OMRON

Magnetic Contactor
J7KC Series

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

- 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

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

⚠ Refer to *Safety Precautions* on page 18.

Model Number Structure

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

J7KC□-12-□□ □□□□

(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

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**

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	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.

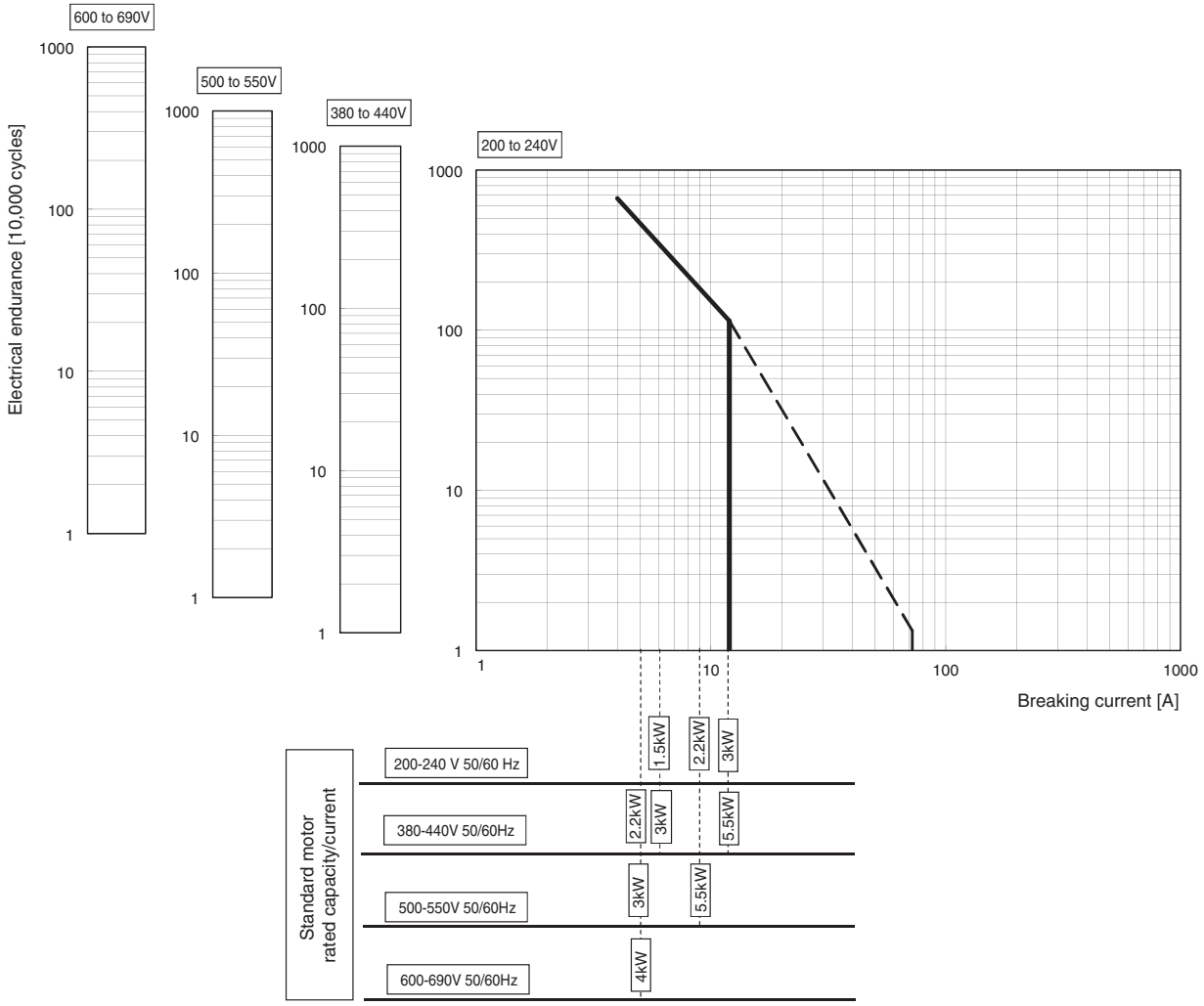
Auxiliary circuit rating	Rating based on IEC 60947-5-1/ JIS C 8201-5-1	Voltage range (V)			100-120 AC	200-240 AC	380-440 AC	500-600 AC	24 DC	48 DC	110 DC	220 DC
		Rated operational current (A)			AC-15 (coil load)				DC-13 (coil load)			
					3	3	1	0.5	2	1	0.3	0.2
					AC-12 (resistive load)				DC-12 (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.

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)