



Motor Protection Circuit Breaker Specifications

Bulletin 140MP

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Summary of Changes

This publication contains the following new or updated information. This list includes substantive updates only and is not intended to reflect all changes.

Topic	Page
Updated specifications	throughout

Product Overview

Bulletin 140MP Motor Protection Circuit Breakers (MPCBs) or Motor Protective Switching Devices (MPSDs) are UL Listed as Manual Motor Controllers (with approvals for Suitable as Motor Disconnect and Suitable for use in Group Installation).

Group motor installations eliminate the need for individual branch short circuit protective devices for each motor circuit, reducing panel space, installation & wiring time, and costs. There is only one Branch Circuit Protective Device (BCPD) for the "Group".

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
- Manual Switching (Motor control means)
- Overload Protection (Thermal Protection)

These devices meet requirement of Motor Protective Switching Devices (MPSD) according to IEC 60947-4-1 and Circuit Breaker according to 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)

140MP devices provide trip class 10A overload protection and phase loss sensitivity protection. These are suitable for single- and three-phase application.

Group Installation with MPCBs

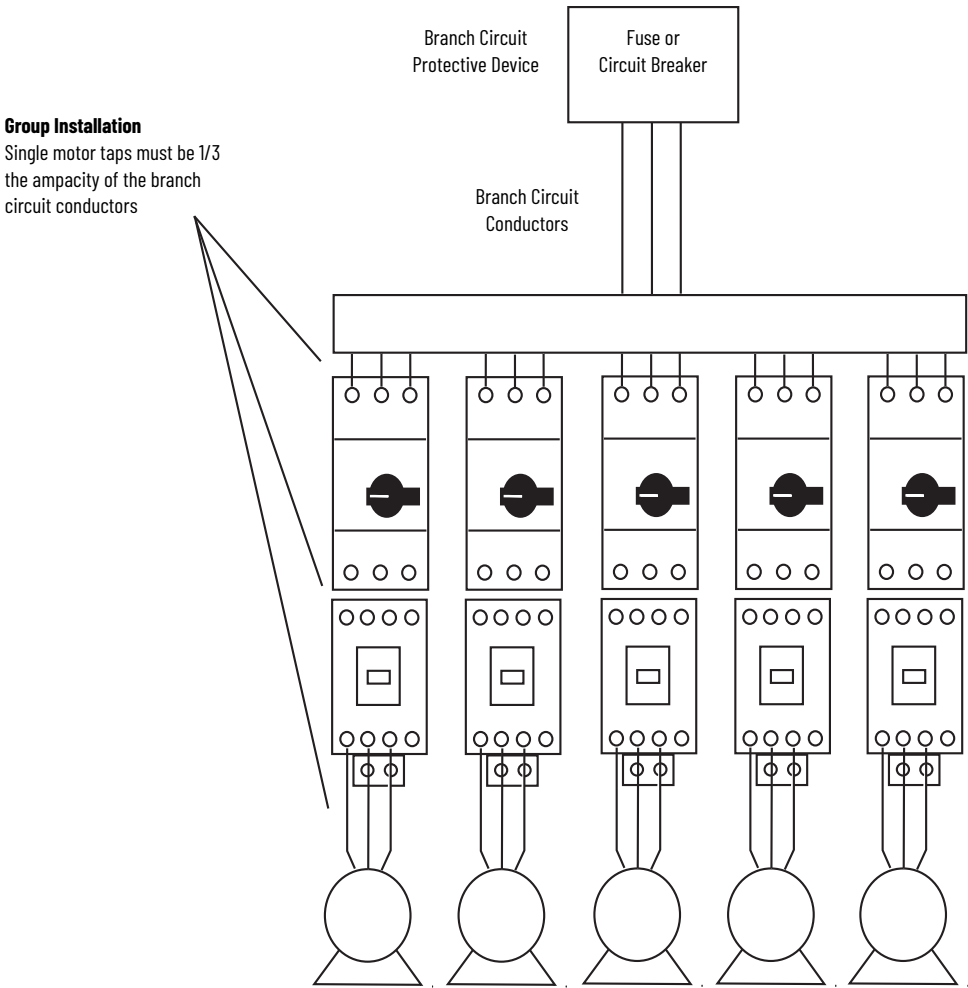
There is only one Branch Circuit Protective Device (BCPD) for the "Group".

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.

[Figure 1](#) shows an example that illustrates installations involving multiple motors with a single BCPD protecting the entire "Group".

Bulletin 140MP Motor Protection Circuit Breakers 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.

Figure 1 - Group Installation with MPCBs



Catalog Number Explanation

140MP - A 3 E - B10
a b c d e

a	
Bulletin Number	
Code	Description
140MP	140MP Motor Protection Circuit Breaker

b	
Frame Size	
Code	Description
A	Frame A

c	
Interrupting Rating/ Breaking Capacity	
Code	Description
3	Normal break

d	
Function	
Code	Description
E	Adjustable Thermal / Fixed Magnetic MPCB

e	
Current Range	
Code	Description
A	0.10 (example: A16 = 0.16 A)
B	1.0 (example: B16=1.6 A)
C	10 (example: C16 = 16 A)

Product Selection

Use the tables in this section to help select your Bulletin 140MP Motor Protection Circuit Breaker.

Table 1 - Bulletin 140MP MPCB Selection Using Current and Hp/kW Ratings

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)									
0.16	0.10...0.16	2	100	30	—	—	—	—	—	0.02	0.06	0.06	140MP-A3E-A16
0.25	0.16...0.25	3.1	100	30	—	—	—	—	—	0.04	0.09	0.09	140MP-A3E-A25
0.4	0.25...0.40	5	100	30	—	—	—	0.25	0.06	0.09	0.12	0.18	140MP-A3E-A40
0.63	0.40...0.63	7.9	100	30	—	—	0.25	0.33	0.09	0.18	0.18	0.25	140MP-A3E-A63
1	0.63...1.0	12.5	100	30	—	—	0.5	0.75	0.18	0.25	0.37	0.55	140MP-A3E-B10
1.6	1.0...1.6	20	100	30	0.25	0.33	1	1	0.25	0.55	0.75	1.1	140MP-A3E-B16
2.5	1.6...2.5	31.3	75	30	0.5	0.75	1.5	2	0.37	0.75	1.1	1.8	140MP-A3E-B25
4	2.5...4.0	50	75	18	1	1	3	3	0.75	1.5	2.2	3	140MP-A3E-B40
6.3	4.0...6.3	78.8	50	18	1.5	2	5	5	1.5	2.2	3	4	140MP-A3E-B63
10	6.3...10	150	50	18	3	3	7.5	10	2.2	4	6.3	7.5	140MP-A3E-C10
12	8.0...12	180	50	18	3	3	7.5	10	3	5.5	6.3	7.5	140MP-A3E-C12
16	10...16	240	15	18	5	5	10	15	4	7.5	10	13	140MP-A3E-C16
20	16...20	300	15	18	5	7.5	15	20	5.5	10	11	17	140MP-A3E-C20
25	20...25	375	15	18	7.5	7.5	20	20	5.5	11	15	22	140MP-A3E-C25
32	25...32	480	15	18	7.5	10	25	30	7.5	15	20	25	140MP-A3E-C32

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

Table 2 - Bulletin 140MP MPCB Selection Using Interrupting Rating/Breaking Capacity

Breaking Capacity, IEC 60947-2														Cat. No.	
230V AC			400V AC			440V AC			500V AC			690V AC			
I_{cs} [kA]	I_{cu} [kA]	Back-up Fuse Rating ⁽¹⁾ [A]	I_{cs} [kA]	I_{cu} [kA]	Back-up Fuse Rating ⁽¹⁾ [A]	I_{cs} [kA]	I_{cu} [kA]	Back-up Fuse Rating ⁽¹⁾ [A]	I_{cs} [kA]	I_{cu} [kA]	Back-up Fuse Rating ⁽¹⁾ [A]	I_{cs} [kA]	I_{cu} [kA]		Back-up Fuse Rating ⁽¹⁾ [A]
50	100	_(2)	50	100	_(2)	30	100	_(2)	30	100	_(2)	30	100	_(2)	140MP-A3E-A16
50	100		50	100		30	100		30	100		30	100		140MP-A3E-A25
50	100		50	100		30	100		30	100		30	100		140MP-A3E-A40
50	100		50	100		30	100		30	100		30	100		140MP-A3E-A63
50	100		50	100		30	100		30	100		30	100		140MP-A3E-B10
50	100		50	100		30	100		30	100		30	100		140MP-A3E-B16
50	100		50	100		30	100		30	100		30	100		140MP-A3E-B16
50	75		50	75		10	30	25 ⁽³⁾	10	20	25 ⁽³⁾	5	10	25 ⁽³⁾	140MP-A3E-B25
50	75		50	75		6	18	25 ⁽³⁾	6	15	25 ⁽³⁾	2	3	25 ⁽³⁾	140MP-A3E-B40
50	50		50	50		6	18	63 ⁽³⁾	6	10	63 ⁽³⁾	2	3	40 ⁽³⁾	140MP-A3E-B63
50	50		50	50		6	18	63 ⁽³⁾	6	10	63 ⁽³⁾	2	3	50 ⁽³⁾	140MP-A3E-C10
25	50	80 ⁽³⁾	25	50	80 ⁽³⁾	6	15	63 ⁽³⁾	6	10	63 ⁽³⁾	2	3	50 ⁽³⁾	140MP-A3E-C12
15	15	80 ⁽³⁾	15	15	80 ⁽³⁾	4	6	63 ⁽³⁾	4	6	63 ⁽³⁾	2	3	63 ⁽³⁾	140MP-A3E-C16
10	15	125 ⁽³⁾	10	15	125 ⁽³⁾	3	6	125 ⁽³⁾	3	6	125 ⁽³⁾	2	3	80 ⁽³⁾	140MP-A3E-C20
10	15	125 ⁽³⁾	10	15	125 ⁽³⁾	3	6	125 ⁽³⁾	3	6	125 ⁽³⁾	2	3	100 ⁽³⁾	140MP-A3E-C25
10	15	125 ⁽³⁾	10	15	125 ⁽³⁾	3	6	125 ⁽³⁾	3	6	125 ⁽³⁾	2	3	100 ⁽³⁾	140MP-A3E-C32

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

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

(3) Rated back-up fuse for short-circuit up to 50 kA.

Accessories

Table 3 - Auxiliary Contacts

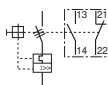
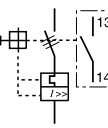
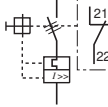
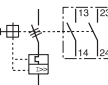
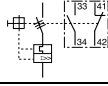
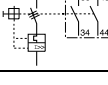
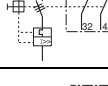
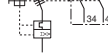
Description	Auxiliary Contacts		Connection Diagram	Pkg. Qty.	Cat. No.
	N.O	N.C			
 Front-mounted Auxiliary Contact - No additional space required 1 and 2-pole	1	1		10	140MP-A-AFA11
	1	0			140MP-A-AFA10
	0	1			140MP-A-AFA01
	2	0			140MP-A-AFA20
 Right-side-mounted Auxiliary Contact 2-pole - Adds 9 mm to the width of the Manual Motor Starter - Use compact bus bars with 54 mm spacing	1	1		2	140MP-A-ASA11
	2	0			140MP-A-ASA20
	0	2			140MP-A-ASA02
	Lead Contacts				140MP-A-ASA20L
	2	0			

Table 4 - Trip Contacts

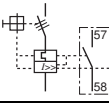
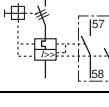
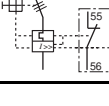
Description	Auxiliary Contacts		Connection Diagram	Pkg. Qty.	Cat. No.
	N.O	N.C			
 Right-side-mounted Trip Signaling Contact 2-pole - Adds 9 mm to the width of the Manual Motor Starter - Use compact bus bars with 54 mm spacing	1	1		2	140MP-A-ASAR11
	2	0			140MP-A-ASAR20
	0	2			140MP-A-ASAR02

Table 5 - Undervoltage and Shunt Trip Units

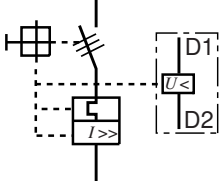
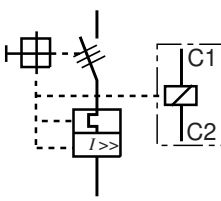
Description	Trip Rating	Connection Diagram	Pkg. Qty.	Cat. No.
 Undervoltage Trip Release - Left-side mounted - Adds 18 mm to the width of the Manual Motor Starter	20V, 50 Hz/ 24V, 60 Hz		1	140MP-A-UXJ
	24V, 50 Hz			140MP-A-UXK
	48V, 50 Hz			140MP-A-UXY
	60V, 50 Hz			140MP-A-UXYA
	110V, 50 Hz/ 120V, 60 Hz			140MP-A-UXC
	208V, 60 Hz			140MP-A-UXH
	230V, 50 Hz/ 240V, 60 Hz			140MP-A-UXF
	400V, 50 Hz			140MP-A-UXN
	415V, 50 Hz/ 480V, 60 Hz			140MP-A-UXB
	575V, 60 Hz			140MP-A-UXM
 Shunt Trip Release - Left-side mounted - Adds 18 mm to the width of the Manual Motor Starter	20-24 V, 50/60 Hz		1	140MP-A-SNKJ
	110V, 50/60 Hz			140MP-A-SND
	200...240V, 50/60 Hz			140MP-A-SNAF
	350...415V, 50/60 Hz			140MP-A-SNN

Table 6 - Bus Bars

Description	Terminal Links	For Use With	Pkg. Qty.	Cat. No.
 Compact Bus Bars - UL: 600V, 60 A - IEC: 690V, 65 A	45 mm spacing	140MP	10	140MP-A-W452
	For use with front-mounted auxiliary contact			140MP-A-W453
	54 mm spacing			140MP-A-W454
	For use with side-mounted auxiliary contact			140MP-A-W455
	63 mm spacing	140MP	10	140MP-A-W542
	For use with side-mounted auxiliary contact			140MP-A-W543
	For use with side-mounted auxiliary contact			140MP-A-W544
	For use with side-mounted auxiliary contact			140MP-A-W545
	For use with side-mounted auxiliary contact	140MP	10	140MP-A-W632
	For use with side-mounted auxiliary contact			140MP-A-W633
	For use with side-mounted auxiliary contact			140MP-A-W634
	For use with side-mounted auxiliary contact			140MP-A-W635
 Bus Bar Feeder Terminal (Flat) - Supply of compact bus bars - Increases terminal capacity		140MP-A-W	10	140MP-A-WTN
	Bus Bar Feeder Terminal (High) - Supply of compact bus bars - Increases terminal capacity	140MP-A-W	10	140MP-A-WTNH

Table 7 - Connecting Modules

Description	For Use With	Cat. No.
 ECO Connecting Module - 12 A (IEC), 11 A (UL) - For DOL Starters - ECO Starters mount on single DIN Rail (140MP on DIN rail) - Electrical and mechanical interconnection of 140MP and 100-K Contactors	140MP-A to 100-K	140MP-A-PEK12
 ECO Connecting Module - 25 A (IEC), 24 A (UL) - For DOL Starters - ECO Starters mount on single DIN Rail (140MP on DIN rail) - Electrical and mechanical interconnection of 140MP and 100-C Contactors	140MP-A to 100-C09...C23	140MP-A-PEC23

Table 8 - Additional Accessories

Description		For Use With	Pkg. Qty.	Cat. No.
	Blank Space Cover • For covering unused terminal links • Must be ordered in multiples of 10 (10pcs/pkg)	140MP-A-W	50	140MP-A-WSN
	Screw Adapter • For screw arrangement of a motor protection circuit breaker • Hat (DIN) Rail 35 x 7.5 mm • 44 mm length	140MP	10	140MP-A-N45
	Enclosure • Up to three padlocks in OFF position • Protection Class: IP65; UL/CSA Type 12	Red/yellow handle	1	140MP-A-ENY65
		Black handle		140MP-A-ENN65
	Door Mounting Kit • Up to three padlocks in OFF position • Protection Class: IP65; UL/CSA Type 12	Red/yellow handle	1	140MP-A-DMY65
		Black handle		140MP-A-DMN65
	Door Coupling Handle • Up to three padlocks in OFF position • Defeatable • Type 1/3R/12 • IP64	Red/Yellow	1	140MP-A-DCY65
		Black		140MP-A-DC65
	Coupler • Coded - Positioning of ON indication dependent from mounting orientation of the 140MP	Driver with screw	1	140MP-A-DNC
	• Uncoded - Positioning of ON indication independent from mounting orientation of the 140MP	Driver without coding, with screw		140MP-A-DNUC
	Shaft Alignment Ring • Supports the long shafts for alignment to the handle inlet. It makes closing panel doors more easy • Use for shafts	140MP	1	140MP-A-SAR
	Extension Shaft	105 mm (4.13 in.)	10	140MP-A-DS
		180 mm (7.1 in.)		140MP-A-DSM
	Extension Shaft Support • Supports the shaft in the extension of handle (140MP-A-DC) • Required for shaft lengths >130 mm (5.1 in.) • Snaps on the right side of the MPCB • Width: 9 mm • For use with screw-mounted or hat rail mounted devices.	140MP	1	140MP-A-SHS
	Lockable Handle Accessory • For locking 140MP devices in the OFF position	140MP	10	140MP-A-KN1

Specifications

This section provides specification information for MPCBs and related accessories.

MPCB Specifications

Table 9 - General Ratings

Attribute		Value
Standards compliance	IEC	IEC/EN 60947-2, IEC/EN 60947-4-1, IEC/EN 60947-1
	cULus	UL 60947-1, UL 60947-4-1, CSA C22.2, No. 60947-4-1
Certifications	Global	RINA (Marine)
	Regional	CCC, KC, EAC, CE, IEC, cULus, CB Scheme
Rated operating voltage U_e		690V AC
Maximum operating voltage (UL)		600 V
Rated Frequency		50/60 Hz
Trip Class		10A
Number of operations	Mechanical	100,000 Cycles
	Electrical	100,000 Cycles (0.1...16 A); 50,000 Cycles (20...32 A)
Rated impulse withstand voltage U_{imp}		6 kV
Rated insulation voltage U_i		690V
Pollution Degree		3
Phase loss sensitivity		Yes
Disconnect function per IEC/EN 60947-2		Yes
Resistance to shock per IEC 60068-2-27		25g / 11 ms
Resistance to vibrations per IEC 60068-2-6		5g / 3 ... 150 Hz
Mounting		DIN Rail (EN 60715)
Group mounting (side by side)		up to 40 °C (104 °F)
Minimum distance to other units same type	Horizontal	0 mm (0 in.)
	Vertical	150 mm (5.9 in.)
Minimum distance to electrical conductive board	Horizontal, up to 400 V	0 mm (0 in.)
	Horizontal, up to 690 V	> 1.5 mm (0.06 in.)
	Vertical	75 mm (2.96 in.)
Degree of Protection	Housing	IP20
	Main Terminals	IP10
Short-circuit ratings	@230V, 400V, 440V, 500V, and 690 V	See Table 2
	@480V and 600V—for motor disconnect	See Table 13
	@480V and 600V—for group motor installation	
Utilization Category	IEC 60947-2 (Circuit breaker)	A
	IEC 60947-4-1 (Motor Starter)	AC-3

Table 10 - Power Loss

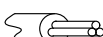
Power Loss		Rated Operating Current [A]				
		0.16...1.6	2.5...6.3	10...12	16...25	32
Power Loss in all 3 Poles up to:	[W]	5.1	5.4	7.2	8.4	9.3

Table 11 - Environmental Ratings

Attribute		Value
Operating Ambient air temperature	Open—compensated	-25 ... +55 °C (-13...+131 °F) ⁽¹⁾
	Open	-25 ... +70 °C (-13...+158 °F) ⁽¹⁾
	Enclosed	0 ... +40 °C (32...104 °F)
Storage Ambient air temperature		-50 ... +80 °C (-58...+176 °F)
Maximum operating altitude permissible		2000 m

(1) With derating. See [Table 13](#).

Table 12 - MPCB Connecting Characteristics

Connection		No. of Conductors	Devices Rated ≤ 16 A	Devices Rated 20...32 A
Type of terminals				
Connection Screw			M3.5/Pozidriv No.2	M4/Pozidriv No.2
Wiring	Solid	 1 or 2	1...4 mm ²	1...2.5 mm ² 2.5...6 mm ²
	Flexible with ferrule	 1 or 2	0.75...2.5 mm ²	0.75...6 mm ²
	Flexible	 1 or 2	0.75...2.5 mm ² /No. 16...12 AWG	1.5...2.5 mm ² /No.16...8 AWG 2.5...6 mm ² /No.16...8 AWG
	Stranded per UL/CSA	 1 or 2	1...4 mm ² /No. 16...12 AWG	1...2.5 mm ² /No.16...8 AWG 2.5...6 mm ² /No.16...8 AWG
	Stripping length		9 mm (0.35 in.)	10 mm (0.39 in.)
	Tightening torques		0.8...1.2 N•m / 7...10 lb•in	2 N•m /18 lb•in

Application Ratings

[Table 13](#) lists specific application ratings for MPCBs.

Table 13 - UL/CSA Listed Application Ratings, Motor Protection Circuit Breaker Only

Cat. No.	UL 60947-4-1 – Manual Motor Controller				
	Branch Circuit Protection Max. Size per NEC/CEC [A]	Max. Short Circuit Current [kA]			
		Motor Disconnect		Group Installation	
		480V	600V	480V	600V
140MP-A3E-A16	175	30	5	30	5
140MP-A3E-A25	175	30	5	30	5
140MP-A3E-A40	175	30	5	30	5
140MP-A3E-A63	175	30	5	30	5
140MP-A3E-B10	175	30	5	30	5
140MP-A3E-B16	175	30	5	30	5
140MP-A3E-B25	175	30	5	30	5
140MP-A3E-B40	175	18	5	18	5
140MP-A3E-B63	175	18	5	18	5
140MP-A3E-C10	175	18	5	18	5
140MP-A3E-C12	175	18	5	18	5
140MP-A3E-C16	175	18	5	18	5
140MP-A3E-C20	400	18	5	18	5
140MP-A3E-C25	400	18	5	18	5
140MP-A3E-C32	400	18	5	18	5

[Table 14](#) through [Table 16](#) lists specific application ratings for MPCBs in combination with Bulletin 100-K or 100-C contactors.

Type 1 Coordination—Specified 100-K contactors are suitable for motor group applications when they are used on the load side of the 140MP-A3E Manual Motor Controllers that are specified in [Table 14](#).

Table 14 - Type 1 Application Ratings, 140MP to 100-K Miniature IEC Contactors

Manual Motor Controller	Contactor ⁽¹⁾	SCCR		
		480V AC [kA]	600V AC [kA]	Maximum Fuse or Circuit Breaker sized per NEC [A]
140MP-A3E-A16	100-K05 100-K09 100-K12	30	5	175
140MP-A3E-A25		30	5	175
140MP-A3E-A40		30	5	175
140MP-A3E-A63		30	5	175
140MP-A3E-B10		30	5	175
140MP-A3E-B16		30	5	175
140MP-A3E-B25		30	5	175
140MP-A3E-B40		18	—	175
140MP-A3E-B63		18	—	175
140MP-A3E-C10	100-K09 100-K12	18	—	175
140MP-A3E-C12	100-K12	18	—	175
140MP-A3E-C16		18	—	175

(1) May be used with 140MP-A-PEK12 connecting module between 140MP-A3E manual motor controller and 100-K contactor.

Type 1 Coordination—Specified 100-C contactors (without R suffix) are suitable for motor group applications when they are used on the load side of the specified Manual Motor Controllers.

Table 15 - Type 1 Application Ratings, 140MP to 100-C IEC Contactors

Manual Motor Controller	Contactor ⁽¹⁾	SCCR		
		480V AC [kA]	600V AC [kA]	Maximum Fuse or Circuit Breaker sized per NEC [A]
140MP-A3E-A16	100-C09 100-C12 100-C16 100-C23	30	5	175
140MP-A3E-A25		30	5	175
140MP-A3E-A40		30	5	175
140MP-A3E-A63		30	5	175
140MP-A3E-B10		30	5	175
140MP-A3E-B16		30	5	175
140MP-A3E-B25		30	5	175
140MP-A3E-B40		18	5	175
140MP-A3E-B63		18	5	175
140MP-A3E-C10		18	5	175
140MP-A3E-C12	100-C12 100-C16 100-C23	18	5	175
140MP-A3E-C16 ⁽²⁾	100-C16 100-C23	18	5	175
140MP-A3E-C20	100-C23 100-C30 100-C37	18	5	400
140MP-A3E-C25 ⁽³⁾	100-C23	18	—	400
140MP-A3E-C25 ⁽³⁾	100-C30 100-C37	18	5	400
140MP-A3E-C32 ⁽⁴⁾	100-C30 100-C37	18	5	400

(1) 140MP-A-PEC23 connection modules may be used with 100-C09...-C23 up to 24 A.

(2) Limited to 15.5 FLA maximum when used in a 365 x 235 x 140 mm (14.4 x 9.3 x 5.5) (200%) or larger enclosure. Limited to 14.5 FLA maximum when used in 115 x 290 x 180 mm (4.5 x 11.4 x 7.1 in.) (150%) minimum sized enclosure.

(3) Minimum enclosure size is 170 x 670 x 235 mm (6.7 x 26.4 x 9.3) (250%) at full load current. If end use current is 22.5 FLA or less, may be used in an enclosure as small as 115 x 290 x 180 mm (4.5 x 11.4 x 7.1 in.) (150%).

(4) May be used at 30.8 FLA maximum when used ambient temperature of 40 °C (104 °F) maximum. May be used up to 29 FLA when used in a 115 x 290 x 180 mm (4.5 x 11.4 x 7.1 in.) (150%) minimum size enclosure.

Table 16 - Type 2 Coordination Ratings per IEC 60947-4-1, 140MP to 100-C IEC Contactors, Standard Motor Protection

Cat. No.	Type 2 Coordination Ratings, IEC 60947-4-1	
	400/415V	
	Max. Short Circuit Current [kA]	For Use With Contactor Cat. No.
140MP-A3E-A16	50	100-C09
140MP-A3E-A25	50	100-C09
140MP-A3E-A40	50	100-C09
140MP-A3E-A63	50	100-C09
140MP-A3E-B10	50	100-C09
140MP-A3E-B16	50	100-C09
140MP-A3E-B25	50	100-C09
140MP-A3E-B40	50	100-C09
140MP-A3E-B63	50	100-C09
140MP-A3E-C10	50	100-C09
140MP-A3E-C12	25	100-C12
140MP-A3E-C16	10	100-C23
140MP-A3E-C20	10	100-C30
140MP-A3E-C25	10	100-C30
140MP-A3E-C32	10	100-C30

Table 17 - Type 2 Coordination Ratings per UL 60947-4-1, 140MP to 100-C IEC Contactors, Standard Motor Protection

Cat. No.	Contactor ⁽¹⁾	Type 2 Coordination Ratings, UL 60947-4-1		Max. Fuse or Circuit Breaker Size per NEC [A]
		480V	600V	
		Max. Short Circuit Current [kA]	Max. Short Circuit Current [kA]	
140MP-A3E-A16	100-C09 100-C12 100-C16 100-C23	30	5	175
140MP-A3E-A25		30	5	175
140MP-A3E-A40		30	5	175
140MP-A3E-A63		30	5	175
140MP-A3E-B10		30	5	175
140MP-A3E-B16		30	5	175
140MP-A3E-B25	100-C12 100-C16 100-C23	30	5	175
140MP-A3E-B40	100-C16 100-C23	18	5	175
140MP-A3E-B63	100-C23	18	5	175
140MP-A3E-C10	100-C30 100-C37	18	5	175
140MP-A3E-C12		18	5	175
140MP-A3E-C16 ⁽²⁾		18	5	175
140MP-A3E-C20		18	5	400
140MP-A3E-C25 ⁽³⁾		18	5	400
140MP-A3E-C32 ⁽⁴⁾		18	5	400

(1) 140MP-A-PEC23 connection modules may be used with 100-C09...-C23 up to 24 A.

(2) Limited to 15.5 FLA maximum when used in a 365 x 235 x 140 mm (14.4 x 9.3 x 5.5) (200%) or larger enclosure. Limited to 14.5 FLA maximum when used in 115 x 290 x 180 mm (4.5 x 11.4 x 7.1 in.) (150%) minimum sized enclosure.

(3) Minimum enclosure size is 170 x 670 x 235 mm (6.7 x 26.4 x 9.3) (250%) at full load current. If end use current is 22.5 FLA or less, may be used in an enclosure as small as 115 x 290 x 180 mm (4.5 x 11.4 x 7.1 in.) (150%).

(4) May be used at 30.8 FLA maximum when used ambient temperature of 40 °C (104 °F) maximum. May be used up to 29 FLA when used in a 115 x 290 x 180 mm (4.5 x 11.4 x 7.1 in.) (150%) minimum size enclosure.

Accessory Specifications

Table 18 - Auxiliary Contact, Signaling Contact, and Short-circuit Signaling Contact Specifications

Attribute		Side-mounted Auxiliary, Signaling, and Short-circuit Signaling Contacts	Front-mounted Auxiliary Contacts
Standards compliance	IEC	IEC/EN 60947-1, IEC/EN 60947-5-1	IEC/EN 60947-1, IEC/EN 60947-5-1
	UL/cULus	UL 60947-4-1, CAN/CSA22.2 No. 60947-4-1	UL 60947-4-1, CAN/CSA22.2 No. 60947-4-1
Rated operating voltage U_e		690V AC/600V DC	250V AC / 250V DC
Conventional free-air thermal current I_{th}		6 A	5 A
Rated Frequency		50/60 Hz	50/60 Hz
Rated impulse withstand voltage U_{imp}		6 kV	6 kV
Rated insulation voltage U_i		690 V AC	250 V AC
Pollution Degree		3	3
Ambient air temperature	Operation	-25 ... +60 °C (-13...+140 °F)	-25 ... +60 °C (-13...+140 °F)
	Storage	-50 ... +80 °C (-58...+176 °F)	-50 ... +80 °C (-58...+176 °F)
Resistance to shock per IEC 60068-2-27		25g / 11 ms	25g / 11 ms
Resistance to vibrations per IEC 60068-2-6		5g / 3 ... 150 Hz	5g / 3 ... 150 Hz
Rated operational current I_e AC-15 per IEC/EN 60947-5-1 for utilization category	24 V, 120 V	6 A	3 A
	240 V	4 A	1.5 A
	400 V	3 A	—
	440 V, 690 V	1 A	—
Rated operational current I_{eDC} -13 per IEC/EN 60947-5-1 for utilization category	24 V	2 A	1 A
	125 V	0.55 A	0.27 A
	250 V	0.27 A	0.11 A
	440 V, 600 V	0.15 A	—
Minimum switching capacity		17 V DC / 5 mA	17V DC / 5 mA
Short-circuit protective device (N.O, N.C)		10 A Type gG	10 A Type gG
Duty time		100%	100%
Mounting		Right side	Front
Number of operations	Mechanical	50,000 cycles	50,000 cycles
	Electrical		
Contact utilization characteristics according to UL/CSA			
Rated operating voltage U_e per UL/CSA		600 V AC / 600 V DC	250V AC / 250V DC
Pilot duty		B600, Q600	B300, R300
AC thermal rated current		5 A	5 A
AC maximum volt-ampere	making	3600	3600 VA
	breaking	360	360 VA
DC thermal rated current		2.5 A	2.5 A
DC maximum volt-ampere	making	69 VA	28 VA
	breaking		
Connecting characteristics		Table 21	Table 21

Table 19 - Undervoltage Release Specifications

Attribute		Value
Standards compliance	IEC	IEC/EN 60947-1, IEC/EN 60947-5-1
	UL/cULus	UL 60947-4-1, CAN/CSA22.2 No. 60947-4-1
Rated control supply voltage		See Table 5
Rated frequency		
Operating voltage	Tripping	0.35 ... 0.7 x U _s
	Coil	0.85 ... 1.1 x U _s
Rated impulse withstand voltage U _{imp}		6 kV
Rated insulation voltage U _i		690V
Pollution degree		3
Ambient air temperature	Operation	-25 ... +60 °C (-13...+140 °F)
	Storage	-50 ... +80 °C (-58...+176 °F)
Resistance to shock per IEC 60068-2-27		25g / 11 ms
Resistance to vibrations per IEC 60068-2-6		5g / 3 ... 150 Hz
Mounting		left side of MPCB

Table 20 - Shunt Trip Specifications

Attribute		Value
Standards compliance	IEC	IEC/EN 60947-1, IEC/EN 60947-5-1
	UL/cULus	UL 60947-4-1, CAN/CSA22.2 No. 60947-4-1
Rated control supply voltage		See Table 5
Rated frequency		
Operating voltage	Tripping	0.7 ... 1.1 x U _s
Rated impulse withstand voltage U _{imp}		6 kV
Rated insulation voltage U _i		690V
Pollution degree		3
Ambient air temperature	Operation	-25 ... +60 °C (-13...+140 °F)
	Storage	-50 ... +80 °C (-58...+176 °F)
Resistance to shock per IEC 60068-2-27		15g/11ms
Resistance to vibrations per IEC 60068-2-6		5g / 3 ... 150 Hz
Mounting		left side of MPCB

Table 21 - Auxiliary Contact Connecting Characteristics

Connection		No. of Conductors	Side Mounted	Front Mounted
Wiring	Solid 	1 or 2	1...1.5 mm ²	1...2.5 mm ²
	Flexible with ferrule 	1 or 2	0.75...1.5 mm ²	
	Flexible 	1 or 2	0.75...1.5 mm ²	
	Stranded per UL/CSA 	1 or 2	No. 16...14 AWG	
	Stripping length		8 mm (0.31 in.)	
Tightening torques			0.8...1.2 N•m / 7 lb•in	
Recommended screwdriver			Pozidriv No.2	

Table 22 - Feeder Terminal and Bus Bar Current Ratings

Attribute	140MP-A-W45..., -W54..., -W63...	140MP-A-WT...
Rated operational voltage U_e	690 V	
Rated operational voltage U_e per UL/CSA	600V AC	
Rated operational current I_e	65 A	
Rated operational current I_e per UL/CSA	60 A	65 A
Suitable for enclosure size (UL)	200% of Size of 140MP-A with bus bars	
Rated frequency	50/60 Hz	
Rated impulse withstand voltage U_{imp}	6 kV	
Rated insulation voltage U_i	690V AC	

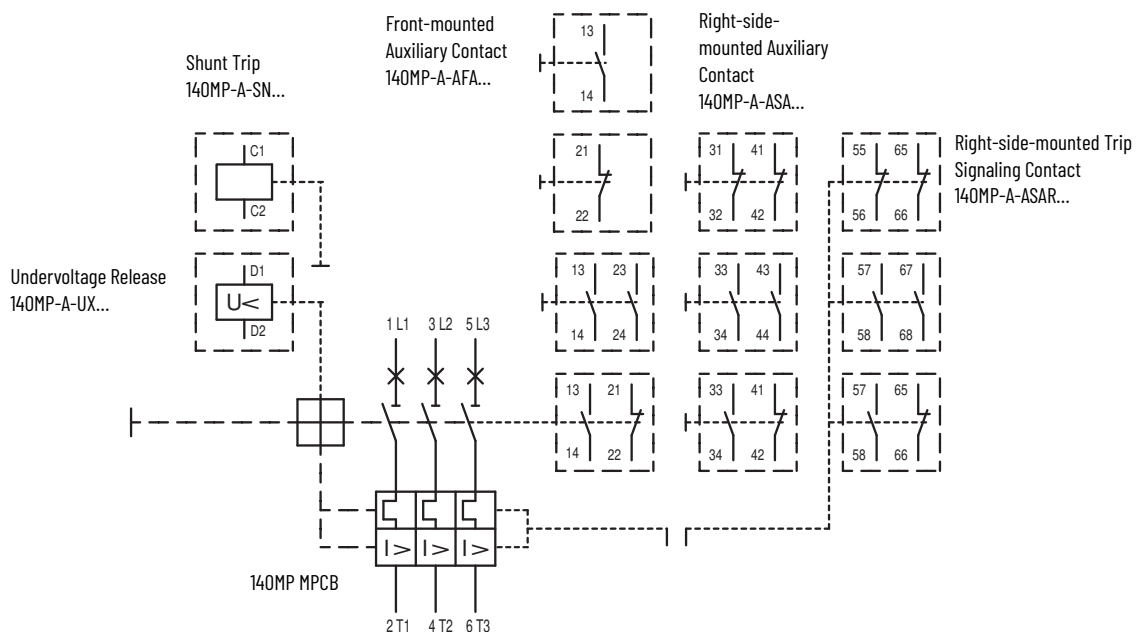
Table 23 - Main Circuit Connecting Characteristics

Connection			No. of Conductors	Value
Wiring	Solid		1	6...25 mm ²
	Flexible with ferrule		1	6...16 mm ²
	Flexible with insulated ferrule		1	6...16 mm ²
	Flexible		1	6...16 mm ²
	Stranded per UL/CSA		1	No. 10...4 AWG
	Stripping length			10 mm (0.39 in.)
Tightening torques				2.5 N•m / 22 lb•in
Recommended screwdriver				Pozidriv No.2

Wiring Diagrams

Figure 2 illustrates basic wiring for the 140MP MPCB and accessories.

Figure 2 - 140MP Wiring Example



Approximate Dimensions

Dimensions are in millimeters (inches) and are not intended for manufacturing purposes.

Figure 3 - Mounting Position

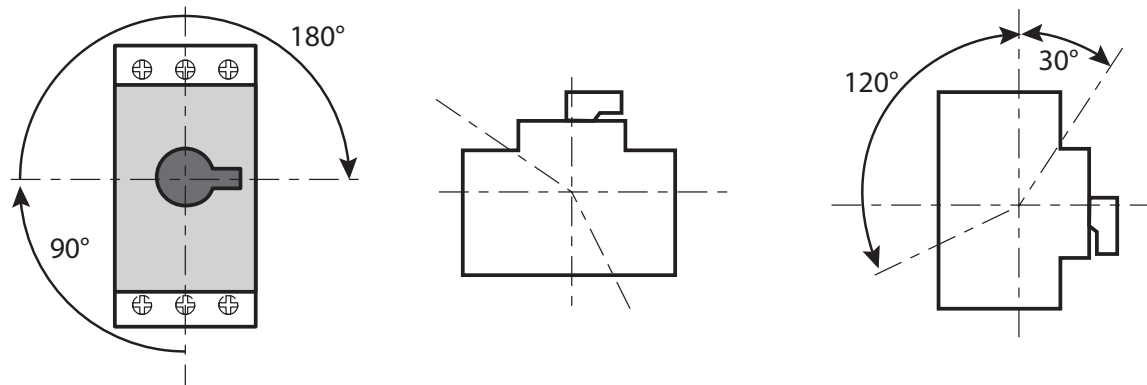


Figure 4 - Cat. No. 140MP-A3E..., 140MP-A-N45 ≤16 A

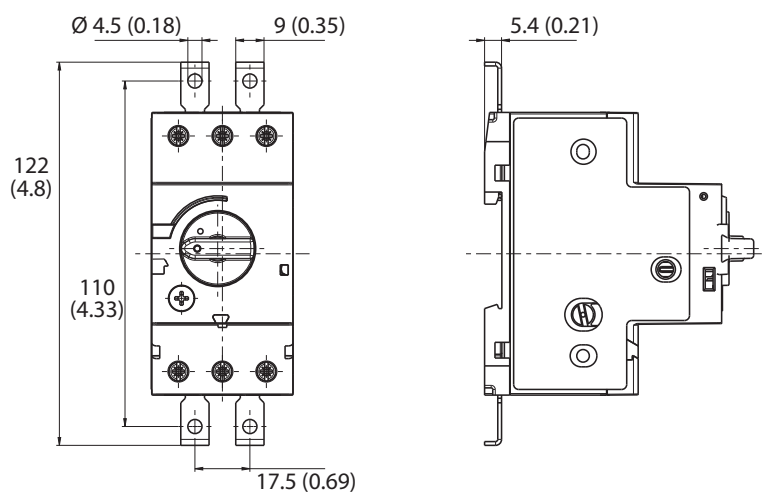


Figure 5 - Cat. No. 140MP-A3E..., 140MP-A-N45 ≥20 A

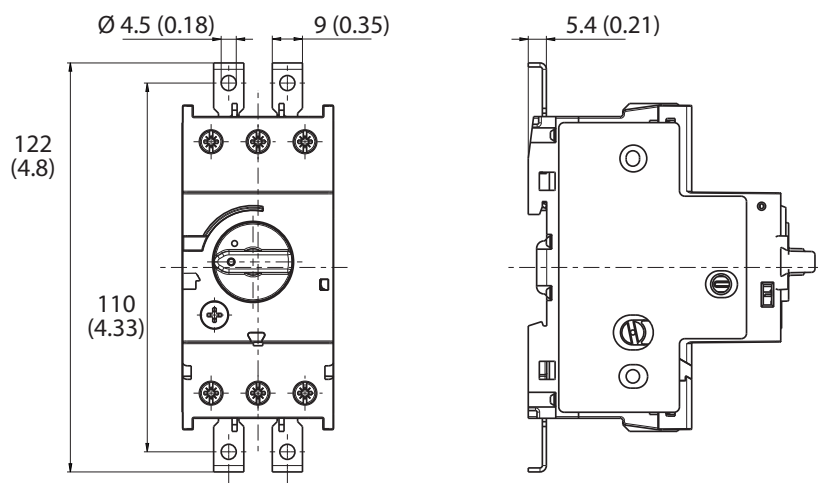


Figure 6 - Cat. No. 140MP-A3E-C16 with Accessories

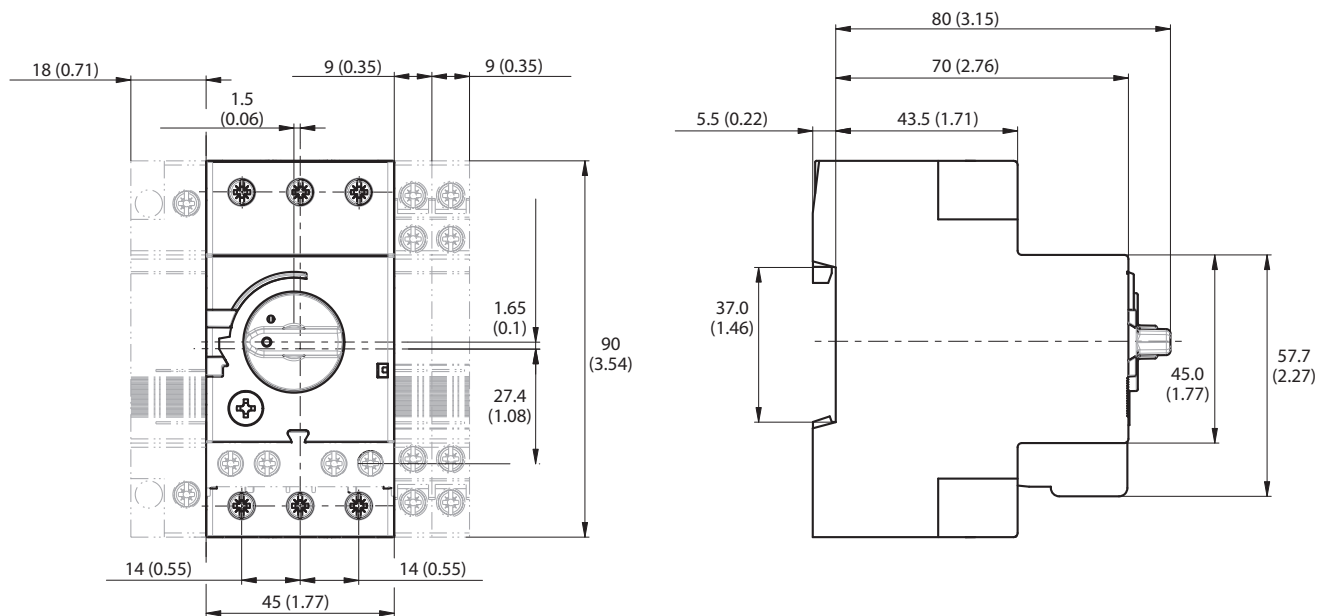
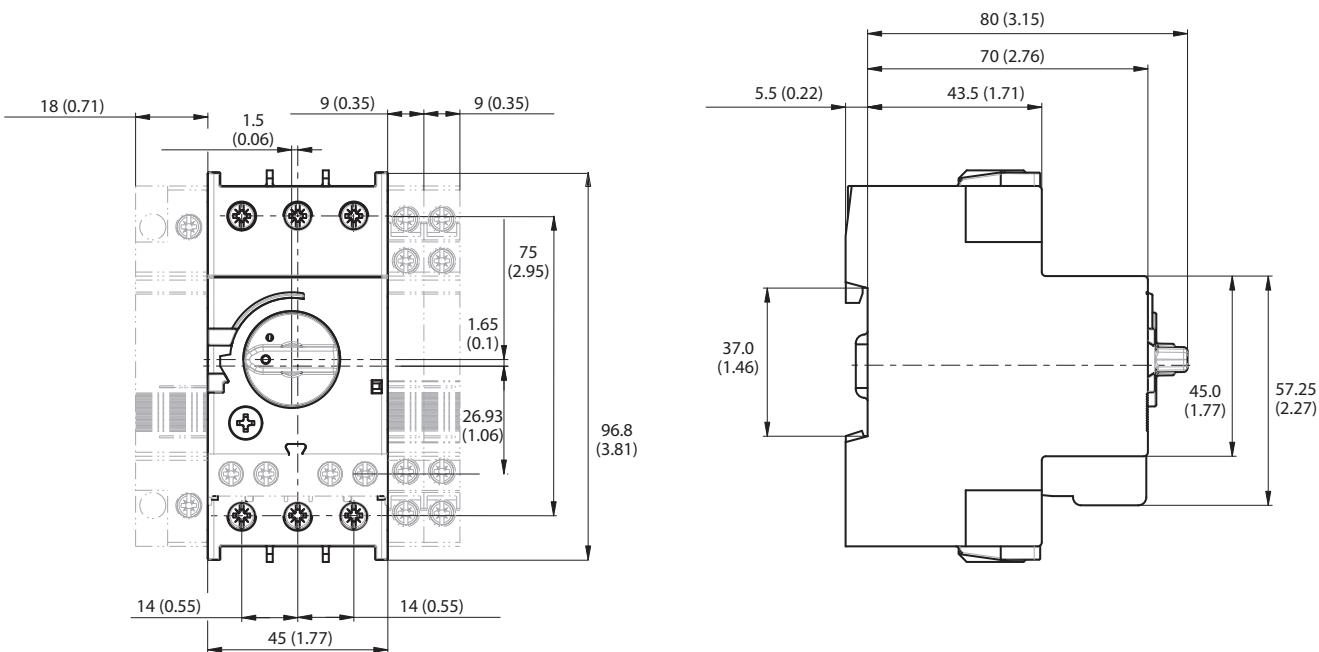


Figure 7 - Cat. No. 140MP-A3E-C32 with Accessories



Additional Resources

These documents contain additional information concerning related products from Rockwell Automation.

Resource	Description
IEC Contactor Specifications, publication 100-TD013	Provides product selection and selection information for IEC contactors.
Industrial Components Preventive Maintenance, Enclosures, and Contact Ratings Specifications, publication IC-TD002	Provides a quick reference tool for Allen-Bradley industrial automation controls and assemblies.
Safety Guidelines for the Application, Installation, and Maintenance of Solid-state Control, publication SGI-1.1	Designed to harmonize with NEMA Standards Publication No. ICS 1.1-1987 and provides general guidelines for the application, installation, and maintenance of solid-state control in the form of individual devices or packaged assemblies incorporating solid-state components.
Industrial Automation Wiring and Grounding Guidelines, publication 1770-4.1	Provides general guidelines for installing a Rockwell Automation industrial system.
Product Certifications website, rok.auto/certifications .	Provides declarations of conformity, certificates, and other certification details.

You can view or download publications at [rok.auto/literature](#).

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