

Bulletin 700-K Control Relays

Product Overview

Bulletin 700-K — Miniature Control Relays

- IEC compact industrial relay
- IP2X Finger Protection
- Bifurcated contacts for low-level signals
- Optional integrated coil protection diode



Standards Compliance

UL 508
 CSA C22.2 No. 14
 EN/IEC 60947-1, -5-1
 Meets the material restrictions for European Directive 2002/95/EC - EU-RoHS

Certifications

cULus Listed (File No. E33916, Guide NKCR/NKCR7)
 CE Marked
 CCC

4-Pole AC or DC Coil Voltage

AC-12		AC-15 (B600)							Connection Diagrams	Contacts		Pkg. Qty. *	Cat. No.
I_{th} [A]		I_e [A]								N.O.	N.C.		
40 °C	60 °C	24/48V	120V	240V	400V	500V	600V	690V					
10	6	3	3	2	1	1	0.6	0.6		4	0	1	700-K40E-⊗
										3	1	1	700-K31Z-⊗
										2	2	1	700-K22Z-⊗
										1+1L‡	1+1L‡	1	700-KL22Z-⊗

* May be ordered in package quantities of 20. Add letter **M** to the end of the cat. no. Example: **700-K40E-ZJM**.

‡ 1L = Late Break N.C. / Early Make N.O.

⊗ Coil Voltage Codes

The cat. no. as listed is incomplete. Select a coil voltage code from the table below to complete the cat. no. Example: 230V, 50/60 Hz: Cat. No. 700-K40E-⊗ becomes Cat. No. 700-K40E-KF. For other voltages, consult your local Rockwell Automation sales office or Allen-Bradley distributor.

For Screw Type Terminal Versions

	[V]	12	24	110	120	125	220	230	240	250	400	440	480	525	600
AC, 50 Hz		–	–	D	–	–	–	–	–	–	–	B	–	VC	–
AC, 60 Hz		–	–	–	D	–	–	–	–	–	–	–	B	–	VC
AC, 50/60 Hz		–	KJ	–	–	–	–	KF	KA	–	KN	–	–	–	–
Standard	DC	ZQ	ZJ	ZD	–	ZS	ZA	–	–	ZT	–	–	–	–	–
Standard diode		–	DJ	–	–	–	–	–	–	–	–	–	–	–	–

For Spring Clamp Type Terminal Versions

AC, 50 Hz		–	–	D	–	–	–	–	–	–	–	–	–	–	–
AC, 60 Hz		–	–	–	D	–	–	–	–	–	–	–	–	–	–
AC, 50/60 Hz		–	KJ	–	–	–	–	KF	–	–	–	–	–	–	–
Standard	DC	–	ZJ	ZD	–	–	–	–	–	–	–	–	–	–	–
Standard diode		–	DJ	–	–	–	–	–	–	–	–	–	–	–	–

Assignment of Contacts

Device Combinations in Accordance with IEC 60947-1 / -4-1

Table valid for : AC / DC = 0.85...1.1 x U_s , $T_{amb.} = -25\text{ }^{\circ}\text{C}...+60\text{ }^{\circ}\text{C}$, normal position (horizontal rail mounting). Also valid for Bulletin 700-KR relays and Bulletin 100-KR auxiliary contacts. *




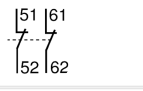
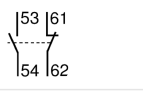
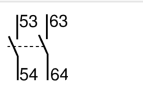
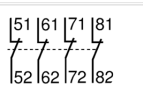
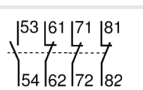
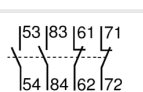

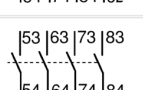
Auxiliary Contact Blocks		Control Relays 700-K (AC and DC Control)				
Circuit Diagram	Control	700-K22Z-⊗	700-K31Z-⊗	700-K40E-⊗	700-KL22Z-⊗	
Front Mounting						
100-KFA02E		AC/DC	–	31Z + 02E = 33Y ‡	40E + 02E = 42Y	–
100-KFA11E		AC/DC	22Z + 11E = 33Y	31Z + 11E = 42Y	40E + 11E = 51Y	L22Z + 11E = L33Y
100-KFA20E		AC/DC	22Z + 20E = 42Y	31Z + 20E = 51Y	40E + 20E = 60Y	L22Z + 20E = L42Y
100-KFA04E		AC/DC	–	–	40E + 04E = 44Y ‡	–
100-KFA13E		AC/DC	–	31Z + 13E = 44Y ‡	40E + 13E = 53Y	–
100-KFA22Z		AC/DC	–	31Z + 22Z = 53Y ‡	40E + 22Z = 62Y	–
100-KFA31Z		AC/DC	–	–	40E + 31Z = 71Y §	–
100-KFA40E		AC/DC	22Z + 40E = 62Y	31Z + 40E = 71Y	40E + 40E = 80Y	L22Z + 40E = L62Y

* For other operating limits, please contact our technical consultant.

‡ $T_{amb.}$ max. +40 °C




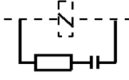
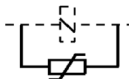
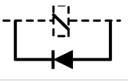
§ $T_{amb.}$ max. +40 °C and only allowed for coil voltage 24V DC or 230V AC

Auxiliary Contact Blocks

	Description	Connection Diagrams			For Use With	Pkg. Qty. *	Cat. No.
			N.O.	N.C.			
 <p>Front-mounted auxiliary contacts</p> <ul style="list-style-type: none"> Auxiliary Contact Blocks 2- and 4-pole versions Choice of contact configurations Snap on, no tools required Electronic-compatible bifurcated contacts for signals down to 15V/2 mA 			0	2	100/104-K, 700-K	1	100-KFA02E
			1	1	100/104-K, 700-K	1	100-KFA11E
			2	0	100/104-K, 700-K	1	100-KFA20E
			0	4	100/104-K, 700-K	1	100-KFA04E
			1	3	100/104-K, 700-K	1	100-KFA13E
			2	2	100/104-K, 700-K	1	100-KFA22Z
			3	1	100/104-K, 700-K	1	100-KFA31Z
			4	0	100/104-K, 700-K	1	100-KFA40E



* May be ordered in package quantities of 10. Add letter **M** to the end of the cat. no. Example: 100-KFA02EM.

Control Modules

	Description	Connection Diagrams	For Use With	Pkg. Qty.	Cat. No.	
 <p>Mechanical Interlock</p> <ul style="list-style-type: none"> For interlocking of two adjacent contactors No added width to contactor assembly Front mount plug-in type Optional auxiliary contact blocks and suppressor modules mount onto the interlock 			100/104-K/-KR, 700-K/-KR	1	100-KMCH	
 <p>Surge Suppressor</p> <ul style="list-style-type: none"> Plug-in type Limits surge voltage on coil drop-off 	RC Suppressor		100/104-K/-KR, 700-K/-KR	1 *	24...48V AC	100-KFSC50
					110...280V AC	100-KFSC280
					380...480V AC	100-KFSC480
	MOV Suppressor		100/104-K/-KR, 700-K/-KR	1 *	12...55V AC, 12...77V DC	100-KFSV55
					56...136V AC, 78...180V DC	100-KFSV136
					137...277V AC, 181...250V DC	100-KFSV277
	Diode Suppressor		100/104-K/-KR, 700-K/-KR	1 *	100-KFSD250	

* May be ordered in package quantities of 10. Add letter **M** to the end of the cat. no. Example: 100-KFSC50M.

Marking Systems






	Description	Pkg. Qty.	Cat. No.
	Label Sheet 105 self-adhesive paper labels each, 6 x 17 mm	10	100-FMS
	Snap-In Marker Card	5	1492-M6X12

		700-K	700-KR
AC-12 Rated Thermal Current Ambient temperature 40 °C			
I_{th}	24...240V	[A]	10
	230...500V	[A]	10
	230...690V	[A]	10
Ambient temperature 60 °C			
I_{th}	24...240V	[A]	6
	230...500V	[A]	6
	230...690V	[A]	6
AC-15/B600 Switching of Solenoids and contactors			
I_e	24V	[A]	3
	48V	[A]	3
	120V	[A]	3
	230V	[A]	2
	240V	[A]	2
	400V	[A]	1.2
	480V	[A]	1
	500V	[A]	1
	600V	[A]	0.6
	690V	[A]	0.6
Short-circuit Protection "gG" Fuse acc. to IEC 60947-5-1, no welding of contacts			
	Fuse gG	[A]	10
Min. Switching Capacity 15V For bifurcated contacts (control relays and auxiliary contact blocks)			
		[mA]	2
Resistance and Power Dissipation			
Main current circuit resistance, 1 pole		[mΩ]	6.5
Power dissipation, 4 poles		[W]	2.6
Total power dissipation			
	AC control, warm	[W]	4.4
	DC control, warm	[W]	5.2
Lifespan			
Mechanical		[Mio. op.]	15
Electrical AC-15 (240V / 2 A)		[Mio. op.]	0.7
Weight			
	AC control	kg (lbs.)	0.16 (0.35)
	DC control	kg (lbs.)	0.2 (0.44)
Load Carrying Capacity per UL/CSA			

Rated voltage	AC	[V]	max. 600	
Continuous rating	40 °C	[A]	10	6
Switching capacity	AC	[A]	B 600	
Rated voltage	DC	[V]	max. 600	
Switching capacity	DC	[A]	Q 600	

700-K				
DC-13/Q600				
1 pole	24V	[A]	2.3	
	48V	[A]	1	
	110V	[A]	0.55	
	125V	[A]	0.55	
	220V	[A]	0.27	
	250V	[A]	0.27	
	400V	[A]	0.15	
	440V	[A]	0.15	
	600V	[A]	0.1	

Cross Sections

Conductor Cross Sections - Main Contacts, Auxiliary Contacts, and Coil Terminals				700-K	700-KR
Terminal type				*	
					
	Fine stranded with ferrule	(1) Conductor (2) Conductors	[mm ²] [mm ²]	0.75...2.5 0.75...2.5	0.50...2.5 0.50...2.5
	Solid or coarse stranded	(1) Conductor (2) Conductors	[mm ²] [mm ²]	1...4 1...2.5 + 1...4	0.75...2.5 ♣ 0.75...2.5 ♣
					
Recommended torque			[Nm]	1.2	—
Cross section per UL/CSA			[AWG]	18...12 ‡	18...14 ♣
Recommended torque			[lb-in]	10.6	—

* Pozidriv No. 2 / Blade No. 3 screw

‡ Use same cross sections

♣ Stranded wire only

Coil Data

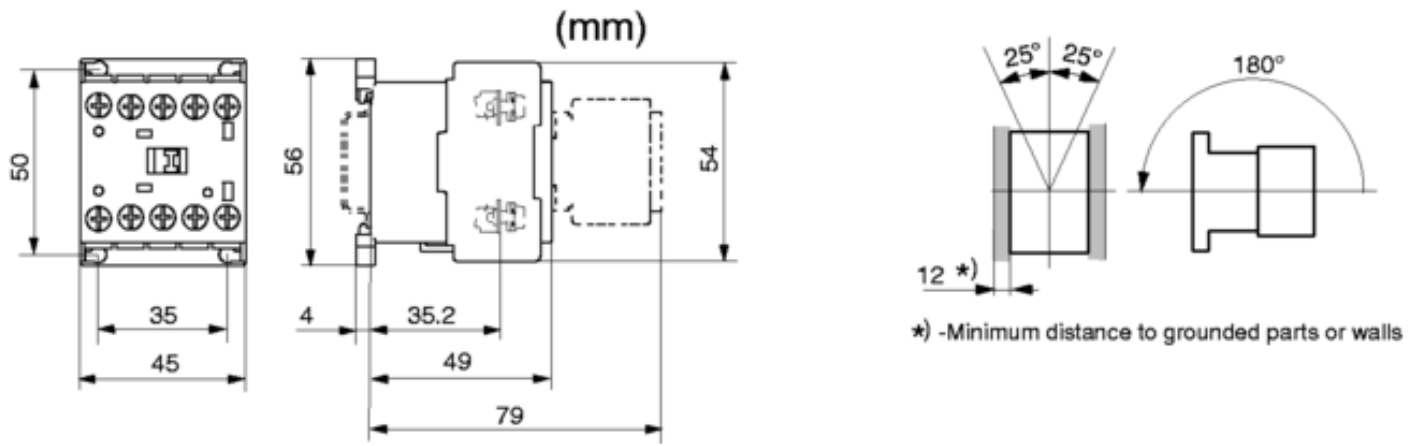
700-K			
Operating Limits			
AC control 50 Hz, 60 Hz, 50/60 Hz	pick-up	[x U _s]	0.85...1.1
	dropout	[x U _s]	0.2...0.75
DC control	pick-up	[x U _s]	0.8...1.1 9, 12, 24, 110V DC: 0.7...1.25
	dropout	[x U _s]	0.1...0.75
Coil Consumption			
AC control	pick-up	[VA/W]	35/32

50 Hz, 60 Hz, 50/60 Hz	hold-in	[VA/W]	5/1.8
DC control	pick-up	[W]	cold 3.0, warm 2.6
	hold-in	[W]	cold 3.0, warm 2.6
Operating Times			
AC	closing delay	[ms]	15...40
	opening delay	[ms]	15...33
With RC module	opening delay	[ms]	15...28
DC	closing delay	[ms]	18...40
	opening delay	[ms]	6...12
With integrated diode	opening delay	[ms]	8...12
With external diode	opening delay	[ms]	35...50

General Data

		700-K
Rated Isolation Voltage U_i		
IEC	[V]	690
UL, CSA	[V]	600
1 minute acc. to IEC 60947-5-1	[V]	—
Rated Impulse Voltage Withstand U_{imp}	[kV]	6
Rated Operating Voltage U_e		
AC 50/60 Hz	[V]	24, 48, 120, 230, 400, 500, 600, 690
DC	[V]	24, 48, 110, 220, 440
Rated Coil Frequency		AC 50/60 Hz, DC
Ambient Temperature		
Storage	[°C]	-55...+80
Operation at rated voltage	[°C]	-25...+60
at 70 °C		15% current reduction against 60 °C values
Climatic Withstand		—
Max. Altitude of Installation Site	[m]	2000 NN
Protection Class		IP2X
Auxiliary contact		—
Standards		IEC/EN 60947-1, -5-1, -5-4, UL 508, CSA 22.2. No. 14
Approvals		CE, cULus

Approximate Dimensions are shown in millimeters. Approximate Dimensions are not intended for manufacturing purposes.



Copyright © 2016 Rockwell Automation, Inc. All Rights Reserved.