

Global Short Circuit Current Ratings



IEC Motor Control Solutions

Global SCCR Solutions:

Motor Starters:

- 3 Component Starter: Motor Circuit Protector + Contactor + Overload Relay
- 3 Component Starter: Fuse + Contactor + Overload Relay
- 2 Component Starter: Motor Protection Circuit Breaker + Contactor
- 2 Component Load-feeder: Molded Case Circuit Breaker + Contactor

Branch Circuit Protection:

- Fuses
- Circuit Breakers

DOL, Reversing and Star-delta Configurations

Motor Sizes:

- 1/2...300 Hp
- 0.16...400 kW

Global Voltages:

- 380...400V, 50 Hz
- 415V, 50 Hz
- 440V, 50 Hz
- 460V (480 Line), 60 Hz
- 500V, 50 Hz
- 525V, 50 Hz
- 575V (600 Line), 60 Hz
- 690V, 50 Hz

Standard Compliance:

- UL 508 Standard and High Fault SCCR
- UL 508 Combination Motor Controllers
- IEC 60947-4-1 Type 1 and Type 2 short circuit coordination
- UL listing and certification



MCS Motor Control Family

Overview

Determining the Short Circuit Current Rating of a complete electrical panel can be very challenging, especially if proper considerations are not made during the initial stages of the component selection process.

Rockwell Automation has developed global **SCCR Selection Tables** for IEC Motor Starters based on common global motor voltages (50/60 Hz) and short circuit current rating fault levels. These tables provide a **One-Line Bill of Material** to quickly select motor starter components over a wide range of HP or kW ratings based on common SCCR application requirements.

In addition, **Test Summary Letters** are available that summarize the test parameters used to cover the applicable motor starter configuration, motor voltage and short circuit fault rating. These Test Summary Letters are based on compliance to IEC and UL standards, and are in most cases covered by third party witness by Underwriters Laboratories and conducted in Rockwell Automation accredited test facilities.

SCCR Selection Table & Test Summary Letter

LISTEN.
THINK.
SOLVE.

Global SCCR Selection Tool – NEW! Access on the Web

www.rockwellautomation.com/go/etools



Global Short Circuit Current Ratings

Welcome to the Global Short Circuit Current Ratings Selection Tool, providing coordinated high fault branch circuit solutions.

Revised January 2017

Product Category

Your Selection: IEC Motor Control

Product Family

Starter Type: 2 Component Starters (Motor Protection Circuit Breaker + Contactor)

Motor Voltage: 380...400V 50Hz

Circuit Protection Type: 140M/MG + 100-C/D

Reset Accept SCCR Inquiry

Global Short Circuit Current Ratings

Available Documents

SCCR Table Ref. Number: SCCR-1200A.pdf

Test Summary Letter Ref. Number(s): TS-1200-1A.pdf In Process

Selection Summary

Product Category: Your Selection: IEC Motor Control

Product Family: Starter Type: 2 Component Starters (Motor Protection Circuit Breaker + Contactor)

Motor Voltage: 380...400V 50Hz

Circuit Protection Type: 140M/MG + 100-C/D

Modify Existing Begin New Search

MCS 2 Component Starter Selection Table*

Short-circuit Coordination

Starter Type: Motor Protection Circuit Breaker (MPCB): Direct-On-Line & Reversing, Trip Class 10
 Contactor: 140M-C, D, F, I, J, L
 Overload Relay: 100-C, 100-K, 100-D
 Rated Operational Voltage: 400 V, 50 Hz
 Test voltage: 436 V, 50Hz
 Rated Conditional S.C. Current (I_{sc}): 85 kA (rms sym.)
 Level of S.C. Coordination: Type "2" (Type "1" per IEC 60947-4-1)

Motor	Rated Operational Current I _N	Catalog Number	Thermal Setting Range	Magnetic Trip Current	Contactor	Catalog Number	Coordination Type	Test Summary Letter	Remark
0.36	0.20	140M-C2E-A25	0.18 - 0.25	3.3	100-C09...				
0.09	0.30	140M-C2E-A40	0.25 - 0.40	5.2	100-C09...				
0.12	0.44	140M-C2E-A63	0.40 - 0.63	8.2	100-C09...				
0.18	0.60	140M-C2E-A63	0.40 - 0.63	8.2	100-C09...				
0.25	0.85	140M-C2E-B10	0.63 - 1.00	13	100-C09...				
0.37	1.1	140M-C2E-B16	1.0 - 1.6	21	100-C09...				
0.55	1.5	140M-C2E-B16	1.0 - 1.6	21	100-C09...				
0.75	1.9	140M-C2E-B25	1.6 - 2.5	33	100-C09...				
1.1	2.7	140M-D8E-B40	2.5 - 4.0	52	100-C09...				
1.5	3.6	140M-D8E-B40	2.5 - 4.0	52	100-C09...				
2.2	4.9	140M-D8E-B63	4.0 - 6.3	82	100-C09...				
3	6.5	140M-D8E-C10	6.3 - 10	130	100-C09...				
4	8.5	140M-D8E-C10	6.3 - 10	130	100-C09...				
5.5	11.5	140M-D8E-C16	10 - 16	206	100-C12...				
7.5	15.5	140M-D8E-C20	14.5 - 20	260	100-C16...				
11	22	140M-D8E-C25	18 - 25	325	100-C23...				
15	29	140M-D8E-C32	27 - 32	448	100-C30...				
18.5	35	140M-F8E-C45	32 - 45	585	100-C37...				
22	41	140M-F8E-C45	32 - 45	585	100-C43...				
30	55	140M-IBE-C80E	40 - 80	1200	100-C85...				
37	66	140M-IBE-C80E	40 - 80	1200	100-C85...				
45	80	140M-IBE-C80E	40 - 80	1200	100-C85...				
55	97	140M-IBE-D10E	80 - 100	1500	100-C97...				
63	113	140M-IBE-D16	64 - 160	2240	100-D210...	Type "2"	TS-1200-1A		
63	113	140M-IBE-D16E	100 - 160	2400	100-D215...	Type "1"			
75	132	140M-IBE-D16	64 - 160	2240	100-D210...	Type "2"			
75	132	140M-IBE-D16E	100 - 160	2400	100-D140...	Type "1"			
90	160	140M-IBE-D25	100 - 250	3500	100-D210...	Type "2"			
90	160	140M-IBE-D25E	100 - 250	3500	100-D160...	Type "1"			
110	195	140M-IBE-D25	100 - 250	3500	100-D210...	Type "2"			
132	230	140M-IBE-D25	100 - 250	3500	100-D300...	Type "2"			
160	280	140M-LBE-D40	160 - 400	4800	100-D300...	Type "1"			
200	350	140M-LBE-D40	160 - 400	4800	100-D430...	Type "1"			
250	430	140M-LBE-D63	250 - 630	7580	100-D630...	Type "1"			
315	540	140M-LBE-D63	250 - 630	7580	100-D630...	Type "1"	E125316	4)	
355	610	140M-LBE-D63	250 - 630	7580	100-D630...	Type "1"			

¹⁾ Typical motor currents according IEC 60947-4-1 Table G.1
²⁾ Incomplete catalog number, add coil and auxiliary contact codes
³⁾ 100-KDS can also be taken
⁴⁾ Tested at 40 kA short circuit current

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File: SCCR-1200A 07-2012 PH 400V_65_MPCB

Rockwell Automation

One-Line
Bill of Material

MCS 2 Component Starter Test Summary Letter*

TEST SUMMARY

Type 2 SC Coordination – 400V, 415V, 65kA
 100-C09...100-C97 Contactors, 2 Component Starters with MPCB

Date: July 27, 2012
 Test Summary No.: TS-1200-1A

Purpose of Tests:
 Evaluate Type 2 and Type 1 Short Circuit Coordination of Allen-Bradley 140M-C2E-*, 140M-D8E-*, 140M-F8E-*, and 140M-IBE Motor Protection Circuit Breakers and 100-C Contactors

Test Standard:
 IEC 60947-4-1, Edition 2.1 2002-12

Test Devices:

Motor Protection Circuit Breaker	Contactor	Motor Protection Circuit Breaker	Contactor
140M-D8E-C10	100-C09...	140M-F8E-C25	100-C30...
140M-D8E-C16	100-C12...	140M-F8E-C32	100-C30...
140M-D8E-C16	100-C16...	140M-F8E-C45	100-C37...
140M-D8E-C20	100-C23...	140M-F8E-C45	100-C43...
140M-D8E-C25	100-C23...	140M-IBE-C80E	100-C60...
140M-D8E-C32	100-C30...	140M-IBE-D10E	100-C97...
140M-D8E-C32	100-C37...		

Summary of Tests:

Short-circuit "I_{sc}" tests: 1 operation with all devices closed, 1 operation with contactor closing into fault
 Dielectric tests at 1000VAC

Short-circuit I_{sc} tests: 1 operation with all devices closed, 1 operation with contactor closing into fault
 Dielectric tests at 1000VAC

Test Circuits:

Open Circuit Voltage:	"I _{sc} "	I _{sc}
436/440 Volts, 3-Phase, 50Hz	436/440 Volts, 3-Phase, 50Hz	436/440 Volts, 3-Phase, 50Hz
Available Symmetrical Current:	1 and 3 kA r.m.s.	65 kA r.m.s.
Power Factor:	95 and 90 %	20%

Test Results:
 The test device combinations listed above passed Type "2" and Type "1" criteria.

Reference Numbers:
 KEMA No. 2094351.01-QUAMINC, R 23.00 116, R 23.00 129, R 23.00 163, R 23.00 166, R 23.00 210, R 23.00 212, R 23.00 268, R 23.00 338, R 23.00 353, R 23.00 357

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This document summarizes testing performed and documented in the above referenced test report(s) and is not to be reproduced except in full without written permission of Rockwell Automation.

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