

Energy management terminal

Intelligent circuit breaker

The ELCO IoT mechanical intelligent circuit breaker series terminal is developed using embedded technology and designed based on 4G and Ethernet communication methods. It is equipped with a high-strength on/off switch and a fast response wireless communication module, which can receive commands and respond instantly, balancing power safety and energy conservation. The main module gateway and circuit breaker are integrated to fully meet customers' intelligent power needs. It adopts a guide rail design and is an ideal product for the construction of power IoT systems. This product can easily achieve energy distribution and line protection, avoiding damage to power equipment from overcurrent, overload, undervoltage, overvoltage, short circuit, leakage and other faults. It has intelligent protection, remote on-off, timed on-off, and energy metering functions, improving power supply reliability. It is widely used in the field of smart energy, such as commercial electricity monitoring and control, and can also cover smart power, smart buildings, smart communities, smart buildings, smart industries and other fields.



01 Product characteristics

- Supports 4G or Ethernet communication methods
- Support multiple power supply modes and product forms, including AC and DC
- Gateway and circuit breaker integrated structure, compact and convenient for customers to install and use on site
- Support voltage, current, power, and electricity measurement and statistics, with measurement accuracy up to level 1
- Support functions such as connection, disconnection, timing, delay, and periodic disconnection
- Support parameter threshold settings for overvoltage, undervoltage, overcurrent, overload, short circuit, leakage, overtemperature, and phase loss, as well as reporting circuit abnormal states
- Equipped with high-quality arc extinguishing grids to ensure circuit safety
- The local host supports multiple operation buttons, making it easy to control circuit opening and closing, leakage testing, manual and automatic mode selection, etc
- Support multiple status lights to provide timely feedback on device status, including current device networking status, power status, and other information
- Provide one standard RS485 interface, supporting up to 31 circuit breakers for expansion
- Equipped with extended IO interfaces, it can be functionally customized to meet customer customization needs
- Support serial software upgrade and remote FOTA function
- Supporting standard application management platform, supporting customized application platform development or API interface services
- Easy to use and install, supports remote mobile app login
- Capable of third-party and CQC certification

02 Product parameters

Working parameters	Direct Current (DC)	AC 220V communication	Communication AC 380 V
Working voltage	48 (-36V-72 V, error<1%)	220 (175~280 V, error<1%)	380 (320~440 V, error<1%)
Working current	63 A and below, 80 A	63 A and below, 80 A, 100 A	63 A and below, 80 A, 100 A
Rated frequency	---	50/60 Hz	50/60 Hz
Rated insulation voltage (UI)	---	500 V	500 V
Rated impulse withstand voltage (UIMP)	---	≥6 kV	≥6 kV
Breaking capacity (rated short-circuit capacity)	---	6 KA	6 KA
Extreme numbers	1P, 2P	1P, 2P, 3P, 4P	1P, 2P, 3P, 4P
Opening action time (s)	≤2 s		
Closing action time (s)	≤3 s		
Power on delay time	≥4 s		
Working temperature and humidity	-20 °C ... +55 °C, 0~95% RH without condensation, error ±5 °C		
Storage temperature and humidity	-40 °C ... +85 °C, 0~95% RH without condensation, error ±5 °C		
Maximum power consumption	less than 10 W		
Standby power	less than 200 mW		
Mechanical and electrical lifespan	mechanics 10000, electrical 6000		
Technical requirements related to action function and power supply voltage	The equipment should operate correctly at any power supply voltage between 0.85 and 1.1 times the rated voltage (Un)		
Protection level	IP20		
Product size	1P: 73.6*45*103 mm 2P: 73.6*63*103 mm	1P: 73.6*45*103 mm 2P: 73.6*63*103 mm 3P: 73.6*81*103 mm 4P: 73.6*99*103 mm	3P: 73.6*81*103 mm 4P: 73.6*99*103 mm
Measurement ability (Level 2, Level 1)	voltage, current, power, and electricity consumption	three phase voltage, three- phase current, total power, total electricity consumption	overvoltage protection and action time
Overvoltage protection and action time	≥65 V, protection time ≤3 s recovery value ≤60 V recovery time ≤30 s	alarm ≥265 V, action ≥275 V, protection time ≤3 s recovery value ≤245 V, recovery time ≤30 s	protection value 435 V±5 V recovery value 400 V±5 V, recovery time ≤30 s
Undervoltage protection and action time	≤35 V, protection time ≤3 s recovery value ≥45 V, recovery time ≤30 s	alarm ≤175 V, action≤165 V, protection time ≤3 s recovery value ≥185 V, recovery time ≤30 s	protection value 325 V±5 V recovery value 345 V±5 V, recovery time ≤30 s

02 Product parameters

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Overload protection and action time	When the input power is greater than the set power, the device output should be disconnected, and the protection time should be less than 300ms		
Over temperature action range	≥ 75 alarm, ≥ 85 action (60~90 Can be set)		
Overtemperature action time	action ≤ 1 s, alarm ≤ 3 s		
Leakage action current (for 2P and 4P)	0.03 A, 0.05 A, 0.1 A, 0.3 A (Adjustable)		
Leakage non operating current (for 2P and 4P)	$0.5 I_{\Delta n}$		
Leakage action time (for 2P and 4P)	Maximum interruption time 0.03 s		
Ground wire disconnected	5 mA		
Short circuit current protection type	—	type C:5-10 In, type D:10-14 In	type C:5-10 In, type D:10-14 In
Institution type	—	C65	C65
Short circuit inactive current (A)/time t (s)	—	$5.0I_n / t \leq 0.1$ s	$5.0I_n / t \leq 0.1$ s
Short circuit action current (A)/time t (s)	—	$10I_n / t < 0.1$ s	$10I_n / t < 0.1$ s
Residual current action	—	30mA	30mA
Overcurrent without action current (A)/time t (h)	—	$1.13I_n / t \leq 1$ h	$1.13I_n / t \leq 1$ h
Overcurrent action current (A)/time t (h)	—	$1.45I_n / t \leq 2$ h / Protection time less than 300 ms	$1.45I_n / t \leq 2$ h / Protection time less than 300ms
Phase loss protection and action time	—		It has a phase loss protection function. The protection time is less than 60 seconds.
Phase imbalance protection and action time	—		The judgment value is 2%. The protection time is less than 60 seconds.