

Bulletin 700
 Type N Relays and
 Type NM Latching Relays

- Convertible Contact Cartridges
- Compact Construction
- NEMA A300 AC
- NEMA P300 DC
- Pneumatic Timing Unit
- Solid State Timing Unit
- Overlap Contacts
- Logic Reed Contacts
- Front Deck

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Description

Bulletin 700 Type N range of 2-8 pole relays and Bulletin 700 Type NM range of 2-6 pole relays with convertible contact cartridges provide a complete line of 300V NEMA rated devices.

Type N relay line includes electrically held relays (Type N), permanent magnet latched relays (Type NM) and various accessories such as pneumatic timing units, solid state timing units, mounting tracks, etc. The compact construction of these relays greatly reduces relay panel size and simplifies panel layout, wiring and maintenance. All relays feature convertible contact cartridges which can be arranged in any normally open (N.O.) and normally closed (N.C.) combination. Relays can be manually operated by pressing the red bar at the center of the nameplate; the red bar also gives visual indication of relay operation. Both Type N electrically held and Type NM latch relays have a pressure molded coil and twin spanner contacts.

Conformity to Standards:

NEMA A300
 NEMA P300

Approvals:




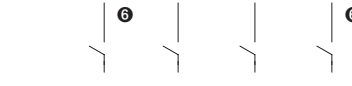

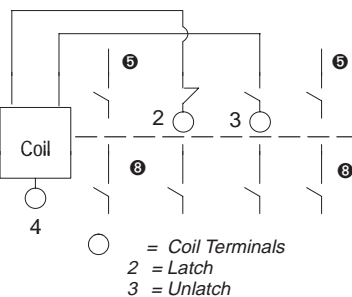
CSA Certified
 CSA File #LR1234
 UL Listed
 UL File #E14840,
 Guide NKCR
 CE Certified

Your order must include:

- Cat. No. of the relay selected.
- Voltage suffix code.
- If required, Cat. No. of timing unit and potentiometer.
- If required, Cat. No. of any accessories.

Product Selection

AC Operated Relays

	Description	Contacts		Contact Arrangement	Open Type Without Enclosure		Type 1 General Purpose Enclosure	
		N.O.	N.C.		Cat. No.	*	Cat. No.	*
 Type N Relay 4 Poles	Electrically Held AC Relay	2	-		700-N200 ①		700-N201 ①	
		4	-		700-N400 ①		700-N401 ①	
		6	-		700-N600 ①		700-N601 ①	
 Type N Relay 8 Poles	Permanent Magnet Latch AC Relay ⑦	8	-	 8 Pole Relay	700-N800 ①		700-N801 ①	
		2	-		700-NM200 ①		700-NM201 ①	
		-	-		700-NM400 ①		700-NM401 ①	
 Type NM Relay 2 Poles		4	-	 Coil 4 ② = Coil Terminals 2 = Latch 3 = Unlatch	700-NM600 ①		700-NM601 ①	
		6	-		700-NM601 ①		700-NM601 ①	

① 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-N200 ①** becomes **Cat. No. 700-N200A24**. For other coil voltages, contact your nearest Allen-Bradley Sales Office.

Voltage	24V	32V	48V	64V	110V	120V	208V	220V	240V
50	B24	B32	B48	B64	A1	-	B20	A2	-
60	A24	A32	A48	A64	-	A1	A20	-	A2


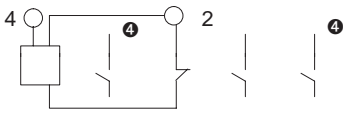
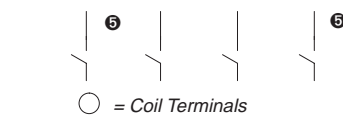
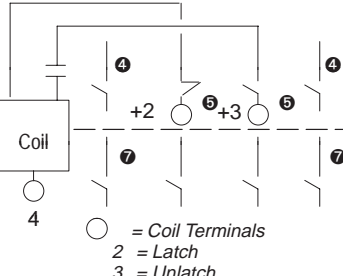
ATTENTION – The “LATCH” and “UNLATCH” contacts must never be closed at the same time. Energizing both circuits simultaneously will cause damage to the relay.

- ② **NORMALLY CLOSED CONTACTS** – Listed relays are supplied with all contacts normally open. These contacts can be readily converted to normally closed in the field. Relays having combinations of normally open and normally closed contacts can be supplied.
- ③ **OVERLAP CONTACTS** – Overlap contacts (normally open contact closes before the normally closed contact opens) can be supplied. See page 10-50 for information on kits for field installation of overlap contact cartridges.
- ④ **BIFURCATED CONTACTS** – To order a relay with bifurcated contacts, add the letter “B” after the letter “N” in the Cat. No. Example: **Cat. No. 700-N200A1** becomes **Cat. No. 700-NB200A1**.
- ⑤ Location of contacts in 2 pole relays.
- ⑥ Location of contacts in 6 pole relays: 4 pole relay plus the 2 contacts indicated.
- ⑦ **MINIMUM OPERATING TIME – TYPE NM** – For reliable operation, power to the latch circuit **must be** maintained for a minimum time of 75 milliseconds and power to the unlatch circuit **must be** maintained for minimum time of 50 milliseconds.
- ⑧ Location of contacts in 4 pole latch relays: 2 pole relay plus the 2 contacts indicated.

Bulletin 700
Industrial Relays
 Type N, NM

Product Selection, Continued

DC Operated Relays

	Description	Contacts ②③		Contact Arrangement	Open Type Without Enclosure		Type 1 General Purpose Enclosure	
		N.O.	N.C.		Cat. No.	*	Cat. No.	*
 Type N Relay Cat. No. 700DC-N300Z1	Electrically Held DC Relay	2	-		700DC-N200 ①		700DC-N201 ①	
		3	-		700DC-N300 ①		700DC-N301 ①	
	Permanent Magnet Latch DC Relay ⑥	4	-	 ○ = Coil Terminals	700DC-N400 ①		700DC-N401 ①	
		5	-		700DC-N500 ①		700DC-N501 ①	
		6	-		700DC-N600 ①		700DC-N601 ①	
		7	-		700DC-N700 ①		700DC-N701 ①	
		2	-		 ○ = Coil Terminals 2 = Latch 3 = Unlatch	700DC-NM200 ①		700DC-NM201 ①
4	-	700DC-NM400 ①		700DC-NM401 ①				
6	-	700DC-NM600 ①		700DC-NM601 ①				

① 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-N200 ①** becomes **Cat. No. 700DC-N200Z24**. For other coil voltages, contact your nearest Allen-Bradley Sales Office.

Voltage ⑥	24V	32V	48V	64V	115-125V	230-250V
DC	Z24	Z32	Z48	Z64	Z1	Z2

ATTENTION – The “LATCH” and “UNLATCH” contacts must never be closed at the same time. Energizing both circuits simultaneously will cause damage to the relay.

- ② **NORMALLY CLOSED CONTACTS** – Listed relays are supplied with all contacts normally open. These contacts can be readily converted to normally closed in the field. Relays having combinations of normally open and normally closed contacts can be supplied.
- ③ **OVERLAP CONTACTS** – Overlap contacts (normally open contact closes before the normally closed contact opens) can be supplied. See page 10-50 for information on kits for field installation of overlap contact cartridges.
- ④ Location of contacts in 2 pole relays.
- ⑤ Location of contacts in 6 pole relays: 4 pole relay plus the 2 contacts indicated.
- ⑥ **MINIMUM OPERATING TIME – TYPE NM** – For reliable operation, power to the latch circuit **must be** maintained for a minimum time of 75 milliseconds and power to the unlatch circuit **must be** maintained for minimum time of 50 milliseconds.
- ⑦ Location of contacts in 4 pole latch relays: 2 pole relay plus the 2 contacts indicated.

Operating Coils


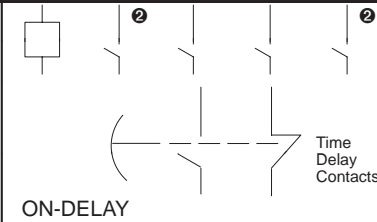

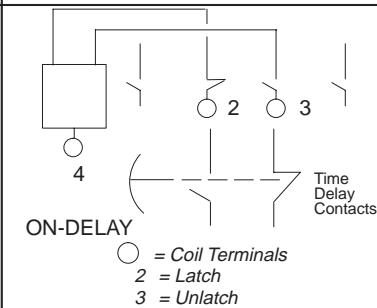


Type N
Operating Coil

Coil Volts	Type N • 2-8 Pole		
	60 Hz	50 Hz	DC
24	84AB27	84AB28	84D721
48	-	-	84D653
110	84AB01	84AB86	84D1194
115-125	-	-	84D418
120	84AB86	-	-
208	84AB113	-	-
220	84AB06	84AB83	84D1201
240	84AB83	-	-
230-250	-	-	84D414

Product Selection, Continued

AC Operated Relays with Pneumatic Timing Unit ②③④

	Description	Instantaneous Contacts		Contact Arrangement	Open Type Without Enclosure	
		N.O.	N.C.		Cat. No.	*
	Electrically Held AC Relay	2 4	- -		700-NT200 ① 700-NT400 ①	
	Permanent Magnet Latch AC Relay ③	2	-		700-NMT200 ①	

① **AC Voltage Suffix Code**


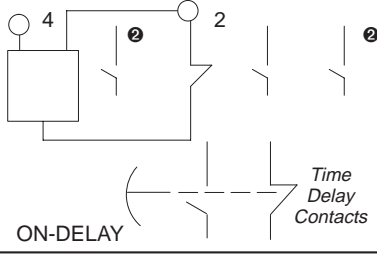

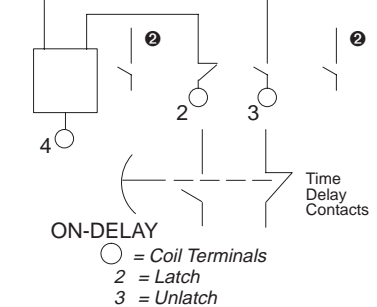
The Cat. No. as listed is incomplete. Select a voltage suffix code from the table below to complete the Cat. No.
 Example: **Cat. No. 700-NT200 ①** becomes **Cat. No. 700-NT200A24**. For other coil voltages, contact your nearest Allen-Bradley Sales Office.

Voltage ④	24V	32V	48V	64V	110V	115-125V	120V	208V	220V	230-250V	240V
AC 50 Hz	B24	B32	B48	B64	A1	-	-	B20	A2	-	-
AC 60 Hz	A24	A32	A48	A64	-	-	A1	A20	-	-	A2

- ② **NORMALLY CLOSED CONTACTS** – Listed relays are supplied with all contacts normally open. These contacts can be readily converted to normally closed in the field. Relays having combinations of normally open and normally closed contacts can be supplied.
- ③ **OVERLAP CONTACTS** – Overlap contacts (normally open contact closes before the normally closed contact opens) can be supplied. See page 10-50 for information on kits for field installation of overlap contact cartridges.
- ④ **BIFURCATED CONTACTS** – To order a relay with bifurcated contacts, add the letter “B” after the letter “N” in the Cat. No. Example: **Cat. No. 700-NT200A1** becomes **Cat. No. 700-NBT200A1**.

Product Selection, Continued

DC Operated Relays with Pneumatic Timing Unit ②③④

	Description	Instantaneous Contacts		Contact Arrangement	Open Type Without Enclosure	
		N.O.	N.C.		Cat. No.	*
	Electrically Held DC Relay	2 3	- -		700DC-NT200 ① 700DC-NT300 ①	
	Permanent Magnet DC Relay ③	2	-		700DC-NMT200 ①	

○ = Coil Terminals
 2 = Latch
 3 = Unlatch

① DC Voltage Suffix Code



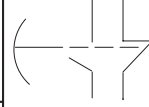
The Cat. No. as listed is incomplete. Select a voltage suffix code from the table below to complete the Cat. No. Example: **Cat. No. 700DC-NT200 ①** becomes **Cat. No. 700DC-NT200Z24**. For other coil voltages, contact your nearest Allen-Bradley Sales Office.

Voltage ④	24V	32V	48V	64V	110V	115-125V	120V	208V	220V	230-250V	240V
DC	Z24	Z32	Z48	Z64	-	Z1	-	-	-	Z2	-

- ② **NORMALLY CLOSED CONTACTS** – Listed relays are supplied with all contacts normally open. These contacts can be readily converted to normally closed in the field. Relays having combinations of normally open and normally closed contacts can be supplied.
- ③ **OVERLAP CONTACTS** – Overlap contacts (normally open contact closes before the normally closed contact opens) can be supplied. See page 10-50 for information on kits for field installation of overlap contact cartridges.
- ④ **BIFURCATED CONTACTS** – To order a relay with bifurcated contacts, add the letter “B” after the letter “N” in the Cat. No. Example: **Cat. No. 700DC-NT200Z24** becomes **Cat. No. 700DC-NBT200Z24**.

Product Selection, Continued

Type NT Pneumatic Timing Unit

 Cat. No. 700-NT  Cat. No. 700-NPTA1	Description	Contacts		Contact Arrangement	Open Type Without Enclosure		
		N.O.	N.C.		Cat. No.	*	
	Timing Unit Only (for Bulletin 700, 2 and 4 pole Type N, 2 Pole Type NM, Bulletin 700DC, 2 and 3 pole Type N, 2 pole Type NM)	1	1	 ON-DELAY ON-Delay mode is standard. Timer is easily converted to OFF-Delay mode.	700-NT		
	Timing Unit Mounted on Relay (Relay supplied without contacts)	Type N AC relay	1		1	700-NPT ①	
		Type NM AC relay	1		1	700-NMPT ①	
Type N DC relay		1	1		700DC-NPT ②		
Type NM DC relay		1	1	700DC-NMPT ②			

① 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-NPT ①** becomes **Cat. No. 700-NPTA24**. For other coil voltages, contact your nearest Allen-Bradley Sales Office.

Voltage ③	24V	32V	48V	64V	110V	115-125V	120V	208V	220V	230-250V	240V
50 Hz	B24	B32	B48	B64	A1	-	-	B20	A2	-	-
60 Hz	A24	A32	A48	A64	-	-	A1	A20	-	-	A2

② 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-NPT ②** becomes **Cat. No. 700DC-NPTZ24**. For other coil voltages, contact your nearest Allen-Bradley Sales Office.

Voltage ③	24V	32V	48V	64V	110V	115-125V	120V	208V	220V	230-250V	240V
DC	Z24	Z32	Z48	Z64	-	Z1	-	-	-	Z2	-

③ For type NM relays in 24, 32, 48 or 64 volt application, consult your nearest Allen-Bradley Sales Office.

Bulletin 852S Solid State Timing Unit for Mounting on Type N Relays ④ (Supplied as On-Delay Easily Converted to Off-Delay Mode) Input: 110V/50 Hz, 120V/60 Hz Output: NEMA B300, Sealed Contacts

Timing Unit with Self-Contained Potentiometer			
Minimum Time Seconds	Maximum Time Seconds ⑤	Cat. No.	*
0.1	5	852S-NSA	
0.5	30	852S-NSB	
1.0	60	852S-NSC	

④ The maximum time is fixed by component characteristics and may be up to 70% greater than listed.

⑤ For specifications see page 10-51.











Timing Unit Only				External Potentiometer ⑥						
Minimum Time Seconds	Maximum Time Seconds ⑤	Cat. No.	*	Resistance Megohms	Cat. No.	*				
0.1	0.21	852S-A ⑤		0.015	800T-U34					
	0.35			0.025	800T-U37					
	0.70			0.05	800T-U41					
	1.10			0.075	800T-U46					
	1.50			0.10	800T-U49					
	2.10			0.15	800T-U50					
	5.6			0.40	800T-U54					
	7.0			0.50	800T-U55					
	14.00			1.00	800T-U57					
	29.00			2.00	800T-U59					
	1.0			2.0	852S-C ⑤			0.05	800T-U41	
				4.0				0.10	800T-U49	
				8.0				0.20	800T-U51	
16.0		0.40	800T-U54							
32.0		0.80	800T-U56							
40.0		1.00	800T-U57							
80.0		2.00	800T-U59							
120.0		3.00	800T-U62							
160.0		4.00	800T-U64							

⑥ These timing relays require an external potentiometer. To order an external potentiometer, refer to right side of table above.

Bulletin 700
Industrial Relays
Type N, NM

Accessories

Accessories for Type N Relays

	Description	Cat. No.	*
 Universal Mounting Strip	Universal Mounting Strips Simplifies panel layout. Available in various lengths. Accepts Type N and NM relays, as well as Type P, PH, PK, R, RM, and RTC relays. Sold only in packages of 5 strips.	Relays per strip 4 8 12 16	700-MP4 700-MP8 700-MP12 700-MP16
 Cat. No. 700-NA40	Front Deck Front decks can be attached to Bulletin 700 4 pole or Bulletin 700DC 3 pole Type N relays and Bulletin 700 or Bulletin 700DC 2 pole Type NM relays. Provides up to 4 additional convertible poles – without changing the mounting area,	Front Deck with 2 Contact Cartridges Front Deck with 4 Contact Cartridges	700-NA20 700-NA40
	Standard Contact Cartridges Available for adding to both rear deck and front deck.	Rear Deck Contact Cartridge Front Deck Contact Cartridge	700-C1 ① 700-C2 ①
	Gold Plated Contact Cartridges May be used in low power circuits to improve reliability. Good for long term storage, because gold resists corrosion.	Rear Deck Contact Cartridge Front Deck Contact Cartridge	700-C1X ① 700-C2X ①
	Logic Reed Cartridges Cartridges are hermetically sealed contact for low energy switching.	Rear Deck Contact Cartridge (150V AC, 150mA, 8VA Max.) (30V DC, 60mA Max.)	700-C1R ①
	Bifurcated Contact Cartridges Cartridges are less apt to open because of vibration and shock.	Rear Deck Contact Cartridge Front Deck Contact Cartridge	700-C1B ① 700-C2B ①
 Cat. No. 700-C11Z	Overlap Contact Cartridges Cartridges are available in pairs. The N.O. contact closes before the N.C. contact opens. 300V AC max. 125V DC max.	Rear Deck Contact Cartridge (1 pair in a package) Front Deck Contact Cartridge (1 pair in a package)	700-C11Z ① 700-C22Z ①
Timing Unit Replacement Bifurcated Contact Cartridge		Timing Unit Deck Contact Cartridge	X-457011 ①
 Cat. No. 700-N4,-N3	Jumpers Terminal connection available for the two middle poles or one middle pole to one outer pole on the Bulletin 700 or 700DC Type N relays. Sold only in package of 50 jumpers.	Jumper for middle pole to outer poles Jumper for middle poles.	700-N3 700-N4
Gold Plated Contact Timing Unit Replacement Cartridge		–	40163-447-03 ①
 Cat. No. 700-N5 Cat. No. 700-N24	Surge Suppressor Reduces high transient voltages generated when coil circuit is opened. Max. ratings 150V AC or DC, or 35VA.	For mounting behind relay (1 inch additional depth needed) For mounting on coil terminal	700-N5 700-N24
 Cat. No. 700-N21	Check Out Tool Mechanically maintains the Bulletin 700 Type N relay in operated position.	Check Out Tool for Bulletin 700 Type N, NM, AC or DC relay	700-N21

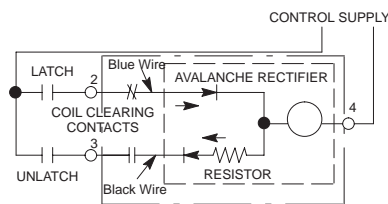
① Note: All contact cartridges are convertible (N.O. or N.C.).

Specifications

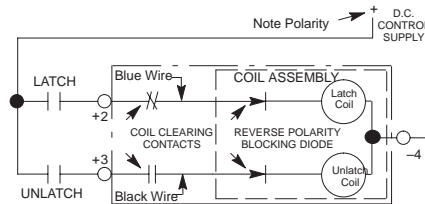
		Type 700-N		Type 700-NM		Type 700-NT
Electrical Ratings						
Rated Thermal Current I_{th}		10A				
Rated Insulation Voltage		300V				
Contact Rating		10A @ 300V AC, NEMA A300 See page 10-6				
		5A @ 300V DC, NEMA P300 See page 10-6				
Coil Voltage Range						
AC		85% to 110%				
DC		80% to 110%				
Coil Consumption						
		50 Hz	60 Hz	50 Hz	60 Hz	-
AC	Inrush	120VA	133VA	157 VA (latch) 18 VA (unlatch)	148 (latch) 19 (unlatch)	-
	Sealed	24VA	20VA	0	0	-
DC	Inrush	145W		-		-
	Sealed	9.75W		-		-
	Latch	-		146 VA		-
	Unlatch	-		28 VA		-
Mechanical		AC	DC	AC	DC	-
Max. Operating Time	Pickup	14 msec	14 msec	Latch/29 msec	10 msec	-
	Drop Out	13 msec	24 msec	Unlatch/24 msec	17 msec	-
Timing Range		-		-		0.2 to 60 sec
Repeat Accuracy		-		-		±15% of setting
Reset Time		-		-		75 msec
Timing Mode		-		-		On-Delay – convertible to OFF Delay, Up to 2 poles convertible to N.O. or N.C.
Construction						
Contact Arrangement		Up to 8 Poles, Convertible to N.O. or N.C.				
Contact Material		Silver				
Mounting		Panel or strip mount Horizontal mounting recommended				
Environmental						
Ambient Temperature						
Operating		-20°C to +40°C (-4°F to 104°F)				
Storage		-40°C to +60°C (-40°F to 140°F)				

Typical Wiring Diagrams

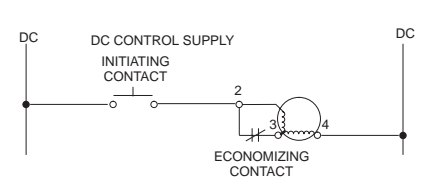
See Applicable Codes and Laws



Type NM Magnetic Latch
AC Relay



Type NM Magnetic Latch
DC Relay



The normally closed "Economizing Contact" will open to increase the resistance of the coil and reduce or "economize" the coil current

Type N Electrically Held
DC Relay

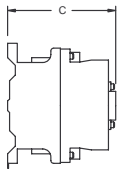
ATTENTION – The "LATCH" and "UNLATCH" contacts must never be closed at the same time. Energizing both circuits simultaneously will cause damage to the relay.

Bulletin 700
Industrial Relays
Type N, NM

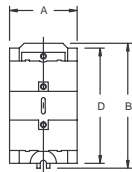
Approximate Dimensions and Shipping Weights

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

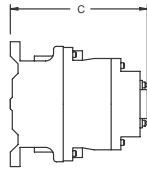
Type of Relay	No. of Poles	Drawing Number	Open Type Without Enclosure				Approx. Ship. Wt. kg (lbs.)	Type 1 General Purpose Enclosure					Approx. Ship. Wt. kg (lbs.)	
			A Wide	B High	C Deep	D		A Wide	B High	C Deep	D	E		
N	Bulletin 700	2-4	1	57.15 (2-1/4)	88.90 (3-1/2)	82.55 (3-1/4)	79.38 (3-1/8)	0.68 (1 1/2)	107.95 (4-1/4)	185.74 (7-5/16)	103.19 (4-1/16)	146.05 (5-3/4)	85.73 (3-3/8)	1.59 (3-1/2)
	Bulletin 700DC	2-3		57.15 (2-1/4)	88.90 (3-1/2)	82.55 (3-1/4)	79.38 (3-1/8)	0.68 (1 1/2)	107.95 (4-1/4)	185.74 (7-5/16)	103.19 (4-1/16)	146.05 (5-3/4)	85.73 (3-3/8)	1.59 (3-1/2)
	Bulletin 700	6-8	2	57.15 (2-1/4)	88.90 (3-1/2)	106.36 (4-3/16)	79.38 (3-1/8)	0.79 (1-3/4)	112.71 (4-7/16)	228.60 (9)	120.65 (4-3/4)	206.38 (8-1/8)	92.08 (3-5/8)	2.27 (5)
	Bulletin 700DC	4-7		57.15 (2-1/4)	88.90 (3-1/2)	106.36 (4-3/16)	79.38 (3-1/8)	0.79 (1-3/4)	112.71 (4-7/16)	228.60 (9)	120.65 (4-3/4)	206.38 (8-1/8)	92.08 (3-5/8)	2.27 (5)
N with Pneumatic Timer	Bulletin 700	2-4	3	57.15 (2-1/4)	88.90 (3-1/2)	138.11 (5-7/16)	79.38 (3-1/8)	0.91 (2)	-	-	-	-	-	-
	Bulletin 700DC	2-3		57.15 (2-1/4)	88.90 (3-1/2)	138.11 (5-7/16)	79.38 (3-1/8)	0.91 (2)	-	-	-	-	-	-
N with Solid State Timer	Bulletin 700	2-4	3	57.15 (2-1/4)	88.90 (3-1/2)	160.34 (6-5/16)	79.38 (3-1/8)	1.02 (2-1/4)	-	-	-	-	-	-
NM	Bulletin 700 and Bulletin 700DC	2	1	57.15 (2-1/4)	88.90 (3-1/2)	82.55 (3-1/4)	79.38 (3-1/8)	0.68 (1-1/2)	107.95 (4-1/2)	185.74 (7-5/16)	103.19 (4-1/16)	146.05 (5-3/4)	85.73 (3-3/8)	1.59 (3-1/2)
	Bulletin 700 and Bulletin 700DC	4-6	2	57.15 (2-1/4)	88.90 (3-1/2)	106.36 (4-3/16)	79.38 (3-1/8)	0.79 (1-3/4)	112.71 (4-7/16)	228.60 (9)	120.65 (4-3/4)	206.38 (8-1/8)	92.08 (3-5/8)	2.27 (5)
NM with Pneumatic Timer	Bulletin 700 and Bulletin 700DC	2	3	57.15 (2-1/4)	88.90 (3-1/2)	138.11 (5-7/16)	79.38 (3-1/8)	0.91 (2)	-	-	-	-	-	-



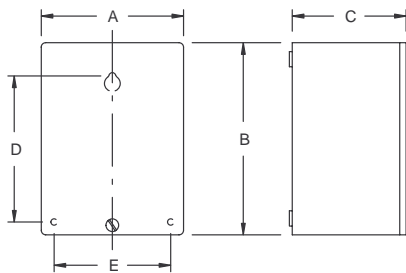
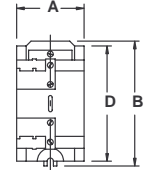
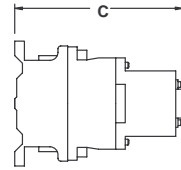
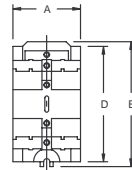
Drawing Number 1



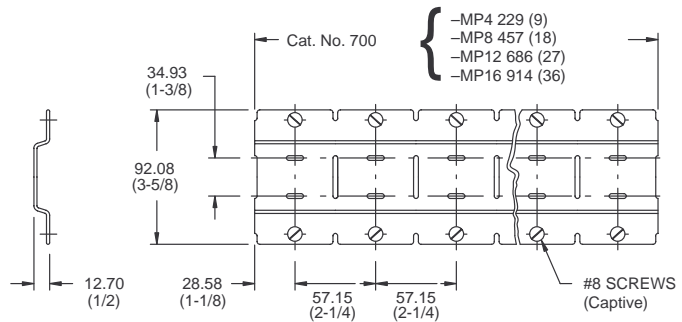
Drawing Number 2



Drawing Number 3



Type 1 Enclosure



Universal Mounting strip for Type P, PH, PK, N, NM, R, RM, RT, RTA Relays

Secure the mounting strip with 2 screws at each end relay position. Use a minimum of one screw at the 3rd, 5th, 7th etc. relay positions. Alternate between upper and lower horizontal slots.