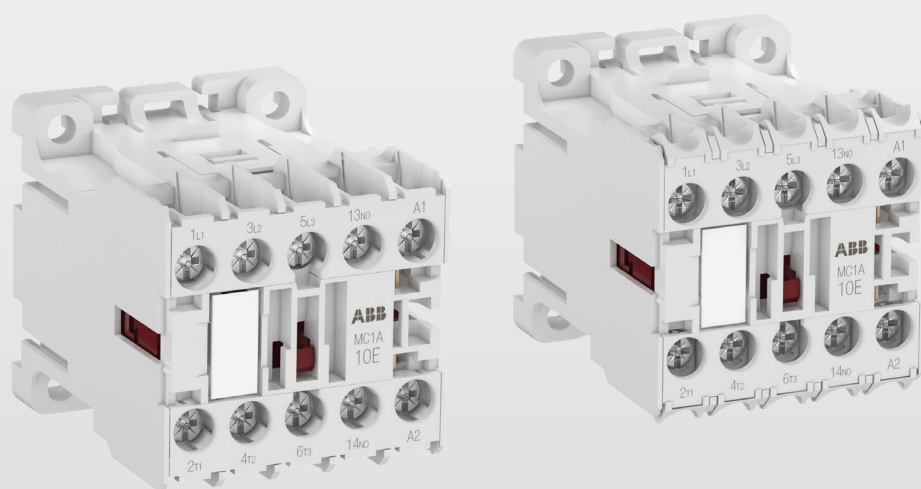


# M mini contactors and contactor relays

Reliability, always



- Dimension optimized performance solution
- Wide set of variants
- Secure connection in all the applications



—  
**For more information please find our electronic data sheets online, for example:**  
[www.abb.com/productdetails/1SAL102617R9901](http://www.abb.com/productdetails/1SAL102617R9901)

# M mini contactors and contactor relays

3 **Presentation**

5 **Overview**

## 3-pole mini contactors - 4 to 5.5 kW

### With screw terminals

6	MC1A	AC operated
7	MC2A	AC operated
8	MC1C	DC operated
9	MC2C	DC operated
10	MC1I, MC1K, MC2I, MC2K	DC operated - low consumption

### For ring tongue ferrules

11	MC1A..R, MC2A..R	AC operated
12	MC1C..R	DC operated
13	MC1K..R	DC operated - low consumption

## 4-pole mini contactors - 4 to 5.5 kW

### With screw terminals

14	MC1A	AC operated
15	MC2A	AC operated
16	MC1C, MC2C	DC operated
17	MC1I, MC1K	DC operated - low consumption

### For ring tongue ferrules

18	MC1A..R	AC operated
19	MC1C..R	DC operated
20	MC1K..R	DC operated - low consumption

## 4-pole mini contactor relays

### With screw terminals

21	MCRA	AC operated
22	MCRC	DC operated
23	MCRI, MCRK	DC operated - low consumption

### For ring tongue ferrules

24	MCRA..R	AC operated
25	MCRC..R	DC operated
26	MCRK..R	DC operated - low consumption

27 **Accessories**

31 **Technical data**

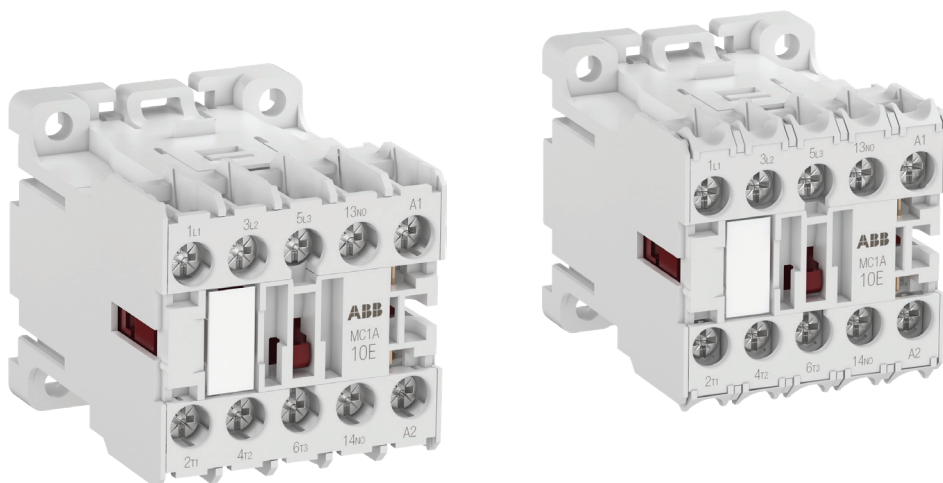
40 **Terminal marking and product positioning**

42 **Accessories dimensions**

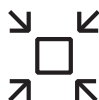


# M mini contactors and contactor relays

Reliability, always



The M contactors range is a performance-dimension optimized solution for all purposes. High reliability, even in extreme conditions, combined with small size and safe connections, facilitate easy design and compact panels.



## Space-saving

### Small dimensions for big projects

M range devices are a great solution when high performance is needed but space is limited. Small product dimensions and the ability to mount them side-by-side maximizes cabinet cost efficiency without compromise.



## Reliability in extreme conditions

### Made for all applications

The design technology and wide set of available variants guarantee reliability in demanding conditions. Network instability, high altitude and extreme temperatures will not be a limit anymore.



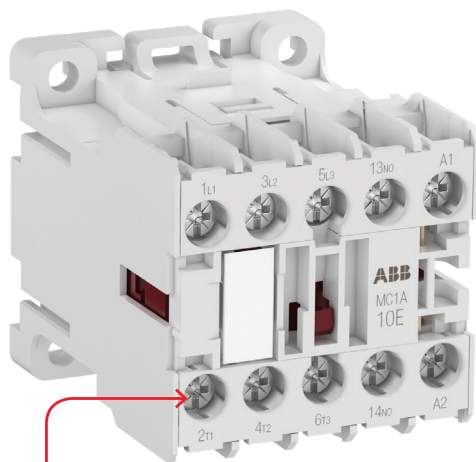
## Optimum interface

### Never without a solution

A wide set of coils is provided to match all requirements; pure AC or DC for very fast switching, with low energy consumption for direct control by PLC, and with extended operating limits to tolerate voltage fluctuations.

# M mini contactors and contactor relays

## Efficient - High performance in a small size



### Screw

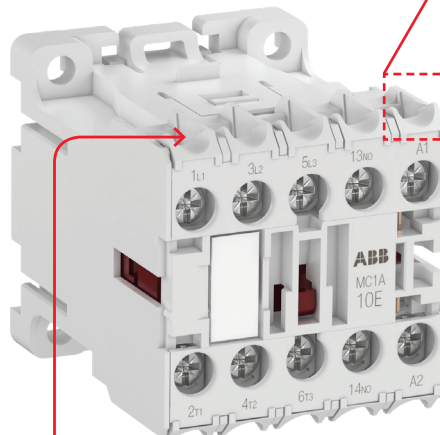
#### Screw terminals

The same screw is used for all device terminals and circuits for an efficient and fast installation. The connection is always stable, the range of usable wire dimensions wide and the maintenance easy.



### Wide range of accessories

Up to 6 auxiliary contacts can be mounted on the devices; on the side or the front, and with both connection types. Electronic timers, surge suppressors and parallel connection links are also available in the portfolio.



### Ring tongue ferrules

#### With specific screw terminal

Some contactor and contactor relay models are equipped with specific screw terminals to allow quick and easy installations using ring tongue ferrules. A must for applications with shocks and vibrations and when the solidity of the connection is a crucial factor.



### Assemble your reversing starter

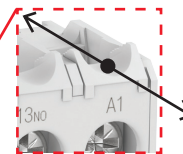
Thanks to the mechanical interlock and the connection sets, a compact reversing starter can be easily assembled for motor controlling in both directions. Auxiliary contact blocks can be installed on the front or on both sides of the reversing contactor.



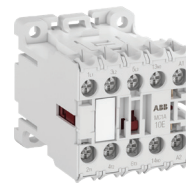
### Compact protection



The M mini contactors are fully compatible with T16 thermal overload relays to create a very compact, yet effective solution, to protect your loads from current overloads and phase failures.

Lugs easy connection



# M mini contactors





			Screw terminals	Screw terminals for ring tongue ferrules
<b>AC Control supply</b> 				
3-pole contactors	Coil consumption (50 Hz) 5.3 VA	Type	MC1A..T	MC2A..T
4-pole contactors	Coil consumption (50 Hz) 5.3 VA	Type	MC1A..T	MC2A..T
<b>DC Control supply</b> 				
3-pole contactors	Coil consumption 3 W	Type	MC1C..T	MC2C..T
3-pole low consumption contactors	Coil consumption 1.2 / 2 W	Type	MC1I..T / MC1K..T	MC2I..T / MC2K..T
3-pole extended limits coil contactors	Coil consumption 4 W	Type	MC1C..TW	MC2C..TW
4-pole contactors	Coil consumption 3 W	Type	MC1C..T	–
4-pole low consumption contactors	Coil consumption 1.2 / 2 W	Type	MC1I..T / MC1K..T	–
4-pole extended limits coil contactors	Coil consumption 4 W	Type	MC1C..TW	MC2C..TW
IEC Rated operational power AC-3	230 V	kW	2.2	3
	400 V	kW	4	5.5
	500 V	kW	4	5.5
	690 V	kW	4 (1)	4 (1)
Rated operational current AC-1	400 V, $\theta \leq 55^\circ\text{C}$	A	20	20
UL/CSA 3-phase motor rating	200 V AC	hp	3	3
	240 V AC	hp	3	3
	380-425 V AC	hp	3	5
	440-480 V AC	hp	5	7.5
	500-600 V AC	hp	5	10
General use rating		A	20 (600 V)	20 (600 V)
<b>Main accessories</b>				
Auxiliary contact blocks	Front mounting		MACN / MARN	
	Side mounting		MACL / MARL	
Electronic timers			MREBC	
Connection sets	For reversing contactors		WKMIU	
Surge suppressors			MPO	
<b>Overload relays</b>				
Thermal overload relays		Class 10	T16	
Thermal and phase failure protection, with single setup possible				

(1) Valid for N.O. contacts only.

# M mini contactor relays

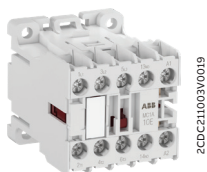


			Screw terminals	Screw terminals for ring tongue ferrules
<b>AC Control supply</b> 				
4-pole contactor relays	Coil consumption (50 Hz) 5.3 VA	Type	MCRA..T	MCRA..R
<b>DC Control supply</b> 				
4-pole contactor relays	Coil consumption 3 W	Type	MCRK..T	MCRK..R
4-pole low consumption contactor relays	Coil consumption 1.2 / 2 W	Type	MCRJ..T / MCRK..T	MCRK..R
4-pole extended limits coil contactor relays	Coil consumption 4 W	Type	MCRK..TW	–
IEC Rated operational current AC-15	240 V	A	6	6
	400 V	A	4	4
	Rated operational current DC-13	24 V	A	5
UL/CSA Pilot duty			A600, Q600	
<b>Main accessories</b>				
Auxiliary contact blocks	Front mounting		MARN	
	Side mounting		MARL	
Electronic timers			MREBC	
Surge suppressor			MPO	

## MC1A 3-pole mini contactors with screw terminals

4 kW

AC operated



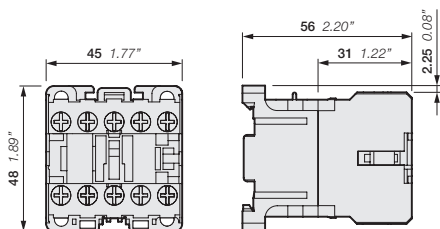
MC1A310AT

MC1A 3-pole mini contactors are a high performance but space saving solution for the control of small motors and resistive loads up to 690 V AC and 220 V DC.

These contactors are designed with 3 main poles and one built-in auxiliary contact:

- control circuit: AC operated
- add-on auxiliary contact blocks for front or side mounting (up to 6 additional contacts) and a wide range of accessories
- suitable for rail or wall mounting.

IEC		UL/CSA		Rated control circuit voltage U <sub>c</sub>		Auxiliary contacts fitted	U.S. order code	Global reference number	Weight Pkg (1 pce)
Rated operational power	current θ ≤ 55 °C	3-phase motor rating 480 V	General use rating 600 V AC	V 50 Hz	V 60 Hz				
400 V	AC-3	AC-1							
kW	A	hp	A				kg		
4	20	5	20	24	24	1 0	MC1A-3-10-AT-1	1SAL102617R9901	0.170
						0 1	MC1A-3-01-AT-1	1SAL102638R9901	0.170
				48	48	1 0	MC1A-3-10-AT-9	1SAL100298R9901	0.170
						0 1	MC1A-3-01-AT-9	1SAL100320R9901	0.170
				110...115	110...120	1 0	MC1A-3-10-AT-J	1SAL100213R9901	0.170
						0 1	MC1A-3-01-AT-J	1SAL100223R9901	0.170
				120	120	1 0	MC1A-3-10-AT-4	1SAL102620R9901	0.170
						0 1	MC1A-3-01-AT-4	1SAL102641R9901	0.170
				-	208...220	1 0	MC1A-3-10-AT-M	1SAL102611R9901	0.170
						0 1	MC1A-3-01-AT-M	1SAL220348R9901	0.170
				220...230	220...230	1 0	MC1A-3-10-AT-6	1SAL102622R9901	0.170
						0 1	MC1A-3-01-AT-6	1SAL102643R9901	0.170
				220...240	240...277	1 0	MC1A-3-10-AT-N	1SAL100214R9901	0.170
						0 1	MC1A-3-01-AT-N	1SAL100224R9901	0.170
				240	240	1 0	MC1A-3-10-AT-7	1SAL102623R9901	0.170
						0 1	MC1A-3-01-AT-7	1SAL102995R9901	0.170
				380...400	440	1 0	MC1A-3-10-AT-U	1SAL100215R9901	0.170
						0 1	MC1A-3-01-AT-U	1SAL100225R9901	0.170
415...440	480	1 0	MC1A-3-10-AT-W	1SAL102615R9901	0.170				
		0 1	MC1A-3-01-AT-W	1SAL102636R9901	0.170				
500	600	1 0	MC1A-3-10-AT-Y	1SAL102616R9901	0.170				
		0 1	MC1A-3-01-AT-Y	1SAL102637R9901	0.170				



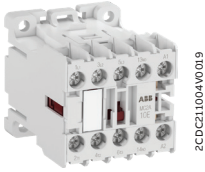
MC1A

Main dimensions mm, inches

# MC2A 3-pole mini contactors with screw terminals

5.5 kW

AC operated



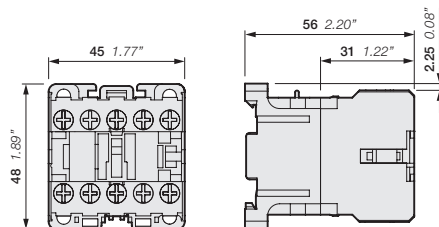
MC2A310AT

MC2A 3-pole mini contactors are a high performance but space saving solution for the control of small motors and resistive loads up to 690 V AC and 220 V DC.

These contactors are designed with 3 main poles and one built-in auxiliary contact:

- control circuit: AC operated
- add-on auxiliary contact blocks for front or side mounting (up to 6 additional contacts) and a wide range of accessories
- suitable for rail or wall mounting.

IEC		UL/CSA		Rated control circuit voltage U <sub>c</sub>		Auxiliary contacts fitted	U.S. order code	Global reference number	Weight Pkg (1 pce) kg
Rated operational power	current θ ≤ 55 °C	3-phase motor rating 480 V	General use rating 600 V AC	V 50 Hz	V 60 Hz				
400 V	AC-1								
kW	A	hp	A						
5.5	20	7.5	20	24	24	1 0	MC2A-3-10-AT-1	1SAL103577R9902	0.170
				48	48	0 1	MC2A-3-01-AT-1	1SAL103569R9902	0.170
						1 0	MC2A-3-10-AT-9	1SAL103268R9902	0.170
						0 1	MC2A-3-01-AT-9	1SAL103269R9902	0.170
				110...115	110...120	1 0	MC2A-3-10-AT-J	1SAL103573R9902	0.170
						0 1	MC2A-3-01-AT-J	1SAL103565R9902	0.170
				120	120	1 0	MC2A-3-10-AT-4	1SAL101644R9902	0.170
						0 1	MC2A-3-01-AT-4	1SAL101641R9902	0.170
				-	208...220	1 0	MC2A-3-10-AT-M	1SAL103835R9902	0.170
						0 1	MC2A-3-01-AT-M	1SAL100046R9902	0.170
				220...230	220...230	1 0	MC2A-3-10-AT-6	1SAL103579R9902	0.170
						0 1	MC2A-3-01-AT-6	1SAL103571R9902	0.170
				220...240	240...277	1 0	MC2A-3-10-AT-N	1SAL103574R9902	0.170
						0 1	MC2A-3-01-AT-N	1SAL103566R9902	0.170
				240	240	1 0	MC2A-3-10-AT-7	1SAL101875R9902	0.170
						0 1	MC2A-3-01-AT-7	1SAL101877R9902	0.170
				380...400	440	1 0	MC2A-3-10-AT-U	1SAL103575R9902	0.170
						0 1	MC2A-3-01-AT-U	1SAL103567R9902	0.170
				415...440	480	1 0	MC2A-3-10-AT-W	1SAL135704R9902	0.170
						0 1	MC2A-3-01-AT-W	1SAL135705R9902	0.170
				500	600	1 0	MC2A-3-10-AT-Y	1SAL101876R9902	0.170
						0 1	MC2A-3-01-AT-Y	1SAL101907R9902	0.170



MC2A

Main dimensions mm, inches

## MC1C 3-pole mini contactors with screw terminals

4 kW

DC operated



MC1C310AT

MC1C 3-pole mini contactors are a high performance but space saving solution for the control of small motors and resistive loads up to 690 V AC and 220 V DC.

These contactors are designed with 3 main poles and one built-in auxiliary contact:

- control circuit: DC operated
- add-on auxiliary contact blocks for front or side mounting (up to 6 additional contacts) and a wide range of accessories
- suitable for rail or wall mounting.

IEC		UL/CSA		Rated control circuit voltage Uc	Auxiliary contacts fitted	U.S. order code	Global reference number	Weight Pkg (1pce) kg
Rated operational power	current $\theta \leq 55^\circ\text{C}$	3-phase motor rating 480 V	General use rating 600 V AC					
400 V	AC-3	AC-1	hp	A	V DC			
kW	A							

### MC1C mini contactors

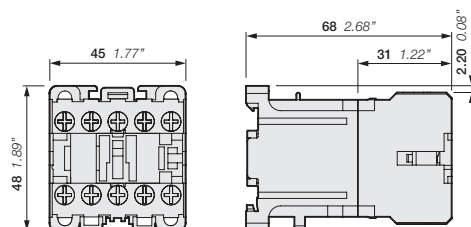
4	20	5	20	12	1 0	MC1C-3-10-AT-B	1SAL100210R9901	0.250
					0 1	MC1C-3-01-AT-B	1SAL100220R9901	0.250
				24	1 0	MC1C-3-10-AT-D	1SAL100216R9901	0.250
					0 1	MC1C-3-01-AT-D	1SAL100226R9901	0.250
				24	1 0	MC1C-3-10-AT-DD	1SAL113312R9901	0.250
				with Diode	0 1	MC1C-3-01-AT-DD	1SAL113328R9901	0.250

### MC1C mini contactors with extended operating limits coil

4	20	5	20	24*	1 0	MC1C-3-10-AT-WD	1SAL220373R9901	0.250
					0 1	MC1C-3-01-AT-WD <td>1SAL220372R9901 <td>0.250</td> </td>	1SAL220372R9901 <td>0.250</td>	0.250
				48*	1 0	MC1C-3-10-AT-WG <td>1SAL100380R9901 <td>0.250</td> </td>	1SAL100380R9901 <td>0.250</td>	0.250
					0 1	MC1C-3-01-AT-WG <td>1SAL200795R9901 <td>0.250</td> </td>	1SAL200795R9901 <td>0.250</td>	0.250
				110*	1 0	MC1C-3-10-AT-WJ <td>1SAL220371R9901 <td>0.250</td> </td>	1SAL220371R9901 <td>0.250</td>	0.250
					0 1	MC1C-3-01-AT-WJ <td>1SAL220370R9901 <td>0.250</td> </td>	1SAL220370R9901 <td>0.250</td>	0.250
				125*	1 0	MC1C-3-10-AT-WL <td>1SAL220460R9901 <td>0.250</td> </td>	1SAL220460R9901 <td>0.250</td>	0.250
					0 1	MC1C-3-01-AT-WL <td>1SAL220459R9901 <td>0.250</td> </td>	1SAL220459R9901 <td>0.250</td>	0.250
				220*	1 0	MC1C-3-10-AT-WN <td>1SAL220369R9901 <td>0.250</td> </td>	1SAL220369R9901 <td>0.250</td>	0.250
					0 1	MC1C-3-01-AT-WN <td>1SAL220368R9901 <td>0.250</td> </td>	1SAL220368R9901 <td>0.250</td>	0.250

\* With the extended operating limits coils:

- at nominal voltage, U<sub>c</sub>, a higher number of additional auxiliary contacts can be attached to the device
- a wider range of voltages,  $-30\% \leq U_c \leq +30\%$ , can be used for the operation with a limitation of the number of auxiliary contacts.



MC1C

Main dimensions mm, inches

# MC2C 3-pole mini contactors with screw terminals

5.5 kW

DC operated



MC2C310AT

MC2C 3-pole mini contactors are a high performance but space saving solution for the control of small motors and resistive loads up to 690 V AC and 220 V DC.

These contactors are designed with 3 main poles and one built-in auxiliary contact:

- control circuit: DC operated
- add-on auxiliary contact blocks for front or side mounting (up to 6 additional contacts) and a wide range of accessories
- suitable for rail or wall mounting.

IEC		UL/CSA		Rated control circuit voltage Uc	Auxiliary contacts fitted	U.S. order code	Global reference number	Weight Pkg (1 pce) kg
Rated operational power	current $\theta \leq 55^\circ\text{C}$	3-phase motor rating 480 V	General use rating 600 V AC					
400 V	AC-3	AC-1	hp	A	VDC			
kW	A							

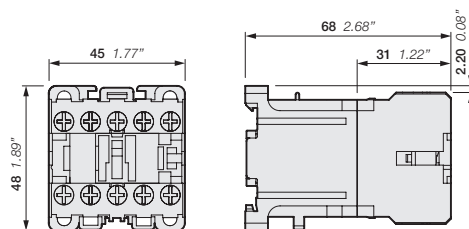
### MC2C mini contactors

Rated operational power	current	3-phase motor rating	General use rating	Rated control circuit voltage	Auxiliary contacts	U.S. order code	Global reference number	Weight
5.5	20	7.5	20	12	1 0	MC2C-3-10-AT-B	1SAL103588R9902	0.250
					0 1	MC2C-3-01-AT-B	1SAL103589R9902	0.250
				24	1 0	MC2C-3-10-AT-D	1SAL103584R9902	0.250
					0 1	MC2C-3-01-AT-D	1SAL103580R9902	0.250
				24	1 0	MC2C-3-10-AT-DD	1SAL101926R9902	0.250
					with Diode	0 1	MC2C-3-01-AT-DD	1SAL101955R9902

### MC2C mini contactors with extended operating limits coil

Rated operational power	current	3-phase motor rating	General use rating	Rated control circuit voltage	Auxiliary contacts	U.S. order code	Global reference number	Weight
5.5	20	7.5	20	24*	1 0	MC2C-3-10-AT-WD	1SAL102378R9902	0.250
					0 1	MC2C-3-01-AT-WD	1SAL102379R9902	0.250
				48*	1 0	MC2C-3-10-AT-WG	1SAL101951R9902	0.250
					0 1	MC2C-3-01-AT-WG	1SAL101958R9902	0.250
				110*	1 0	MC2C-3-10-AT-WJ	1SAL102381R9902	0.250
					0 1	MC2C-3-01-AT-WJ	1SAL102382R9902	0.250
				125*	1 0	MC2C-3-10-AT-WL	1SAL204887R9902	0.250
					0 1	MC2C-3-01-AT-WL	1SAL204886R9902	0.250
				220*	1 0	MC2C-3-10-AT-WN	1SAL100442R9902	0.250
					0 1	MC2C-3-01-AT-WN	1SAL100435R9902	0.250

\* With the extended operating limits coils:  
 - at nominal voltage, Uc, a higher number of additional auxiliary contacts can be attached to the device  
 - a wider range of voltages,  $-30\% \leq U_c \leq +30\%$ , can be used for the operation with a limitation of the number of auxiliary contacts.



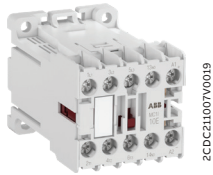
MC2C

Main dimensions mm, inches

## MC1I, MC1K, MC2I, MC2K 3- pole mini contactors with screw terminals

4 to 5.5 kW

DC operated - low consumption



MC2I310AT

2CDC211007V0019




MC2K310AT

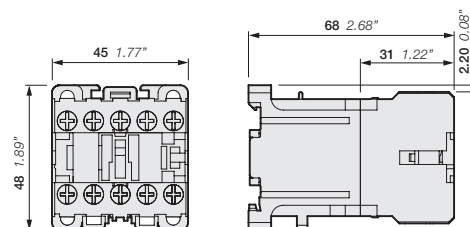
2CDC211008V0019

MC..I and MC..K 3-pole mini contactors are a high performance but space saving solution for the control of small motors and resistive loads up to 690 V AC and 220 V DC.

These contactors are designed with 3 main poles and one built-in auxiliary contact:

- control circuit: DC operated
- coil with very low energy consumption; suitable for direct control by PLC outputs
- only for K variants: add-on auxiliary contact blocks for front or side mounting (up to 2 additional contacts)
- wide range of accessories
- suitable for rail or wall mounting.

IEC		UL/CSA		Rated control circuit voltage Uc	Auxiliary contacts fitted 	U.S. order code	Global reference number	Weight Pkg (1 pce) kg
Rated operational power	current $\theta \leq 55^\circ\text{C}$	3-phase motor rating 480 V	General use rating 600 V AC					
400 V AC-3 kW	AC-1 A	hp	A	V DC				
<b>DC operation 24 V / 1.2 W</b>								
4	20	7.5	20	24	1 0 0 1	MC1I-3-10-AT-D MC1I-3-01-AT-D	1SAL100572R9901 1SAL100573R9901	0.250 0.250
5.5	20	7.5	20	24	1 0 0 1	MC2I-3-10-AT-D MC2I-3-01-AT-D	1SAL100559R9902 1SAL100538R9902	0.250 0.250
<b>DC operation 24 V / 2 W</b>								
4	20	7.5	20	24	1 0 0 1	MC1K-3-10-AT-D MC1K-3-01-AT-D	1SAL100576R9901 1SAL100577R9901	0.250 0.250
5.5	20	7.5	20	24	1 0 0 1	MC2K-3-10-AT-D MC2K-3-01-AT-D	1SAL103590R9902 1SAL103591R9902	0.250 0.250

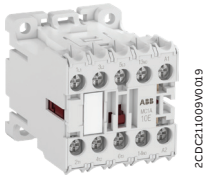


MC1I, MC1K, MC2I, MC2K

Main dimensions mm, inches

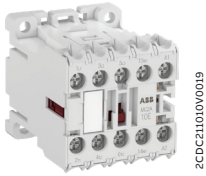
# MC1A..R, MC2A..R 3-pole mini contactors for ring tongue ferrules

4 to 5.5 kW  
AC operated



MC1A310AR

2CDC211009V0019



MC2A310AR

2CDC211010V0019

MC1A..R and MC2A..R 3-pole mini contactors are a high performance but space saving solution for the control of small motors and resistive circuits up to 690 V AC and 220 V DC.

These contactors are designed with 3 main poles and one built-in auxiliary contact:

- specific screw terminals for an easy connection with ring tongue ferrules
- control circuit: AC operated
- add-on auxiliary contact blocks for front or side mounting (up to 6 additional contacts) and a wide range of accessories
- suitable for rail or wall mounting.

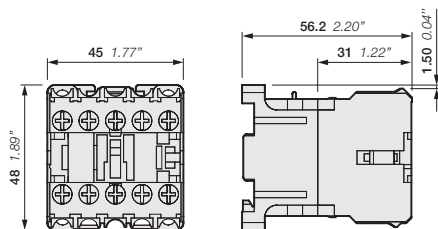
IEC		UL/CSA		Rated control circuit voltage U <sub>c</sub>		Auxiliary contacts fitted	U.S. order code	Global reference number	Weight Pkg (1 pce)
Rated operational power	current θ ≤ 55 °C	3-phase motor rating	General use rating	V 50 Hz	V 60 Hz				kg
400 V AC-3 kW	AC-1 A	480 V hp	600 V AC A						

### MC1A mini contactors

4	20	5	20	24	24	1 0	MC1A-3-10-AR-1	1SAL103386R9901	0.170
				110 ... 115	110 ... 120	0 1	MC1A-3-01-AR-1	1SAL103399R9901	0.170
						1 0	MC1A-3-10-AR-J	1SAL100182R9901	0.170
						0 1	MC1A-3-01-AR-J	1SAL100175R9901	0.170
				220 ... 230	220 ... 230	1 0	MC1A-3-10-AR-6	1SAL102157R9901	0.170
						0 1	MC1A-3-01-AR-6	1SAL102158R9901	0.170

### MC2A mini contactors

5.5	20	7.5	20	24	24	1 0	MC2A-3-10-AR-1	1SAL103412R9902	0.170
				110 ... 115	110 ... 120	0 1	MC2A-3-01-AR-1	1SAL103425R9902	0.170
						1 0	MC2A-3-10-AR-J	1SAL103414R9902	0.170
						0 1	MC2A-3-01-AR-J	1SAL103427R9902	0.170
				220 ... 230	220 ... 230	1 0	MC2A-3-10-AR-6	1SAL102175R9902	0.170
						0 1	MC2A-3-01-AR-6	1SAL102176R9902	0.170



MC1A..R, MC2A..R

Main dimensions mm, inches

## MC1C..R 3-pole mini contactors for ring tongue ferrules

4 kW

DC operated




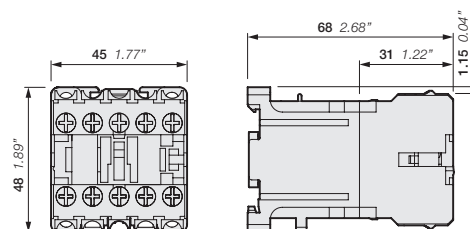
MC1C310AR

MC1C..R 3-pole mini contactors are a high performance but space saving solution for the control of small motors and resistive circuits up to 690 V AC and 220 V DC.

These contactors are designed with 3 main poles and one built-in auxiliary contact:

- specific screw terminals for an easy connection with ring tongue ferrules
- control circuit: DC operated
- add-on auxiliary contact blocks for front or side mounting (up to 6 additional contacts) and a wide range of accessories
- suitable for rail or wall mounting.

IEC		UL/CSA		Rated control circuit voltage Uc	Auxiliary contacts fitted 	U.S. order code	Global reference number	Weight Pkg (1 pce)  kg
Rated operational power	current $\theta \leq 55^\circ\text{C}$	3-phase motor rating 480 V	General use rating 600 V AC					
400 V AC-3 kW	AC-1 A	hp	A	V DC				
4	20	5	20	12	1 0 0 1	MC1C-3-10-AR-B MC1C-3-01-AR-B	1SAL101847R9901 1SAL101848R9901	0.250 0.250



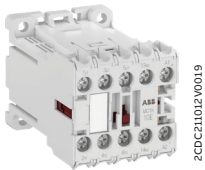
MC1C..R

Main dimensions mm, inches

# MC1K..R 3-pole mini contactors for ring tongue ferrules

4 kW

DC operated - low consumption




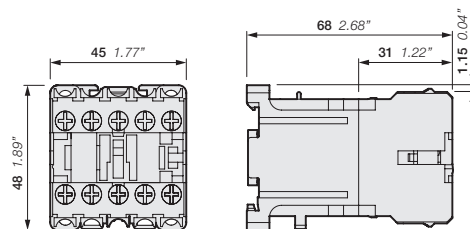
MC1K310AR

MC1K..R 3-pole interface mini contactors are high performance but space saving solution for the control of small motors and resistive circuits up to 690 V AC and 220 V DC.

These contactors are designed with 3 main poles and one built-in auxiliary contact:

- specific screw terminals for an easy connection with ring tongue ferrules
- control circuit: DC operated
- coil with very low energy consumption; suitable for direct control by PLC outputs
- add-on auxiliary contact blocks for front or side mounting (up to 2 additional contacts) and a wide range of accessories
- suitable for rail or wall mounting.

IEC		UL/CSA		Rated control circuit voltage Uc	Auxiliary contacts fitted 	U.S. order code	Global reference number	Weight Pkg (1 pce) kg
Rated operational power	current $\theta \leq 55^\circ\text{C}$	3-phase motor rating 480 V	General use rating 600 V AC					
400 V AC-3 kW	AC-1 A	hp	A	V DC				
<b>DC operation 24 V / 2 W</b>								
4	20	5	20	24	1 0 0 1	MC1K-3-10-AR-D MC1K-3-01-AR-D	1SAL103446R9901 1SAL101858R9901	0.250 0.250



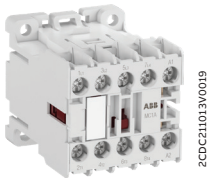
MC1K..R

Main dimensions mm, inches

## MC1A 4-pole mini contactors with screw terminals

4 to 5.5 kW

AC operated



MC1A400AT

MC1A 4-pole mini contactors are a high performance but space saving solution for the control of small motors and resistive loads up to 690 V AC and 220 V DC.

These contactors are designed with 4 main poles:

- control circuit: AC operated
- add-on auxiliary contact blocks for front or side mounting (up to 6 additional contacts) and a wide range of accessories
- suitable for rail or wall mounting.

IEC		UL/CSA		Rated control circuit voltage U <sub>c</sub>		Auxiliary contacts fitted	U.S. order code	Global reference number	Weight Pkg (1 pce)
Rated operational power	current θ ≤ 55 °C	3-phase motor rating	General use rating	V 50 Hz	V 60 Hz				
400 V	AC-3	480 V	600 V AC						kg

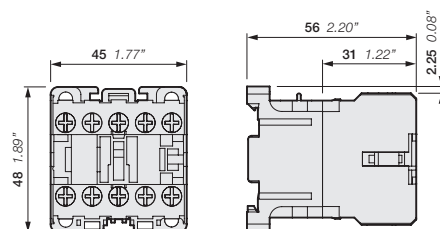
### 4 N.O. main poles

4	20	5	20	24	24	0 0	MC1A-4-00-AT-1	1SAL102986R9901	0.170
				48	48	0 0	MC1A-4-00-AT-9	1SAL100296R9901	0.170
				110 ... 115	110 ... 120	0 0	MC1A-4-00-AT-J	1SAL100363R9901	0.170
				120	120	0 0	MC1A-4-00-AT-4	1SAL102989R9901	0.170
				–	208 ... 220	0 0	MC1A-4-00-AT-M	1SAL102980R9901	0.170
				220 ... 230	220 ... 230	0 0	MC1A-4-00-AT-6	1SAL102991R9901	0.170
				220 ... 240	240 ... 277	0 0	MC1A-4-00-AT-N	1SAL100364R9901	0.170
				240	240	0 0	MC1A-4-00-AT-7	1SAL103101R9901	0.170
				380 ... 400	440	0 0	MC1A-4-00-AT-U	1SAL100365R9901	0.170
				415 ... 440	480	0 0	MC1A-4-00-AT-W	1SAL102984R9901	0.170
				500	600	0 0	MC1A-4-00-AT-Y	1SAL102985R9901	0.170

### 2 N.O. + 2 N.C. main poles

4	20	5	20	24	24	0 0	MC1A-B-00-AT-1	1SAL103007R9901	0.170
				48	48	0 0	MC1A-B-00-AT-9	1SAL100400R9901	0.170
				110 ... 115	110 ... 120	0 0	MC1A-B-00-AT-J	1SAL100373R9901	0.170
				120	120	0 0	MC1A-B-00-AT-4	1SAL103010R9901	0.170
				–	208 ... 220	0 0	MC1A-B-00-AT-M	1SAL103001R9901	0.170
				220 ... 230	220 ... 230	0 0	MC1A-B-00-AT-6	1SAL103012R9901	0.170
				240	240	0 0	MC1A-B-00-AT-7	1SAL103099R9901	0.170
				220 ... 240	240 ... 277	0 0	MC1A-B-00-AT-N	1SAL100374R9901	0.170
				380 ... 400	440	0 0	MC1A-B-00-AT-U	1SAL100375R9901	0.170
				415 ... 440	480	0 0	MC1A-B-00-AT-W	1SAL101834R9901	0.170
				500	600	0 0	MC1A-B-00-AT-Y	1SAL103006R9901	0.170

Note: Other contact configuration available. Please consult your ABB local sales organization.

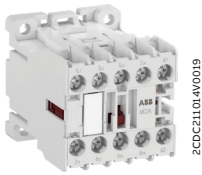


MC1A

Main dimensions mm, inches

# MC2A 4-pole mini contactors with screw terminals

4 to 5.5 kW  
AC operated



MC2A400AT

MC2A 4-pole mini contactors are a high performance but space saving solution for the control of small motors and resistive loads up to 690 V AC and 220 V DC.

These contactors are designed with 4 main poles:

- control circuit: AC operated
- add-on auxiliary contact blocks for front or side mounting (up to 6 additional contacts) and a wide range of accessories
- suitable for rail or wall mounting.

IEC		UL/CSA		Rated control circuit voltage U <sub>c</sub>		Auxiliary contacts fitted	U.S. order code	Global reference number	Weight Pkg (1 pce)
Rated operational power	current θ ≤ 55 °C	3-phase motor rating	General use rating	V 50 Hz	V 60 Hz				
400 V	AC-3	480 V	600 V AC						kg

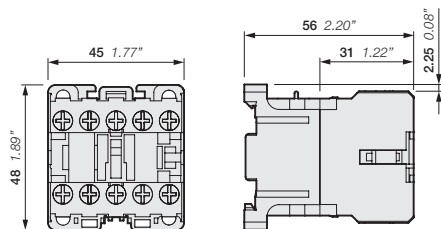
### 4 N.O. main poles

Rated operational power	current θ ≤ 55 °C	3-phase motor rating	General use rating	V 50 Hz	V 60 Hz	Auxiliary contacts fitted	U.S. order code	Global reference number	Weight
5.5	20	7.5	20	24	24	0 0	MC2A-4-00-AT-1	1SAL101645R9902	0.170
				48	48	0 0	MC2A-4-00-AT-9	1SAL116195R9902	0.170
				110 ... 115	110 ... 120	0 0	MC2A-4-00-AT-J	1SAL116184R9902	0.170
				120	120	0 0	MC2A-4-00-AT-4	1SAL101647R9902	0.170
				-	208 ... 220	0 0	MC2A-4-00-AT-M	1SAL101912R9902	0.170
				220 ... 230	220 ... 230	0 0	MC2A-4-00-AT-6	1SAL103595R9902	0.170
				220 ... 240	240 ... 277	0 0	MC2A-4-00-AT-N	1SAL116177R9902	0.170
				240	240	0 0	MC2A-4-00-AT-7	1SAL101910R9902	0.170
				380 ... 400	440	0 0	MC2A-4-00-AT-U	1SAL103292R9902	0.170
				415 ... 440	480	0 0	MC2A-4-00-AT-W	1SAL116193R9902	0.170
				500	600	0 0	MC2A-4-00-AT-Y	1SAL101915R9902	0.170

### 2 N.O. + 2 N.C. main poles

Rated operational power	current θ ≤ 55 °C	3-phase motor rating	General use rating	V 50 Hz	V 60 Hz	Auxiliary contacts fitted	U.S. order code	Global reference number	Weight
5.5	20	7.5	20	24	24	0 0	MC2A-B-00-AT-1	1SAL101648R9902	0.170
				48	48	0 0	MC2A-B-00-AT-9	1SAL248068R9902	0.170
				110 ... 115	110 ... 120	0 0	MC2A-B-00-AT-J	1SAL110548R9902	0.170
				120	120	0 0	MC2A-B-00-AT-4	1SAL101650R9902	0.170
				-	208 ... 220	0 0	MC2A-B-00-AT-M	1SAL101918R9902	0.170
				220 ... 230	220 ... 230	0 0	MC2A-B-00-AT-6	1SAL103027R9902	0.170
				220 ... 240	240 ... 277	0 0	MC2A-B-00-AT-N	1SAL135699R9902	0.170
				240	240	0 0	MC2A-B-00-AT-7	1SAL101917R9902	0.170
				380 ... 400	440	0 0	MC2A-B-00-AT-U	1SAL101919R9902	0.170
				415 ... 440	480	0 0	MC2A-B-00-AT-W	1SAL247441R9902	0.170
				500	600	0 0	MC2A-B-00-AT-Y	1SAL101923R9902	0.170

Note: Other contact configuration available. Please consult your ABB local sales organization.



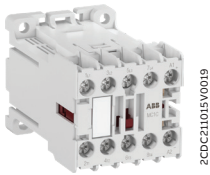
MC2A

Main dimensions mm, inches

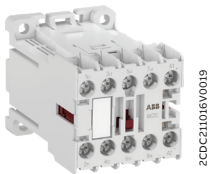
## MC1C, MC2C 4-pole mini contactors with screw terminals

4 to 5.5 kW

DC operated



MC1C400AT



MC2C400AT

MC1C, MC2C 4-pole mini contactors are a high performance but space saving solution for the control of small motors and resistive loads up to 690 V AC and 220 V DC.

These contactors are designed with 4 main poles:

- control circuit: DC operated
- add-on auxiliary contact blocks for front or side mounting (up to 6 additional contacts) and a wide range of accessories
- suitable for rail or wall mounting.

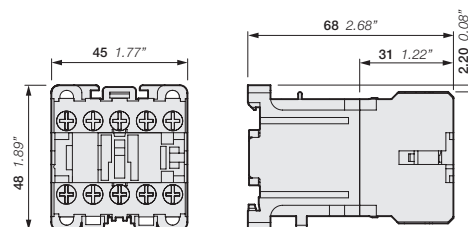
IEC		UL/CSA		Rated control circuit voltage Uc	Auxiliary contacts fitted	U.S. order code	Global reference number	Weight Pkg (1 pce)  kg
Rated operational power	current $\theta \leq 55^\circ\text{C}$	3-phase motor rating 480 V	General use rating 600 V AC					
400 V AC-3	AC-1	hp	A	V DC				
kW	A	hp	A	V DC				
<b>4 N.O. main poles</b>								
4	20	5	20	12	0 0	MC1C-4-00-AT-B	1SAL100360R9901	0.250
				24	0 0	MC1C-4-00-AT-D	1SAL100366R9901	0.250
				24 with Diode	0 0	MC1C-4-00-AT-DD	1SAL101841R9901	0.250
<b>4 N.O. main poles mini contactors with extended operating limits coil</b>								
4	20	5	20	24*	0 0	MC1C-4-00-AT-WD	1SAL220344R9901	0.250
				48*	0 0	MC1C-4-00-AT-WG	1SAL220364R9901	0.250
				110*	0 0	MC1C-4-00-AT-WJ	1SAL220342R9901	0.250
				125*	0 0	MC1C-4-00-AT-WL	1SAL220462R9901	0.250
				220*	0 0	MC1C-4-00-AT-WN	1SAL220340R9901	0.250
5.5	20	7.5	20	24*	0 0	MC2C-4-00-AT-WD	1SAL101961R9902	0.250
				48*	0 0	MC2C-4-00-AT-WG	1SAL101962R9902	0.250
				110*	0 0	MC2C-4-00-AT-WJ	1SAL101963R9902	0.250
				125*	0 0	MC2C-4-00-AT-WL	1SAL101964R9902	0.250
				220*	0 0	MC2C-4-00-AT-WN	1SAL100445R9902	0.250
<b>2 N.O. + 2 N.C. main poles mini contactors with extended operating limits coil</b>								
4	20	5	20	24*	0 0	MC1C-B-00-AT-WD	1SAL220345R9901	0.250
				48*	0 0	MC1C-B-00-AT-WG	1SAL220366R9901	0.250
				110*	0 0	MC1C-B-00-AT-WJ	1SAL220343R9901	0.250
				125*	0 0	MC1C-B-00-AT-WL	1SAL220461R9901	0.250
				220*	0 0	MC1C-B-00-AT-WN	1SAL220341R9901	0.250
5.5	20	7.5	20	24*	0 0	MC2C-B-00-AT-WD	1SAL101965R9902	0.250
				48*	0 0	MC2C-B-00-AT-WG	1SAL101966R9902	0.250
				110*	0 0	MC2C-B-00-AT-WJ	1SAL101967R9902	0.250
				125*	0 0	MC2C-B-00-AT-WL	1SAL204888R9902	0.250
				220*	0 0	MC2C-B-00-AT-WN	1SAL101968R9902	0.250

Note: Other contact configuration available. Please consult your ABB local sales organization.

\* With the extended operating limits coils:

- at nominal voltage, U<sub>c</sub>, a higher number of additional auxiliary contacts can be attached to the device

- a wider range of voltages,  $-30\% \leq U_c \leq +30\%$ , can be used for the operation with a limitation of the number of auxiliary contacts.



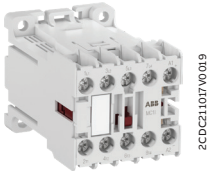
MC1C, MC2C

Main dimensions mm, inches

# MC1I, MC1K 4-pole mini contactors with screw terminals

4 kW

DC operated - low consumption



MC1I400AT



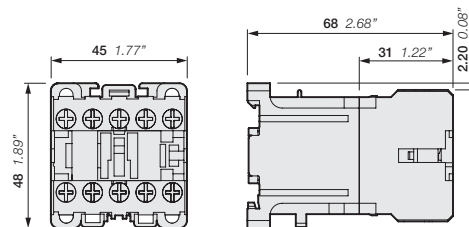
MC1K400AT

MC1I, MC1K 4-pole mini contactors are a high performance but space saving solution for the control of small motors and resistive loads up to 690 V AC and 220 V DC.

These contactors are designed with 4 main poles:

- control circuit: DC operated
- coil with very low energy consumption; suitable for direct control by PLC outputs
- only for K variants: add-on auxiliary contact blocks for front or side mounting (up to 2 additional contacts)
- wide range of accessories
- suitable for rail or wall mounting.

IEC		UL/CSA		Rated control circuit voltage Uc	U.S. order code	Global reference number	Weight Pkg (1 pce) kg
Rated operational power	current θ ≤ 55 °C	3-phase motor rating 480 V	General use rating 600 V AC				
400 V	AC-3	hp	A	V DC			
kW	AC-1 A						
<b>DC operation 24 V / 1.2 W</b>							
4	20	5	20	24	MC1I-4-00-AT-D	1SAL101840R9901	0.250
<b>DC operation 24 V / 2 W</b>							
4	20	5	20	24	MC1K-4-00-AT-D	1SAL100569R9901	0.250



MC1I, MC1K

Main dimensions mm, inches

# MC1A..R 4-pole mini contactors for ring tongue ferrules

4 kW

AC operated



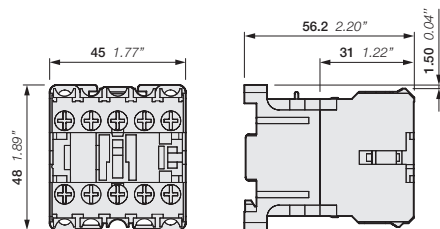
MC1A400AR

MC1A..R 4-pole mini contactors are a high performance but space saving solution for the control of small motors and resistive circuits up to 690 V AC and 220 V DC.

These contactors are designed with 4 main poles:

- specific screw terminals for an easy connection with ring tongue ferrules
- control circuit: AC operated
- add-on auxiliary contact blocks for front or side mounting (up to 6 additional contacts) and a wide range of accessories
- suitable for rail or wall mounting.

IEC		UL/CSA		Rated control circuit voltage U <sub>c</sub>		Auxiliary contacts fitted	U.S. order code	Global reference number	Weight Pkg (1 pce)
Rated operational power	current θ ≤ 55 °C	3-phase motor rating	General use rating	V 50 Hz	V 60 Hz				
400 V	AC-3	480 V	600 V AC						kg
kW	A	hp	A						
<b>4 N.O. main poles</b>									
4	20	5	20	24	24	0 0	MC1A-4-00-AR-1	1SAL102160R9901	0.170
				110 ... 115	110 ... 120	0 0	MC1A-4-00-AR-J	1SAL102166R9901	0.170
				220 ... 230	220 ... 230	0 0	MC1A-4-00-AR-6	1SAL102164R9901	0.170
<b>2 N.O. + 2 N.C. main poles</b>									
4	20	5	20	24	24	0 0	MC1A-B-00-AR-1	1SAL102172R9901	0.170
				110 ... 115	110 ... 120	0 0	MC1A-B-00-AR-J	1SAL102174R9901	0.170
				220 ... 230	220 ... 230	0 0	MC1A-B-00-AR-6	1SAL102173R9901	0.170



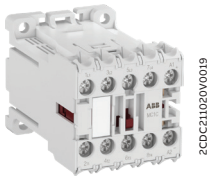
MC1A..R

Main dimensions mm, inches

# MC1C..R 4-pole mini contactors for ring tongue ferrules

4 kW

DC operated



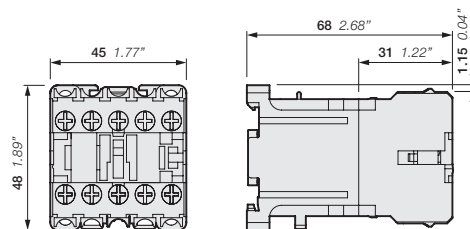
MC1C400AR

MC1C..R 4-pole mini contactors are a high performance but space saving solution for the control of small motors and resistive circuits up to 690 V AC and 220 V DC.

These contactors are designed with 4 main poles:

- specific screw terminals for an easy connection with ring tongue ferrules
- control circuit: DC operated
- add-on auxiliary contact blocks for front or side mounting (up to 6 additional contacts) and a wide range of accessories
- suitable for rail or wall mounting.

IEC		UL/CSA		Rated control circuit voltage Uc	Auxiliary contacts fitted	U.S. order code	Global reference number	Weight Pkg (1 pce) kg
Rated operational power	operational current $\theta \leq 55^\circ\text{C}$	3-phase motor rating	General use rating					
400 V	AC-3	480 V	600 V AC					
kW	A	hp	A	V DC				
<b>4 N.O. main poles</b>								
4	20	5	20	12	0 0	MC1C-4-00-AR-B	1SAL101859R9901	0.250



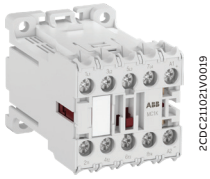
MC1C..R

Main dimensions mm, inches

## MC1K..R 4-pole mini contactors for ring tongue ferrules

4 kW

DC operated - low consumption



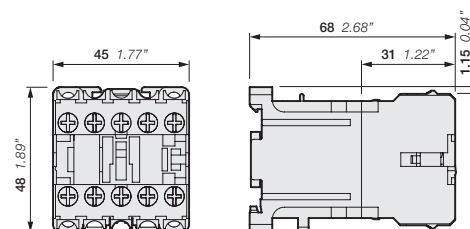
MC1K400AR

MC1K..R 4-pole mini contactors are a high performance but space saving solution for the control of small motors and resistive circuits up to 690 V AC and 220 V DC.

These contactors are designed with 4 main poles:

- specific screw terminals for an easy connection with ring tongue ferrules
- control circuit: DC operated
- coil with very low energy consumption; suitable for direct control by PLC outputs
- add-on auxiliary contact blocks for front or side mounting (up to 2 additional contacts) and a wide range of accessories
- suitable for rail or wall mounting.

IEC		UL/CSA		Rated control circuit voltage Uc	U.S. order code	Global reference number	Weight Pkg (1 pce) kg
Rated operational power	current $\theta \leq 55^\circ\text{C}$	3-phase motor rating 480 V	General use rating 600 V AC				
400 V AC-3	AC-1	hp	A	V DC			
kW	A	hp	A	V DC			kg
4	20	5	20	24	MC1K-4-00-AR-D	1SAL101860R9901	0.250

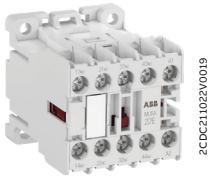


MC1K..R

Main dimensions mm, inches

# MCRA 4-pole mini contactor relays with screw terminals

AC operated



MCRA040AT

MCRA 4-pole mini contactor relays are a high performance but space saving solution used for control functions or for switching small loads up to 6 A.

These contactors are designed with 4 poles with various contact combinations:

- control circuit: AC operated
- add-on auxiliary contact blocks for front or side mounting (up to 6 additional contacts) and a wide range of accessories
- suitable for rail or wall mounting.

Rated control circuit voltage Uc		Auxiliary contacts fitted	U.S. order code	Global reference number	Weight Pkg (1 pce)
V 50 Hz	V 60 Hz				kg

### 4 N.O. poles

24	24	4 0	MCRA-0-40-AT-1	1SAH102013R9900	0.170
48	48	4 0	MCRA-0-40-AT-9	1SAH108237R9900	0.170
110 ... 115	110 ... 120	4 0	MCRA-0-40-AT-J	1SAH100003R9900	0.170
120	120	4 0	MCRA-0-40-AT-4	1SAH102016R9900	0.170
-	208 ... 220	4 0	MCRA-0-40-AT-M	1SAH102007R9900	0.170
220 ... 230	220 ... 230	4 0	MCRA-0-40-AT-6	1SAH102018R9900	0.170
220 ... 240	240 ... 277	4 0	MCRA-0-40-AT-N	1SAH100004R9900	0.170
240	240	4 0	MCRA-0-40-AT-7	1SAH103106R9900	0.170
380 ... 400	440	4 0	MCRA-0-40-AT-U	1SAH100005R9900	0.170
415 ... 440	480	4 0	MCRA-0-40-AT-W	1SAH102011R9900	0.170
500	600	4 0	MCRA-0-40-AT-Y	1SAH102012R9900	0.170

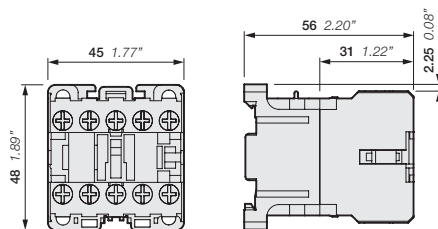
### 3 N.O. + 1 N.C. poles

24	24	3 1	MCRA-0-31-AT-1	1SAH102034R9900	0.170
48	48	3 1	MCRA-0-31-AT-9	1SAH108238R9900	0.170
110 ... 115	110 ... 120	3 1	MCRA-0-31-AT-J	1SAH100013R9900	0.170
120	120	3 1	MCRA-0-31-AT-4	1SAH102037R9900	0.170
-	208 ... 220	3 1	MCRA-0-31-AT-M	1SAH102028R9900	0.170
220 ... 230	220 ... 230	3 1	MCRA-0-31-AT-6	1SAH102039R9900	0.170
220 ... 240	240 ... 277	3 1	MCRA-0-31-AT-N	1SAH100014R9900	0.170
240	240	3 1	MCRA-0-31-AT-7	1SAH103105R9900	0.170
380 ... 400	440	3 1	MCRA-0-31-AT-U	1SAH100015R9900	0.170
415 ... 440	480	3 1	MCRA-0-31-AT-W	1SAH102032R9900	0.170
500	600	3 1	MCRA-0-31-AT-Y	1SAH102033R9900	0.170

### 2 N.O. + 2 N.C. poles

24	24	2 2	MCRA-0-22-AT-1	1SAH220438R9900	0.170
48	48	2 2	MCRA-0-22-AT-9	1SAH108236R9900	0.170
110 ... 115	110 ... 120	2 2	MCRA-0-22-AT-J	1SAH100023R9900	0.170
120	120	2 2	MCRA-0-22-AT-4	1SAH102058R9900	0.170
-	208 ... 220	2 2	MCRA-0-22-AT-M	1SAH102049R9900	0.170
220 ... 230	220 ... 230	2 2	MCRA-0-22-AT-6	1SAH102060R9900	0.170
220 ... 240	240 ... 277	2 2	MCRA-0-22-AT-N	1SAH100024R9900	0.170
240	240	2 2	MCRA-0-22-AT-7	1SAH102061R9900	0.170
380 ... 400	440	2 2	MCRA-0-22-AT-U	1SAH100025R9900	0.170
415 ... 440	480	2 2	MCRA-0-22-AT-W	1SAH102053R9900	0.170
500	600	2 2	MCRA-0-22-AT-Y	1SAH102054R9900	0.170

Note : Other contact configuration available. Please consult your ABB local sales organization.



MCRA

Main dimensions mm, inches

## MCRC 4-pole mini contactor relays with screw terminals

DC operated



MCRC040AT

MCRC 4-pole mini contactor relays are a high performance but space saving solution used for control functions or for switching small loads up to 6 A.

These contactors are designed with 4 poles with various contact combinations:

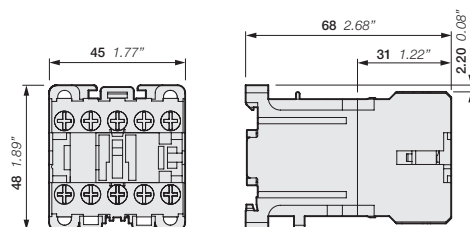
- control circuit: DC operated
- add-on auxiliary contact blocks for front or side mounting (up to 6 additional contacts) and a wide range of accessories
- suitable for rail or wall mounting.

Rated control circuit voltage Uc	Auxiliary contacts fitted	U.S. order code	Global reference number	Weight Pkg (1 pce) kg
VDC				
<b>4 N.O. poles</b>				
12	4 0	MCRC-0-40-AT-B	1SAH10000R9900	0.235
24	4 0	MCRC-0-40-AT-D	1SAH100006R9900	0.235
24 with Diode	4 0	MCRC-0-40-AT-DD	1SAH113311R9900	0.235
<b>3 N.O. + 1 N.C. poles</b>				
12	3 1	MCRC-0-31-AT-B	1SAH100010R9900	0.235
24	3 1	MCRC-0-31-AT-D	1SAH100016R9900	0.235
24 with Diode	3 1	MCRC-0-31-AT-DD	1SAH113325R9900	0.235
<b>2 N.O. + 2 N.C. poles</b>				
12	2 2	MCRC-0-22-AT-B	1SAH100020R9900	0.235
24	2 2	MCRC-0-22-AT-D	1SAH100026R9900	0.235
24 with Diode	2 2	MCRC-0-22-AT-DD	1SAH113324R9900	0.235
<b>4 N.O. poles MCRC mini contactors relays with extended operating limits coil</b>				
24*	4 0	MCRC-0-40-AT-WD	1SAH220410R9900	0.235
48*	4 0	MCRC-0-40-AT-WG	1SAH220463R9900	0.235
110*	4 0	MCRC-0-40-AT-WJ	1SAH220407R9900	0.235
125*	4 0	MCRC-0-40-AT-WL	1SAH220458R9900	0.235
220*	4 0	MCRC-0-40-AT-WN	1SAH220404R9900	0.235
<b>3 N.O. + 1 N.C. poles mini contactors relays with extended operating limits coil</b>				
24*	3 1	MCRC-0-31-AT-WD	1SAH220409R9900	0.235
48*	3 1	MCRC-0-31-AT-WG	1SAH100070R9900	0.235
110*	3 1	MCRC-0-31-AT-WJ	1SAH220406R9900	0.235
125*	3 1	MCRC-0-31-AT-WL	1SAH220457R9900	0.235
220*	3 1	MCRC-0-31-AT-WN	1SAH220403R9900	0.235
<b>2 N.O. + 2 N.C. poles mini contactors relays with extended operating limits coil</b>				
17 ... 32	2 2	MCRC-0-22-AT-WD	1SAH220408R9900	0.235
34 ... 62	2 2	MCRC-0-22-AT-WG	1SAH100082R9900	0.235
77 ... 143	2 2	MCRC-0-22-AT-WJ	1SAH107171R9900	0.235
87 ... 162	2 2	MCRC-0-22-AT-WL	1SAH220456R9900	0.235
154 ... 286	2 2	MCRC-0-22-AT-WN	1SAH220402R9900	0.235

Note : Other contact configuration available. Please consult your ABB local sales organization.

\* With the extended operating limits coils:

- at nominal voltage, U<sub>c</sub>, a higher number of additional auxiliary contacts can be attached to the device
- a wider range of voltages, -30% ≤ U<sub>c</sub> ≤ +30%, can be used for the operation with a limitation of the number of auxiliary contacts.

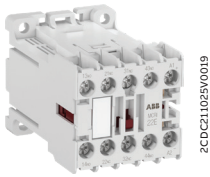


MCRC

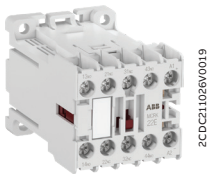
Main dimensions mm, inches

# MCRI, MCRK 4-pole mini contactor relays with screw terminals

DC operated - low consumption



MCRI040AT



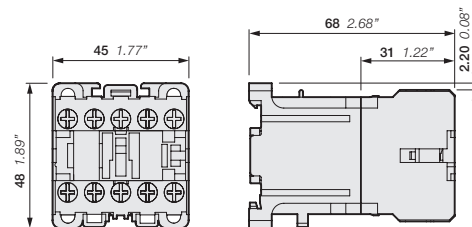
MCRK040AT

MCRI, MCRK 4-pole mini contactor relays are a high performance but space saving solution used for control functions or for switching small loads up to 6 A.

These contactors are designed with 4 poles with various contact combinations:

- control circuit: DC operated
- coil with very low energy consumption; suitable for direct control by PLC outputs
- only for K variants: add-on auxiliary contact blocks for front or side mounting (up to 2 additional contacts)
- wide range of accessories
- suitable for rail or wall mounting.

Rated control circuit voltage Uc	Auxiliary contacts fitted	U.S. order code	Global reference number	Weight Pkg (1 pce) kg
VDC				
<b>DC operation 24 V / 1.2 W</b>				
24	4 0	MCRI-0-40-AT-D	1SAH100530R9900	0.235
	3 1	MCRI-0-31-AT-D	1SAH100531R9900	0.235
	2 2	MCRI-0-22-AT-D	1SAH100532R9900	0.235
<b>DC operation 24 V / 2 W</b>				
24	4 0	MCRK-0-40-AT-D	1SAH100533R9900	0.235
	3 1	MCRK-0-31-AT-D	1SAH100534R9900	0.235
	2 2	MCRK-0-22-AT-D	1SAH100535R9900	0.235



MCRI, MCRK

Main dimensions mm, inches

## MCRA..R 4-pole mini contactor relays for ring tongue ferrules

AC operated



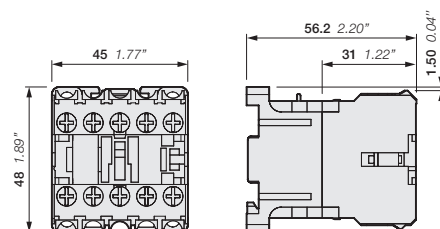
MCRA040AR

MCRA..R 4-pole mini contactor relays are a high performance but space saving solution used for control functions or for switching small loads up to 6 A.

These contactors are designed with 4 poles with various contact combinations:

- specific screw terminals for an easy connection with ring tongue ferrules
- control circuit: AC operated
- add-on auxiliary contact blocks for front or side mounting (up to 6 additional contacts) and a wide range of accessories
- suitable for rail or wall mounting.

Rated control circuit voltage U <sub>c</sub>		Auxiliary contacts fitted	U.S. order code	Global reference number	Weight Pkg (1 pce)
V 50 Hz	V 60 Hz				kg
<b>4 N.O. poles</b>					
24	24	4 0	MCRA-0-40-AR-1	1SAH102177R9900	0.170
110 ... 115	110 ... 120	4 0	MCRA-0-40-AR-J	1SAH102179R9900	0.170
220 ... 230	220 ... 230	4 0	MCRA-0-40-AR-6	1SAH102178R9900	0.170
<b>3 N.O. + 1 N.C. poles</b>					
24	24	3 1	MCRA-0-31-AR-1	1SAH102180R9900	0.170
110 ... 115	110 ... 120	3 1	MCRA-0-31-AR-J	1SAH102182R9900	0.170
220 ... 230	220 ... 230	3 1	MCRA-0-31-AR-6	1SAH102181R9900	0.170
<b>2 N.O. + 2 N.C. poles</b>					
24	24	2 2	MCRA-0-22-AR-1	1SAH102183R9900	0.170
110 ... 115	110 ... 120	2 2	MCRA-0-22-AR-J	1SAH100485R9900	0.170
220 ... 230	220 ... 230	2 2	MCRA-0-22-AR-6	1SAH102184R9900	0.170

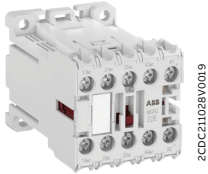


MCRA..R

Main dimensions mm, inches

# MCRC..R 4-pole mini contactor relays for ring tongue ferrules

DC operated



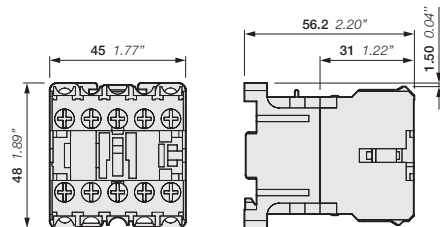
MCRC040AR

MCRC..R 4-pole mini contactor relays are a high performance but space saving solution used for control functions or for switching small loads up to 6 A.

These contactors are designed with 4 poles with various contact combinations:

- specific screw terminals for an easy connection with ring tongue ferrules
- control circuit: DC operated
- add-on auxiliary contact blocks for front or side mounting (up to 6 additional contacts) and a wide range of accessories
- suitable for rail or wall mounting.

Rated control circuit voltage Uc	Auxiliary contacts fitted	U.S. order code	Global reference number	Weight Pkg (1 pce) kg
V DC				kg
12	4 0	MCRC-0-40-AR-B	1SAH101994R9900	0.245
	3 1	MCRC-0-31-AR-B	1SAH101996R9900	0.245
	2 2	MCRC-0-22-AR-B	1SAH101998R9900	0.245

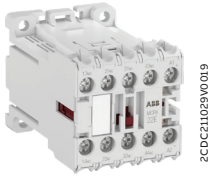


MCRC..R

Main dimensions mm, inches

## MCRK..R 4-pole mini contactor relays for ring tongue ferrules

DC operated - low consumption




MCRK040AR

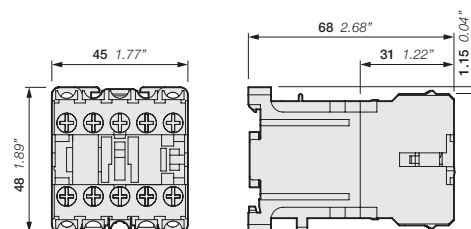
2CDC21029V0019

MCRK 4-pole mini contactor relays are a high performance but space saving solution used for control functions or for switching small loads up to 6 A.

These contactors are designed with 4 main poles with various contact combinations:

- specific screw terminals for an easy connection with ring tongue ferrules
- control circuit: DC operated
- coil with very low energy consumption; suitable for direct control by PLC outputs
- add-on auxiliary contact blocks for front or side mounting (up to 2 additional contacts) and a wide range of accessories
- suitable for rail or wall mounting.

Rated control circuit voltage Uc	Auxiliary contacts fitted 	U.S. order code	Global reference number	Weight Pkg (1 pce) kg
<b>DC operation 24 V / 2 W</b>				
24	4 0	MCRK-0-40-AR-D	1SAH101995R9900	0.245
	3 1	MCRK-0-31-AR-D	1SAH101997R9900	0.245
	2 2	MCRK-0-22-AR-D	1SAH100540R9900	0.245



MCRK..R

Main dimensions mm, inches

## Auxiliary contact blocks for MC1 and MC2 mini contactors

With screw terminals and specific screw terminals for ring tongue ferrules



MACN211AT



MACN422AT



MACL110AT

### Screw terminals

Suitable for	Auxiliary contacts	U.S. order code	Global reference number	Weight
				Pkg (1 pce) kg

### Front mounted instantaneous auxiliary contact blocks

All MC1 and MC2 variants Contacts in accordance with EN 50012	1 1	MACN2-11-AT	1SAL100999R9906	0.030
	0 2	MACN2-02-AT	1SAL100998R9906	0.030
	3 1	MACN4-31-AT	1SAL100995R9906	0.040
	2 2	MACN4-22-AT	1SAL100996R9906	0.040
All MC1 and MC2 variants Contacts in accordance with EN 50005	1 3	MACN4-13-AT	1SAL100997R9906	0.040
	2 0	MARN2-20-AT	1SAL100994R9906	0.030
	1 1	MARN2-11-AT	1SAL100993R9906	0.030
	0 2	MARN2-02-AT	1SAL100992R9906	0.030
	4 0	MARN4-40-AT	1SAL100991R9906	0.040
	3 1	MARN4-31-AT	1SAL100990R9906	0.040
	2 2	MARN4-22-AT	1SAL100989R9906	0.040
	1 3	MARN4-13-AT	1SAL100988R9906	0.040
	0 4	MARN4-04-AT	1SAL100987R9906	0.040

### Side mounted instantaneous auxiliary contact block

All MC1 and MC2 variants Contacts in accordance with EN 50012	1 0	MACL1-10-AT	1SAL100560R9906	0.017
	0 1	MACL1-01-AT	1SAL100561R9906	0.017
All MC1 and MC2 variants Contacts in accordance with EN 50005	1 0	MARL1-10-ATS	1SAL100519R9906	0.017
	0 1	MARL1-01-ATS	1SAL100520R9906	0.017

### Specific screw terminals for ring tongue ferrules

Suitable for	Auxiliary contacts	Type	Global reference number	Weight
				Pkg (1 pce) kg

### Front mounted instantaneous auxiliary contact blocks

All MC1 and MC2 variants Contacts in accordance with EN 50012	1 1	MACN2-11-AR	1SAL103557R9906	0.030
	0 2	MACN2-02-AR	1SAL103558R9906	0.030
	3 1	MACN4-31-AR	1SAL103559R9906	0.040
	2 2	MACN4-22-AR	1SAL103560R9906	0.040
All MC1 and MC2 variants Contacts in accordance with EN 50005	1 3	MACN4-13-AR	1SAL103561R9906	0.040
	2 0	MARN2-20-AR	1SAL103349R9906	0.030
	1 1	MARN2-11-AR	1SAL103350R9906	0.030
	0 2	MARN2-02-AR	1SAL103351R9906	0.030
	4 0	MARN4-40-AR	1SAL103352R9906	0.040
	3 1	MARN4-31-AR	1SAL103353R9906	0.040
	2 2	MARN4-22-AR	1SAL103354R9906	0.040
	1 3	MARN4-13-AR	1SAL103355R9906	0.040
	0 4	MARN4-04-AR	1SAL103300R9906	0.040

### Side mounted instantaneous auxiliary contact block

All MC1 and MC2 variants Contacts in accordance with EN 50012	1 0	MACL1-10-AR	1SAL103555R9906	0.017
	0 1	MACL1-01-AR	1SAL103556R9906	0.017
All MC1 and MC2 variants Contacts in accordance with EN 50005	1 0	MARL1-10-ARS	1SAL103299R9906	0.017
	0 1	MARL1-01-ARS	1SAL103298R9906	0.017



MARN211AR



MARN422AR



MACL110AR

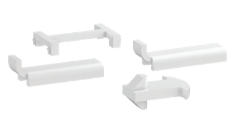
## Other accessories for MC1 and MC2 mini contactors



MP0AAE1



MREBC10AC2



MMH0



WKMIU



MVB0R



MVPOC



MVB0L

Suitable for	Rated control circuit voltage			Protection type	U.S. order code	Global reference number	Pkg qty	Weight (1 pce)
	V DC	V 50 Hz	V 60 Hz					

### Surge suppressors for contactor coils

All MC1 and MC2 DC operated variants	6 ... 250	–	–	Diode	MP0C-AE3	1SAL100546R9906	1	0.006
All MC1 and MC2 AC operated variants	–	12 ... 60	12 ... 60	R/C	MP0A-AE1	1SAL100544R9906	1	0.006
	–	72 ... 250	72 ... 250	R/C	MP0A-AE2	1SAL100545R9906	1	0.006
All MC1 and MC2 variants	24 ... 48	24 ... 48	24 ... 48	Varistor	MPOD-AE4	1SAL100536R9906	1	0.006
	50 ... 127	50 ... 127	50 ... 127	Varistor	MPOD-AE5	1SAL204848R9906	1	0.006
	130 ... 250	130 ... 250	130 ... 250	Varistor	MPOD-AE6	1SAL204849R9906	1	0.006

### Electronic timers

All MC1 and MC2 variants	24 ... 250	24 ... 250	24 ... 250	0.5 ... 60 sec.	MREB-C10-AC2	1SAL100541R9906	1	0.040
				0.2 ... 24 sec	MREB-C20-AC2	1SAL100542R9906	1	0.040

### DIN rail adapter for electronic timers

All MREBC variants					MVB-0R	1SAL100543R9906	1	0.003
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### Mechanical interlock

All MC1 and MC2 variants					MMH-0	1SAL100547R9906	1	0.003
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### Parallel connecting link

All MC1 and MC2 variants					MVP-0C	1SAL100600R9906	1	0.010
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### Connection sets for reversing contactors

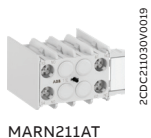
All MC1 and MC2 variants					WKM-IU	1SAL101421R9906	1	0.030
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### Lütze® rail adapter for contactors and contactor relays

All MC1 and MC2 variants					MVB-0L	1SAL101830R9906	30	0.002
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## Auxiliary contact blocks for MCR mini contactor relays

With screw terminals and specific screw terminals for ring tongue ferrules



MARN211AT



MARN422AT



MARL110AT

### Screw terminals

Suitable for	Auxiliary contacts	U.S. order code	Global reference number	Weight Pkg (1 pce) kg

### Front mounted instantaneous auxiliary contact blocks

All MCR variants Contacts in accordance with EN 50005	Auxiliary contacts	U.S. order code	Global reference number	Weight
	2 0	MARN2-20-AT	1SAL100994R9906	0.030
	1 1	MARN2-11-AT	1SAL100993R9906	0.030
	0 2	MARN2-02-AT	1SAL100992R9906	0.030
	4 0	MARN4-40-AT	1SAL100991R9906	0.040
	3 1	MARN4-31-AT	1SAL100990R9906	0.040
	2 2	MARN4-22-AT	1SAL100989R9906	0.040
	1 3	MARN4-13-AT	1SAL100988R9906	0.040
	0 4	MARN4-04-AT	1SAL100987R9906	0.040

### Side mounted instantaneous auxiliary contact block

All MCR variants	Auxiliary contacts	U.S. order code	Global reference number	Weight
	1 0	MARL1-10-AT	1SAL100513R9906	0.017
	0 1	MARL1-01-AT	1SAL100514R9906	0.017
	1 0	MARL1-10-ATS	1SAL100519R9906	0.017
	0 1	MARL1-01-ATS	1SAL100520R9906	0.017



MARN211AR



MARN422AR



MARL110AR

### Specific screw terminals for ring tongue ferrules

Suitable for	Auxiliary contacts	Type	Global reference number	Weight Pkg (1 pce) kg

### Front mounted instantaneous auxiliary contact blocks

All MCR variants Contacts in accordance with EN 50005	Auxiliary contacts	U.S. order code	Global reference number	Weight
	2 0	MARN2-20-AR	1SAL103349R9906	0.030
	1 1	MARN2-11-AR	1SAL103350R9906	0.030
	0 2	MARN2-02-AR	1SAL103351R9906	0.030
	4 0	MARN4-40-AR	1SAL103352R9906	0.040
	3 1	MARN4-31-AR	1SAL103353R9906	0.040
	2 2	MARN4-22-AR	1SAL103354R9906	0.040
	1 3	MARN4-13-AR	1SAL103355R9906	0.040
	0 4	MARN4-04-AR	1SAL103300R9906	0.040

### Side mounted instantaneous auxiliary contact block

All MCR variants	Auxiliary contacts	U.S. order code	Global reference number	Weight
	1 0	MARL1-10-AR	1SAL103356R9906	0.017
	0 1	MARL1-01-AR	1SAL103357R9906	0.017
	1 0	MARL1-10-ARS	1SAL103299R9906	0.017
	0 1	MARL1-01-ARS	1SAL103298R9906	0.017

## Other accessories for MCR mini contactor relays



MPOAAE1

2CDC211036V0019



MREBC10AC2

2CDC211037V0019



MVBOR

2CDC211040V0019



MMHO

2CDC211042V0019



MVBOL

Suitable for	Rated control circuit voltage			Protection type	U.S. order code	Global reference number	Pkg qty	Weight (1 pce)
	Uc	V 50 Hz	V 60 Hz					
	V DC							kg

### Surge suppressors for contactor coils

All MCR	6 ... 250	-	-	Diode	MPOC-AE3	1SAL100546R9906	1	0.006
DC operated variants								
All MC1 and MC2	-	12 ... 60	12 ... 60	R/C	MPOA-AE1	1SAL100544R9906	1	0.006
AC operated variants	-	72 ... 250	72 ... 250	R/C	MPOA-AE2	1SAL100545R9906	1	0.006
All MCR variants	24 ... 48	24 ... 48	24 ... 48	Varistor	MPOD-AE4	1SAL100536R9906	1	0.006
	50 ... 127	50 ... 127	50 ... 127	Varistor	MPOD-AE5	1SAL204848R9906	1	0.006
	130 ... 250	130 ... 250	130 ... 250	Varistor	MPOD-AE6	1SAL204849R9906	1	0.006

### Electronic timers

All MCR variants	24 ... 250	24 ... 250	24 ... 250	0.5 ... 60 sec.	MREB-C10-AC2	1SAL100541R9906	1	0.040
				0.2 ... 24 sec	MREB-C20-AC2	1SAL100542R9906	1	0.040

### DIN rail adapter for electronic timers

All MREBC variants	MVB-OR	1SAL100543R9906	1	0.003
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### Mechanical interlock

All MCR variants	MMH-0	1SAL100547R9906	1	0.003
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

### Lütze® rail adapter for contactors and contactor relays

All MCR variants	MVB-OL	1SAL101830R9906	30	0.002
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# MC1, MC2 3-pole and 4-pole mini contactors

## Technical data

### Main pole – Utilization characteristics according to IEC

Contactor types	AC operated	MC1A	MC2A
	DC operated	MC1C	MC2C
Standards	IEC/EN 60947-1, IEC/EN 60947-4-1		
Rated operational voltage U <sub>e</sub> max	690 V AC, 440 V DC		
Rated frequency (without derating)	DC or 50 / 60 Hz		
AC-1 Utilization category for air temperature close to contactor $\theta \leq 55^\circ\text{C}$			
I <sub>e</sub> / Rated operational current AC-1	230 V	20 A	
U <sub>e</sub> max $\leq 690\text{ V}, 50/60\text{ Hz}$	400 V	20 A	
	500 V	20 A	
	690 V	20 A	
AC-1 Utilization category for air temperature close to contactor $55 < \theta \leq 70^\circ\text{C}$			
I <sub>e</sub> / Rated operational current AC-1	230 V	16 A	
U <sub>e</sub> max $\leq 690\text{ V}, 50/60\text{ Hz}$	400 V	16 A	
	500 V	16 A	
	690 V	16 A	
AC-3 Utilization category for air temperature close to contactor $\theta \leq 55^\circ\text{C}$			
I <sub>e</sub> / Rated operational current AC-3	230 V	9 A	12 A
	400 V	9 A	12 A
	500 V	8 A	10 A
	690 V	5 A (1)	5 A (1)
 3-phase motors Rated operational power AC-3	230 V	2.2 kW	3 kW
1500 r.p.m. 50 Hz	400 V	4 kW	5.5 kW
1800 r.p.m. 60 Hz	500 V	4 kW	5.5 kW
3-phase motors	690 V	4 kW (1)	4 kW (1)
AC-4 Utilization category for air temperature close to contactor $\theta \leq 55^\circ\text{C}$			
I <sub>e</sub> / Rated operational current AC-4	230 V	9 A	
	400 V	9 A	
	500 V	8 A	
	690 V	5 A (1)	
 3-phase motors Rated operational power AC-4	230 V	2.2 kW	
1500 r.p.m. 50 Hz	400 V	4 kW	
1800 r.p.m. 60 Hz	500 V	4 kW	
3-phase motors	690 V	4 kW (1)	
DC-1 Utilization category for air temperature close to contactor $\theta \leq 55^\circ\text{C}$			
I <sub>e</sub> / Rated operational current DC-1 with 3 poles in series	24 V	20 A	
	48 V	20 A	
	60 V	20 A	
	125 V	10 A	
	220 V	8 A	
DC-3 Utilization category for air temperature close to contactor $\theta \leq 55^\circ\text{C}$			
I <sub>e</sub> / Rated operational current DC-3 with 3 poles in series	24 V	12 A	
	48 V	9 A	
	60 V	9 A	
	125 V	6 A	
	220 V	2.5 V	
DC-5 Utilization category for air temperature close to contactor $\theta \leq 55^\circ\text{C}$			
I <sub>e</sub> / Rated operational current DC-5 with 3 poles in series	24 V	9 A	
	48 V	8 A	
	60 V	7 A	
	125 V	2 A	
	220 V	0.8 V	
Rated making capacity	10 x I <sub>e</sub> AC-3 acc. to IEC/EN 60947-4-1, 12 x I <sub>e</sub> AC-4 acc. to IEC/EN 60947-4-1		
Rated breaking capacity	8 x I <sub>e</sub> AC-3 acc. to IEC/EN 60947-4-1, 10 x I <sub>e</sub> AC-4 acc. to IEC/EN 60947-4-1		
Short-circuit protection device for contactors without thermal O/L relay - motor protection excluded U <sub>e</sub> $\leq 500\text{ V AC}$ - fuse type gG	Type 1: 32 A / Type 2: 20 A		
Rated short-time withstand current I <sub>cw</sub> at 40 °C ambient temperature, in free air from a cold state	10 s	72 A	96 A
Maximum breaking capacity cos $\phi = 0.45$	at 400 V	90 A	120 A
Maximum electrical switching frequency	AC	300 cycles/h (AC-1), 1200 cycles/h (AC-3), 150 cycles/h (AC-4)	
	DC	600 cycles/h	

(1) Valid for N.O. contacts only.

# MC1, MC2 3-pole and 4-pole mini contactors

## Technical data

### Main pole – Utilization characteristics according to UL/NEMA/CSA

Contactor types	AC operated	<b>MC1A</b>	<b>MC2A</b>
	DC operated	<b>MC1C</b>	<b>MC2C</b>
Standards		UL 60947-1, UL 60947-4-1	
Maximum operational voltage		600 V AC	
UL/CSA general use rating		20 A / 600 V	
UL/CSA maximum 1-phase motor rating for air temperature close to contactor $\theta \leq 40^\circ\text{C}$			
Full load current	115 V AC	9.8 A	9.8 A
	230 V AC	10 A	12 A
Horse power rating	115 V AC	0.5 hp	0.5 hp
	230 V AC	1.5 hp	2 hp
UL/CSA maximum 3-phase motor rating for air temperature close to contactor $\theta \leq 40^\circ\text{C}$			
Full load current (1)	200 V AC	11 A	11 A
	240 V AC	9.6 A	9.6 A
	380-415 V AC	6.1 A	9.7 A
	440-480 V AC	7.6 A	11 A
	550-600 V AC	6.1 A	11 A
Horse power rating (1)	200 V AC	3 hp	3 hp
	240 V AC	3 hp	3 hp
	380-415 V AC	3 hp	5 hp
	440-480 V AC	5 hp	7.5 hp
	550-600 V AC	5 hp	10 hp
Short-circuit protection device for contactors without thermal overload relay - motor protection excluded			
Fuse rating	600 V	50 A	
Fuse type, 600 V	600 V	Class J	

(1) For the corresponding kW/A or hp/A values of 1500 r.p.m, 50 Hz or 1800 r.p.m, 60 Hz, 3-phase motors, see "Motor rated operational powers and currents".

### General technical data

Contactor types	AC operated	<b>MC1A</b>	<b>MC2A</b>
	DC operated	<b>MC1C</b>	<b>MC2C</b>
Rated insulation voltage $U_i$ acc. to IEC/EN 60947-4-1		750 V	
acc. to UL/CSA		600 V	
Rated impulse withstand voltage $U_{imp}$		6 kV	
Ambient air temperature, close to contactor			
Operation	Fitted with thermal overload relay	-25 ... +55 °C	
	Without thermal overload relay	-40 ... +55 °C	
Storage		-55 ... +80 °C	
Climatic withstand		Acc. to IEC 60947-1 Annex Q	
Maximum operating altitude (without derating)		3000 m	
Mechanical durability		10 <sup>7</sup> operating cycles	
Electrical durability			
	AC-1 20 A	210 000 operating cycles	260 000 operating cycles
	AC-3 400 V	900 000 operating cycles (9 A)*	800 000 operating cycles (12 A)*
	AC-4 400 V	30 000 operating cycles (9 A)*	35 000 operating cycles (9 A)*
Resistance to shock		Half-sine	
acc. IEC/EN 60068-2-27		25 g / 11 ms	
acc. to IEC/EN 60947-1 Annex. Q		Category E	
Resistance to vibrations		Sinusoidal	
acc. IEC/EN 60068-2-6		5 g / 3 ... 150 Hz	
acc. to IEC/EN 60947-1 Annex. Q		Category E	

\* Valid for 3-pole mini contactors.

# MC1, MC2 3-pole and 4-pole mini contactors

## Technical data

### Magnet system characteristics for MC1A, MC2A contactors

Contactor types	AC operated	<b>MC1A</b>	<b>MC2A</b>
Coil operating limits acc. to IEC/EN 60947-4-1	AC supply	0.85 ... 1.1 x U <sub>c</sub>	
AC control voltage			
Rated control circuit voltage U <sub>c</sub>		See ordering tables	
Coil consumption	Average pull-in value (50 Hz)	26 VA	
	Average pull-in value (60 Hz)	32 VA	
	Average holding value (50 Hz)	5.3 VA	
	Average holding value (60 Hz)	4.5 VA	
Drop-out voltage in % of U <sub>c</sub> min		20 ... 75%	

### Magnet system characteristics for MC1C, MC2C contactors

Contactor types	DC operated	<b>MC1C</b>	<b>MC2C</b>
Coil operating limits acc. to IEC/EN 60947-4-1	DC supply	0.85 ... 1.1 x U <sub>c</sub>	
DC control voltage			
Rated control circuit voltage U <sub>c</sub>		See ordering tables	
Coil consumption (1)	Average pull-in value	3 W	
	Average holding value	3 W	
Drop-out voltage in % of U <sub>c</sub> min		10 ... 75%	

(1) Low consumption mini contactors: see coil consumption on ordering details pages.

### Magnet system characteristics for MC1C, MC2C contactors with extended operating limits coils

Contactor types	DC operated	<b>MC1C</b>	<b>MC2C</b>
Coil operating limits acc. to IEC/EN 60715	DC supply	0.85 ... 1.1 x U <sub>c</sub>	
DC control voltage			
Rated control circuit voltage U <sub>c</sub>		See ordering tables	
Coil consumption	Average pull-in value	4 W	
	Average holding value	4 W	
Drop-out voltage in % of U <sub>c</sub> min		10 ... 65%	

### Mounting characteristics and conditions for use

Contactor types	AC operated	<b>MC1A</b>	<b>MC2A</b>
	DC operated	<b>MC1C</b>	<b>MC2C</b>
Mounting positions			
Mounting distances		The contactors can be assembled side by side	
Fixing			
On rail acc. to IEC/EN 60715		35 x 7.5 mm or 35 x 15 mm	
By screws (not supplied)		4 screws at the 4 angles - M4	

# MC1, MC2 3-pole and 4-pole mini contactors

## Technical data













### Built-in auxiliary contact according to IEC

Types		Built-in auxiliary contacts	
Standards		IEC/EN 60947-1, IEC/EN 60947-5-1	
Rated operational voltage U <sub>e</sub> max		690 V AC, 440 V DC	
Rated frequency (without derating)		DC or 50 / 60 Hz	
Conventional free-air thermal current I <sub>th</sub> θ ≤ 55 °C		16 A	
I <sub>e</sub> / Rated operational current AC-15	240 V	6 A	
	400 V	4 A	
	500 V	2.5 A	
	690 V	1.5 A	
I <sub>e</sub> / Rated operational current DC-13	24 V	5 A	
	48 V	3.5 A	
	125 V	0.7 A	
	250 V	0.3 A	
	440 V	0.25 A	
Short-circuit protection device		10 A, Type gG	
Minimum switching capacity with failure rate acc. to IEC/EN 60947-5-4		17 V / 5 mA	
Maximum electrical switching frequency	AC-15	360 cycles/h	
	DC-13	360 cycles/h	

### Built-in auxiliary contact according to UL/CSA

Types		Built-in auxiliary contacts	
Standards		UL 60947-1, UL 60947-5-1	
Maximum operational voltage		600 V AC	
Pilot duty		A600, Q600	

### Connection characteristics

Main terminals			
		Screw terminals with cable clamp	Conductors with insulated ring tongue ferrule
<b>Connection capacity</b>			
Main conductors (poles + built-in auxiliary terminals)			
	Rigid: solid	1 x 0.75 ... 4 mm <sup>2</sup>	-
		2 x 0.75 ... 2.5 mm <sup>2</sup>	-
	Flexible without ferrule	1 or 2 x 0.75 ... 2.5 mm <sup>2</sup>	-
	Flexible with ferrule	1 x 0.75 ... 2.5 mm <sup>2</sup>	-
	(insulated or not)	2 x 0.75 ... 1.5 mm <sup>2</sup>	-
	Lugs	Ø mm > -	3.6 mm
		L mm < -	6.6 mm
Connection capacity acc. to UL/CSA		1 or 2 x AWG 12 ... 18	-
Stripping length		9 mm	-
Tightening torques		0.8 ... 1.0 Nm / 7 lb.in	0.8 Nm / 7 lb.in
<b>Coil terminals</b>			
	Rigid: solid	1 or 2 x 0.75 ... 2.5 mm <sup>2</sup>	-
		Flexible without ferrule	1 or 2 x 0.75 ... 2.5 mm <sup>2</sup>
	Flexible with ferrule	1 x 0.75 ... 2.5 mm <sup>2</sup>	-
	(insulated or not)	2 x 0.75 ... 1.5 mm <sup>2</sup>	-
	Lugs	Ø mm > -	3.6 mm
		L mm < -	6.6 mm
Connection capacity acc. to UL/CSA		1 or 2 x AWG 12 ... 18	-
Stripping length		9 mm	-
Tightening torques		0.8 Nm / 7 lb.in	
Degree of protection acc. to IEC/EN 60947-1 and IEC/EN 60529			
All terminals		IP20	
Screw terminals (screws of unused terminals must be tightened)			
All terminals		M3	M3.5
Screwdriver type		Flat Ø 5.5 mm / Pozidriv 2	

## MCR 4-pole mini contactor relays

### Technical data

#### Main pole – Utilization characteristics according to IEC

Contactor types	AC operated	<b>MCRA</b>
	DC operated	<b>MCRC</b>
Standards		IEC/EN 60947-1, EN 60947-5-1
Rated operational voltage U <sub>e</sub> max		690 V AC, 440 V DC
Rated frequency (without derating)		DC or 50 / 60 Hz
Conventional free-air thermal current I <sub>th</sub> θ ≤ 55 °C		16 A
I <sub>e</sub> / Rated operational current AC-15	240 V	6 A
	400 V	4 A
	500 V	2.5 A
	690 V	1.5 A
I <sub>e</sub> / Rated operational current DC-13	24 V	5 A
	48 V	3.5 A
	125 V	0.7 A
	250 V	0.3 A
	440 V	0.25 A
Short-circuit protection device for contactors U <sub>e</sub> ≤ 500 V AC, fuse type gG		10 A
Minimum switching capacity		17 V / 5 mA
Maximum electrical switching frequency	AC-15	600 cycles/h
	DC-13	600 cycles/h

#### Main pole – Utilization characteristics according to UL/NEMA/CSA

Contactor types	AC operated	<b>MCRA</b>
	DC operated	<b>MCRC</b>
Standards		UL 60947-1, UL 60947-5-1
Maximum operational voltage		600 V AC
Pilot duty		A600, Q600

## MCR 4-pole mini contactor relays

### Technical data

#### General technical data

Contactor relay types	AC operated	<b>MCRA</b>
	DC operated	<b>MCRC</b>
Rated insulation voltage $U_i$		
acc. to IEC 60947-5-1		750 V
acc. to UL/CSA		600 V
Rated impulse withstand voltage $U_{imp}$		6 kV
Electromagnetic compatibility		
Ambient air temperature close to contactor relay	Operation in free air	-40 ... +55 °C
	Storage	-55 ... +80 °C
Climatic withstand		Acc. to IEC / EN 60947-1 Annex. Q
Maximum operating altitude (without derating)		3000 m
Mechanical durability		10 <sup>7</sup> operating cycles
Resistance to shock		Half-sine
acc. IEC/EN 60068-2-27		25 g / 11ms
acc. to IEC/EN 60947-1 Annex. Q		Category E
Resistance to vibrations		Sinusoidal
acc. IEC/EN 60068-2-6		5 g / 3 ... 150 Hz
acc. to IEC/EN 60947-1 Annex. Q		Category E

#### Magnet system characteristics for MCRA contactor relays

Contactor relay types	AC operated	<b>MCRA</b>
Coil operating limits acc. to IEC/EN 60947-4-1	AC supply	0.85 ... 1.1 x $U_c$
AC control voltage		
Coil consumption	Average pull-in value (50 Hz)	26 VA
	Average pull-in value (60 Hz)	32 VA
	Average holding value (50 Hz)	5.3 VA
	Average holding value (60 Hz)	4.5 VA
Drop-out voltage in % of $U_{c\ min}$		20 ... 75%

#### Magnet system characteristics for MCRC contactor relays

Contactor relay types	DC operated	<b>MCRC</b>
Coil operating limits acc. to IEC/EN 60947-5-1	DC supply	0.85 ... 1.1 x $U_c$
DC control voltage		
Coil consumption (1)	Average pull-in value	3 W
	Average holding value	3 W
Drop-out voltage in % of $U_{c\ min}$		10 ... 75%

(1) Low consumption mini contactors: see coil consumption on ordering details pages.

#### Magnet system characteristics for MCRC contactor relays with extended operating limits coils

Contactor types	DC operated	<b>MCRC</b>
Coil operating limits acc. to IEC/EN 60947-4-1	DC supply	0.85 ... 1.1 x $U_c$
DC control voltage		
Rated control circuit voltage $U_c$		See ordering tables
Coil consumption	Average pull-in value	4 W
	Average holding value	4 W
Drop-out voltage in % of $U_{c\ min}$		10 ... 65%

# MCR 4-pole mini contactor relays

## Technical data

### Mounting characteristics and conditions for use

Contactor types	AC operated	<b>MCRA</b>
	DC operated	<b>MCRC</b>
Mounting positions		
Mounting distances	The contactors can be assembled side by side.	
Fixing	On rail acc. to IEC/EN 60715	
	By screws (not supplied)	
	35 x 7.5 mm or 35 x 15 mm	
	4 screws at the 4 angles - M4	

### Connection characteristics

Main terminals			
	Screw terminals with cable clamp		Conductors with insulated ring tongue ferrule
Connection capacity			
Auxiliary terminals			
Rigid: solid	1 x	0.75 ... 4 mm <sup>2</sup>	-
Flexible without ferrule	2 x	0.75 ... 2.5 mm <sup>2</sup>	-
Flexible with ferrule	1 or 2 x	0.75 ... 2.5 mm <sup>2</sup>	-
Flexible with ferrule (insulated or not)	1 x	0.75 ... 2.5 mm <sup>2</sup>	-
Flexible with ferrule (insulated or not)	2 x	0.75 ... 1.5 mm <sup>2</sup>	-
Lugs	Ø mm >	-	3.6 mm
	L mm <	-	6.6 mm
Connection capacity acc. to UL/CSA	1 or 2 x	AWG 12 ... 18	-
Stripping length	9 mm		-
Tightening torques	0.8 ... 1.0 Nm / 7 lb.in		0.8 Nm / 7 lb.in
Coil terminals			
Rigid: solid	1 or 2 x	0.75 ... 2.5 mm <sup>2</sup>	-
Flexible without ferrule	1 or 2 x	0.75 ... 2.5 mm <sup>2</sup>	-
Flexible with ferrule	1 x	0.75 ... 2.5 mm <sup>2</sup>	-
Flexible with ferrule (insulated or not)	2 x	0.75 ... 1.5 mm <sup>2</sup>	-
Lugs	Ø mm >	-	3.6 mm
	L mm <	-	6.6 mm
Connection capacity acc. to UL/CSA	1 or 2 x	AWG 12 ... 18	-
Stripping length	9 mm		-
Tightening torques	0.8 Nm / 7 lb.in		
Degree of protection acc. to IEC/EN 60947-1 and IEC/EN 60529	IP20		
All terminals	(screws of unused terminals must be tightened)		
Screw terminals	M3		M3.5
All terminals	M3		M3.5
Screwdriver type	Flat Ø 5.5 mm / Pozidriv 2		

## Accessories

### Technical data








#### Auxiliary contacts for front mounting and side mounting according to IEC

Types	<b>MACN, MARN, MACL, MARL</b>	
Standards	IEC/EN 60947-1, IEC/EN 60947-5-1	
Rated operational voltage U <sub>e</sub> max	690 V AC	
Rated frequency (without derating)	DC or 50 / 60 Hz	
Conventional free-air thermal current I <sub>th</sub> θ ≤ 55 °C	10 A	
I <sub>e</sub> / Rated operational current AC-15	240 V	6 A
	400 V	4 A
	500 V	2.5 A
	690 V	1.5 A
I <sub>e</sub> / Rated operational current DC-13	24 V	4 A
	48 V	2 A
	125 V	0.55 A
	250 V	0.27 A
	440 V	0.15 A
Short-circuit protection device	10 A, Type gG	
Minimum switching capacity with failure rate acc. to IEC/EN 60947-5-4	17 V / 5 mA	
Maximum electrical switching frequency	AC-15	360 cycles/h
	DC-13	360 cycles/h

#### Auxiliary contacts for front mounting and side mounting according to UL/CSA

Types	<b>MACN, MARN, MACL, MARL</b>	
Standards	UL 60947-1, UL 60947-5-1	
Max. operational voltage	600 V AC	
Pilot duty	A600, Q600	

#### Connection characteristics

Auxiliary terminals	 	
	Screw terminals with cable clamp	Conductors with insulated ring tongue ferrule
Connection capacity		
Auxiliary terminals		
 Rigid: solid	1 or 2 x	0.75 ... 2.5 mm <sup>2</sup>
 Flexible without ferrule	1 or 2 x	0.75 ... 2.5 mm <sup>2</sup>
 Flexible with ferrule	1 x	0.75 ... 2.5 mm <sup>2</sup>
 (insulated or not)	2 x	0.75 ... 1.5 mm <sup>2</sup>
 Lugs	Ø mm >	-
	L mm <	3.6 mm
Connection capacity acc. to UL/CSA	1 or 2 x	AWG 12 ... 18
Stripping length	9 mm	
Tightening torques	0.8 Nm / 7 lb.in	
Degree of protection acc. to IEC/EN 60947-1 and IEC/EN 60529	IP20	
Auxiliary terminals	IP20	
Screw terminals	(screws of unused terminals must be tightened)	
All terminals	M3.5	
Screwdriver type	Flat Ø 5.5 mm / Pozidriv 2	

## Accessories

### Technical data

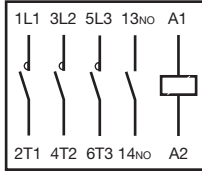
#### Electronic timers

Insulation Voltage		750 V
Impulse withstand voltage U <sub>imp</sub>		4 kV
Control voltage, U <sub>c</sub>	50 Hz, 60 Hz, DC	24-250 V
Tolerance of control voltage		85% - 110%
Timing range		0.5 s - 60 s (+/- 6 s)
Ambient air temperature close to the timer	Operation in free air	-25 °C ... +55 °C
	Storage	-55 °C ... +80 °C
Recovery time		100 ms
Repeatability		+/-1 %
Temperature variation of delay	% / °C	0.05
Degree of protection		IP20
Mounting position		Any

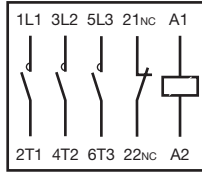
## MC.. 3-pole and 4-pole mini contactors, MCR.. 4-pole mini contactor relays

### Terminal marking and product positioning

#### MC.. 3-pole mini contactors

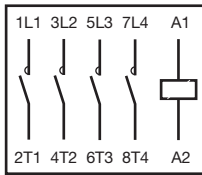


MC..310A

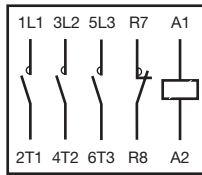


MC..301A

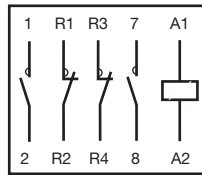
#### MC.. 4-pole mini contactors



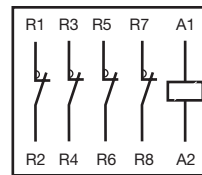
MC..400A



MC..C00A

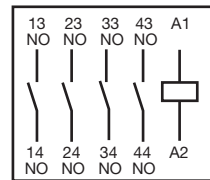


MC..B00A

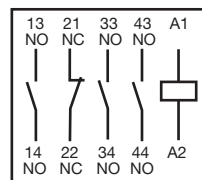


MC..A00A

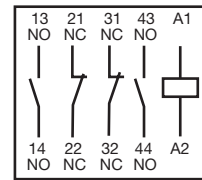
#### MC.. 4-pole mini contactor relays



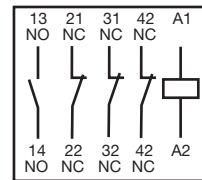
MCR..040A



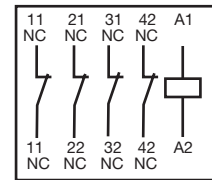
MCR..031A



MCR..022A



MCR..013A



MCR..004A

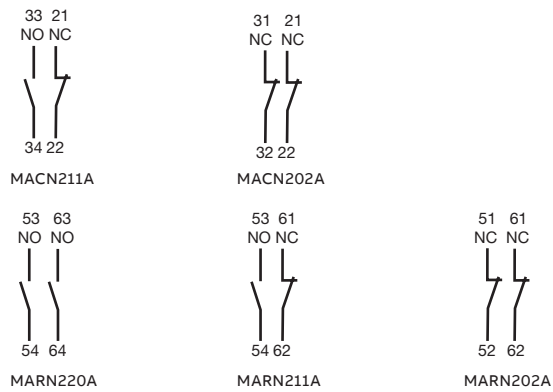
# Auxiliary contact blocks for MC1 and MC2 mini contactors

Terminal marking and product positioning

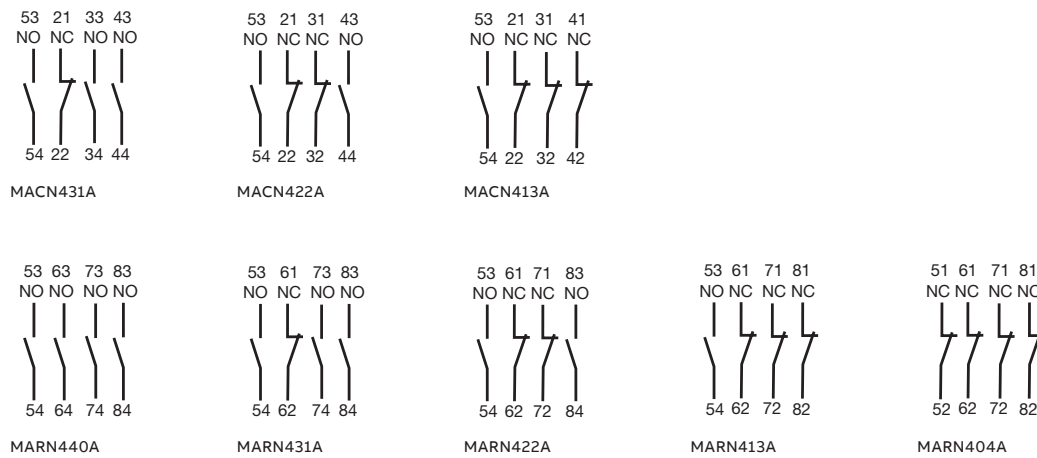
## MACL..., MARL... side mounted (left or right) 1-pole auxiliary contact block



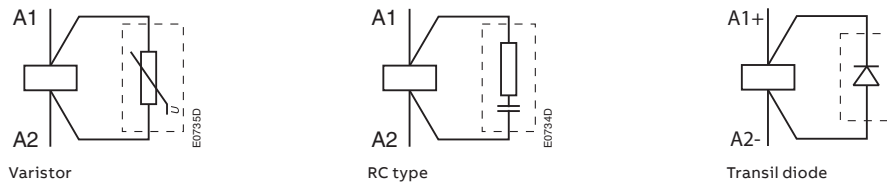
## MACN..., MARN... front mounted 2-pole auxiliary contact block



## MACN..., MARN... front mounted 4-pole auxiliary contact block

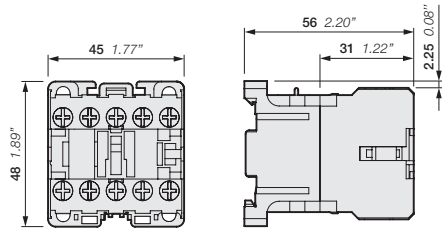


## Surge suppressors

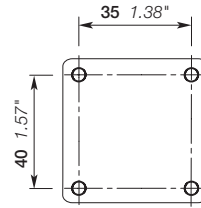


## MC.. mini contactors and MCR.. mini contactor relays - AC operated with screw terminals and specific screw terminals for ring tongue ferrules

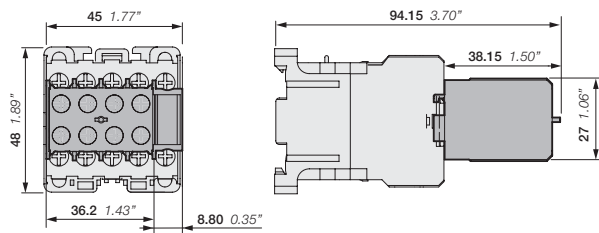
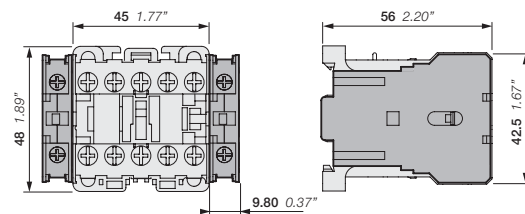
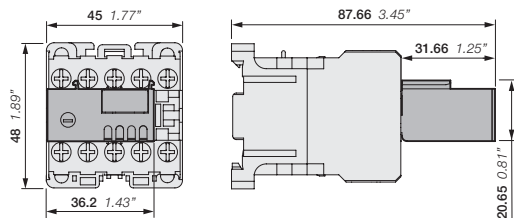
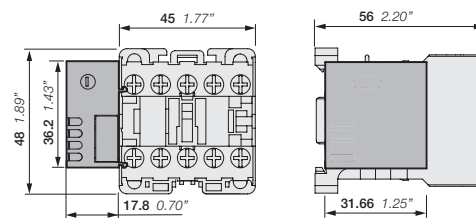
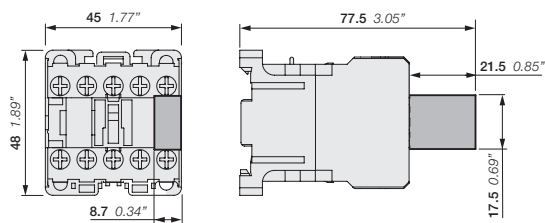
### Dimensions



MC1A, MC2A, MCRA, MC1A..R, MC2A..R, MCRA..R



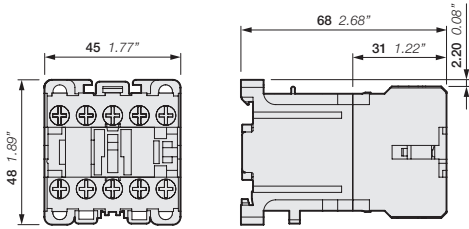
Drilling plan

MC1A, MC2A, MCRA, MC1A..R, MC2A..R, MCRA..R  
+ MACN2.., MARN2.. 2-pole auxiliary contact block  
MACN4.., MARN4.. 4-pole auxiliary contact blockMC1A, MC2A, MCRA, MC1A..R, MC2A..R, MCRA..R  
+ MACL.., MARL.. 1-pole auxiliary contact blockMC1A, MC2A, MCRA, MC1A..R, MC2A..R, MCRA..R  
+MREBC front mounted electronic timerMC1A, MC2A, MCRA, MC1A..R, MC2A..R, MCRA..R  
+MREBC side mounted electronic timerMC1A, MC2A, MCRA, MC1A..R, MC2A..R, MCRA..R  
+MPOA surge suppressor

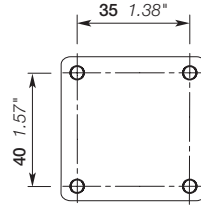
# MC.. mini contactors and MCR.. mini contactor relays - DC operated

## With screw terminals and specific screw terminals for ring tongue ferrules

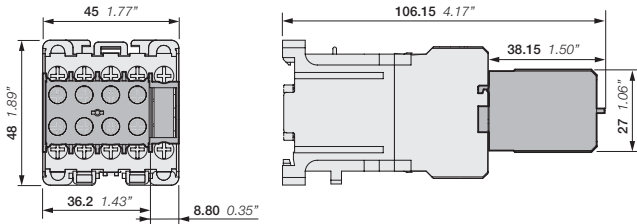
### Dimensions



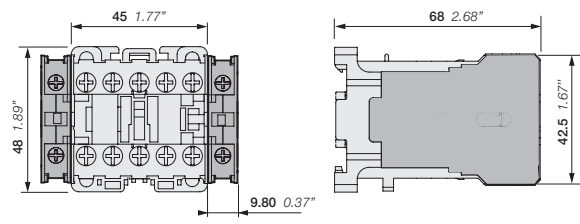
MC1C, MC2C, MCRC, MC1C..R, MC2C..R, MCRC..R



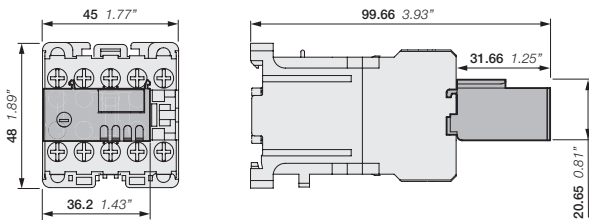
Drilling plan



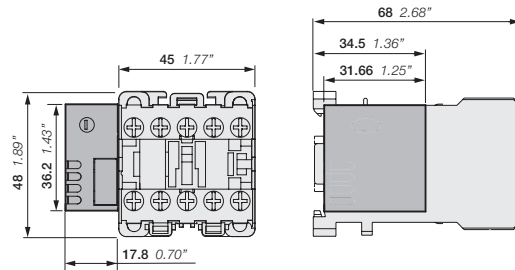
MC1C, MC2C, MCRC, MC1C..R, MC2C..R, MCRC..R  
 + MACN2.., MARN2.. 2-pole auxiliary contact block  
 MACN4.., MARN4.. 4-pole auxiliary contact block



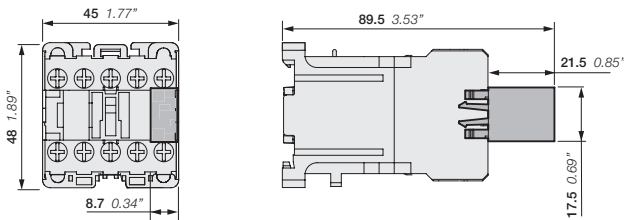
MC1C, MC2C, MCRC, MC1C..R, MC2C..R, MCRC..R  
 + MACL.., MARL.. 1-pole auxiliary contact block



MC1C, MC2C, MCRC, MC1C..R, MC2C..R, MCRC..R  
 +MREBC front mounted electronic timer



MC1C, MC2C, MCRC, MC1C..R, MC2C..R, MCRC..R  
 +MREBC side mounted electronic timer



MC1C, MC2C, MCRC, MC1C..R, MC2C..R, MCRC..R  
 +MPOA surge suppressor

Main dimensions mm, inches



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**ABB, Inc**

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Memphis, TN 38120



<http://new.abb.com/low-voltage>

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