

Magnetic Contactor

J7KC Series

**Best Match for upto 2.2 kW (240 VAC) *2,
5.5 kW (440 VAC) Motor and
Primary Side switches**



For the most recent information on models that have been certified for safety standards, refer to your OMRON website.

- Push-In Plus wiring Technology saves Wiring and Maintenance time
- World's smallest size (*1)
- Ideal for motor Control up to 2.2 kW (200 to 240 VAC) (*2), 5.5 kW (380 to 440 VAC), AC-3 class
- Magnetic Contactor with Mirror contacts according to EN 60947-4-1 in safety applications, whose switching function is controlled by a safety-related system
- High Contact Reliability (Min. 5 VDC, 3 mA) by Bifurcated contacts
- Coil surge absorber unit installed as standard (*3)
- Certified as compliant with the main safety standards

*1. According to OMRON investigation, as of August 2019.

For push-in models.

*2. Based on JIS C 8201-4-1

*3. DC operated

Refer to *Safety Precautions* on page 18.

Model Number Structure

Model Number Legend Order according to the format described in Ordering Information.

J7KC

(1) (2) (3) (4)

(1) Non-reversing/reversing

Code	
None	Non-reversing
R	Reversing

(2) Frame size

Code	
12	12 A

(3) Auxiliary contacts

Code	Contact form
10	SPST-1NO
01	SPST-1NC

(4) Coil voltage

Operation	Code	Coil voltage
AC-operated	AC 24	24 VAC
	AC 48	48 VAC
	AC 100	100 VAC
	AC 110	110 VAC
	AC 120	120 VAC
	AC 200	200 VAC
	AC 220	220 VAC
	AC 230	230 VAC
	AC 240	240 VAC
	AC 380	380 VAC
	AC 400	400 VAC
	AC 440	440 VAC
	AC 500	500 VAC

Operation	Code	Coil voltage
DC-operated	DC 12	12 VDC
	DC 24	24 VDC
	DC 48	48 VDC
	DC 60	60 VDC
	DC 100	100 VDC
	DC 110	110 VDC
	DC 120	120 VDC
	DC 200	200 VDC
	DC 210	210 VDC
	DC 220	220 VDC

J7KC Series

Ordering Information

Main unit

Product Type	Operation	Coil rating	Auxiliary contact	Model
Magnetic contactor	AC-operated	24 VAC	SPST-1NO	J7KC-12-10 AC24
			SPST-1NC	J7KC-12-01 AC24
		48 VAC	SPST-1NO	J7KC-12-10 AC48
			SPST-1NC	J7KC-12-01 AC48
		100 VAC	SPST-1NO	J7KC-12-10 AC100
			SPST-1NC	J7KC-12-01 AC100
		110 VAC	SPST-1NO	J7KC-12-10 AC110
			SPST-1NC	J7KC-12-01 AC110
		120 VAC	SPST-1NO	J7KC-12-10 AC120
			SPST-1NC	J7KC-12-01 AC120
		200 VAC	SPST-1NO	J7KC-12-10 AC200
			SPST-1NC	J7KC-12-01 AC200
		220 VAC	SPST-1NO	J7KC-12-10 AC220
			SPST-1NC	J7KC-12-01 AC220
		230 VAC	SPST-1NO	J7KC-12-10 AC230
			SPST-1NC	J7KC-12-01 AC230
		240 VAC	SPST-1NO	J7KC-12-10 AC240
			SPST-1NC	J7KC-12-01 AC240
		380 VAC	SPST-1NO	J7KC-12-10 AC380
			SPST-1NC	J7KC-12-01 AC380
		400 VAC	SPST-1NO	J7KC-12-10 AC400
			SPST-1NC	J7KC-12-01 AC400
		440 VAC	SPST-1NO	J7KC-12-10 AC440
			SPST-1NC	J7KC-12-01 AC440
		500 VAC	SPST-1NO	J7KC-12-10 AC500
			SPST-1NC	J7KC-12-01 AC500
	DC-operated (With built-in surge absorption unit)	12 VDC	SPST-1NO	J7KC-12-10 DC12
			SPST-1NC	J7KC-12-01 DC12
		24 VDC	SPST-1NO	J7KC-12-10 DC24
			SPST-1NC	J7KC-12-01 DC24
		48 VDC	SPST-1NO	J7KC-12-10 DC48
			SPST-1NC	J7KC-12-01 DC48
		60 VDC	SPST-1NO	J7KC-12-10 DC60
			SPST-1NC	J7KC-12-01 DC60
		100 VDC	SPST-1NO	J7KC-12-10 DC100
			SPST-1NC	J7KC-12-01 DC100
		110 VDC	SPST-1NO	J7KC-12-10 DC110
			SPST-1NC	J7KC-12-01 DC110
		120 VDC	SPST-1NO	J7KC-12-10 DC120
			SPST-1NC	J7KC-12-01 DC120
		200 VDC	SPST-1NO	J7KC-12-10 DC200
			SPST-1NC	J7KC-12-01 DC200
		210 VDC	SPST-1NO	J7KC-12-10 DC210
			SPST-1NC	J7KC-12-01 DC210
		220 VDC	SPST-1NO	J7KC-12-10 DC220
			SPST-1NC	J7KC-12-01 DC220

Product Type	Operation	Coil rating	Auxiliary contact	Model
Reversing magnetic contactor	AC-operated	24 VAC	SPST-2NO	J7KCR-12-10 AC24
			SPST-2NC	J7KCR-12-01 AC24
		48 VAC	SPST-2NO	J7KCR-12-10 AC48
			SPST-2NC	J7KCR-12-01 AC48
		100 VAC	SPST-2NO	J7KCR-12-10 AC100
			SPST-2NC	J7KCR-12-01 AC100
		110 VAC	SPST-2NO	J7KCR-12-10 AC110
			SPST-2NC	J7KCR-12-01 AC110
		120 VAC	SPST-2NO	J7KCR-12-10 AC120
			SPST-2NC	J7KCR-12-01 AC120
		200 VAC	SPST-2NO	J7KCR-12-10 AC200
			SPST-2NC	J7KCR-12-01 AC200
		220 VAC	SPST-2NO	J7KCR-12-10 AC220
			SPST-2NC	J7KCR-12-01 AC220
		230 VAC	SPST-2NO	J7KCR-12-10 AC230
			SPST-2NC	J7KCR-12-01 AC230
		240 VAC	SPST-2NO	J7KCR-12-10 AC240
			SPST-2NC	J7KCR-12-01 AC240
		380 VAC	SPST-2NO	J7KCR-12-10 AC380
			SPST-2NC	J7KCR-12-01 AC380
		400 VAC	SPST-2NO	J7KCR-12-10 AC400
			SPST-2NC	J7KCR-12-01 AC400
		440 VAC	SPST-2NO	J7KCR-12-10 AC440
			SPST-2NC	J7KCR-12-01 AC440
		500 VAC	SPST-2NO	J7KCR-12-10 AC500
			SPST-2NC	J7KCR-12-01 AC500
	DC-operated (With built-in surge absorption unit)	12 VDC	SPST-2NO	J7KCR-12-10 DC12
			SPST-2NC	J7KCR-12-01 DC12
		24 VDC	SPST-2NO	J7KCR-12-10 DC24
			SPST-2NC	J7KCR-12-01 DC24
		48 VDC	SPST-2NO	J7KCR-12-10 DC48
			SPST-2NC	J7KCR-12-01 DC48
		60 VDC	SPST-2NO	J7KCR-12-10 DC60
			SPST-2NC	J7KCR-12-01 DC60
		100 VDC	SPST-2NO	J7KCR-12-10 DC100
			SPST-2NC	J7KCR-12-01 DC100
		110 VDC	SPST-2NO	J7KCR-12-10 DC110
			SPST-2NC	J7KCR-12-01 DC110
		120 VDC	SPST-2NO	J7KCR-12-10 DC120
			SPST-2NC	J7KCR-12-01 DC120
		200 VDC	SPST-2NO	J7KCR-12-10 DC200
			SPST-2NC	J7KCR-12-01 DC200
		210 VDC	SPST-2NO	J7KCR-12-10 DC210
			SPST-2NC	J7KCR-12-01 DC210
		220 VDC	SPST-2NO	J7KCR-12-10 DC220
			SPST-2NC	J7KCR-12-01 DC220

J7KC Series

Options (Order Separately)

Auxiliary contact unit

Number of poles	Auxiliary contact	Model
2 poles	2PST-2NO	J73KC-AM-20
	2PST-1NO 1NC	J73KC-AM-11
	2PST-2NC	J73KC-AM-02
4 poles	4PST-4NO	J73KC-AM-40
	4PST-3NO 1NC	J73KC-AM-31
	4PST-2NO 2NC	J73KC-AM-22
	4PST-1NO 3NC	J73KC-AM-13
	4PST-4NC	J73KC-AM-04

Interlock unit

Model
J74KC-A

Reversing conductor kit

Type	Model
For main circuit	J75KC-WKR-A
For auxiliary circuit	J75KC-WKR-B

Coil surge absorption unit

Adopted Coil voltage type	LED indicator	Model
24-48 VAC	No	J76KC-RC-1
48-125 VAC		J76KC-RC-2
100-250 VAC		J76KC-RC-3
24-48 VAC	Yes	J76KC-RC-N-1
48-125 VAC		J76KC-RC-N-2

Insulation stop

Model	Minimum order (bag)
J77KC-K	1 (30 pcs./bag)

Tools for removal

Model
J78KC

Ratings/Specifications

The ratings/specifications are the same for both non-reversing/reversing types.

Coil rating

AC operated

Displayed model	Rated voltage		Allowable voltage range			Must operate voltage	Must release voltage
	50 Hz	60 Hz		50 Hz	60 Hz		
AC 24	24 VAC	24-26 VAC	85 to 110%	21-27 VAC	21-29 VAC	85% max.	20% min.
AC 48	48 VAC	48-52 VAC		41-53 VAC	41-58 VAC		
AC 100	100 VAC	100-110 VAC		85-110 VAC	85-121 VAC		
AC 110	100-110 VAC	110-120 VAC		85-121 VAC	94-132 VAC		
AC 120	110-120 VAC	120-130 VAC		94-132 VAC	102-143 VAC		
AC 200	200 VAC	200-220 VAC		170-220 VAC	170-242 VAC		
AC 220	200-220 VAC	220-240 VAC		170-242 VAC	187-264 VAC		
AC 230	220-230 VAC	230 VAC		187-253 VAC	196-253 VAC		
AC 240	220-240 VAC	240-260 VAC		187-264 VAC	204-286 VAC		
AC 380	346-380 VAC	380-420 VAC		295-418 VAC	323-462 VAC		
AC 400	380-400 VAC	400-440 VAC		323-440 VAC	340-484 VAC		
AC 440	415-440 VAC	440-480 VAC		353-484 VAC	374-528 VAC		
AC 500	480-500 VAC	500-550 VAC		408-550 VAC	425-605 VAC		

DC operated

Displayed model	Rated voltage	Allowable voltage range		Must operate voltage	Must release voltage
DC 12	12 VDC	85 to 110%	11-14 VDC	85% max.	10% min.
DC 24	24 VDC		21-27 VDC		
DC 48	48 VDC		41-53 VDC		
DC 60	60 VDC		51-66 VDC		
DC 100	100 VDC		85-110 VDC		
DC 110	110 VDC		94-121 VDC		
DC 120	120 VDC		102-132 VDC		
DC 200	200 VDC		170-220 VDC		
DC 210	210 VDC		179-231 VDC		
DC 220	220 VDC		187-242 VDC		

Coil characteristics (reference value)

AC operated

Frequency		50 Hz	60 Hz
Coil power consumption	Making (VA)	22 (200 V)	25 (220 V)
	Holding (VA)	4.5 (200 V)	4.5 (220 V)
Power loss (W)		1.2 (200 V)	1.3 (220 V)
Must operate voltage (V)		122 to 135	128 to 138
Must release voltage (V)		80 to 89	83 to 96
Operate time (ms)		17 to 26	
Release time (ms)		6 to 16	

Note: 1. Coil ratings: Characteristics for 200 VAC, 50 Hz / 200-220 VAC, 60 Hz
 2. Coil power consumption value is the same for a coil that is not rated 200 VAC.
 3. Indicated operate/release times for 200 VAC, 50 Hz.
 4. Closed and open voltages of 100 V coil (100 VAC, 50 Hz/100-110 VAC, 60 Hz) are approximately one half the values in the table above.
 5. Values in the table above are examples for 20°C cold condition.

DC operated

Coil power consumption	Making (W)	2.4 (24 V)
	Holding (W)	2.2 (24 V)
Time constant (ms)	Holding	20
Must operate voltage (V)		10 to 11
Must release voltage (V)		4 to 6
Operate time (ms)		34 to 60
Release time (ms)		5 to 10

Note: 1. Coil ratings: Characteristics for 24 VDC
 2. Coil power consumption value is the same for a coil that is not rated 24 VDC.
 3. Values in the table above are examples for 20°C cold condition.

Ratings/Characteristics

Main circuit rating	Rating based on IEC 60947-4-1	AC-1 (Resistive load)	Voltage range (V)		AC200-240 AC		AC380-440 AC						
			Rated operational current (A)		15		15						
		AC-3 (3-phase cage motor)	Voltage range (V)		200-240 AC		380-440 AC		500-550 AC		600-690 AC		
			Rated capacity (kW)		3		5.5		5.5		4		
			Rated operational current (A)		12		12		9		5		
		AC-4 (3-phase cage motor)	Voltage range (V)		200-240 AC		380-440 AC		500-550 AC		600-690 AC		
			Rated capacity (kW)		3		5.5		5.5		4		
			Rated operational current (A)		12		12		9		5		
		DC-1 (Resistive load L/R ≤ 1 ms)	Voltage range (V)		24 DC		48 DC		110 DC		220 DC		
			Rated operational current (A)	Number of serial contacts 1		12		12		6		1	
				Number of serial contacts 2		12		12		9		4	
				Number of serial contacts 3		12		12		12		12	
		DC-3, DC-5 (DC motor load L/R ≤ 15 ms)	Voltage range (V)		24 DC		48 DC		110 DC		220 DC		
			Rated operational current (A)	Number of serial contacts 1		4		1.5		1		0.3	
				Number of serial contacts 2		10		3		2		0.8	
				Number of serial contacts 3		12		6		5		1.5	
		Conventional free air thermal current (rated flowing current) (A)			15								
	Rating based on UL 60947-4-1, CSA C22.2	3-phase motor	Voltage range (V)		200 AC		220-240 AC		440-480 AC		550-600 AC		
			Rated capacity (HP)		3		3		5		5		
			Rated operational current (A)		11		9.6		7.6		6.1		
			Rated current (A)		15								
		Single-phase motor	Voltage range (V)		110-120 AC		200 AC				220-240 AC		
			Rated capacity (HP)		3/4		1-1/2				2		
			Rated operational current (A)		13.8		11.5				12		
			Rated current (A)		15								
		FUSE			30A (Class K5, RK5)								
		Rating based on JIS C 8201-4-1	AC-1 (resistive load)	Voltage range (V)		200-240 AC			380-440 AC				
				Rated operational current (A)		15			15				
	AC-3 (3-phase cage motor)		Voltage range (V)		200-240 AC			380-440 AC			500-550 AC		
			Rated capacity (kW)		2.2			5.5			5.5		
			Rated operational current (A)		12			12			9		
	DC-1 (Resistive load L/R ≤ 1 ms)		Voltage range (V)		24 DC		48 DC		110 DC		220 DC		
			Rated operational current (A)	Number of serial contacts 1		12		12		6		1	
				Number of serial contacts 2		12		12		9		4	
				Number of serial contacts 3		12		12		12		12	
	DC-3, DC-5 (DC motor load L/R ≤ 15 ms)		Voltage range (V)		24 DC		48 DC		110 DC		220 DC		
			Rated operational current (A)	Number of serial contacts 1		4		1.5		1		0.3	
				Number of serial contacts 2		10		3		2		0.8	
				Number of serial contacts 3		12		6		5		1.5	
	Conventional free air thermal current (rated flowing current) (A)			15									
	Minimum operate voltage/current (reference value)			24 VDC 10 mA									
	Electrical/ mechanical endurance	Voltage range (V)		220 AC				440 AC					
		Rated operational current (A)		12				12					
		Contact closed current (A)		144				144					
		Breaking current (A)		120				120					
		Switching frequency (times per hour)		1800				1800					
		Endurance (10,000 operations min.)		Mechanical		1000				1000			
				Electrical (AC3)		100 *							
	Contact resistance (reference value)			10 mΩ max. (6 VDC, 1 mA, voltage drop method)									

* The electrical endurance is the value at 200 V based on the electrical endurance test conditions assumed in the IEC/JIS standards, and will vary depending on the characteristics and load conditions of the motor you use. A large motor starting current may cause a decrease of electrical endurance or contact sticking.

Auxiliary circuit rating	Rating based on IEC 60947-5-1/ JIS C 8201-5-1	Voltage range (V)		100-120 AC	200-240 AC	380-440 AC	500-600 AC	24 DC	48 DC	110 DC	220 DC	
		Rated operational current (A)	AC-15 (coil load)						DC-13 (coil load)			
			3	3	1	0.5	2	1	0.3	0.2		
			AC-12 (resistive load)						DC-12 (resistive load)			
			6	6	6	3	3	2	1.5	0.5		
		Contact closed and breaking current (A)	30	30	10	5	30	30	10	5		
	Conventional free air thermal current (rated flowing current) (A)	10										
	Rating based on UL 508	Rated carry current (A)		10						2.5		
		Voltage range (V)		120 AC	240 AC	480 AC	600 AC	125 DC	250 DC			
		Contact closed current (A)		60	30	15	12	0.55	0.27			
		Breaking current (A)		6	3	1.5	1.2	0.55	0.27			
		Rating code		A 600						Q 300		
	Minimum operate voltage/current (reference value)		3 mA at 5 VDC									
	Electrical/ mechanical endurance	Switching frequency (times per hour)		1800								
		Mechanical (10,000 cycles min.)		1000								
		Electrical (10,000 cycles min.)	AC-15	220 V	50							
				440 V	50							
			AC-12	220 V	25							
				440 V	25							
			DC-13	220 V	15							
	DC-12		220 V	50								
	Contact resistance (reference value)		50 mΩ max. (6 VDC, 1 mA, voltage drop method)									
Rated insulation voltage		690 VAC										
Rated impulse dielectric strength		6 kV										
Rated frequency		50/60 Hz										
Vibration resistance		Vibration: 10 to 55 Hz, acceleration: 15 m/s ²										
Shock resistance		Shock value 50 m/s ²										
Contact form		Double break form (main circuit: single contacts, auxiliary circuit: bifurcated contacts)										
Contact material		Ag alloy										
Mirror contact		Available *										
Degree of protection		IP20 (IEC60529)										
Operating temperature		-10 to +55°C (however, daily average shall not exceed 35°C)										
Ambient storage temperature		-40 to +65°C (no condensation or icing)										
Relative humidity		45% to 85% RH (no condensation or icing)										
Altitude		2000 m max.										
Weight		160 g (J7KC-□-AC)/190 g (J7KC-□-DC)/400 g (J7KCR-□-AC)/460 g (J7KCR-□-DC)										
Applicable Standards		Safety standard		EN 60947-4-1(IEC 60947-4-1), UL 60947-4-1, CSA 22.2 No.60947-4-1, CCC GB/T14048.4, UKCA								

* A mirror contact is a mechanism found mainly in contactors.

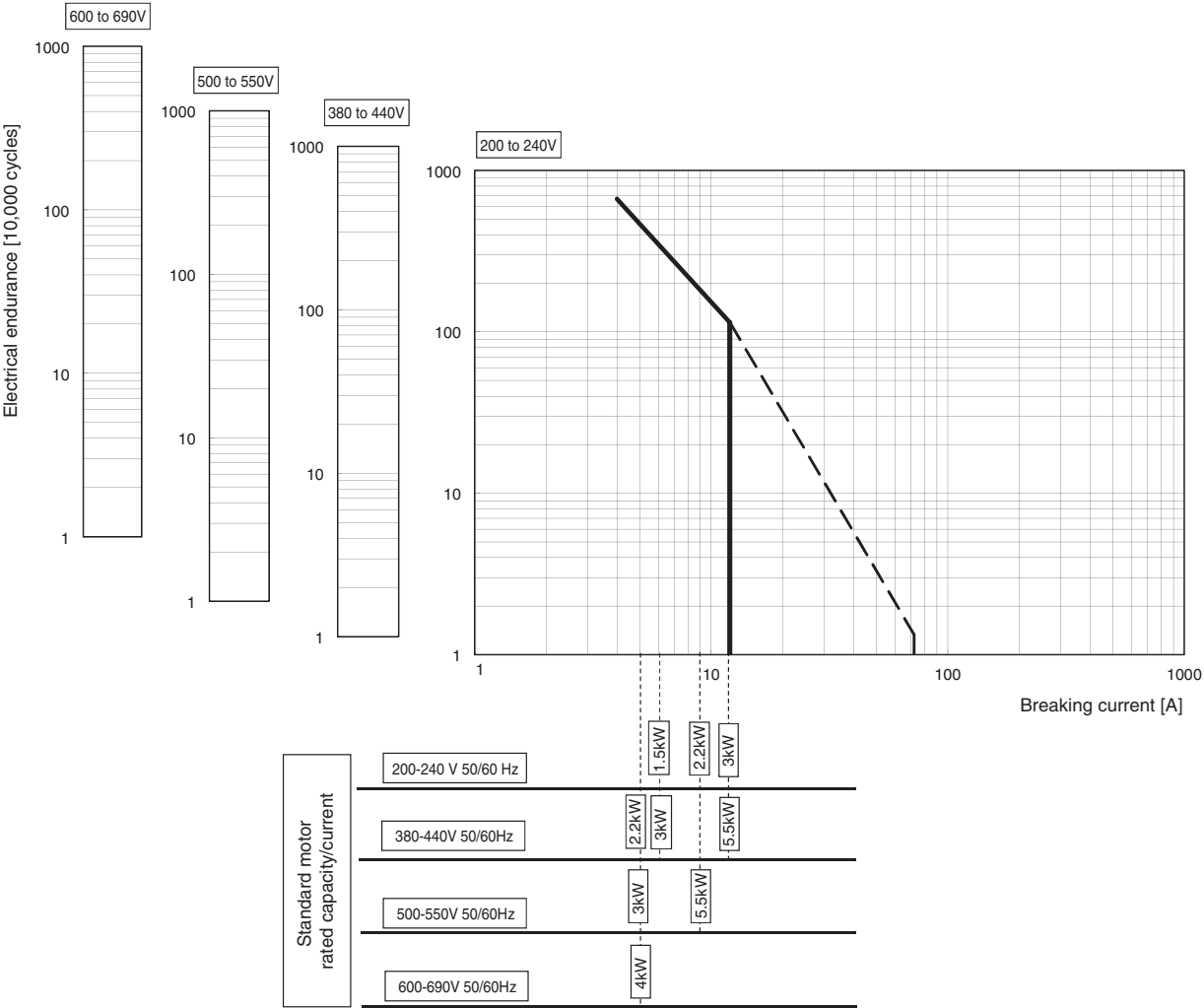
With the combination of the main circuit and the auxiliary circuit of the main unit, welding the main contacts will result in a structure that secures a shock resistance voltage of 2.5 kV or more, or a contact interval of 0.5 mm or more, for all of the auxiliary circuit NC contacts even if the excitation of the coil is released. The main contact may turn on even if the auxiliary circuit is welded. Even with the combined usage of the auxiliary contact unit (J73KC-AM), welding the main contact in the main unit will create a mirror contact surface where the attached auxiliary contact (NC contact) is separated.

J7KC Series

Engineering Data

Electrical endurance curves

AC-3 breaking current and electrical endurance curve (Based on IEC 60947-4-1)



AC-1 breaking current and electrical endurance curve (for resistive load) (Based on IEC 60947-4-1)

