



The Revolution in Circuit Breakers

 *Allen-Bradley*

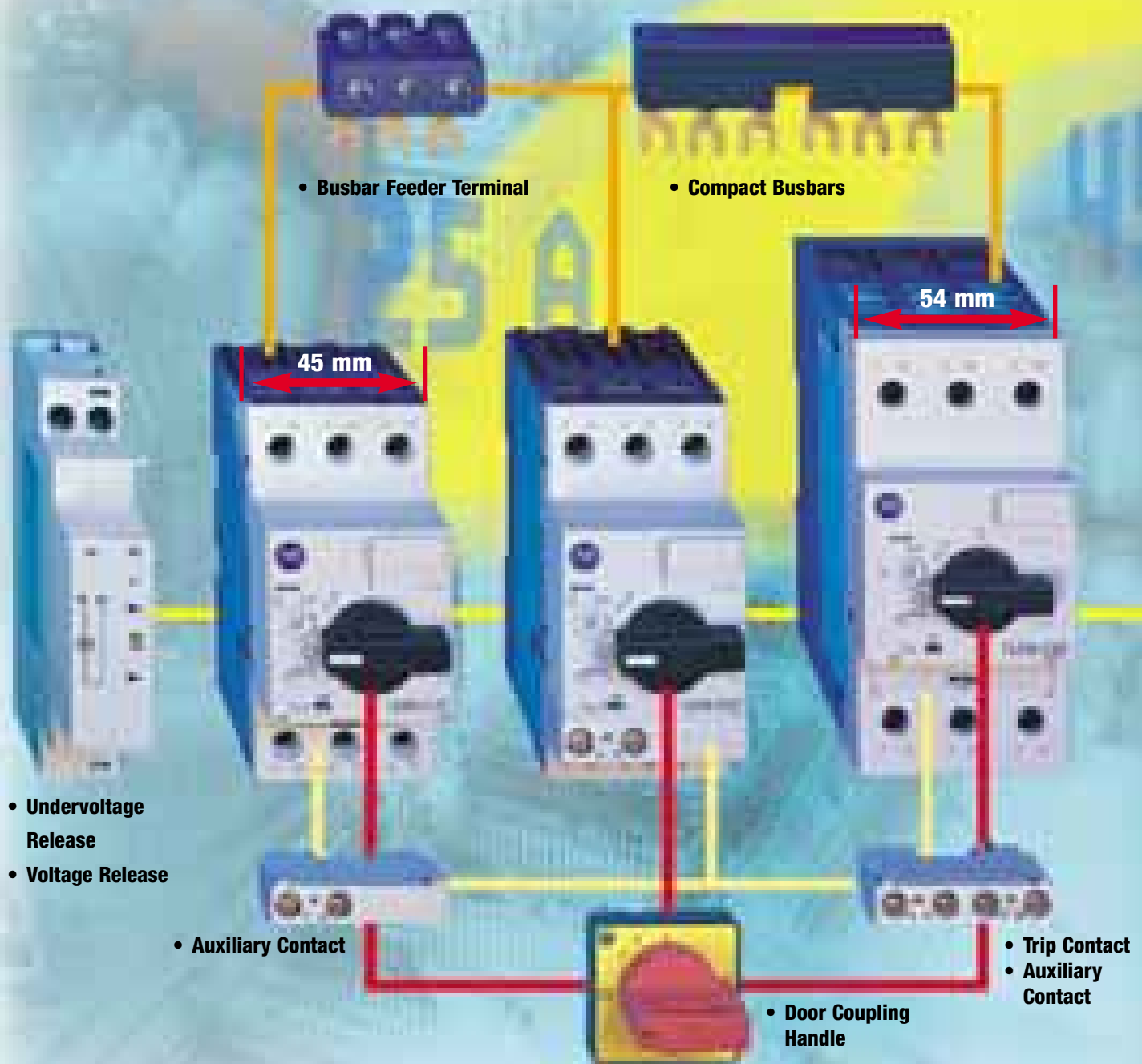
**Circuit Breakers
Bulletin 140M**

LISTEN.
THINK.
SOLVE.®

 *Allen-Bradley* • Rockwell Software

**Rockwell
Automation**

The Revolutionary Circuit Breakers



Latest Technology

A sophisticated construction and the latest technology of materials results in outstanding features and performance. High and effective current limiting and an extremely short drop out time causes an excellent shortcircuit breaking capacity. Combined with other MCS components, powerful load-feeders are assembled in an economic way.

The Right Device for all Applications

The circuit breaker family consists of two basic types of 25 A and 45 A in three variations:

140M-C.. 25 A High Break

140M-D.. 25 A High Break PLUS

140M-F.. 45 A High Break PLUS

They are available in different protection characteristics as **Motor, Starter and Transformer Protection**, opening a wide range of applications.

Ease in Selection of Components

The circuit breakers and contactors are compatible electrically and mechanically, that short circuit co-ordination «Type 2» according IEC 947-4 is achieved automatically. Therefore, you save time in selection and planning and gain security in operation.



Clear Optical and Electrical Signals

The rotary handle ensures a quick and secure recognition of the operating status. The various trip contacts allow optimal plant floor production by quickly detecting defective system parts. **The unique front mounted trip contact saves valuable panel space.**

Operating Security and Comfort

The jump mechanism has exactly defined operation modes **Off, On and Trip**. Manipulation errors are almost impossible. To reset a trip contact, simply reset the circuit breaker. Thus, it is always the real operating state of the load feeder represented.

Simplified Handling and Logistics

For the whole family, a common and complete range of accessories is available. Auxiliary contacts, trip contacts, the voltage or the undervoltage release can be snapped on or built in at the 140M devices without tools.

Motor protection

Rated operational current I_e [A]	Thermal release adjustment range [A]	Magnetic release operating current [A]	Switching of 3 phase AC motors, AC-2, AC-3						I_{cu}	I_{cs}	Cat. No.
			3-phase [kW] (50 Hz) ①			3-phase [HP] (60 Hz) ②					
			230 V	400 V	690 V	230 V	460 V	575 V	[kA]	[kA]	
140M-C2E Size 1 High break											
0.16	0.1...0.16	2.1	-	0.02	-	-	-	-	100	100	140M-C2E-A16
0.25	0.16...0.25	3.3	-	0.06	-	-	-	-	100	100	140M-C2E-A25
0.4	0.25...0.4	5.2	-	0.09	-	-	-	-	100	100	140M-C2E-A40
0.63	0.4...0.63	8.2	0.06/0.09	0.12/0.18	0.25	-	-	-	100	100	140M-C2E-A63
1.0	0.63...1.0	13	0.12	0.25	0.37/0.55	-	1/2	3/4	100	100	140M-C2E-B10
1.6	1.0...1.6	21	0.18/0.25	0.37/0.55	0.75/1.1	-	1	1	100	100	140M-C2E-B16
2.5	1.6...2.5	33	0.37	0.75	1.8	3/4	1-1/2	2	100	100	140M-C2E-B25
4.0	2.5...4.0	52	0.55/0.75	1.1/1.5	2.2/3.0	1	3	3	100	100	140M-C2E-B40
6.3	4.0...6.3	82	1.1/1.5	2.2	4.0	2	5	5	100	100	140M-C2E-B63
10	6.3...10	130	2.2	3.0/4.0	5.5/7.5	3	7-1/2	10	100	100	140M-C2E-C10
16	10...16	208	3.0/4.0	5.5/7.5	11/13	5	10	15	50	50	140M-C2E-C16
20	14.5...20	260	4.0/5.5	7.5/10	15/17	7-1/2	15	20	15	15	140M-C2E-C20
25	18...25	325	-	11	18.5/22	7-1/2	15	20	15	15	140M-C2E-C25
140M-D8E Size 2 High break PLUS											
2.5	1.6...2.5	33	0.37	0.75	1.8	3/4	1-1/2	2	100	100	140M-D8E-B25
4.0	2.5...4.0	52	0.55/0.75	1.1/1.5	2.2/3.0	1	3	3	100	100	140M-D8E-B40
6.3	4.0...6.3	82	1.1/1.5	2.2	4.0	2	5	5	100	100	140M-D8E-B63
10	6.3...10	130	2.2	3.0/4.0	5.5/7.5	3	7-1/2	10	100	100	140M-D8E-C10
16	10...16	208	3.0/4.0	5.5/7.5	11/13	5	10	15	100	50	140M-D8E-C16
20	14.5...20	260	4.0/5.5	7.5/10	15/17	7-1/2	15	20	50	25	140M-D8E-C20
25	18...25	325	-	11	18.5/22	7-1/2	15	20	50	25	140M-D8E-C25
140M-F8E Size 3 High break PLUS											
10	6.3 ... 10	130	2.2	3.0/4.0	5.5/7.5	3	7-1/2	10	65	50	140M-F8E-C10
16	10 ... 16	208	3.0/4.0	5.5/7.5	11/13	5	10	15	65	50	140M-F8E-C16
20	14.5...20	260	4.0/5.5	7.5/10	15/17	7-1/2	15	20	65	50	140M-F8E-C20
25	18 ... 25	325	5.5/6.3	11	18.5/22	10	20	25	65	50	140M-F8E-C25
32	23 ... 32	416	7.5	15	22/25	10	25	30	65	50	140M-F8E-C32
45	32 ... 45	585	11/13	18.5/22	30/40	15	30	40	65	50	140M-F8E-C45

Short-circuit protection for starters

Rated operational current I_e [A]	Thermal release adjustment range [A]	Magnetic release operating current [A]	Switching of 3 phase AC motors, AC-2, AC-3						I_{cu}	I_{cs}	Cat. No.
			3-phase [kW] (50 Hz) ①			3-phase [HP] (60 Hz) ②					
			230 V	400 V	690 V	230 V	460 V	575 V	[kA]	[kA]	
140M-C2N Size 1 High break											
0.16	-	2.1	-	0.02	-	-	-	-	100	100	140M-C2N-A16
0.25	-	3.3	-	0.06	-	-	-	-	100	100	140M-C2N-A25
0.4	-	5.2	-	0.09	-	-	-	-	100	100	140M-C2N-A40
0.63	-	8.2	0.06/0.09	0.12/0.18	0.25	-	-	-	100	100	140M-C2N-A63
1.0	-	13	0.12	0.25	0.37/0.55	-	1/2	3/4	100	100	140M-C2N-B10
1.6	-	20	0.18/0.25	0.37/0.55	0.75/1.1	-	1	1	100	100	140M-C2N-B16
2.5	-	32	0.37	0.75	1.8	3/4	1-1/2	2	100	100	140M-C2N-B25
140M-D8N Size 2 High break PLUS											
2.5	-	32	0.37	0.75	1.8	3/4	1-1/2	2	100	100	140M-D8N-B25
4.0	-	52	0.55/0.75	1.1/1.5	2.2/3.0	1	3	3	100	100	140M-D8N-B40
6.3	-	82	1.1/1.5	2.2	4.0	2	5	5	100	100	140M-D8N-B63
10	-	130	2.2	3.0/4.0	5.5/7.5	3	7-1/2	10	100	100	140M-D8N-C10
16	-	208	3.0/4.0	5.5/7.5	11/13	5	10	15	100	50	140M-D8N-C16
25	-	325	-	11	18.5/22	7-1/2	15	20	50	25	140M-D8N-C25
140M-F8N Size 3 High break PLUS											
25	-	325	5.5/6.3	11	18.5/22	10	20	25	65	50	140M-F8N-C25
32	-	416	7.5	15	22/25	10	25	30	65	50	140M-F8N-C32
45	-	585	11/13	18.5/22	30/40	15	30	40	65	50	140M-F8N-C45


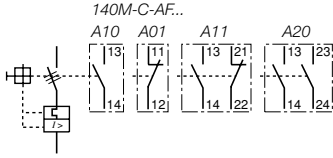

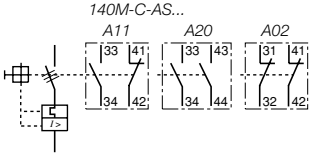

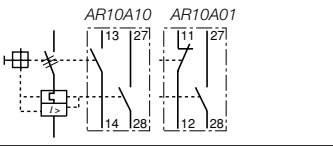

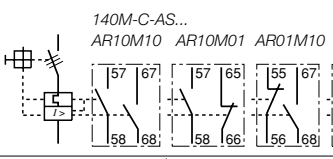

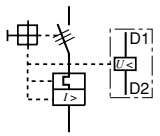
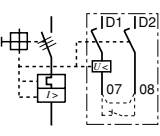
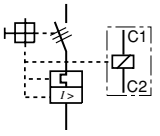
① Switching information: Preferred values acc. IEC 60072-1

② UL-Approval as Manual Motor Controller








Transformer protection

Rated operational current I_e [A]	Thermal release adjustment range [A]	Magnetic release operating current [A]	Switching of 3 phase AC motors, AC-2, AC-3						I_{cu}	I_{cs}	Cat. No.
			3-phase [kW] (50 Hz) Ⓢ			3-phase [HP] (60 Hz) Ⓢ					
			230 V	400 V	690 V	230 V	460 V	575 V	[kA]	[kA]	
140M-C2T Size 1 High break											
0.16	0.1...0.16	3.2	-	0.02	-	-	-	-	100	100	140M-C2T-A16
0.25	0.16...0.25	5.2	-	0.06	-	-	-	-	100	100	140M-C2T-A25
0.4	0.25...0.4	8.2	-	0.09	-	-	-	-	100	100	140M-C2T-A40
0.63	0.4...0.63	13	0.06/0.09	0.12/0.18	0.25	-	-	-	100	100	140M-C2T-A63
1.0	0.63...1.0	21	0.12	0.25	0.37/0.55	-	1/2	3/4	100	100	140M-C2T-B10
1.6	1.0...1.6	32	0.18/0.25	0.37/0.55	0.75/1.1	-	1	1	100	100	140M-C2T-B16
2.5	1.6...2.5	52	0.37	0.75	1.8	3/4	1-1/2	2	100	100	140M-C2T-B25
4.0	2.5...4.0	82	0.55/0.75	1.1/1.5	2.2/3.0	1	3	3	100	100	140M-C2T-B40
6.3	4.0...6.3	130	1.1/1.5	2.2	4.0	2	5	5	100	100	140M-C2T-B63
10	6.3...10	208	2.2	3.0/4.0	5.5/7.5	3	7-1/2	10	100	100	140M-C2T-C10
16	10...16	260	3.0/4.0	5.5/7.5	11/13	5	10	15	15	15	140M-C2T-C16
140M-D8T Size 2 High break PLUS											
16	10...16	260	3.0/4.0	5.5/7.5	11/13	5	10	15	50	50	140M-D8T-C16
20	14.5...20	325	4.0/5.5	7.5/10	15/17	7-1/2	15	20	50	25	140M-D8T-C20
140M-F8T Size 3 High break PLUS											
25	18 ... 25	416	5.5/6.3	11	18.5/22	10	20	25	65	50	140M-F8T-C25
32	23 ... 32	585	7.5	15	22/25	10	25	30	65	50	140M-F8T-C32

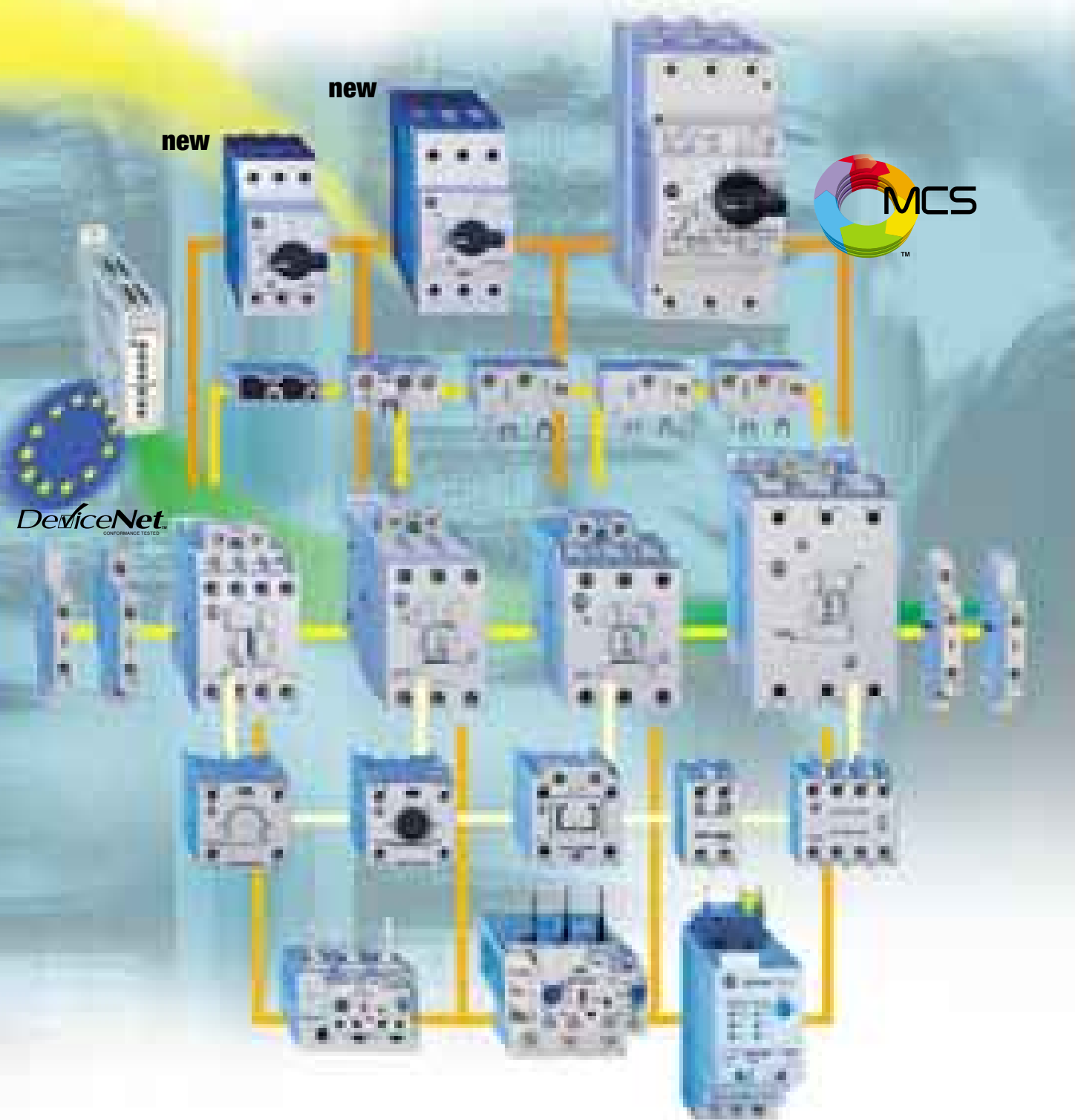
Accessories

	Description	Connection diagram	Cat. No.	
	Auxiliary contact <ul style="list-style-type: none"> Front mounting 1- or 2-pole One front mounting module per circuit breaker 		140M-C-AFA10 140M-C-AFA01 140M-C-AFA11 140M-C-AFA20	
	Auxiliary contact <ul style="list-style-type: none"> Side mounting on the right 2-pole One side mounting module per circuit breaker. (Combined with a trip contact, always fitted on the side of the trip contact). 		140M-C-ASA20 140M-C-ASA02 140M-C-ASA11	
	Combination Trip/Auxiliary contact <ul style="list-style-type: none"> Front mounting 2-pole One front mounting module per circuit breaker 		140M-C-AFAR10A10 140M-C-AFAR10A01	
	Combination Trip/Auxiliary contact <ul style="list-style-type: none"> Side mounting on the right 2-pole One side mounting module per circuit breaker. (Always directly fitted to the circuit breaker). 		140M-C-ASAR10M10 140M-C-ASAR10M01 140M-C-ASAR01M10 140M-C-ASAR01M01 140M-C-ASAM11	
	Undervoltage release <ul style="list-style-type: none"> Side mounting on the left One left side mounted module per circuit breaker 		21 V, 50 Hz / 24 V, 60 Hz 24 V, 50 Hz / 28 V, 60 Hz 105 V, 50 Hz / 120 V, 60 Hz 110 V, 50 Hz / 127 V, 60 Hz 220...230 V, 50 Hz 240...260 V, 60 Hz 240 V, 50 Hz / 277 V, 60 Hz 380...400 V, 50 Hz / 440...460 V, 60 Hz 415 V, 50 Hz / 480 V, 60 Hz	140M-C-UXJ 140M-C-UXK 140M-C-UXD 140M-C-UXC 140M-C-UXF 140M-C-UXA 140M-C-UXT 140M-C-UXN 140M-C-UXB
	Undervoltage release <ul style="list-style-type: none"> Side mounting on the left 2 early make contacts integrated One left side mounted module per circuit breaker 		21 V, 50 Hz / 24 V, 60 Hz 24 V, 50 Hz / 28 V, 60 Hz 105 V, 50 Hz / 120 V, 60 Hz 110 V, 50 Hz / 127 V, 60 Hz 220...230 V, 50 Hz 240...260 V, 60 Hz 240 V, 50 Hz / 277 V, 60 Hz 380...400 V, 50 Hz / 440...460 V, 60 Hz 415 V, 50 Hz / 480 V, 60 Hz	140M-C-UCJ 140M-C-UCK 140M-C-UCD 140M-C-UCC 140M-C-UCF 140M-C-UCA 140M-C-UCT 140M-C-UCN 140M-C-UCB
	Voltage release <ul style="list-style-type: none"> Side mounting on the left One left side mounted module per circuit breaker 		21 V, 50 Hz / 24 V, 60 Hz 24 V, 50 Hz / 28 V, 60 Hz 105 V, 50 Hz / 120 V, 60 Hz 110 V, 50 Hz / 127 V, 60 Hz 220...230 V, 50 Hz 240...260 V, 60 Hz 240 V, 50 Hz / 277 V, 60 Hz 380...400 V, 50 Hz / 440...460 V, 60 Hz 415 V, 50 Hz / 480 V, 60 Hz	140M-C-SNJ 140M-C-SNK 140M-C-SND 140M-C-SNC 140M-C-SNF 140M-C-SNA 140M-C-SNT 140M-C-SNN 140M-C-SNB

Accessories

	Description	to use with	Cat. No.						
	Anti-Tamper shield <ul style="list-style-type: none"> Provides protection against inadvertent adjustment of the current setting 	140M-C/-D/-F	140M-C-CA						
	Lockable rotary handle <ul style="list-style-type: none"> 1 padlock \varnothing 3...6 mm locking in „0“ position 	black	140M-C/-D/-F						
		red / yellow	140M-C/-D 140M-F	140M-C-KRY 140M-F-KRY					
	Locking arrangement <ul style="list-style-type: none"> Increases the padlockable facility of the lockable rotary handle 1...3 padlocks \varnothing 4...8 mm 	140M-C-KN 140M-C-KRY 140M-F-KRY	140M-C-M3						
	Door coupling handle <ul style="list-style-type: none"> Lockable with 1...3 padlocks \varnothing 4...8 mm Protection IP 66 Interlock override facility Can be modified for locking in „1“ position Scope of delivery: Door handle and coupling 	black	140M-C/-D/-F						
	Mounting-depth (Adapter-Door) <table border="0" style="margin-left: 20px;"> <tr> <td>140-C</td> <td>105.5 mm \pm 5 mm</td> </tr> <tr> <td>140-D</td> <td>114.5 mm \pm 5 mm</td> </tr> <tr> <td>140-F</td> <td>137.1 mm \pm 5 mm</td> </tr> </table> (Please order extension shaft and legend plate separately)	140-C	105.5 mm \pm 5 mm	140-D	114.5 mm \pm 5 mm	140-F	137.1 mm \pm 5 mm	red / yellow	140M-C/-D/-F
140-C	105.5 mm \pm 5 mm								
140-D	114.5 mm \pm 5 mm								
140-F	137.1 mm \pm 5 mm								
	Extension shaft <ul style="list-style-type: none"> Can be cut to required length 								
	Mounting-depth (Adapter-Door) <table border="0" style="margin-left: 20px;"> <tr> <td>140-C</td> <td>117...338 mm</td> </tr> <tr> <td>140-D</td> <td>126...347 mm</td> </tr> <tr> <td>140-F</td> <td>149...369 mm</td> </tr> </table>	140-C	117...338 mm	140-D	126...347 mm	140-F	149...369 mm		140M-C-DN66 140M-C-DRY66
140-C	117...338 mm								
140-D	126...347 mm								
140-F	149...369 mm								
	Legend plate <ul style="list-style-type: none"> Marking: „Hauptschalter“ and „Main Switch“ Marking: „Not-Aus“ and „Emergency-OFF“ 	black / grey	140M-C-DN66						
		black / yellow	140M-C-DRY66						
	Screw adapter clip <ul style="list-style-type: none"> For screw mounting of a circuit breaker 	140M-C/-D/-F	140M-C-N45						
	Busbar feeder terminal <ul style="list-style-type: none"> Supply of compact busbars Increases terminal capacity (max. 25 mm²) 	140M-C/-D	140M-C-WT						
		140M-F	140M-F-WT						
	Compact busbars (for circuit breakers 25 A) <ul style="list-style-type: none"> 45 mm spacing with front-mounted auxiliary contact 	2 x 3 connections	140M-C/-D						
		3 x 3 connections							
		4 x 3 connections							
		5 x 3 connections							
		2 x 3 connections	140M-C/-D						
		3 x 3 connections							
		4 x 3 connections							
5 x 3 connections									
	Compact busbar <ul style="list-style-type: none"> Connects 140M-D with 140M-C or with 140M-C-WB Can be used in combination with all other busbars 54 mm spacing 	2 x 3 connections	140M-D to 140M-C/-C-WB						
			140M-C-WD542						
	Blank space cover <ul style="list-style-type: none"> For covering of unused connection lugs 	140M-C/-D	140M-C-WS						
	Supply block <ul style="list-style-type: none"> For supplying compact busbars Increases terminal capacity For the supply of 140M-D use compact busbar 140M-C-WD542	140M-C 140M-D	140M-C-WB						
	Connecting modules ECO-starters <ul style="list-style-type: none"> The ECO-connecting modules provide electrical and mechanical interconnection, safely, quickly and simply. Suitable for reversing and star/delta kits ECO-starters mount on single DIN-rail Additional mechanical support of 100-C contactors recommended 	140M-C to 100M	140M-C-PEM12						
		140M-C to 100-C09...C23	140M-C-PEC23						
		140M-D to 100-C09...C23	140M-D-PEC23						
	Connecting modules <ul style="list-style-type: none"> Electrical interconnection between circuit breaker 140M-F and contactors 100-C Additional mechanical support of contactors and circuit breaker required 	140M-F to 100-C30...C37	140M-F-PNC37						
		140M-F to 100-C43	140M-F-PNC43						

The System is Evolving



The New Highlights

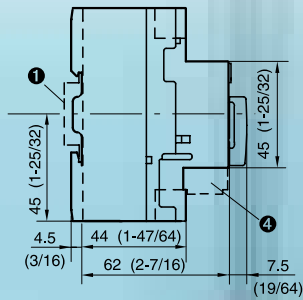
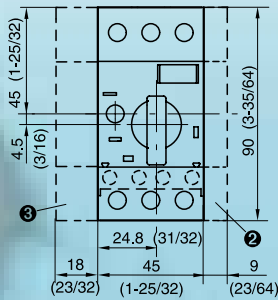
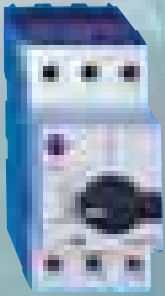
The new circuit breakers follow consistently the ideas of the Modular Control System MCS: All components are designed for electrical and dimensional co-ordination which makes assembly extremely easy. Consistent 9 mm spacing simplifies planning and installation.

Developed for the World Marketplace

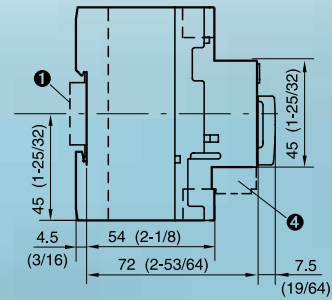
The new circuit breakers were developed and are manufactured in Europe for the tough requirement of the world market. The components fulfil the international standards IEC 947-1/2/4. In North America, the devices can be

used as Manual Motor Starter in Group Installations according UL 508. (Approval under preparation)

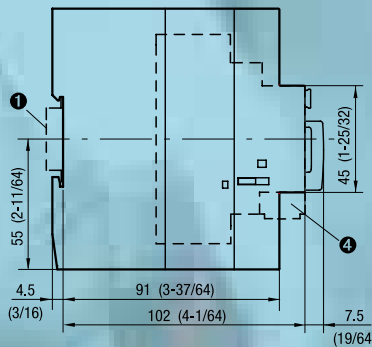
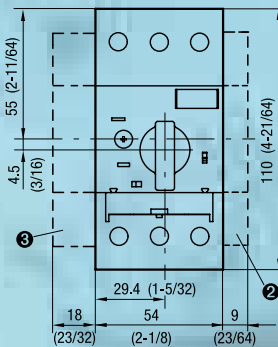
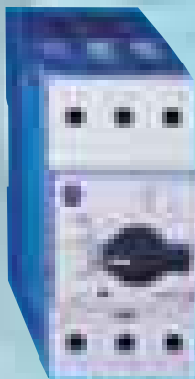
Dimensions in mm (inches)



140M-C...

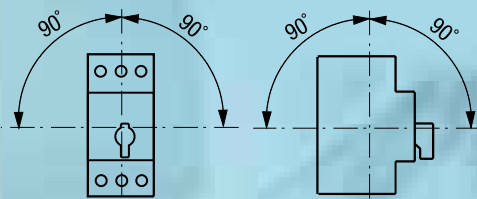


140M-D...



140M-F...

- ❶ Mounting on DIN-rail EN 50 022-35
- ❷ Auxiliary contact (side mounted)
- ❸ Undervoltage trip or Shunt trip
- ❹ Auxiliary contact (front mounted)



Mounting position

Short-Circuit Coordination Type «2» acc. IEC 947-4-1

Rated conditional short-circuit current: $I_q = 50 \text{ kA}$
Voltage: 400/415 V 50 Hz

- ▶ Selection of Circuit Breaker and Contactor acc. to rated motor current
- ▶ Coordination «2» is automatically given

Example: Motor 7.5 kW, 400 V, 16 A

- ▶ Circuit-breaker 16 A: 140M-C2E-C16
- ▶ Contactor 16 A: 100-C16*10