Motor Circuit Protectors

2

Contents

Motor Circuit Protectors (MCP)

Product Description

Designated as Eaton's Types GMCP and HMCP, the instantaneous-only motor circuit protector (MCP) is available in ratings from 3 A to 1200 A for motor starter sizes 0 through 8.

An innovative design of internal components allows higher MCP-starter combination interrupting ratings. The MCP is marked to permit proper electrical application within the assigned equipment ratings.

Standards and Certifications

The MCP is designed to comply with the applicable requirements of Underwriters Laboratories Standard UL 489, Canadian Standards Association Standard C22.2 No. 5.1, and International Electrotechnical Commission Recommendations IEC 157-1.

The MCP is a recognized component (UL File E7819) and complies with the applicable requirements of Underwriters Laboratories Standard UL 489. It is also designed to comply with the applicable requirements of Canadian Standards Association Standard C22.2 No. 5.1, International Electrotechnical Commission Recommendations IEC 157-1, and nameplates bear the CE marking.

Listed

Note: Interrupting ratings are dependent on starter it is used with.

Catalog Number Selection

This information is presented only as an aid to understanding catalog numbers.
It is not to be used to build catalog numbers for circuit breakers or trip units.

Motor Circuit Protector

HMCP 003 A0 C

Motor Circuit Protective Type
HMCP = Three-pole
HM2P = Two-pole ①
HMCPS = Three-pole

Continuous Ampere Rating
003
007
015
025
030
050
070
100
150
250
400
600
800
1200

Magnetic Trip Range/ NEMA Starter Size
A0 = 9–30/0
C0 = 21–70/0
E0 = 45–150/0
D0 = 40–60/0
H1 = 90–300/1
G2 = 80–120/2
K2 = 50–500/2
J2 = 115–170/2
M2 = 210–700/2
L3 = 160–240/3
R3 = 300–1000/3
T4 = 450–1500/4
U4 = 750–2500/4
A5 = 350–700/5
C5 = 450–900/5
D5 = 500–1000/5
F5 = 625–1250/5
G5 = 750–1500/5
J5 = 875–1750/5
K5 = 1000–2000/5
L5 = 1125–2250/5
W5 = 1250–2500/5
N5 = 1500–3000/5
R5 = 1750–3500/5
X5 = 2000–4000/5
Y5 = 2250–4500/5
L6 = 1800–6000/6 (electronic)
X6 = 500–2500/6 (electronic)
Y6 = 1000–4000/6 (electronic)
X7 = 1600–6400/7 (electronic)
Y8 = 2400–9600/8 (electronic)

Suffix
C = Non-aluminum terminals
W = Without terminals
X = Load terminals only
Y = Line terminals only
S = Stainless steel terminals (150A frame only)
No Suffix: Standard terminals on line and load

Motor Circuit Protector

GMCP 003 A0 C

Motor Circuit Protective Device
GMCP = Three-pole

Continuous Ampere Rating
003
007
015
030
050
060
063

Magnetic Trip Range/NEMA Starter Size
A0 = 15–30/0
C0 = 35–70/0
E0 = 75–150/0
H1 = 150–300/1
K2 = 250–500/2
J2 = 300–600/2
M2 = 320–630/2

Suffix
C = Non-aluminum terminals

Note

① On J- and K-Frame HMCPs only.

F-Frame

600 Vac Maximum, 250 Vdc Maximum

NEMA Starter Size	Cont. Amps	Cam Setting	Motor Full Load Current Amperes (FLA) ①	MCP Trip Setting ②	MCP Catalog Number
0	3	A	0.69–0.91	9	**HMCP003A0C**
		B	0.92–1.0	12	
		C	1.1–1.2	15	
		D	1.3–1.5	18	
		E	1.6–1.7	21	
		F	1.8–1.9	24	
		G	2.0–2.2	27	
		H	2.3–2.5	30	
0	7	A	1.5–2.0	21	**HMCP007C0C**
		B	2.1–2.5	28	
		C	2.6–3.1	35	
		D	3.2–3.6	42	
		E	3.7–3.9	49	
		F	4.3–4.7	56	
		G	4.8–5.2	63	
		H	5.3–5.7	70	
0	15	A	3.4–4.5	45	**HMCP015E0C**
		B	4.6–5.6	60	
		C	5.7–6.8	75	
		D	6.9–7.9	90	
		E	8.0–9.1	105	
		F	9.2–10.3	120	
		G	10.4–11.4	135	
		H	11.5 –12.6	150	
1	30	A	6.9–9.1	90	**HMCP030H1C**
		B	9.2–11.4	120	
		C	11.5–13.7	150	
		D	13.8–16.0	180	
		E	16.1–18.3	210	
		F	18.4–20.6	240	
		G	20.7–22.9	270	
		H	23.0–25.2	300	
2	50	A	11.5–15.2	150	**HMCP050K2C**
		B	15.3–19.1	200	
		C	19.2–22.9	250	
		D	23.0–26.8	300	
		E	26.9–30.6	350	
		F	30.7–4.5	400	
		G	34.6–38.3	450	
		H	38.4–42.1	500	

600 Vac Maximum, 250 Vdc Maximum, continued

NEMA Starter Size	Cont. Amps	Cam Setting	Motor Full Load Current Amperes (FLA) ①	MCP Trip Setting ②	MCP Catalog Number
2	70	A	16.1–21.4	210	**HMCP070M2C**
		B	21.5 –26.8	280	
		C	26.9 –32.2	350	
		D	32.3–37.5	420	
		E	37.6–42.9	490	
		F	43.0–48.3	560	
		G	48.4–53.7	630	
		H	53.8–59.1	700	
3	100	A	23.0–30.6	300	**HMCP100R3C**
		B	30.7–38.3	400	
		C	38.4–46.0	500	
		D	46.1–53.7	600	
		E	53.8 –61.4	700	
		F	61.5 –69.1	800	
		G	69.2–76.8	900	
		H	76.9–84.5	1000	
4	150	A	34.6–46.0	450	**HMCP150T4C**
		B	46.1–57.5	600	
		C	57.6–69.1	750	
		D	69.2–80.6	900	
		D	69.2–80.6	900	
		E	80.7–92.2	1050	
		F	92.3–103.7	1200	
		G	103.8–115.2	1350	
		H	115.3–126.7	1500	
4	150	A	57.0 –75.0	750	**HMCP150U4C**
		B	76.0–95.0	1000	
		C	96.0–114.0	1250	
		D	115.0–130.7	1500	
		E	③	1750	
		F	③	2000	
		G	③	2250	
		H	③	2500	

Notes

① Motor FLA ranges are typical. The corresponding trip setting is at 13 x the minimum FLA value shown. Where a 13 x setting is required for an intermediate FLA value, alternate Cam settings and/or MCP ratings should be used.

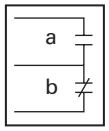
② For DC applications, actual trip levels are approximately 40% higher than values shown.

③ Settings above 130 amperes are for special applications. NEC Article 430.110(a) requires the ampere rating of the disconnecting means to be not less than 115% of the motor full load ampere rating.

HMCP 3–100 A come with line and load steel body terminals, 3T100FB. HMCP 150A come with line and load steel body terminals, 3T150FB.

Auxiliary Switch

Auxiliary Switch



G-Frame Auxiliary Switch (RH Only)

Electrical Ratings Volts	Frequency	Amperes	Contact Arrangement	Factory Suffix	Catalog Number ①②
240	50/60 Hz	6	1a/1b	**A3**	**1288C74G03**
240	50/60 Hz	6	2a/2b	**A6**	**1288C73G03**

F-Frame and HMCP (F) Auxiliary Switch

		Factory Mounted Connection Type and Location 18-Inch (457.2 mm) Pigtail Leads				Factory Installation Kit ④	
					Terminal Block	Pigtail Leads	Terminal Block
Number of Contacts A and B	Mounting Location (Pole)	Same Side Suffix Number	Rear ③ Suffix Number	Opposite Side Suffix Number	Same Side Suffix Number	Catalog Number	Catalog Number
1	Left ⑤	**A01**	**A02**	**A03**	**A04**	**A1X1PK**	**A1X1LTK**
	Left ⑤	**A15** ⑦	**A16** ⑦	**A17** ⑦	—	**E1X1PK**	—
	Right or Neutral ⑥	**A05**	**A06**	**A07**	**A08**	**A1X1PK**	**A1X1RTK** ⑧
	Right or Neutral ⑥	**A18** ⑦	**A19** ⑦	**A20** ⑦	—	—	—
2	Left ⑤	**A09**	**A10**	—	**A11**	**A2X1LPK**	**A2X1LTK**
	Left ⑤	**A21** ⑦	**A22** ⑦	—	—	**E2X1LPK**	—
	Right or Neutral ⑥	**A12**	**A13**	—	**A14**	**A2X1RPK**	**A2X1RTK** ⑧
	Right or Neutral ⑥	**A23** ⑦	**A24** ⑦	—	—	**E2X1RPK**	—

F-Frame with Electronic Trip Unit Auxiliary Switch ⑨

		Factory Mounted Connection Type and Location 18-Inch (457.2 mm) Pigtail Leads				Factory Installation Kit ④	
					Terminal Block	Pigtail Leads	Terminal Block
Number of Contacts A and B	Mounting Location (Pole)	Same Side Suffix Number	Rear Suffix Number	Opposite Side Suffix Number	Same Side Suffix Number	Catalog Number	Catalog Number
Trip Unit Type 310+							
1	Right	**A30**	**A31**	**A32**	—	—	—
Trip Unit Type 210+							
1	Right	**A33**	**A34**	**A35**	—	—	—

J-Frame and HMCP (J) Auxiliary Switch

		Factory Mounted Connection Type and Location 18-Inch (457.2 mm) Pigtail Leads				Field Mounted Factory Installation Kit ⑩	
					Terminal Block	Pigtail Leads	Terminal Block
Number of Contacts A and B	Mounting Location (Pole)	Same Side Suffix Number	Rear ③ Suffix Number	Opposite Side Suffix Number	Same Side Suffix Number	Catalog Number	Catalog Number
1	Left	**A01**	**A02**	**A03**	**A04**	**A1X2PK**	**A1X2LTK**
	Right ⑪	**A05**	**A06**	**A07**	**A08**	**A1X2PK**	**A1X2RTK** ④
2	Left	**A09**	**A10**	—	**A11**	**A2X2PK**	**A2X2LTK**
	Right ⑪	**A12**	**A13**	—	**A14**	**A2X2PK**	**A2X2RTK** ④

Notes

① Includes 24-inch external pigtail leads, 18 AWG (16–0.010).
② A maximum of two internal accessories may be mounted in a three-pole circuit breaker. Suitable for mounting in right pole only of two- or three-pole breaker.
③ Standard pigtail lead exit location.
④ Not listed with Underwriters Laboratories; for field installation.
⑤ Pigtail wire size: 18 AWG (0.82 mm^2).
⑥ Not for use on F-Frame with electronic trip unit.
⑦ 125 volts (max.), 50/60 Hz switch for use in electronic circuit of 100 micro amperes and 15 Vdc minimum.
⑧ Not for use on four-pole circuit breakers.
⑨ Only for use on three-pole F-Frame breakers with electronic trip unit. Installation auxiliary switch for FD electronic breakers on right pole must be performed at breaker factory.
⑩ Listed with Underwriters Laboratories for field installation or interchangeable trip unit breakers under E64983.
⑪ Standard mounting location—leads exit rear of breaker.

K-Frame and HMCP (K) Auxiliary Switch

Number of Contacts A and B	Mounting Location (Pole)	Factory Mounted Connection Type and Location 18-Inch (457.2 mm) Pigtail Leads Same Side Suffix Number	Rear ② Suffix Number	Opposite Side Suffix Number	Terminal Block Same Side Suffix Number	Field Mounted Factory Installation Kit ① Pigtail Leads Catalog Number	Terminal Block Catalog Number
1	Left	A01	A02	A03	A04	A1X3PK	A1X3LTK
	Right ②③	A05	A06	A07	A08	A1X3PK	A1X3RTK ④
2	Left	A09	A10	—	A11	A2X3PK	A2X3LTK
	Right ②③	A12	A13	—	A14	A2X3PK	A2X3RTK ④
	Right	A21	A22	—	—	1482D28G10 ⑥⑦	—
3	Left	A18	—	—	A15	A3X3LPK	A3X3LTK
	Right ③	A17	—	—	A16	A3X3RPK	A3X3RTK ④

L-, HMCP (L) and (M) Frames and Auxiliary Switch

Number of Contacts A and B	Mounting Location (Pole)	Factory Mounted Connection Type and Location 18-Inch (457.2 mm) Pigtail Leads Same Side Suffix Number	Rear ② Suffix Number	Opposite Side Suffix Number	Terminal Block Same Side Suffix Number	Field Mounted Factory Installation Kit ① Pigtail Leads Catalog Number	Terminal Block Catalog Number
1	Left	A01	A02	A03	A04	A1X4PK	A1X4LTK
	Right ②	A05	A06	A07	A08	A1X4PK	A1X4RTK ④
2	Left	A09	A10	—	A11	A2X4PK	A2X4LTK
	Right ②	A12	A13	—	A14	A2X4PK	A2X4RTK ④
3	Left	A18	—	—	A15	A3X4PK	A3X4LTK
	Right ②	A17	—	—	A16	A3X4PK	A3X4RTK ④

N-Frame and HMCP (N) Auxiliary Switch

Number of Contacts A and B	Mounting Location (Pole)	Factory Mounted Connection Type and Location 18-Inch (457.2 mm) Pigtail Leads Same Side Suffix Number	Rear ② Suffix Number	Opposite Side Suffix Number	Terminal Block Same Side Suffix Number	Field Mounted Factory Installation Kit ① Pigtail Leads Catalog Number	Terminal Block Catalog Number
1	Left	A01	A02	A03	A04	A1X5PK	A1X5LTK
	Right ②	A05	A06	A07	A08	A1X5PK	A1X5RTK ④
2	Left	A09	A10	—	A11	A2X5PK	A2X5LTK
	Right ②	A12	A13	—	A14	A2X5PK	A2X5RTK ④
3	Left	A18	—	—	A15	A3X5LPK	A3X5LTK
	Right ②	A17	—	—	A16	A3X5RPK	A3X5RTK ④

R-Frame Auxiliary Switch (RH Only)

Number of Contacts A and B	Factory Mounted Connection Type and Location 18-Inch (457.2 mm) Pigtail Leads Suffix Number ⑤	Field Mounted Field Installation Kits ① Pigtail Leads Catalog Number ⑤
2	A12	A2X6RPK
4	A19	A4X6RPK

Notes

① Listed with Underwriters Laboratories for field installation under E64983.
② Standard mounting location—leads exit rear of breaker.
③ Breakers with K-Frame OPTIM 550 can only accept accessories in left pole.
④ Not for use on four-pole circuit breakers.
⑤ A maximum of two auxiliary switches (any combination of 2a/2b or 4a/4b plug-in modules may be installed in a circuit breaker.
⑥ This option is not field installable.
⑦ Available on the OPTIM 550 only. Communications are not available with this option.