current Adjustment Range [A]	Nominal Magnetic Trip Current [A]	Max Short-circuit Current [kA]		Max. 3-phase Hp Ratings ⁽¹⁾				Max. kW, 3-Phase – AC-3 ⁽¹⁾				Cat. No.
			400V (I_{cu})	480V (group motor)	200V	230V	460V	575V	230V	400/415V	500V	690V	
C-Frame, Adjustable Thermal/Fixed Magnetic (14 x I_n)													
0.16	0.10...0.16	2.2	100	65	—	—	—	—	—	0.02	0.06	0.06	140MT-C3E-A16
0.25	0.16...0.25	3.5	100	65	—	—	—	—	—	0.04	0.09	0.09	140MT-C3E-A25
0.4	0.25...0.40	5.6	100	65	—	—	—	—	0.06	0.09	0.12	0.18	140MT-C3E-A40
0.63	0.40...0.63	8.8	100	65	—	—	—	—	0.09	0.18	0.18	0.25	140MT-C3E-A63
1	0.63...1.0	14	100	65	—	—	0.5	0.5	0.18	0.25	0.37	0.55	140MT-C3E-B10
1.6	1.0...1.6	22	100	65	—	—	0.75	—	0.25	0.55	0.75	1.1	140MT-C3E-B16
2.5	1.6...2.5	35	100	65	0.5	0.5	1	1.5	0.37	0.75	1.1	1.8	140MT-C3E-B25
4	2.5...4.0	56	100	65	0.75	0.75	2	3	0.75	1.5	2.2	3	140MT-C3E-B40
6.3	4.0...6.3	88	100	65	1	1.5	3	5	1.5	2.2	3	4	140MT-C3E-B63
10	6.3...10	140	100	65	2	2	5	7.5	2.2	4	6.3	7.5	140MT-C3E-C10
16	10...16	224	65	30	3	5	10	10	4	7.5	10	13	140MT-C3E-C16
20	14.5...20	280	50	30	5	5	10	15	5.5	10	11	17	140MT-C3E-C20
25	18...25	350	15	30	5	7.5	15	20	5.5	11	15	22	140MT-C3E-C25
29	23...29	406	15	30	7.5	10	20	25	7.5	13	18.5	25	140MT-C3E-C29
32	26.5...32	448	15	30	7.5	10	20	30	7.5	15	20	25	140MT-C3E-C32
D-Frame, Adjustable Thermal/Fixed Magnetic (14 x I_n)													
0.63	0.40...0.63	8.8	100	65	—	—	—	—	0.09	0.18	0.18	0.25	140MT-D9E-A63
1	0.63...1.0	14	100	65	—	—	0.5	0.5	0.18	0.25	0.37	0.55	140MT-D9E-B10
1.6	1.0...1.6	22	100	65	—	—	0.75	—	0.25	0.55	0.75	1.1	140MT-D9E-B16
2.5	1.6...2.5	35	100	65	0.5	0.5	1	1.5	0.37	0.75	1.1	1.8	140MT-D9E-B25
4	2.5...4.0	56	100	65	0.75	0.75	2	3	0.75	1.5	2.2	3	140MT-D9E-B40
6.3	4.0...6.3	88	100	65	1	1.5	3	5	1.5	2.2	3	4	140MT-D9E-B63
10	6.3...10	140	100	65	2	2	5	7.5	2.2	4	6.3	7.5	140MT-D9E-C10
16	10...16	224	100	65	3	5	10	10	4	7.5	10	13	140MT-D9E-C16
20	14.5...20	280	100	65	5	5	10	15	5.5	10	11	17	140MT-D9E-C20
25	18...25	350	65	50	5	7.5	15	20	5.5	11	15	22	140MT-D9E-C25
29	23...29	406	50	50	7.5	10	20	25	7.5	13	18.5	25	140MT-D9E-C29
32	26.5...32	448	50	50	7.5	10	20	30	7.5	15	20	25	140MT-D9E-C32
36	30...36	432	50	30	10	10	25	30		18.5	20	25	140MT-D9E-C36 ⁽²⁾
40	34...40	480	50	30	10	10	30	30	11	20	24	30	140MT-D9E-C40 ⁽²⁾
D-Frame, Fixed Magnetic (application at output of VFD multi-motor)													
1.6	1.0...1.6	88	100	65	—	—	0.75	—	0.25	0.55	0.75	—	140MT-D9V-B16
2.5	1.6...2.5	88	100	65	0.5	0.5	1	—	0.37	0.75	1.1	—	140MT-D9V-B25
4	2.5...4.0	88	100	65	0.75	0.75	2	—	0.75	1.5	2.2	—	140MT-D9V-B40
6.3	4.0...6.3	88	100	65	1	1.5	3	—	1.5	2.2	3	—	140MT-D9V-B63
10	6.3...10	140	100	65	2	2	5	—	2.2	4	6.3	—	140MT-D9V-C10
16	10...16	224	100	65	3	5	10	—	4	7.5	10	—	140MT-D9V-C16
20	14.5...20	280	100	65	5	5	10	—	5.5	10	11	—	140MT-D9V-C20
25	18...25	350	65	50	5	7.5	15	—	5.5	11	15	—	140MT-D9V-C25
29	23...29	406	50	50	7.5	10	20	—	7.5	13	18.5	—	140MT-D9V-C29
32	26.5...32	448	50	50	7.5	10	20	—	7.5	15	20	—	140MT-D9V-C32
36	30...36	432	50	30	10	10	25	—	—	18.5	20	—	140MT-D9V-C36 ⁽²⁾
40	34...40	480	50	30	10	10	30	—	11	20	24	—	140MT-D9V-C40 ⁽²⁾

Table 27 - Motor Protective Switching Devices (Continued)

Rated Operational Current (I_e) [A]	Motor Current Adjustment Range [A]	Nominal Magnetic Trip Current [A]	Max Short-circuit Current [kA]		Max. 3-phase Hp Ratings ⁽¹⁾				Max. kW, 3-Phase – AC-3 ⁽¹⁾				Cat. No.
			400V (I_{cu})	480V (group motor)	200V	230V	460V	575V	230V	400/415V	500V	690V	
F-Frame, Adjustable Thermal/Fixed Magnetic (15 x I_n)													
12	9...12	180	100	65	3	3	7.5	10	3	5.5	5.5	7.5	140MT-F9E-C12
16	12...16	240	100	65	3	5	10	10	4	7.5	10	11	140MT-F9E-C16
20	15...20	300	100	65	5	5	10	15	5.5	7.5	11	15	140MT-F9E-C20
25	19...25	375	100	65	5	7.5	15	20	5.5	11	15	22	140MT-F9E-C25
32	24...32	480	65	65	7.5	10	20	30	7.5	15	18.5	30	140MT-F9E-C32
38	30...38	570	65	65	10	10	25	30	11	18.5	22	30	140MT-F9E-C38
45	36...45	675	65	65	10	15	30	40	11	22	30	37	140MT-F9E-C45

(1) Hp/kW ratings shown are for reference. The final selection of the MPCB/MPSD depends on the actual motor full load current.

(2) Suitable for continuous operation at 90% current rating at 480V only if used in a minimum enclosure size of 250 x 175 x 150 mm (10 x 7 x 6 in).

Table 28 - High Inrush Motor Protection Switching Devices

Rated Operational Current (I_e) [A]	Motor Current Adjustment Range [A]	Nominal Magnetic Trip Current [A]	Max Short-circuit Current [kA]		Max. 3-phase Hp Ratings ⁽¹⁾				Max. kW, 3-Phase – AC-3 ⁽¹⁾				Cat. No.
			400V	480V	200V	230V	460V	575V	230V	400/415V	500V	690V	
			(I_{cu})	(group motor)									
D-Frame, Adjustable Thermal/Fixed Magnetic (18...22 x I_n)													
0.16	0.10...0.16	3.5	100	65	—	—	—	—	—	0.02	0.06	0.06	140MT-D9T-A16
0.25	0.16...0.25	5.5	100	65	—	—	—	—	—	0.04	0.09	0.09	140MT-D9T-A25
0.4	0.25...0.40	8.8	100	65	—	—	—	—	0.06	0.09	0.12	0.18	140MT-D9T-A40
0.63	0.40...0.63	14	100	65	—	—	—	—	0.09	0.18	0.18	0.25	140MT-D9T-A63
1	0.63...1.0	22	100	65	—	—	0.5	0.5	0.18	0.25	0.37	0.55	140MT-D9T-B10
1.6	1.0...1.6	35	100	65	—	—	0.75	—	0.25	0.55	0.75	1.1	140MT-D9T-B16
2.5	1.6...2.5	55	100	65	0.5	0.5	1	1.5	0.37	0.75	1.1	1.8	140MT-D9T-B25
4	2.5...4.0	88	100	65	0.75	0.75	2	3	0.75	1.5	2.2	3	140MT-D9T-B40
6.3	4.0...6.3	139	100	65	1	1.5	3	5	1.5	2.2	3	4	140MT-D9T-B63
10	6.3...10	220	100	65	2	2	5	7.5	2.2	4	6.3	7.5	140MT-D9T-C10
16	10...16	320	100	65	3	5	10	10	4	7.5	10	13	140MT-D9T-C16
20	14.5...20	400	100	65	5	5	10	15	5.5	10	11	17	140MT-D9T-C20
25	18...25	450	65	50	5	7.5	15	20	5.5	11	15	22	140MT-D9T-C25
F-Frame, Adjustable Thermal/Fixed Magnetic (19...22 x I_n)													
25	19...25	550	65	65	5	7.5	15	20	5.5	11	15	22	140MT-F9T-C25
32	24...32	704	65	65	7.5	10	20	30	7.5	15	18.5	30	140MT-F9T-C32
38	30...38	836	65	65	10	10	25	30	11	18.5	22	30	140MT-F9T-C38
45	36...45	990	65	65	10	15	30	40	11	22	30	37	140MT-F9T-C45

(1) Hp/kW ratings shown are for reference. The final selection of the MPCB/MPSD depends on the actual motor full load current.

Table 29 - Motor Circuit Protectors

Rated Operational Current (I_e) [A]	Motor Current Adjustment Range [A]	Nominal Magnetic Trip Current [A]	Max. Short Circuit Current [kA]		Max. 3-phase Hp Ratings ⁽¹⁾				Max. kW, 3-Phase – AC-3 ⁽¹⁾				Cat. No.
			400V	480V	200V	230V	460V	575V	230V	400/415V	500V	690V	
			(I_{cu})	(group motor)									
D-Frame, Fixed Magnetic (14 x I_n)													
0.16	—	2.2	100	65	—	—	—	—	—	0.02	0.06	0.06	140MT-D9N-A16
0.25	—	3.5	100	65	—	—	—	—	—	0.04	0.09	0.09	140MT-D9N-A25
0.4	—	5.6	100	65	—	—	—	—	0.06	0.09	0.12	0.18	140MT-D9N-A40
0.63	—	8.8	100	65	—	—	—	—	0.09	0.18	0.18	0.25	140MT-D9N-A63
1	—	14	100	65	—	—	0.5	0.5	0.18	0.25	0.37	0.55	140MT-D9N-B10
1.6	—	22	100	65	—	—	0.75	—	0.25	0.55	0.75	1.1	140MT-D9N-B16
2.5	—	35	100	65	0.5	0.5	1	1.5	0.37	0.75	1.1	1.8	140MT-D9N-B25
4	—	56	100	65	0.75	0.75	2	3	0.75	1.5	2.2	3	140MT-D9N-B40
6.3	—	88	100	65	1	1.5	3	5	1.5	2.2	3	4	140MT-D9N-B63
10	—	140	100	65	2	2	5	7.5	2.2	4	6.3	7.5	140MT-D9N-C10
16	—	224	100	65	3	5	10	10	4	7.5	10	13	140MT-D9N-C16
20	—	280	100	65	5	5	10	15	5.5	10	11	17	140MT-D9N-C20
25	—	350	65	50	5	7.5	15	20	5.5	11	15	22	140MT-D9N-C25
29	—	406	50	50	7.5	10	20	25	7.5	13	18.5	25	140MT-D9N-C29
32	—	448	50	50	7.5	10	20	30	7.5	15	20	25	140MT-D9N-C32
36	—	432	50	30	10	10	25	30	—	18.5	20	25	140MT-D9N-C36 ⁽²⁾
40	—	480	50	30	10	10	30	30	11	20	24	30	140MT-D9N-C40 ⁽²⁾
F-Frame, Fixed Magnetic (15 x I_n)													
25	—	375	100	65	5	7.5	15	20	5.5	11	15	22	140MT-F9N-C25
32	—	480	65	65	7.5	10	20	30	7.5	15	18.5	30	140MT-F9N-C32
38	—	570	65	65	10	10	25	30	11	18.5	22	30	140MT-F9N-C38
45	—	675	65	65	10	15	30	40	11	22	30	37	140MT-F9N-C45

(1) Hp/kW ratings shown are for reference. The final selection of the MCP depends on the actual motor full load current.

(2) Suitable for continuous operation at 90% current rating at 480V only if used in a minimum enclosure size of 250 x 175 x 150 mm (10 x 7 x 6 in).



Motor Circuit Protectors (Cat. No. 140MT-D9N, 140MT-F9N) do not provide thermal protection for themselves nor for downstream components. You must install a separate protective device against thermal overload, such as an overload relay as part of a starter combination. In applications that use these devices as the short-circuit protection device of heavy-duty starting motors, the rated operational current I_e of the devices must be over-sized using the factors in [Table 30](#).

Table 30 - Oversizing for Heavy-duty Starting

Current Range [A]	Device Type	Class 10	Class 20	Class 30
0.16...10	140MT-D9N	—	—	—
16...29		—	—	1.41
32...40		—	1.41	1.73
9...38	140MT-F9N	—	1.41	1.73
45		—	—	1.41

Selection Using Application Ratings

See [page 44](#) for combination ratings.

Table 31 - UL/CSA Listed Application Ratings, Motor Protective Switching Devices

UL 60947-4-1 – Manual Motor Controller							UL 60947-4-1 Self-Protected (Type E) Combination Motor Controller		Cat. No.
Max. Fuse or Circuit Breaker per NEC [A]	Max Short-circuit Current [kA]						Max Short-circuit Current [kA]		
	Group Motor Installation		Motor Disconnect		Tap Conductor Protection				
	480V	600V	480V	600V	480Y/277V ⁽¹⁾	600Y/347V ⁽¹⁾	480Y/277V ⁽¹⁾	600Y/347V ⁽¹⁾	
C-Frame, Adjustable Thermal/Fixed Magnetic (14 x I _n)									
450	65	50	65	50	65	50	65	50	140MT-C3E-A16
450	65	50	65	50	65	50	65	50	140MT-C3E-A25
450	65	50	65	50	65	50	65	50	140MT-C3E-A40
450	65	50	65	50	65	50	65	50	140MT-C3E-A63
450	65	50	65	50	65	50	65	50	140MT-C3E-B10
450	65	50	65	50	65	50	65	50	140MT-C3E-B16
450	65	30	65	30	65	30	65	30	140MT-C3E-B25
450	65	30	65	30	65	30	65	30	140MT-C3E-B40
450	65	30	65	30	65	—	65	—	140MT-C3E-B63
450	65	30	65	30	65	—	65	—	140MT-C3E-C10
450	30	30	30	30	30	—	30	—	140MT-C3E-C16
450	30	30	30	10	—	—	—	—	140MT-C3E-C20
450	30	18	30	5	—	—	—	—	140MT-C3E-C25
450	30	10	10	--	—	—	—	—	140MT-C3E-C29
450	30	10	10	--	—	—	—	—	140MT-C3E-C32
D-Frame, Adjustable Thermal/Fixed Magnetic (14 x I _n)									
450	65	50	65	50	65	50	65	50	140MT-D9E-A63
450	65	50	65	50	65	50	65	50	140MT-D9E-B10
450	65	50	65	50	65	50	65	50	140MT-D9E-B16
450	65	30	65	30	65	30	65	30	140MT-D9E-B25
450	65	30	65	30	65	30	65	30	140MT-D9E-B40
450	65	30	65	30	65	30	65	30	140MT-D9E-B63
450	65	30	65	30	65	30	65	30	140MT-D9E-C10
450	65	30	65	30	65	30	65	30	140MT-D9E-C16
450	65	30	65	30	65	—	65	—	140MT-D9E-C20
450	50	30	50	30	50	—	50	—	140MT-D9E-C25
450	50	30	50	30	50	—	50	—	140MT-D9E-C29
450	50	30	30	18	30	—	30	—	140MT-D9E-C32
450	30	30	30	18	30	—	30	—	140MT-D9E-C36 ⁽²⁾
450	30	30	30	18	30	—	30	—	140MT-D9E-C40 ⁽²⁾
D-Frame, Adjustable Thermal/Fixed Magnetic (application at output of VFD multi-motor)									
450	65	—	65	—	65	—	65	—	140MT-D9V-B16
450	65	—	65	—	65	—	65	—	140MT-D9V-B25
450	65	—	65	—	65	—	65	—	140MT-D9V-B40
450	65	—	65	—	65	—	65	—	140MT-D9V-B63
450	65	—	65	—	65	—	65	—	140MT-D9V-C10
450	65	—	65	—	65	—	65	—	140MT-D9V-C16
450	65	—	65	—	65	—	65	—	140MT-D9V-C20
450	50	—	50	—	50	—	50	—	140MT-D9V-C25
450	50	—	50	—	50	—	50	—	140MT-D9V-C29
450	50	—	30	—	30	—	30	—	140MT-D9V-C32
450	30	—	30	—	30	—	30	—	140MT-D9V-C36 ⁽²⁾
450	30	—	30	—	30	—	30	—	140MT-D9V-C40 ⁽²⁾

Table 31 - UL/CSA Listed Application Ratings, Motor Protective Switching Devices (Continued)

UL 60947-4-1 – Manual Motor Controller							UL 60947-4-1 Self-Protected (Type E) Combination Motor Controller		Cat. No.
Max. Fuse or Circuit Breaker per NEC [A]	Max Short-circuit Current [kA]						Max Short-circuit Current [kA]		
	Group Motor Installation		Motor Disconnect		Tap Conductor Protection				
	480V	600V	480V	600V	480Y/277V ⁽¹⁾	600Y/347V ⁽¹⁾	480Y/277V ⁽¹⁾	600Y/347V ⁽¹⁾	
D-Frame, Adjustable Thermal/Fixed Magnetic (18...22 x I _n)									
450	65	50	65	50	65	50	65	50	140MT-D9T-A16
450	65	50	65	50	65	50	65	50	140MT-D9T-A25
450	65	50	65	50	65	50	65	50	140MT-D9T-A40
450	65	50	65	50	65	50	65	50	140MT-D9T-A63
450	65	50	65	50	65	50	65	50	140MT-D9T-B10
450	65	50	65	50	65	50	65	50	140MT-D9T-B16
450	65	30	65	30	65	30	65	30	140MT-D9T-B25
450	65	30	65	30	65	30	65	30	140MT-D9T-B40
450	65	30	65	30	65	30	65	30	140MT-D9T-B63
450	65	30	65	30	65	30	65	30	140MT-D9T-C10
450	65	30	65	30	65	30	65	—	140MT-D9T-C16
450	65	30	65	30	65	—	65	—	140MT-D9T-C20
450	50	30	50	18	50	—	50	—	140MT-D9T-C25
F-Frame, Adjustable Thermal/Fixed Magnetic (15 x I _n)									
600	65	30	65	30	65	30	65	30	140MT-F9E-C12
600	65	30	65	30	65	30	65	30	140MT-F9E-C16
600	65	30	65	30	65	30	65	30	140MT-F9E-C20
600	65	30	65	30	65	30	65	30	140MT-F9E-C25
600	65	30	65	30	65	30	65	30	140MT-F9E-C32
600	65	30	65	30	65	30	65	30	140MT-F9E-C38
600	65	30	65	30	65	30	65	30	140MT-F9E-C45
F-Frame, Adjustable Thermal/Fixed Magnetic (19...22 x I _n)									
600	65	30	65	30	65	30	65	30	140MT-F9T-C25
600	65	30	65	30	65	30	65	30	140MT-F9T-C32
600	65	30	65	30	65	30	65	30	140MT-F9T-C38
600	65	30	65	30	65	30	65	30	140MT-F9T-C45

(1) For full voltage (delta) ratings above 277V or 347V, follow the NEC or CEC rules for group motor applications.

(2) Suitable for continuous operation at 90% current rating at 480V only if used in a minimum enclosure size of 250 x 175 x 150 mm (10 x 7 x 6 in).

Table 32 - UL/CSA Listed Application Ratings, Motor Circuit Protectors

UL 60947-4-1 – Manual Motor Controller							Cat. No.
Max. Fuse or Circuit Breaker per NEC [A]	Max. Short Circuit Current [kA]						
	Group Motor Installation		Motor Disconnect		Tap Conductor Protection		
	480V	600V	480V	600V	480Y/277V ⁽¹⁾	600Y/347V ⁽¹⁾	
D-Frame, Fixed Magnetic (14 x I _n)							
450	65	50	65	50	65	50	140MT-D9N-A16
450	65	50	65	50	65	50	140MT-D9N-A25
450	65	50	65	50	65	50	140MT-D9N-A40
450	65	50	65	50	65	50	140MT-D9N-A63
450	65	50	65	50	65	50	140MT-D9N-B10
450	65	50	65	50	65	50	140MT-D9N-B16
450	65	30	65	30	65	30	140MT-D9N-B25
450	65	30	65	30	65	30	140MT-D9N-B40
450	65	30	65	30	65	30	140MT-D9N-B63
450	65	30	65	30	65	30	140MT-D9N-C10
450	65	30	65	30	65	30	140MT-D9N-C16
450	65	30	65	30	65	—	140MT-D9N-C20
450	50	30	50	30	50	—	140MT-D9N-C25
450	50	30	50	30	50	—	140MT-D9N-C29
450	50	30	30	18	30	—	140MT-D9N-C32
450	30	30	30	18	30	—	140MT-D9N-C36 ⁽²⁾
450	30	30	30	18	30	—	140MT-D9N-C40 ⁽²⁾
F-Frame, Fixed Magnetic (15 x I _n)							
600	65	30	65	30	—	—	140MT-F9N-C25
600	65	30	65	30	—	—	140MT-F9N-C32
600	65	30	65	30	—	—	140MT-F9N-C38
600	65	30	65	30	—	—	140MT-F9N-C45

(1) For full voltage (delta) ratings above 277V or 347V, follow the NEC or CEC rules for group motor applications.

(2) Suitable for continuous operation at 90% current rating at 480V only if used in a minimum enclosure size of 250 x 175 x 150 mm (10 x 7 x 6 in).

Table 33 - IEC Application Ratings, Interrupting Rating/Breaking Capacity

Breaking Capacity, IEC 60947-2															Cat. No.	
230/240V AC			400/415V AC			440/460V AC			500/525V AC			690V AC				
I_{cu} [kA]	I_{cs} [kA]	Back-up Fuse Rating ⁽¹⁾ [A]	I_{cu} [kA]	I_{cs} [kA]	Back-up Fuse Rating ⁽¹⁾ [A]	I_{cu} [kA]	I_{cs} [kA]	Back-up Fuse Rating ⁽¹⁾ [A]	I_{cu} [kA]	I_{cs} [kA]	Back-up Fuse Rating ⁽¹⁾ [A]	I_{cu} [kA]	I_{cs} [kA]	Back-up Fuse Rating ⁽¹⁾ [A]		
C-Frame, Adjustable Thermal/Fixed Magnetic (14 x I_n)																
100	100	_(2)	100	100	_(2)	100	100	_(2)	100	100	_(2)	100	100	_(2)	140MT-C3E-A16	
100	100		100	100		100	100		100	100		100	100		140MT-C3E-A25	
100	100		100	100		100	100		100	100		100	100		140MT-C3E-A40	
100	100		100	100		100	100		100	100		100	100		140MT-C3E-A63	
100	100		100	100		100	100		100	100		100	100		140MT-C3E-B10	
100	100		100	100		100	100		100	100		4	4	16	140MT-C3E-B16	
100	100		100	100		100	100		100	100		4	4	20	140MT-C3E-B25	
100	100		100	100		100	100		100	100		4	4	35	140MT-C3E-B40	
100	100		100	100		100	100		100	100		3	3	50	140MT-C3E-B63	
100	100		100	100	50	80	50	50	80	50	50	63	3	3	50	140MT-C3E-C10
100	100		100	65	50	80	10	6	80	10	6	80	3	3	63	140MT-C3E-C16
65	50	100	50	15	100	6	6	80	6	6	80	3	2	63	140MT-C3E-C20	
65	50	100	15	15	100	6	4	80	6	4	80	3	2	63	140MT-C3E-C25	
50	25	125	15	10	125	6	4	100	6	4	100	3	2	80	140MT-C3E-C29	
50	25	125	15	10	125	6	4	100	6	4	100	3	2	80	140MT-C3E-C32	

Table 33 - IEC Application Ratings, Interrupting Rating/Breaking Capacity (Continued)

Breaking Capacity, IEC 60947-2															Cat. No.
230/240V AC			400/415V AC			440/460V AC			500/525V AC			690V AC			
I_{cu} [kA]	I_{cs} [kA]	Back-up Fuse Rating ⁽¹⁾ [A]	I_{cu} [kA]	I_{cs} [kA]	Back-up Fuse Rating ⁽¹⁾ [A]	I_{cu} [kA]	I_{cs} [kA]	Back-up Fuse Rating ⁽¹⁾ [A]	I_{cu} [kA]	I_{cs} [kA]	Back-up Fuse Rating ⁽¹⁾ [A]	I_{cu} [kA]	I_{cs} [kA]	Back-up Fuse Rating ⁽¹⁾ [A]	
D-Frame, Adjustable Thermal/Fixed Magnetic (14 x I_n)															
100	100	_(2)	100	100	_(2)	100	100	_(2)	100	100	_(2)	100	100	_(2)	140MT-D9E-A63
100	100		100	100		100	100		100	100		100	100		140MT-D9E-B10
100	100		100	100		100	100		100	100		100	100		140MT-D9E-B16
100	100		100	100		100	100		100	100		6	4	20	140MT-D9E-B25
100	100		100	100		100	100		100	100		6	4	35	140MT-D9E-B40
100	100		100	100		100	100		100	100		6	4	50	140MT-D9E-B63
100	100		100	100		100	100		100	100		6	3	50	140MT-D9E-C10
100	100		100	50	80	50	25	80	50	25	80	4	3	63	140MT-D9E-C16
100	100		100	25	100	50	25	100	50	25	80	4	3	63	140MT-D9E-C20
100	100		65	25	100	35	20	100	35	20	80	4	3	63	140MT-D9E-C25
65	50	125	50	25	125	25	15	125	25	15	100	4	3	80	140MT-D9E-C29
65	50	125	50	25	125	25	15	125	25	15	100	4	3	80	140MT-D9E-C32
50	35	125	50	25	125	12	6	125	12	6	100	3	2	100	140MT-D9E-C36 ⁽³⁾
50	35	125	50	25	125	12	6	125	12	6	100	3	2	100	140MT-D9E-C40 ⁽³⁾
D-Frame, Fixed Magnetic (application at output of VFD multi-motor)															
100	100	_(2)	100	100	_(2)	100	100	_(2)	100	100	_(2)	—	—	_(2)	140MT-D9V-B16
100	100		100	100		100	100		100	100		—	—		140MT-D9V-B25
100	100		100	100		100	100		100	100		—	—		140MT-D9V-B40
100	100		100	100		100	100		100	100		—	—		140MT-D9V-B63
100	100		100	100		100	100		100	100		—	—		140MT-D9V-C10
100	100		100	50	80	50	25	80	50	25	80	—	—		140MT-D9V-C16
100	100		100	25	100	50	25	100	50	25	80	—	—		140MT-D9V-C20
100	100		65	25	100	35	20	100	35	20	80	—	—		140MT-D9V-C25
65	50	125	50	25	125	25	15	125	25	15	100	—	—		140MT-D9V-C29
65	50	125	50	25	125	25	15	125	25	15	100	—	—		140MT-D9V-C32
50	35	125	50	25	125	12	6	125	12	6	100	—	—	140MT-D9V-C36 ⁽³⁾	
50	35	125	50	25	125	12	6	125	12	6	100	—	—	140MT-D9V-C40 ⁽³⁾	
F-Frame, Adjustable Thermal/Fixed Magnetic (15 x I_n)															
100	100	—	100	100	—	50	25	80	50	25	80	10	6	63	140MT-F9E-C12
100	100		100	50		50	25	100	50	25	100	10	6	80	140MT-F9E-C16
100	100		100	35		50	25	100	50	25	100	10	6	80	140MT-F9E-C20
100	100		100	35		50	25	100	50	25	100	10	6	80	140MT-F9E-C25
100	100		65	35	125	50	15	125	50	15	125	10	4	100	140MT-F9E-C32
100	100		65	35	125	50	15	125	50	15	125	10	4	100	140MT-F9E-C38
100	100		65	35	125	50	15	125	50	15	125	10	4	100	140MT-F9E-C45

Table 33 - IEC Application Ratings, Interrupting Rating/Breaking Capacity (Continued)

Breaking Capacity, IEC 60947-2															Cat. No.			
230/240V AC			400/415V AC			440/460V AC			500/525V AC			690V AC						
I_{cu} [kA]	I_{cs} [kA]	Back-up Fuse Rating ⁽¹⁾ [A]	I_{cu} [kA]	I_{cs} [kA]	Back-up Fuse Rating ⁽¹⁾ [A]	I_{cu} [kA]	I_{cs} [kA]	Back-up Fuse Rating ⁽¹⁾ [A]	I_{cu} [kA]	I_{cs} [kA]	Back-up Fuse Rating ⁽¹⁾ [A]	I_{cu} [kA]	I_{cs} [kA]	Back-up Fuse Rating ⁽¹⁾ [A]				
D-Frame, High Inrush, Adjustable Thermal/Fixed Magnetic (18...22 x I_n)																		
100	100	_(2)	100	100	_(2)	100	100	_(2)	100	100	_(2)	100	100	_(2)	140MT-D9T-A16			
100	100		100	100		100	100		100	100		100	100		140MT-D9T-A25			
100	100		100	100		100	100		100	100		100	100		140MT-D9T-A40			
100	100		100	100		100	100		100	100		100	100		140MT-D9T-A63			
100	100		100	100		100	100		100	100		100	100		140MT-D9T-B10			
100	100		100	100		100	100		100	100		100	100		140MT-D9T-B16			
100	100		100	100		_(2)	100		100	_(2)		100	100	_(2)	6	4	20	140MT-D9T-B25
100	100		100	100			100		100			100	100		6	4	35	140MT-D9T-B40
100	100		100	100			100		100			100	100		6	4	50	140MT-D9T-B63
100	100		100	100			100		100			100	100		6	3	50	140MT-D9T-C10
100	100		100	50	80		50	25	80		50	25	80		4	3	63	140MT-D9T-C16
100	100		100	25	100		50	25	100		50	25	80		4	2	63	140MT-D9T-C20
100	100		65	25	100		35	12	100		35	12	80		4	2	63	140MT-D9T-C25
F-Frame, High Inrush, Adjustable Thermal/Fixed Magnetic (19...22 x I_n)																		
100	100	—	65	35	—	25	15	100	25	15	100	10	6	80	140MT-F9T-C25			
100	100		65	35	125	25	15	125	25	15	125	10	4	100	140MT-F9T-C32			
100	100		65	35	125	25	15	125	25	15	125	10	4	100	140MT-F9T-C38			
100	100		65	35	125	25	15	125	25	15	125	10	4	100	140MT-F9T-C45			
D-Frame, Motor Circuit Protectors, Fixed Magnetic (14 x I_n)																		
100	100	_(2)	100	100	_(2)	100	100	_(2)	100	100	_(2)	100	100	_(2)	140MT-D9N-A16			
100	100		100	100		100	100		100	100		100	100		100	100	140MT-D9N-A25	
100	100		100	100		100	100		100	100		100	100		100	100	140MT-D9N-A40	
100	100		100	100		100	100		100	100		100	100		100	100	140MT-D9N-A63	
100	100		100	100		100	100		100	100		100	100		100	100	140MT-D9N-B10	
100	100		100	100		100	100		100	100		100	100		100	100	140MT-D9N-B16	
100	100		100	100		_(2)	100		100	_(2)		100	100	_(2)	6	4	20	140MT-D9N-B25
100	100		100	100			100		100			100	100		6	4	35	140MT-D9N-B40
100	100		100	100			100		100			100	100		6	4	50	140MT-D9N-B63
100	100		100	100			100		100			100	100		6	3	50	140MT-D9N-C10
100	100		100	50	80		50	25	80		50	25	80		4	3	63	140MT-D9N-C16
100	100		100	25	100		50	25	100		50	25	80		4	3	63	140MT-D9N-C20
100	100		65	25	100		35	20	100		35	20	80		4	3	63	140MT-D9N-C25
65	50		125	50	25		125	25	15		125	25	15		100	4	3	80
65	50	125	50	25	125	25	15	125	25	15	100	4	3	80	140MT-D9N-C32			
50	35	125	50	25	125	12	6	125	12	6	100	3	2	100	140MT-D9N-C36 ⁽³⁾			
50	35	125	50	25	125	12	6	125	12	6	100	3	2	100	140MT-D9N-C40 ⁽³⁾			
F-Frame, Motor Circuit Protectors, Fixed Magnetic (15 x I_n)																		
100	100	—	100	35	—	50	25	100	50	25	100	10	6	80	140MT-F9N-C25			
100	100		65	35	125	50	15	125	50	15	125	10	4	100	140MT-F9N-C32			
100	100		65	35	125	50	15	125	50	15	125	10	4	100	140MT-F9N-C38			
100	100		65	35	125	50	15	125	50	15	125	10	4	100	140MT-F9N-C45			

(1) Back-up fuses are type gG, aM.

(2) No Back-up fuse required if $I_{cc} < I_{cs}$.

(3) Suitable for continuous operation at 90% current rating at 480V only if used in a minimum enclosure size of 250 x 175 x 150 mm (10 x 7 x 6 in).