

ZQM1EL
Electronic molded case circuit breaker
(leakage type)

Action performance of release

◆ Overload protection feature (inverse time limit action)

Rated working current of release(A)	Release (ambient temperature 40°C)	
	1.05I _n (cold)	1.30I _n (hot)
I _n ≤ 63A	≥ 1h no action	< 1h action
I _n > 63A	≥ 2h no action	< 2h action

Calculation of overload long delay time: $T1 = (6Ir1/I)2x Tr1$

(Ir1: rated current setting value, I: fault current, Tr1: delay overload coefficient)

◆ Instantaneous overcurrent release current setting value

Rated current of shell frame grade I _{nm} (A)	Setting current multiple	Agreed time
160	10 I _n ± 20%	< 0.2s
250	10 I _n ± 20%	< 0.2s
400	10 I _n ± 20%	< 0.2s
630	10 I _n ± 20%	< 0.2s
800	10 I _n ± 20%	< 0.2s

Handling instructions

◆ Key description (see Figure 6-3)

- ◇ The circuit breaker has 【Menu】 , 【Shift】 , 【Increment】 , 【Return】 and four buttons. The shortcut keys are defined as follows:
- ◇ 【Menu】 Enter the main menu, and use the confirmation key during the setting process. (See Figure 6-4)
- ◇ 【Shift】 Enter the password correctly, and enter the parameter setting interface. It is used for shift or decrease function during setting.
- ◇ 【Increment】 Query the current real-time parameters. Used increment key in the setting process.
- ◇ 【Return】 Press and hold this key for 5 seconds to enter the quick function setting interface. It is used for return in the setting
- ◇ 【Increment】 + 【Return】 Press two buttons at the same time, and the password is entered correctly to enter the data clearing interface.

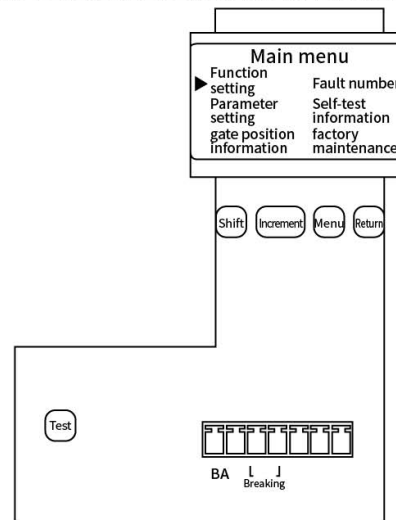


Figure 6-1 Type 250 and 400 human-computer interaction panel

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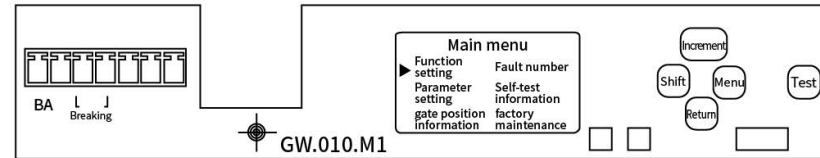


Figure 6-2 Type 630 and 800 human-computer interaction panel

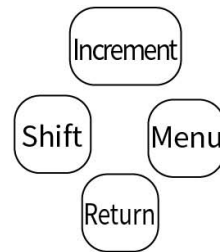


Figure6-3

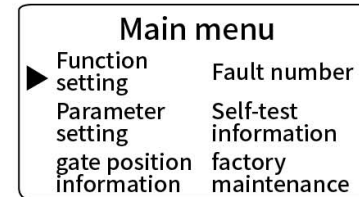


Figure6-4

- ◆ Display descriptions (see Figure 6-4)
 - ◇ Dot matrix high brightness LCD display, intuitive and accurate display.
 - ◇ Three indicator lights indicate the gate status, alarm status and communication status of the protector respectively.
 - ◇ Status indicator light: when the circuit breaker is in the closing state, the indicator light is off, and when the circuit breaker is in the opening state, the indicator light is always on.
 - ◇ Warning indicator light: When the circuit breaker has a fault and gives an alarm, the indicator light is always on, and it goes out when there is no alarm.
 - ◇ Communication indicator light: When the circuit breaker receives the complete data frame, the indicator light flashes once.
- ◆ Operation display descriptions:
 - ◇ Circuit breaker operation display: the circuit breaker is in the closing operation state, as shown in Figure 6-5, and Figure 6-6 shows the current operation parameters in turn; The current tripping state and current fault information are shown in Figure 6-7 when the circuit breaker is in the opening state.

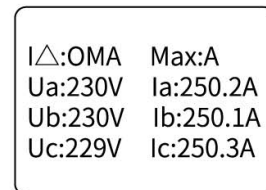


Figure 6-5

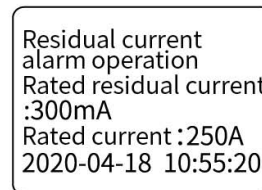


Figure 6-6



Figure 6-7

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◇ Circuit breaker alarm: the circuit breaker general alarm is on, and the overvoltage, undervoltage, phase loss, overload, short circuit delay and other functions are set to alarm. If the corresponding fault occurs, the circuit breaker will display the alarm prompt, as shown in Figure 6-8, 6-9, 6-10 is overvoltage, undervoltage, phase loss alarm. At this time, if the audible and visual alarm function is on, the LCD backlight will light up.

Phase A overvoltage
:287V
Voltage threshold
:275V
Function warning....
2020-04-18 08:56:34

Figure6-8

Phase A undervoltage
:164V
Voltage threshold
:165V
Function warning....
2020-04-18 08:56:45

Figure6-9

Phase C failure
:0V
Voltage threshold
:100V
Function warning....
2020-04-18 08:56:55

Figure6-10

◇ Overload alarm. When the current current value of any phase exceeds 1.3 times of the rated current value, the circuit breaker will automatically display the alarm parameters, and the overload display is shown in Figure 6-11.

Please
Opening manually
switch on
Type : Overload
Parameter : 330A
Phase difference : A
2020-04-18 09:50:20

Figure 6-11

◆ Menu operation instructions

◇ 【Return】 : restore to the normal operation state of the system; Exit the setting and inquiry functions and restore to the rotating display state (when the circuit breaker is in the tripping state, restore to the stop display state).

◇ Function setting: press the 【Menu】 key to open the menu list, select the "Function setting" option, and then press the 【Menu】 key to open the function setting list, as shown in Figure 6-12. Each function item can be switched through 【Shift】 or 【Increment】 ; Press 【Menu】 to select the function item, 【Shift】 or 【Increment】 to select the required function, and press 【Menu】 to confirm saving.

► 0.Residual current protection: Start using
1.Automatic fixed gear : Close
2.Off sudden change protection : Close
3.Special wave protection : Close

Figure 6-12

Please enter password:
0000

Figure 6-13

► Rated residual current:
0500mA
No drive time:200ms
Sudden change threshold:50ms
Rated current:250A

Figure 6-14

◇ Parameter setting: select the "Parameter setting" option in the main menu list, and press the 【Menu】 key to open the password verification interface, as shown in Figure 6-10. After entering the interface correctly (the default password is 9009), press the 【Menu】 key to open the parameter setting list, as shown in Figure 6-11; As described above, the parameters can be modified through the combination of 【Menu】 , 【Shift】 and 【Increment】 keys. If you give up modifying parameters, press 【Return】 to return to the menu interface.

◇ Gate position information query: select the "gate position information" option in the main menu list, press the 【Menu】 key to open the gate position information data, and use the 【Shift】 or 【Increment】 key to query the last 10 gate position change data.

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Gate position information of the last
01 times: closing - opening
Type : overload
Parameter : 330A Phase difference:A
2020-04-18 10:20:20

Figure 6-15

Gate position information of the last
02 times: opening-closing
Type :Manual closing
Parameter :none Phase difference: none
2020-04-14 10:16:01

Figure 6-16

- ◇ Fault Times Query: Select the "Fault Times" option in the main menu list, and press the [Menu] key to open the fault times list, and query the total trip times and blocking trip times locking trip times and other data item information.
- ◇ In the rotating display state, press the [Increment] and [Return] keys at the same time, enter the password (default password: 9009), the password verification passes, and enter the data clearing interface, as shown in Figure 6-17. Press the [Menu] key to clear all data and return to the main menu.

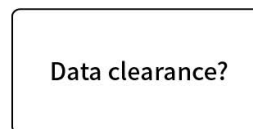


Figure 6-17

- ◇ Description of external terminal:
External wiring terminal: 1/2 pin is 485 communication B/A, 3 and 4 pins are external telecontrol breaking, short circuit 3 and 4 pins will trip the circuit breaker. (This function needs to turn on the [Remote breaking] option in the function setting option), and pin 7 is the working voltage N-line connection. External terminals are shown in Figure 6-18 below.

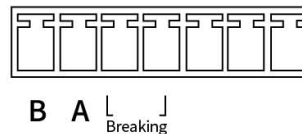
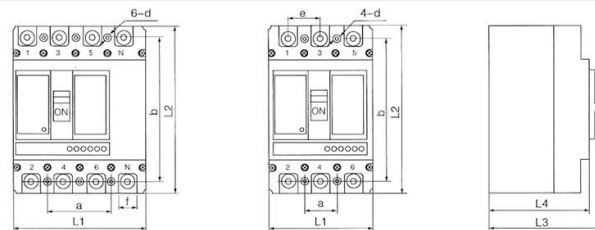


Figure 6-18

Product appearance and installation size (mm)



Model specification	Number of poles (p)	Overall dimension (mm)				Installation dimension (mm)			Center distance of copper bar	Size of inlet and outlet copper bar
		L1	L2	L3	L4	a	b	d		
ZQM1EL-250	3	107	165	110	90	35	126	Φ4.5	37	23
	4	142	165	110	90	70	126	Φ4.5	37	23
ZQM1EL-400	3	150	257	146	108	50	194	Φ7	48	31
	4	198	257	146	108	94	194	Φ7	48	31
ZQM1EL-800	3	210	280	155	116	70	243	Φ7	69	44
	4	280	280	155	116	140	243	Φ7	69	44