



Bulletin 700-K — Miniature Control Relays

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

Certifications

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

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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

4-Pole AC or DC Coil Voltage

AC-12		AC-15 (B600)							Connection Diagrams	Contacts		Pkg. Qty. *	Screw Type Terminals Cat. No.	Spring Clamp Terminals 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-⊗	700-KR40E-⊗
										3	1	1	700-K31Z-⊗	700-KR31Z-⊗
										2	2	1	700-K22Z-⊗	700-KR22Z-⊗
										1+1L*	1+1L*	1	700-KL22Z-⊗	700-KRL22Z-⊗

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

⊗ 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

[M]	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	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	—	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 , $T_{amb.} = -25\text{ }^{\circ}\text{C} \dots +60\text{ }^{\circ}\text{C}$, normal position (horizontal rail mounting). Also valid for Bulletin 700-KR relays and Bulletin 100-KR auxiliary contacts. *





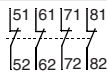
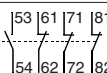
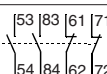
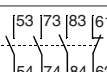
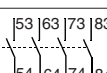
Auxiliary Contact Blocks		Control Relays 700-K (AC and DC Control)				
Circuit Diagram	Control	700-K22Z-⊗	700-K31Z-⊗	700-K40E-⊗	700-KL22Z-⊗	
Front Mounting						
100-KFA02E		AC/DC	—	31Z + 02E = 33Y *	40E + 02E = 42Y	—
100-KFA11E		AC/DC	22Z + 11E = 33Y	31Z + 11E = 42Y	40E + 11E = 51Y	L22Z + 11E = L33Y
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




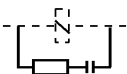
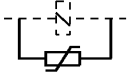
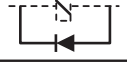
‡ $T_{amb.}$ max. +40 °C and only allowed for coil voltage 24V DC or 230V AC

Auxiliary Contact Blocks

	Description	Connection Diagrams			For Use With	Pkg. Qty. *	Screw Type Terminals	Spring Clamp Terminals
			N.O.	N.C.			Cat. No.	Cat. No.
	Front-mounted auxiliary contacts <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	100-KRFA02E
			1	1	100/104-K, 700-K	1	100-KFA11E	100-KRFA11E
			2	0	100/104-K, 700-K	1	100-KFA20E	100-KRFA20E
		0	4	100/104-K, 700-K	1	100-KFA04E	100-KRFA04E	
		1	3	100/104-K, 700-K	1	100-KFA13E	100-KRFA13E	
		2	2	100/104-K, 700-K	1	100-KFA22Z	100-KRFA22Z	
		3	1	100/104-K, 700-K	1	100-KFA31Z	100-KRFA31Z	
		4	0	100/104-K, 700-K	1	100-KFA40E	100-KRFA40E	



* 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.	
	Mechanical Interlock <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-K, 700-K (AC & DC Control)	1	100-KMCH	
	Surge Suppressor <ul style="list-style-type: none"> Plug-in type Limits surge voltage on coil drop-off 		100/104-K, 700-K	1 *	100-KFSC50	
				1 *	100-KFSC280	
				1 *	100-KFSC480	
			MOV Suppressor	100/104-K, 700-K	1 *	100-KFSV55
					1 *	100-KFSV136
	Diode Suppressor	100/104-K, 700-K	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



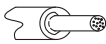
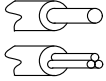
IEC Specifications

			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	

Bulletin 700-K
IEC Industrial Control Relays
 Specifications

			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

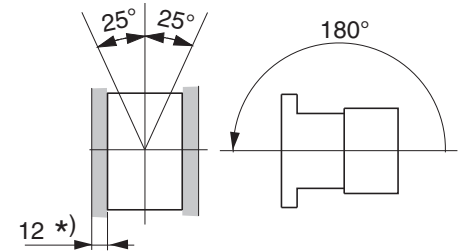
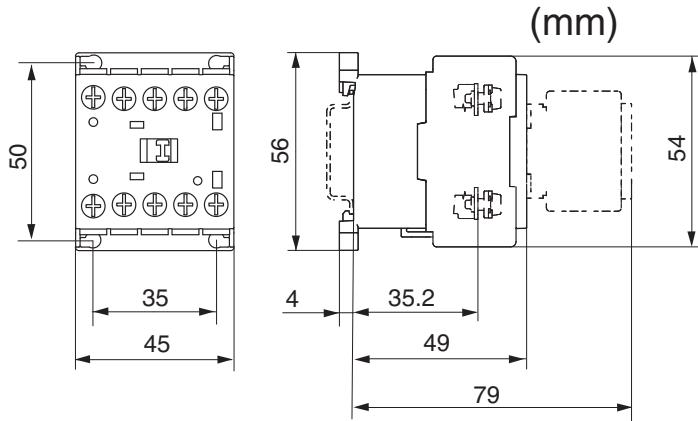
Conductor Cross Sections - Main Contacts, Auxiliary Contacts, and Coil Terminals				700-K	700-KR
Terminal type					
	Fine stranded with ferrule	(1) Conductor (2) Conductors	[mm ²] [mm ²]	0.75...2.5 0.75...2.5	0.50...2.5 0.50...2.5
	Solid or coarse stranded	(1) Conductor (2) Conductors	[mm ²] [mm ²]	1...4 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 50 Hz, 60 Hz, 50/60 Hz	pick-up	[VA/W]	35/32
	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

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



*) -Minimum distance to grounded parts or walls