

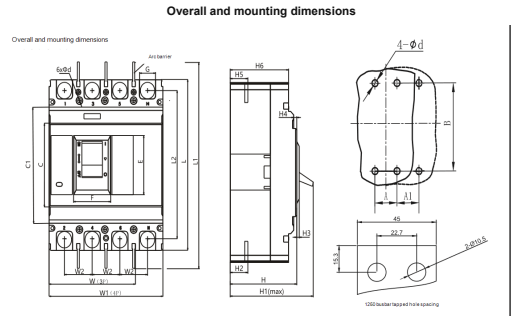


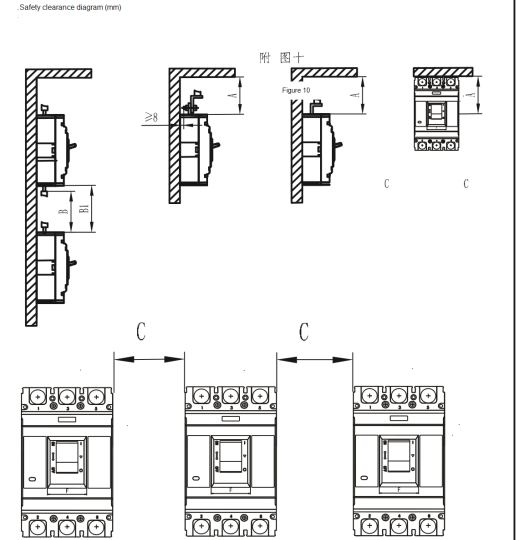
Table 7																	
Model	Overall dimensions										Mounting				Terminal screw		
	C	C1	E	F	G	H	H1	H2	H3	H4	L	L1	A	B			
JUM7-63/125	92	92.5	26	17.5	71	33.1	21	3.1	21	61.5	130	235	25	25	118	M6-12	
JUM7-160	92	92	32	17	77	38	25	3	3	26	64.5	150	255	33	33	128	M8-20
JUM7-250	100	94	37.5	22	91	40	23.5	3	3	23.5	68	160	267	33	33	130	M8-20
JUM7-400/630	126	116	50	34	110	53.1	39	3	3	28	86.5	230	324	44	50	164	M10-26
JUM7-800	132	124	53	38	121	118.5	40	3.5	3	32.5	100.5	271	321	58	58	200	M12-30
JUM7-1000/1250	138	124	53	38	117	100	41.4	3	3	32.5	42	103	280	438	70	243	M12-30
JUM7-1250	138	130	102.5	43	119	104	31.5	3	3	36	107	276.5	452	70	7	241	M10-26

Additional widths: W (3P) / W1 (4P) / W2, and L2, as marked on the drawing. "—" means not applicable.

Table 8									
Rated current (A)	16	16-20	25	32	40	50	63	100	125
Conductor (mm²)	1.5	2.5	4	6	10	16	25	35	50

Rated current (A)	Cable cross-section		Copper busbar	
	Qty	Section (mm²)	Qty	Size (mm/mm)
300	2	120	2	30*3
630	2	185	2	40*5
700/800	2	240	2	50*5
1000/1000	2	—	2	60*5
1000/1250	2	—	2	60*5

Frame	Terminal screw	Torque (N·m)
63/125	M6-12	3.5-4.5
160	M8-20	9.5-10.5
250	M8-20	9.5-10.5
400/630	M10-26/M10-30	18.5-20.5
800	M10-30	18.5-20.5
1000/1000	M12-30	25.9-30.9
1250	M12	25.9-30.9



Model	A (mm)	B (mm)	B1 (mm)	C (mm)
JUM7-63/125	60	60	Bare conductor length + B	30
JUM7-160/250	60	60		30
JUM7-400/630	110	110	Bare conductor length + B	70
JUM7-800/1250	110	110		70

7. Installation, Use and Maintenance

7.1 Connecting conductors
Use single-core PVC-insulated copper conductors, or equivalent copper busbar, with the cross-section selected from Table 8. Before installation, check the packing list (Table 11) and read the notes in this manual carefully.

7.2 Main circuit wiring
A. Front connection: using PVC copper conductor of the section specified in 7.1, strip a suitable length of insulation, insert it into the hole of the terminal lug and crimp the outer sleeve firmly onto the conductor; then fix the lug hole to the breaker terminal with the screw. For busbar, first fix the connecting plate to the breaker, then fix the busbar to it.
B. Rear connection: fix the connecting plate as shown, then fix the corresponding conductor.

7.2.2 Auxiliary circuit wiring
Wire the auxiliary circuit as marked on the breaker nameplate.

7.2.3
Fit insulating barriers between the poles of the breaker.

7.2.4 Check
Before the breaker is put into service, check it against the installation requirements: all fixed connections must be secure, and after operating the breaker several times the mechanism must be free and reliable.

7.3 Use and maintenance
7.3.1 When selecting the breaker, its technical parameters must match the actual requirements.
7.3.2 All characteristics and accessories are set by the manufacturer and must not be adjusted arbitrarily in use.
7.3.3 After an overload or short-circuit trip, clear the fault before closing the breaker again.
7.3.4 Inspect periodically, remove dust from the surface of the case and maintain good insulation.
7.3.5 The breaker must not be dropped or exposed to rain during use, storage or transport.

8. Common Faults and Remedies
Faults in service can arise from several causes. Apart from loose line connections and fasteners, a sticking mechanism, and correct selection of the relevant technical parameters -- which the user's qualified personnel may check and correct -- the analysis of other faults, the method of correction, the replacement of parts and the re-adjustment of parameters must be carried out by qualified technical personnel of the manufacturer.

9. Other
9.1 In addition to the internal and external accessories specified in 4.3, terminal lugs and connecting plates can be supplied at the customer's request.
9.2 The documents supplied with the product are the certificate of conformity and this instruction manual. The packing list is given in Table 11.
9.3 When installed and used, the breaker must be kept at the distances from other electrical components shown in Figure 10 and Table 10.

10. Notes
10.1 After the product has been put into normal service, it should be tested once a month and a test record kept.
10.2 The company does not accept warranty liability for non-quality problems caused by incorrect installation or use, or for terminals burnt out by incorrect wiring.
10.3 If any problem arises in use, contact your distributor or the JUTRION customer service centre.

No.	Item	Unit	Qty
1	Circuit breaker	pc	1
2	Arc barrier	pc	3P: 4 / 4P: 6
3	Mounting screws (flat and spring washers)	set	3P: 4 / 4P: 4
4	Instruction manual	copy	1
5	Certificate of conformity	sheet	1



INSTRUCTION MANUAL

JUM7 Series Moulded Case Circuit Breaker

- Do not break the seal. Doing so may lead to unsafe consequences.
- If the product is supplied with a protective cover or arc barrier, these must be fitted before use, otherwise unsafe consequences may result.
- Wiring of this breaker must be carried out by suitably qualified personnel.
- Never operate the breaker with wet hands or touch live parts (conductors, terminals); electric shock or burns may result.
- If the breaker has opened because of a fault in the protected circuit (overload or short circuit), the cause must be found and the fault cleared before the breaker is closed again.
- Short-circuit characteristic tests must be carried out with dedicated test equipment approved by the relevant national authority. Testing by direct contact with a live phase conductor is strictly prohibited.

Caution:

- The place of installation must be free from explosion risk and corrosive gases, and protected against damp, dust, vibration and direct sunlight.
- Before installation, check that the basic parameters on the nameplate meet the requirements. Operate the breaker manually to close and open three times and check that the mechanism does not stick; operate the test button and confirm the mechanism acts reliably and is undamaged before installing.
- To prevent phase-to-phase arcing, insulate bare incoming conductors and copper busbars.
- When installing the breaker, select conductors able to carry the corresponding current.
- Front-connected breakers may be mounted on a metal frame or an insulating board; rear-connected breakers must be mounted on an insulating board.
- Once the breaker is in service, the user should keep an operating record and establish a corresponding management system.
- Inspect the breaker every six months. Isolate the supply, operate the handle to close and open the breaker three times and check that the mechanism is reliable. Check the insulation resistance between the breaker and the mounting board, remove dust from the surface of the case and maintain good insulation. If the insulation resistance is less than 20 MΩ, the breaker must be replaced.

Insulation test

The insulation test specified by the standard is carried out before despatch. If the test is repeated before installation, proceed as follows:

- Use a 1000 V DC insulation tester.
- The insulation resistance must be not less than 20 MΩ.
- Measure between the breaker contacts, between phases, and between each phase and the case (cover the case with metal foil).
- For an undervoltage release connected to the main circuit, measure between the incoming terminals and the breaker case.

Note: If no insulation tester is available, a power-frequency withstand voltage tester may be used instead. Measure at the points described above, applying 2000 V for 5 s.

1. Main Applications and Scope

The JUM7 series moulded case circuit breaker (hereinafter "the breaker") is a completely new breaker developed by our company, with a new industrial appearance design that gives the product a modern, high-quality look. The range covers frame currents from 63 A to 1250 A. The product is compact, has a high breaking capacity and a short arc travel, and a rated insulation voltage of 1140 V. It is suitable for AC 50 Hz distribution networks with a rated operational voltage up to 400 V / 690 V and rated operational currents from 6 A to 1250 A, for distributing electrical energy and for protecting cables and supply equipment against overload, short circuit and undervoltage faults. It also provides infrequent changeover of circuits, infrequent starting of motors, and overload, short-circuit and undervoltage protection.

The breaker provides an isolating function; the corresponding symbol is shown on the product.

The breaker may be mounted vertically or horizontally.

The product complies with IEC 60947-2 and GB/T 14048.2.

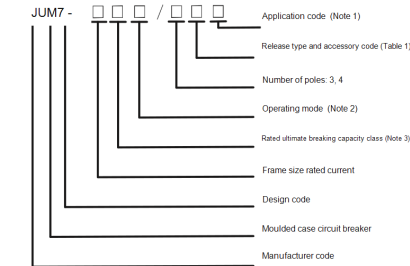
2. Normal Service and Installation Conditions

2.1 Normal service conditions

- Degree of protection IP30; pollution degree 3.
- Ambient air temperature not higher than +40 °C (+40 °C for marine products) and not lower than -5 °C, with a 24 h mean not exceeding +35 °C.
- Altitude of the place of installation not exceeding 2000 m.
- At an ambient temperature of +40 °C the relative humidity must not exceed 50 %. A higher relative humidity is permissible at lower temperatures, for example 90 % at 20 °C. Special measures must be taken for condensation that occurs occasionally as a result of temperature change.
- In a medium free from explosion risk, and free from gases or conductive dust sufficient to corrode metal or damage insulation.
- In a place not subject to rain or snow.
- Mounting arrangements: fixed front connection, fixed rear connection, plug-in front connection, plug-in rear connection or draw-out.

3. Model and Specification

3.1 Model designation



- Application code: "1" for distribution protection (may be omitted); "2" for motor protection.
- Operating mode: no code for manual operation; "P" for motor operation; "Z" for rotary handle operating mechanism.
- Breaking capacity class: L — standard type; M — higher type; H — high breaking capacity type.

Table 1 Release type and accessory codes																		
Accessory	Release type																	
Release type	None	Alarm contact	Shunt release	Prepayment shunt release	Auxiliary contact	Undervoltage release	Shunt release + auxiliary contact	Shunt release + undervoltage release	Two groups of auxiliary contacts	Auxiliary contact + undervoltage release	Shunt release + alarm contact	Auxiliary contact + alarm contact	Undervoltage release + alarm contact	Shunt release + auxiliary contact + alarm contact	Two groups of auxiliary contacts + alarm contact	Auxiliary contact + undervoltage release + alarm contact		
Instantaneous release	200	208	210	210Y	220	230	240	250	260	270	218	228	238	248	268	278		
Thermal-magnetic release	300	308	310	310Y	320	330	340	350	360	370	318	328	338	348	368	378		

3.2 Classification

- By connection method: front connection and rear connection.
- By overcurrent release type: thermal-magnetic (compound) type and magnetic (instantaneous) type.
- By accessory devices: with and without accessory devices. Accessories are divided into internal and external devices. Internal devices comprise five types: shunt release, prepayment shunt release, undervoltage release, auxiliary contact and alarm contact. External devices include the rotary handle operating mechanism and the motor operating mechanism.

4. Main Technical Data

4.1 Basic specifications and parameters — Table 2

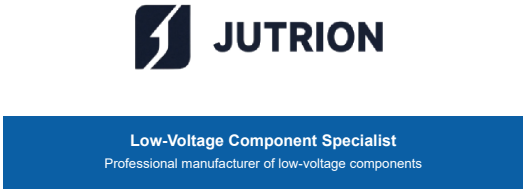
Table 2 Basic specifications and parameters							
Model	Frame current I _{nb} (A)	Breaking capacity I _{cn} (kA) V _{ins} 415 V/ 480 V			Poles	Rated current I _n (A)	
		Class	I _{cn}	I _{cn}			
JUM7-63	63	M	250	18	3P/4P	6, 10, 16, 20, 32, 40, 50, 63	
		M	50	30			
JUM7-125	125	M	50	22		80, 100, 125 (125 type 16-125 A)	
		M	50	30			
JUM7-160	160	L	350	22	3P/4P	80, 100, 125, 140, 160	
		M	250	25			
		M	350	25			
JUM7-250	250	M	500	25		100, 125, 140, 160, 180, 200, 225, 250	
		M	500	30			
JUM7-400	400	M	500	30	3P/4P	250, 315, 350, 400	
		M	800	30			
		M	1000	30			
		M	1000	35			
JUM7-630	630	M	800	30	3P/4P	400, 500, 630	
		M	1000	30			
		M	250	35			
		M	800	35			
JUM7-800	800	M	800	30	3P/4P	630, 700, 800	
		M	1000	30			
		M	350	35			
		M	800	35			
JUM7-1000	1000	M	800	30	3P/4P	800, 1000	
		M	1000	30			
		M	1000	35			
		M	1000	35			
JUM7-1250	1250	M	800	30	3P/4P	800, 1000, 1250	
		M	1000	30			

4.2 Overcurrent release types

The thermal release has an inverse time-current characteristic and the magnetic release has an instantaneous characteristic. See Table 3 (distribution protection) and Table 4 (motor protection).

Table 3 Distribution protection characteristics			
Release rated current (A)	Thermal release (ambient +30 °C)		Magnetic release operating current (A)
	1.05 I _n (cold) non-operating time (h)	1.1 I _n (hot) operating time (h)	
I _n ≤ 63 A	≥ 1 h	< 1 h	< 50 A: 500 A ±20 % ≥ 50 A: 10 I _n ±20 % (trip time ≤ 0.2 s)
I _n > 63 A	≥ 2 h	< 2 h	

Table 4 Motor protection characteristics		
Release rated current (A)	Thermal release (ambient +40 °C)	
	1.0 I _n (cold) non-operating time (h)	1.1 I _n (hot) operating time (h)
I _n ≤ 63 A	≥ 2 h	< 2 h
I _n > 63 A	≥ 2 h	< 2 h



JUM7 SERIES

FUTURE SERIES

MOULDED CASE CIRCUIT BREAKER

INSTRUCTION MANUAL

Standards: IEC 60947-2
GB/T 14048.2

JUTRION ELECTRIC CO., LTD.

For your personal safety, read this manual carefully before installation and use.

www.jutron.com | sales@jutron.com
WhatsApp: +86 150 6847 6965

4.3 Technical data of accessory devices

(1) Rated values of the auxiliary and alarm contacts are given in Table 5.

Type	Table 5		
	Frame size rated current I _{nb} (A)	Conventional thermal current I _{th} (A)	Rated operational current at AC 400 V, I _n (A)
Auxiliary contact	≥ 225 A	3	0.4
	400 A ~ 630 A	6	3
Alarm contact	800 A ~ 1250 A	9	3
	all currents	1	0.3

(2) Shunt release. The shunt release opens the breaker reliably at any voltage between 70 % and 110 % of the rated supply voltage. The shunt release must not be energised continuously for more than 5 s, otherwise it will burn out. When the shunt release control supply is DC 24 V, the rated current of the control circuit reaches 4.5-6.5 A and the maximum length of the copper conductor must not exceed the requirement of Table 6.

(3) Undervoltage release. When the voltage falls (even slowly) to between 70 % and 35 % of the rated voltage, the undervoltage release shall operate. Below 35 % of the rated voltage of the release, the undervoltage release prevents the breaker from closing. At 85 % of the rated voltage or above, the undervoltage release allows the breaker to close reliably. Rated values of the undervoltage release: AC 50 Hz, 230 V and 400 V.

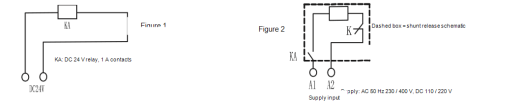
Reminder: a breaker fitted with an undervoltage release can only be reset and closed when the release is energised at its rated voltage; otherwise the breaker will be damaged.

(4) Auxiliary contacts. The auxiliary contacts of the breaker are arranged in two groups; the contacts within each group are not electrically separated. Parameters are given in Table 5.

(5) Alarm contact. The rated operational voltage and related parameters of the alarm contact are given in Table 5. The alarm contact does not operate when the breaker is opened normally; it changes from its original position only after a free trip or a fault trip.

Table 6		2.5 mm²
U _n : DC 24 V — conductor section		
100 % U _n		250 m
85 % U _n		160 m

Reminder: if the above requirement cannot be met, design the shunt release circuit as shown in Figure 1 or Figure 2.



4.4 Rated insulation voltage
U_i: 1140 V. Rated impulse withstand voltage U_{imp}: 8 kV

4.5 Arcing distance

Vertical: ≤ 50 mm (JUM7-63, 125, 250); ≤ 100 mm (JUM7-400, 630); ≤ 100 mm (JUM7-800, 1000, 1250).
Lateral: ≤ 0 mm (JUM7-63, 125, 250); ≤ 0 mm (JUM7-400, 630); ≤ 0 mm (JUM7-800).
Front and rear: ≤ 50 mm (JUM7-125, 250); ≤ 100 mm (JUM7-400, 630, 800); ≤ 100 mm (JUM7-1000, 1250).

5. Overall and Mounting Dimensions

See the outline drawing and Table 7 (page 05).

6. External Conductors, Screw Torque and Safety Clearances

Connecting conductors and cross-sections for the corresponding rated currents are given in Table 8; screw tightening torques in Table 9; safety clearances in Figure 10 and Table 10.