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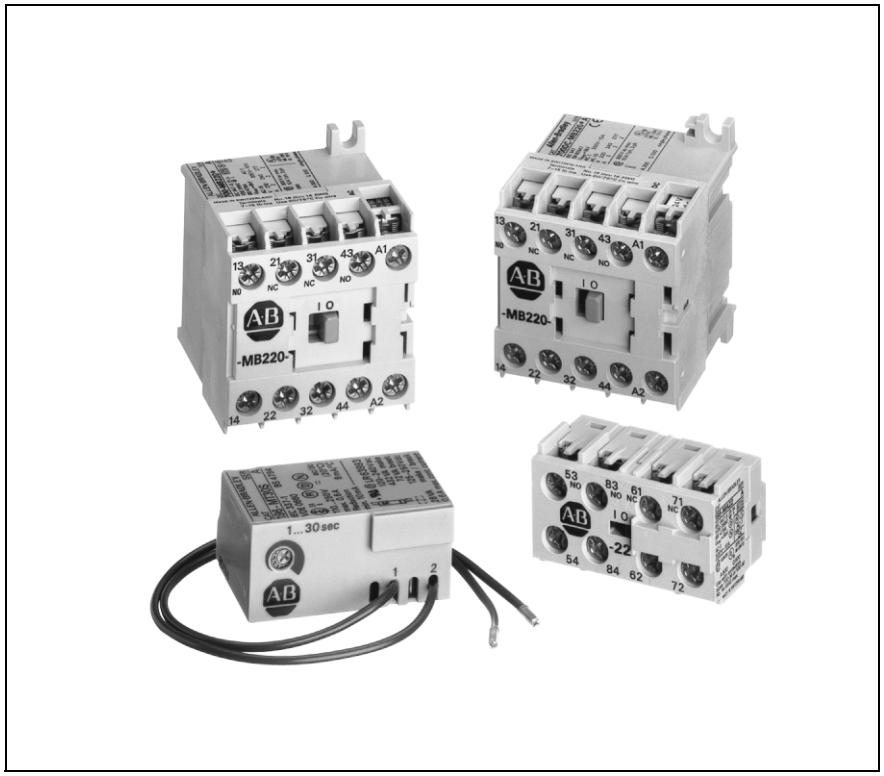
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Find the *Rockwell / Allen-Bradley 700DC-MB310D24* at our website: *Click HERE*



Bulletin 700-M, -MB

- Compact Size
- Bifurcated Contacts (700-MB)
- DIN Rail Mounting
- Finger-Safe Terminals
- 10 A AC, 600V AC/DC (700-M)
- 5 A AC 300V AC/DC (700-MB)
- Relay Configurations
  - 4 N.O.
  - 3 N.O., 1 N.C.
  - 2 N.O., 2 N.C.
- AC and DC Operating Coils
- Low Power Consumption 1.4 VA (AC) 2.5 W (DC)
- Mechanically Linked Contacts

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Description

The Allen-Bradley miniature control relays are designed for commercial and industrial applications where panel space is at a premium. These miniature devices, while 45 mm wide, are smaller in height and depth requirements than standard IEC control relays, and are about 1/2 the size of standard IEC relays. They are an excellent alternative to plug-in relays for applications requiring longer contact life.
They are also compatible with Bulletin 100-M Miniature Contactors.
These mini-control relays are designed with flexibility in mind. They are available in a wide variety of contact configurations and offer 2- and 4-pole adder decks. Additionally, the relays are available with either AC or DC operating coils.
Bulletin 700-MB line of miniature control relays features bifurcated “H” style contacts to increase the switching reliability at lower power levels.
Bulletin 700-M relays have a single contact pad design with a “+” stamped into the contact for more reliability.

Conformity to Standards:

IEC 947, BS 5424, 4794, CEE24
SEV 1025
UTE NF C63-110
VDE 0660
CSA C22.2 No. 14
UL 508

Approvals:

SEV, CEBEC, DEMKO, NEMKO, SEMKO
Finland,
Germ. Lloyd
Bureau Veritas
USSR Register
CSA Certified, UL Listed, File E14840

Your order must include:

- Cat. No. of the miniature relay. selected with voltage code.
- If required, Cat. No. of any accessories.

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AC Control Relays (700-M) and Control Relays with Bifurcated Contacts (700-MB)❸



Contact Configuration		Pkg. Qty. ❶	Cat. No. ❶ ❹
N.O.	N.C.		
2	2	1	700-M220⊗S
3	1	1	700-M310⊗S
4	—	1	700-M400⊗S
2	2	1	700-MB220⊗S
3	1	1	700-MB310⊗S
4	—	1	700-MB400⊗S

⊗ AC Voltage Suffix Code

The Cat. No. as listed is incomplete. Select a voltage suffix code from the table below to complete the Cat. No. Example: **Cat. No. 700-MB400⊗S** becomes **Cat. No. 700-MB400A24S**. For other voltages, consult your local Allen-Bradley Sales Office.

Voltage	24	48	100	110…120	220…230	230…240	380	440	440…480
50 Hz	A24	A48	A1	—	A2	—	A3	A4	—
60 Hz	A24	A48	—	A1	—	A2	A3	—	A4

DC Control Relays (700DC-M) and Control Relays with Bifurcated Contacts (700DC-MB) ❸



Contact Configuration		Pkg. Qty. ❶	Cat. No. ❹
N.O.	N.C.		
2	2	1	700DC-M220⊗S
3	1	1	700DC-M310⊗S
4	—	1	700DC-M400⊗S
2	2	1	700DC-MB220⊗S
3	1	1	700DC-MB310⊗S
4	—	1	700DC-MB400⊗S

⊗ DC Voltage Suffix Code

The Cat. No. as listed is incomplete. Select a voltage suffix code from the table below to complete the Cat. No. Example: **Cat. No. 700DC-MB400⊗S** becomes **Cat. No. 700DC-MB400Z24S**. To order a relay with a diode surge suppressor, in a 24V DC coil, change the letter "**Z**" to "**D**". Example: **Cat. No. 700DC-MB220Z24** becomes **Cat. No. 700DC-MB220D24** (coil tab is green for diode.)

Voltage	12	24	24 with Diode	48	80	110	125	220
DC	Z12	Z24	D24❷	Z48	Z80	Z11	Z3	Z2

❶ 10-packs can be ordered for the following voltage codes: A1, A2, A24, Z24, D24. To order a 10-pack, specify quantity in multiples of 10 and drop the final "S" from the catalog number.

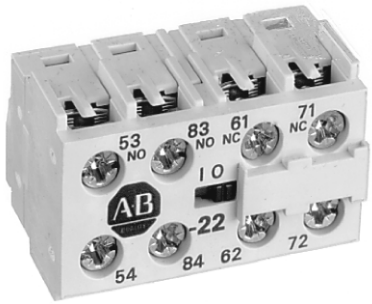
❷ To determine whether a 700DC-M relay has a diode, check the voltage label above the A1 terminal. A green background indicated that the relay has a built-in diode; a white background indicates that there is no diode.

❸ Positively Guided Contacts — Summary:
700-M, 700-MB, 700DC-M, and 700DC-MB relays are positively guided for 4 main poles. Restrictions apply when using auxiliary contacts.

❹ All Cat. Nos. are factory stocked.

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Auxiliary Contact Adder Decks



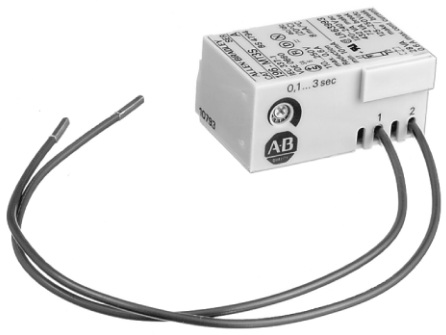
For Use with 700-MB Relays		
Contact Configuration	**Pkg. Qty.**	**Cat. No. ❶**
1 N.O.–1 N.C.	10	195-MA11
2 N.O.	10	195-MA20
2 N.C.	10	195-MA02
2 N.O.–2 N.C.	10	195-MA22
4 N.O.	10	195-MA40
1 N.O.–3 N.C.	10	195-MA13
4 N.C.	10	195-MA04

Surge Suppressors



Description		Pkg. Qty.	Cat. No. ❶
R-C Suppressor	24…48V AC	10	199-MSMA48
	110…280V AC	10	199-MSMA1
MOV Suppressor	12…55V AC	10	199-MSMV1
	56…136V AC	10	199-MSMV2
	137…277V AC	10	199-MSMV3
Diode Suppressor	12…250V DC	10	199-MSMD1

Timers



Description		Pkg. Qty.	Cat. No. ❶
Solid State Timing Element 110…250V 50/60 Hz, DC	0.1…3 s On–Delay	10	196-MT3S
	1…30 s On–Delay	10	196-MT30S
Star-Delta Timer 1…30 s The Star (K3) contactor is energized for the time setting and de-energized. Then after 90 ± 30 ms the Delta (K2) contactor is energized.	220…250V 50/60Hz	10	196-MTSDA2
	110…120V 50/60 Hz	10	196-MTSDA1
35 mm DIN Rail Mounting Adapter For Above Timers		10	196-MTM

❶All Cat. Nos. are factory stocked.

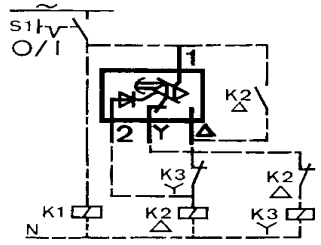
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Mini-Relays

			Cat. Nos. 700-M… and 700-MB…
Electrical			
Operating Range	AC	Pick-Up	85…110% nominal coil voltage
		Drop-Out	35…65% nominal coil voltage
	DC	Pick-Up	80…110% nominal coil voltage
		Drop-Out	10…25% nominal coil voltage
Coil Consumption	AC	Inrush	22 VA
		Sealed	4 VA
	DC	Inrush	2.5 W
		Sealed	2.5 W
Mechanical			
Operating Time	AC	Pick-Up	15…40 ms
		Drop-Out	15…25 ms
	DC	Pick-Up	18…40 ms
		Drop-Out	6…12 ms
Environmental			
Ambient Temperature	In storage, transport		–55…+80°C (–67…176°F)
	At rated operational current		–50…+60°C (–58…140°F)
	At 85% rated operational current		–50…+70°C (–58…158°F)
Resistance to Climatic Change	Humid heat		40°C (104°F), 95% relative humidity, 56 days
	Alternating climatic conditions		23°C (73.4°F), 83%/40°C (104°F), 93%, 56 cycles
Mounting Position			
Construction			
Protection Class			IP20
Protection Against Accidental Contact			Finger and back-of-hand proof according to VDE 0106, part 100
Terminals	Wire		2 x 0.75…2.5 mm² (#18…14 AWG)
	Stranded lead without connector sleeve		2 x 0.75…2.5 mm² (#18…14 AWG)
	Stranded lead with connector sleeve		2 x 0.75…2.5 mm² (#18…14 AWG)
Weight			700-M = 153 g, 700-MB = 153 g

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Timers

Cat. No.		196-M	196-MSD
Electrical			
Operational Voltage		AC and DC 110V –23%…250V +10%	AC only, 50/60 Hz 110V –23%…120V +10% 220V –20%…240V +10%
Voltage Drop		5V maximum	5V maximum
Load current for reliable function		10 mA minimum	10 mA minimum
Load current at	20°C (68°F) 40°C (104°F) 55°C (131°F)	600 mA 440 mA 320 mA	600 mA 440 mA 320 mA
Leakage current at 220V		5 mA	Y 17 mA, Δ 6 mA
Time range (delayed operation)		0.1…3 s 1…30 s	1…30 s
Transition time Y/Δ		—	90 ms ± 30 ms
Reset time		≥ 200 ms	≥ 200 ms
Voltage failure duration having no influence on time sequence		≤ 15 ms	≥ 20 ms
Repeat accuracy	At fixed temperature With temperature range of –5…+55°C (+23…+131°F)	±1% ±5%	±1% ±5%
Time interval for start commands		1.4 X set time	2 X set time
General			
Functional description		After the set time has expired, the timer completes the circuit and switches on the series connected relay or contactor.	After the set time has expired, contactor KY is switched off, and after the fixed switching interval 90 ± 30 ms, contactor KΔ is switched on.
Circuit diagrams			
Time setting		The 0.1…3 s and 1…30 s delay period is preset by means of the seconds marking and then corrected according to the process sequence or by checking with a stop watch.	
Environmental			
Ambient temperature	Operation	–20…+55°C (–40…+131°F)	–20…+55°C (–40…+131°F)
	Storage	–40…+80°C (–4…+176°F)	–40…+80°C (–40…+176°F)
Construction			
Terminals:	0.8 mm² (AWG 18)	2 free cable ends, each 250 mm long	4 free cable ends, each 250 mm long

Surge Suppressors

Cat. No.	196-M	196-MSD
Electrical		
Overvoltage factor	n = U_{max}/U_n = 0.8…2.5	

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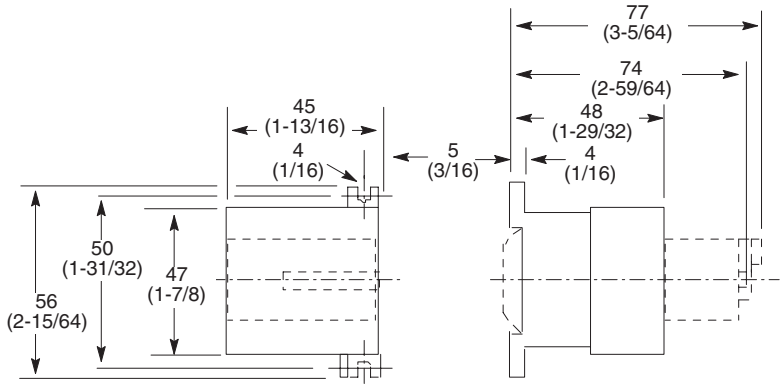
Contact Ratings

Description						
Cat. No.		700-MB… and Auxiliary Contacts		700-M…		
Rated Thermal Current	I_{th} Open ❶	10 A		16 A		
	I_{th} Enclosed ❶	6 A		12 A		
Contact Ratings Continuous		10 A @ 300V AC NEMA A300 ❷ 2.5 A @ 300V DC NEMA Q300 ❷		10 A @ 600V AC NEMA A600 ❷ 2.5 A @ 600V DC NEMA Q600 ❷		
Make/Break IEC 947 AC-15 (Switching Solenoid)		12…120V 220…240V 360…400V 480…500V	5.0 A 2.5 A 2.0 A 2.0 A	12…120V 220…240V 360…400V 480…500V	10.0 A 6.0 A 2.5 A 1.25 A	
Make/Break IEC 947 DC-13		24V 48V 110V 220V	5.0 A 0.6 A 0.45 A 0.1 A	24V 48V 110V 220V 440V	5.0 A 4.0 A 0.6 A 0.2 A 0.04 A	
Minimum Switching Recommendation		17V, 5 mA		17V, 25 mA		
Rated Voltage Withstand U_i	IEC, AS, BS, ASE, VDE 0660	500V		500V		
	UL, NEMA, CSA, EEMAC	600V		600V		
	IEC 947-4, IEC 158-1	2500V		2500V		
Back-Up Fuse IEC 158-1		10 A		16 A		
Life	Mechanical	10 million operations		10 million operations		
	AC-1 Electrical (230V / 6 A)	0.7 million operations		0.7 million operations		
Continuous Rating		300V 600V	10 A 10 A	300V 600V	12 A 12 A	
DC Switching (DC-1 Slightly Inductive Loads at 60°C)		—			1 pole	2 poles	3 poles
				24/48V	6/4	6.0 A	6.0 A
				110V	0.6 A	4.0 A	6.0 A
				220V	0.2 A	0.8 A	3.0 A
				440V	0.08 A	0.2 A	0.4 A

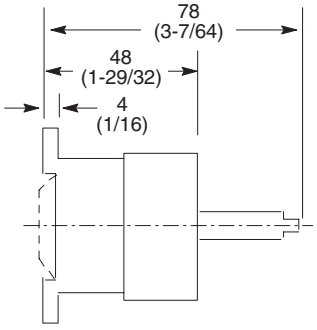
❶ "Open" values refer to 40°C (104°F) ambient temperature. "Enclosed" values refer to 60°C (140°F) ambient temperature.
❷ Refer to page 29 for NEMA Contact Rating information.

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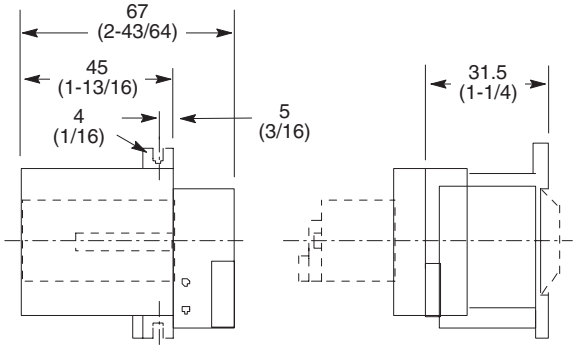
Dimensions are shown in millimeters (inches). Dimensions are not intended to be used for manufacturing purposes.



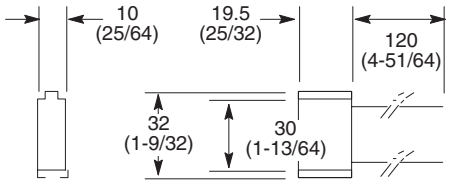
Mini-contactor or mini-relay with auxiliary contact adder deck or timer mounted to front.
Cat. No. 700-M and 700-MB



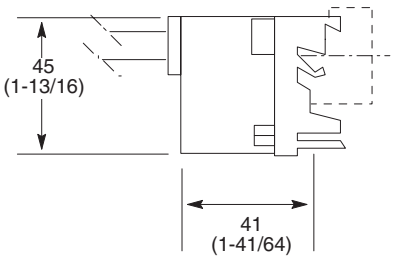
Mini-contactor or mini-relay with surge suppressor mounted to front.
Cat. No. 700-M and 700-MB



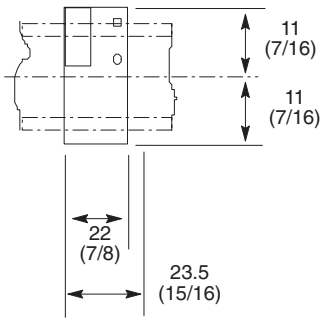
Mini-contactor or mini-relay with auxiliary contact adder deck mounted to front and timer mounted to side
Cat No. 700-M and 700-MB



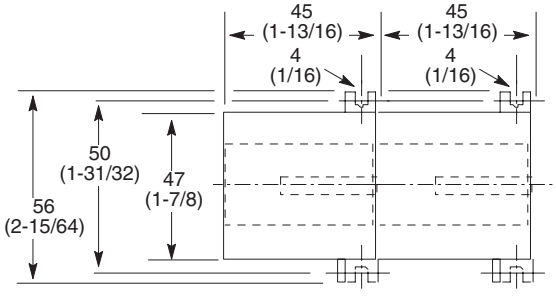
Surge Suppressor
Cat No. 199-MSM



Timer with DIN Rail mounting adapter on 35 mm DIN Rail
Cat. No. 196-MT



Timer with DIN Rail mounting adapter on 35 mm DIN Rail
Cat. No. 196-MT



Mini-contactors or mini-relays latched
Cat. No. 700-ML

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