


YCM8LE series

EARTH-LEAKAGE
CIRCUIT-BREAKER
OPERATION INSTRUCTION

Standard: IEC60947-2

CNC Deliver
Power For Better Life

-  Before installing and using this product, please read this manual carefully and pay more attention to safety.

YCM8LE series

EARTH-LEAKAGE CIRCUIT-BREAKER

1.Application rangal

M1L Series Earth-leakage circuit-breaker (hereafter simply referred to as breakers) are mainly suitable for turn-on or turn-off not frequently and starting a motor not frequently in the circuit of AC50Hz, rated working voltage 400V and rated current up to 800A . The breakers have overload, short-circuit and under voltage protection devices, so as to protect the circuit and the power equipment against damage. Synchronously, the breakers provide indirect contact protection for man, and protect the fire damage may caused by long-term existed earth fault, which can't be examined by the over-current protection device.

2.Normal Use, Installation, and Transportation, Storage Conditions

2.1 Use Conditions:

2.1.1 Ambient temperature: -5°C to $+40^{\circ}\text{C}$.

2.1.2 Air conditions: At the mounting site, the relative-humidity should not exceed 50% at the maximum temperature of $+40^{\circ}\text{C}$. For the wettest month, the maximum average relative humidity should be 90% while the lowest average temperature in that month is $+20^{\circ}\text{C}$. Special measures should be taken to prevent condensation.

2.1.3 Altitude: $\leq 2000\text{m}$.

2.1.4 Pollution degree: 2.

2.1.5 Protection degree: Ip20.

- 2.1.6 The installation category is II and III.
- 2.1.7 This product is not suitable for directly starting high inductive and high capacitive loads such as fans, motors, electric heaters, capacitor cabinets, etc.
- 2.1.8 This product does not provide protection against electric shock hazards caused by simultaneous contact with both protected circuit wires.

2.2 Installation Conditions:

- 2.2.1 The external magnetic field at the installation site should not exceed 5 times the geomagnetic field, while adhering to safety precautions. Residual current operated circuit breakers should generally be installed directly, in a location free from shaking, impact, and vibration.
- 2.2.2 The product must not be installed in environments containing flammable or explosive gases, or in damp and condensing areas. It is strictly prohibited to operate the product with wet hands.
- 2.2.3 Do not install the product in locations where the gas medium can corrode metal or damage insulation.
- 2.2.4 The product must be wired and installed by qualified personnel, who should also conduct regular inspections.
- 2.2.5 Please strictly follow the wiring diagram for correct wiring of the product.
- 2.2.6 During installation and use, the terminal screws should be tightened, and the wires should not be

loose or pulled out. Select wires according to the requirements and connect them to the power source and load as specified.

2.2.7 Foreign objects should be prevented from entering the product to avoid affecting its normal operation.

2.3 Packaging, Transportation, and Storage Conditions:

2.3.1 Ensure secure packaging to prevent any damage during transportation and handling.

2.3.2 Use appropriate packaging materials such as sturdy cartons or boxes to provide sufficient impact and moisture protection.

2.3.3 Use suitable cushioning materials such as foam or bubble wrap to provide additional protection and prevent any physical damage.

2.3.4 Securely seal the packaging with strong adhesive tape or strapping to ensure the contents remain intact.

2.3.5 Handle with care during transportation to avoid any physical damage.

2.3.6 During storage and transportation, avoid dropping or exposure to rainwater or corrosive gases.

2.3.7 If transporting the product by vehicle, ensure proper fixation to prevent movement or damage during transit.

2.3.8 Comply with all applicable transportation regulations and guidelines for the safe handling and

transportation of electrical equipment.

- 2.3.9 Store the product in a clean, dry, and wellventilated environment to prevent moisture damage.
- 2.3.10 Keep the product away from direct sunlight, extreme temperatures, humidity, and corrosive substances.
- 2.3.11 Store in the original packaging or suitable storage containers to prevent dust, dirt, and physical damage.
- 2.3.12 Ensure the storage area is free from any potential mechanical stress or sources of impact.
- 2.3.13 Regularly inspect stored products for any signs of damage. If any issues are found, contact the manufacturer or qualified electrician for further guidance.

3. Type designation

YCM8LE - 160 S P / 4 300 - 160A 2 A L1 Y1

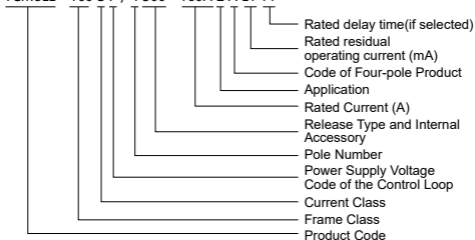


Table 1 Release pattern and accessories code/accessories code

Accessories code Release pattern Accessories name	Electromagnetic instantaneous release pattern	Electromagnetic double release pattern
Nothing	200	300
Alarm contact	208	308
Shunt release	210	310
Auxiliary contact	220	320
Undervoltage release	230	330
Shunt release+auxiliary contact	240	340
Shunt release+undervoltage release	250	350
Two group of auxiliary contact	260	360
Undervoltage release+auxiliary release	270	370
Shunt release+alarm contact	218	318
Auxiliary contact+alarm contact	228	328
Undervoltage release+alarm contact	238	338
Shunt release+auxiliary contact + alarm contact	248	348
Shunt release+undervoltage release + alarm contact	258	358
Two group of auxiliary contact + alarm contact	268	368
Undervoltage release+auxiliary release + alarm contact	278	378

4. Main technical parameter

4.1 The specifications and technical parameter see table 2, 3.

Table 2 The specifications and technical parameter

Frame Current(A)		160	250
Type		YCM8LE-160S	YCM8LE-250S
Pole number		1P+N,3,4	3,4
Power supply system	3P	3Φ3W, 1Φ2W, 1Φ3W	3Φ3W, 1Φ2W, 1Φ3W
	4P	3Φ4W	3Φ4W
Rated Current (A)		10, 16, 20, 32, 40, 50, 63, 80, 100, 125, 140, 160	100, 125, 140, 160, 180, 200, 225, 250
Rated voltage (V)		AC400V	AC400V
Rated insulation voltage (V)		AC690V	AC690V
Leakage indication system		Button	Button
Short Circuit Breaking Capacity (kA) Icu/Ics	AC400V	25/18	25/18
Operating cycle number	ON	6000	3000
	OFF	9000	7000
Quick type	Rated residual operating current	30, 100, 500 (adjustable)	30, 100, 500 (adjustable)
	Max. actuation time	0.1	0.1
Delay type	Rated residual operating current	100, 300, 500 (adjustable)	100, 300, 500 (adjustable)
	Max. actuation time	-	-
	Max. actuation time under 21Δn (s)	0.45, 1.0, 2.0 (adjustable)	0.45, 1.0, 2.0 (adjustable)
	Inertia non-actuation time under 21Δn (s)	0.1, 0.5, 1.0	0.1, 0.5, 1.0
Dimension(mm) a-b-c-ca	1P+N	60-155-68-90	
	4P	120-155-68-90	140-165-68-92
Weight(kg)	4P	1.2	2.5
Electric operating device (MD)		●	●
External drive handle		●	●
Automatic release		Thermal electromagnetic type	Thermal electromagnetic type

Frame Current(A)		400	800
Type		YCM8LE-400S	YCM8LE-800H
Pole number		3,4	3,4
Power supply system	3P	3Φ3W, 1Φ2W, 1Φ3W	3Φ3W, 1Φ2W, 1Φ3W
	4P	3Φ4W	3Φ4W
Rated Current (A)		250, 315, 350, 400	500, 630, 700, 800
Rated voltage (V)		AC400V	AC400V
Rated insulation voltage (V)		AC690V	AC690V
Leakage indication system		Button	Button
Short Circuit Breaking Capacity (kA) Icu/Ics	AC400V	35/25	50/35
Operating cycle number	ON	2000	2000
	OFF	4000	4000
Quick type	Rated residual operating current	30, 100, 500 (adjustable)	30, 100, 500 (adjustable)
	Max. actuation time	0.1	0.1
Delay type	Rated residual operating current	100, 300, 500 (adjustable)	100, 300, 500 (adjustable)
	Max. actuation time	-	-
	Max. actuation time under 21Δn (s)	0.45, 1.0, 2.0 (adjustable)	0.45, 1.0, 2.0 (adjustable)
	Inertia non-actuation time under 21Δn (s)	0.1, 0.5, 1.0	0.1, 0.5, 1.0
Dimension(mm) a-b-c-ca	4P	185-257-103-155	280-257-103-155
Weight(kg)	4P	8.4	17.5
Electric operating device (MD)		●	●
External drive handle		●	●
Automatic release		Thermal electromagnetic type	Thermal electromagnetic type

Table 3 Operating time of the residual current protection

Residual current		$I \Delta n$	$I \Delta n$	$2I n$	$10I \Delta n$
Non-time-delay	Maximum break time (s)	0.3	0.3	0.15	0.04
Time-delay	Maximum break time (s)	0.5/11.5/21.5	0.35/1/2	0.35/0.9/19	0.25/0.9/1.9
	"Limiting non-actuating time (s)"	---	0.1/0.5/1	---	---

4.2 The thermodynamic release of a circuit breaker provides the feature of inverse time-delay, while the magnetic release feature of instantaneous operation as shown on table 4(distribution circuit breaker). (distribution circuit breaker).The specifications and technical parameter see table2、 3.

Table 4 (For Power Distribution)

Rated current of release(A)	Thermodynamic release (ambient temp +40°C)		Electromagnetic release operating current
	"1.05In(cold state) Not operating time"	"1.3In(heat state) Operating time"	
10~800A	"Not operating within one hour"	≤ 1h operating	10In±20%
	"Not operating within two hour"	≤ 2h operating	

4.3 The limit over-current which would not lead to misoperation is $6I_n$ in the main circuit.reliably when the operation voltage is 70%~100%of the rated control voltage

4.4 Under-voltage release Under the voltage of 35%~70% of the rated voltage, the under-voltage release should make the breaker trip correctly. In case of the operation voltage less than 35% of the rated voltage, the under-voltage should prevent the breaker from closing. Under the voltage of 85%~110% of the rated voltage, the under-voltage release should make the breaker close reliably.

5. Use and maintenance

- 5.1 All the performance of the breaker and accessories have been set on by the company, and it could not be adjusted arbitrarily when using.
- 5.2 The handle of the breaker has three positions: close-up, cut-off or released state respectively. When the handle at the "released" position, it should be pulled backward to make the breaker "recramped", then to switching-in the circuit.
- 5.3 The company would replace or repair the breakers gratuitously for the products damaged or working unregularly as a result of manufacturing quality, but it should be in accord with following conditions: users comply the demand about application and storage, from delivery date to 18th month.
- 5.4 The rated residual operating current and residual current operating time(undelay and delay) of the breakers can be adjusted by the users according to actual needs(operated by professionals).
- 5.5 As the main circuit is energized, for the rated residual operating time of undelayed of the

breaker, press the button of simulating residual current working test should release immediately. For the delayed breaker, only while, press the test button and remain the adjusted delay time value, the breaker could release.

- 5.6 After the breaker released due to creepage, the creepage indicating button on the panel should be out-protrude.
- 5.7 The breaker with creepage alarm unit module must reset the return button when creepage alarmed, and the creepage protection module of the breaker can work as normal.



CERTIFICATE

Product Model : YCM8LE series

Standard : IEC60947-2

Inspector : CNC 001

Production date: Printed on the product
or package.

This product is qualified according
to the delivery inspection

A vertical red bar containing the white text 'CNC' in a bold, sans-serif font.

YCM8LE series

CNC ELECTRIC

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