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ARCM/L series integrated electrical fire monitoring detector

Installation Manual V1.0

Acrel Co., Ltd.

State

The company reserves the right to modify the product specifications described in this manual without prior notice. Please contact your local agent for new specifications before ordering.

Catalogue

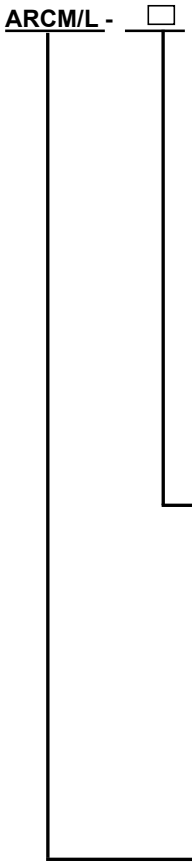
ARCM/L series integrated electrical fire monitoring detector

Installation Manual

1、General

ARCM/L series integrated electrical fire monitoring detector has the functions of 1-channel residual current monitoring and 4-channel temperature monitoring, and can monitor and collect the residual current value and temperature value of the circuit in real time. It can be directly connected to electrical fire monitoring equipment through the second bus. The detector can judge whether the residual current or temperature of the monitored circuit reaches the alarm setting value. If the monitoring value is greater than the alarm setting value, the detector alarm indicator light will be always on.Monitoring equipment after analysis and processing can indicate the corresponding fault type, and send out light alarm signal.

2、Model



Model： L45:The maximum rated current of the measuring circuit is 100A；

L65:The maximum rated current of the measuring circuit is 250A；

L80:The maximum rated current of the measuring circuit is 400A；

L100:The maximum rated current of the measuring circuit is 600A；

L15050:The maximum rated current of the measuring circuit is 250A；

L18030:The maximum rated current of the measuring circuit is 200A；

L22050:The maximum rated current of the measuring circuit is 400A；

L260100:The maximum rated current of the measuring circuit is 800A；

L30050:The maximum rated current of the measuring circuit is 1000A；

Product Type: Acrel electric fire monitoring products

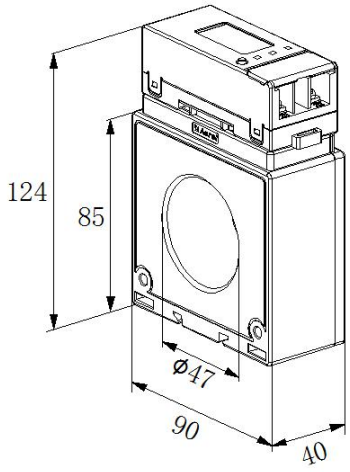
3、Technical parameters

Power supply	Rated voltage	DC24V
	Consumption	≤0.3W
Input		1-channel residual current, 4-channel temperature
Rated residual current operating value		300mA～1000mA, step size 1mA (set by the background host)
Temperature alarm setting		45°C～110°C, step size 1°C (set by the background host)
Action delay time		1S～60S, step size 1S (set by the background host)
Residual current measuring range		10mA～3000mA
Temperature measurement range		0℃～120℃
Measuring grid frequency		50Hz
Residual current measurement accuracy		Class 1.0
Alarm		Light alarm, communication alarm
Communication		Two bus
Display		LCD liquid crystal display
Range of working temperature		-10℃～+55℃
Range of storage temperature		-20℃～+70℃
Relative humidity		≤95% no condensation
Reference standard		GB 14287.2-2014　GB 14287.3-2014

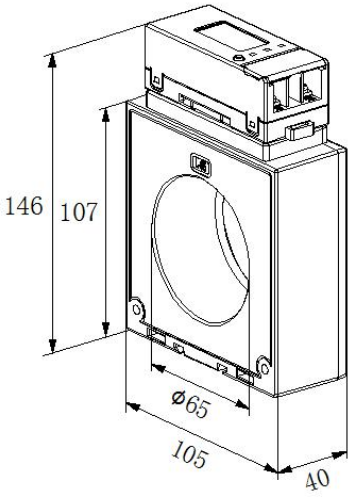
4、Appearance

4.1. Size

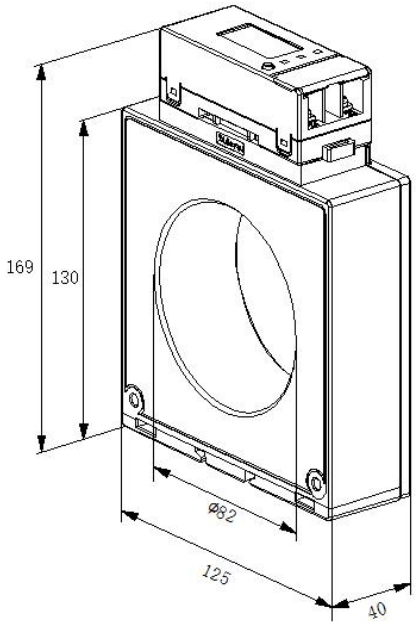
Size of ARCM/L-L45



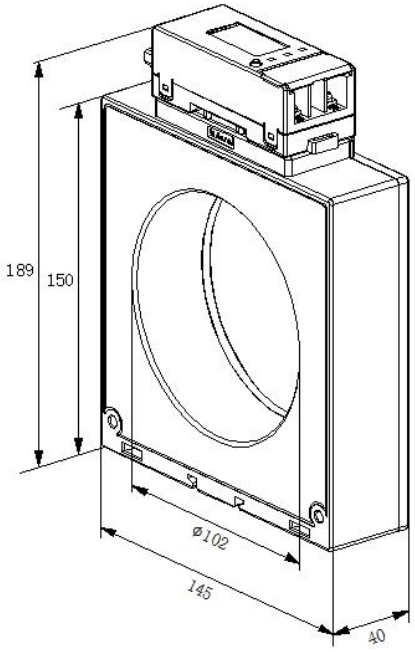
Size of ARCM/L-L65



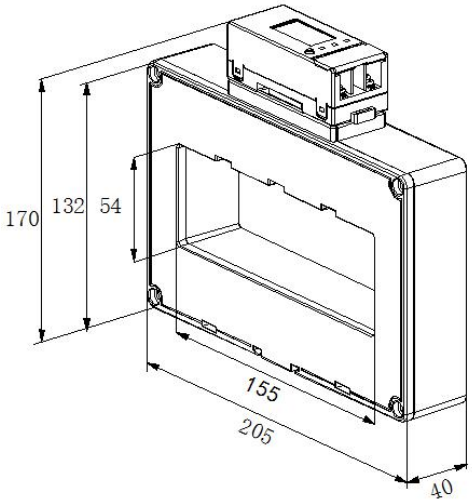
Size of ARCM/L-L80



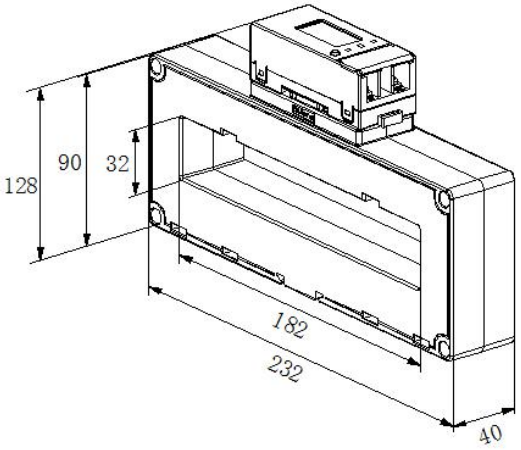
Size of ARCM/L-L100



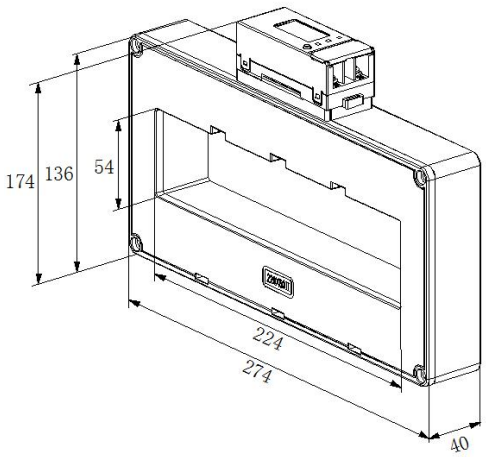
Size of ARCM/L-L15050



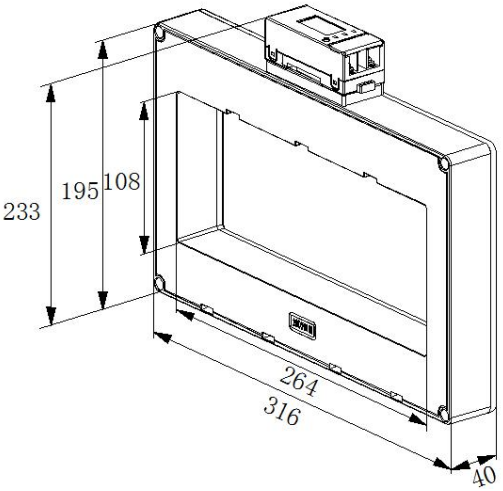
Size of ARCM/L-L18030



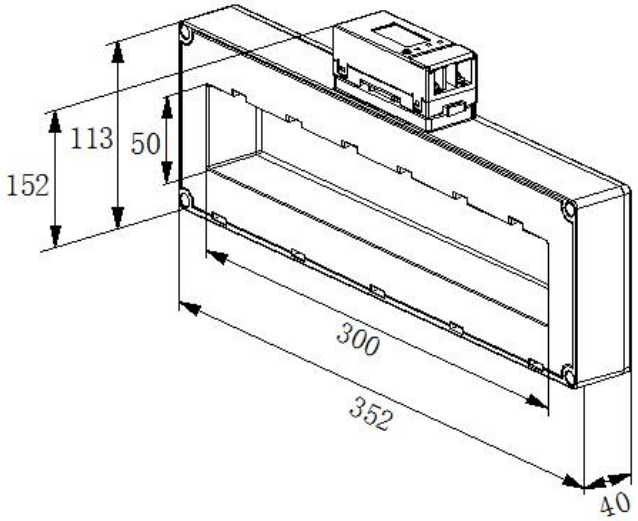
Size of ARCM/L-L22050



Size of ARCM/L-L260100

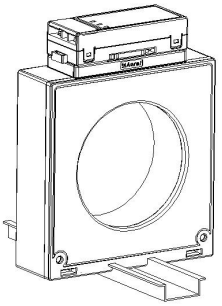


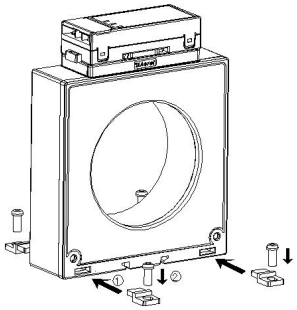
Size of ARCM/L-L30050

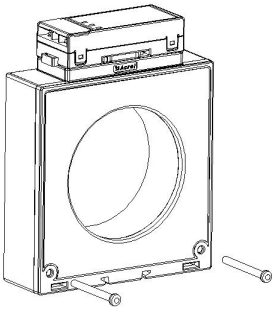


4.2. Installation

(1)35 din rail installation (2) Base plate insert fixed installation (3) Wall-mounted screw fixed installation

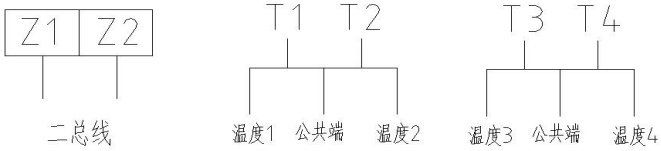






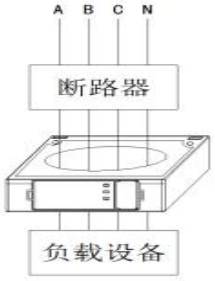
5、Wiring

5.1. Definition of the terminals



Terminal description: Terminals Z1 and Z2 are connected to the second bus and have no polarity; the temperature sensor can be connected to the corresponding temperature and common terminal, and has no polarity.

5.2. Wiring diagram



6、Requirements of product's setting

The detector has a running indicator (green), a fault indicator (yellow), an alarm indicator (red) and a segment code LCD. The flashing cycle of the running indicator is 1S. When the sensor connected to the detector has a disconnection or a short-circuit fault, the fault indicator is always on; when the residual current value detected by the detector reaches the alarm setting value, the alarm indicator is always on.

LCD display residual current, 4-channel temperature monitoring and address. The address is adjustable, in the LCD address interface , long press the key to enter the setting mode, when the cursor jumps ,if you short press the key ,you can modify the address of each and long press the key jump to ten modify.Also, the modification method is the same as the ones, tens, and hundreds. After setting the IP address, hold down the key to change the IP address.

7、Fault analysis of detector itself

● If the detector running indicator light is off, please check whether the power is connected.

● The communication indicator light will flash when the detector communicates. When the detector co mmunicates with the monitoring unit or device, if the communication indicator does not flash and the monitoring unit or device cannot receive the data uploaded by the detector, check whether the commu nication address of the detector is consistent with that of the host or whether there is a conflict. If the y are correct and the communication indicator does not flash, power them on again. If the fault persist s,you need to repair them.

8、Requirements of installation

● This detector must be installed by a qualified installer, and the instructions must be read carefully before installation.

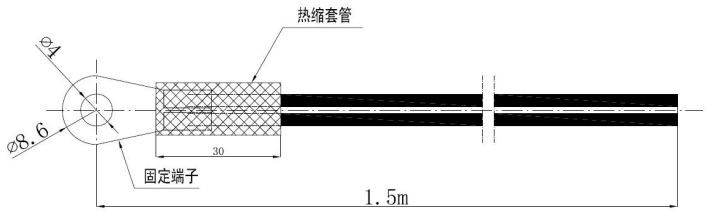
● When wiring, follow the wiring method in the instruction manual. After the wiring is completed, carefully check whether the wiring is correct, so as to avoid damage to the detector and dangerous accidents after power on.

● Before sending the detector for inspection and maintenance, cut off all power and inspection control cables.

● The normal operation of the detector depends on the correct installation, setting and operation. Before installation, please read the relevant contents of installation, setting and operation in detail to ensure the normal operation of the detector.

9、Description of the Attachment

The temperature sensor is an NTC thermistor customized by the company, which provides a temperature monitoring signal of 0°C to 120°C for the detector.It can be used to monitor the temperature of cables or power distribution boxes to achieve temperature protection. Its dimensions are as follows (unit mm):



10、Precautions

● The detector is mainly installed in low voltage power distribution TN and TT systems in buildings and industries. Its residual current electrical protection function is suitable for TN-C-S system, TN-S system and local TT system, but not for TN-C system.

● Residual current transformers are generally designed to be installed at the main incoming terminal of the floor power supply, and detectors are designed to be installed on the door of the distribution box or control box (cabinet), which is beneficial for the on-duty personnel to observe various data information. The system terminal console should be installed with a duty room and a fire center, so that the duty personnel can supervise and discover hidden dangers in time.

● The temperature sensor can monitor the temperature of the cable as well as the temperature of the power distribution cabinet, but when using it, please contact the temperature sensor closely with the measured point to avoid future troubles due to improper installation.

● The electrical fire monitoring system shall comply with GB13955 "Installation and Operation of Residual Current Action Protection Devices". In order to avoid large-scale power outages, graded protection should be adopted, that is, the residual current protection device on the power supply end or branch line should be coordinated with the operating characteristics of the residual current protection device at the end, so as to achieve graded protection with action selectivity.

In general, low sensitivity delay type residual current protection device should be selected in the power supply inlet end or branch main circuit. At the end, the residual current action value is I△ N <30mA, and the rated action time is Tn<0.1s, which is mainly used for protection against personal shock, and is complementary to the electrical fire monitoring system.One or several of the detectors can be installed at the general incoming line of each floor of the building, but the action parameters should be set correctly according to the normal leakage current. Generally, the residual current at the total incoming line is 200~500mA.Important load: including fire, security, emergency power supply, channel lighting lines and places where power failure is not allowed. According to GB139554.6, the detector should be set as an alarm mode for protection; When it collected leakage current, over-current and other signals exceed the alarm value, only sound and light alarm signals are issued, and the power supply is not cut off. At the same time, the collected signals are transmitted to the control center through the bus mode. It can be set to power off by yourself, which not only ensures the safety of power consumption, but also ensures the continuity of power supply.

- Residual current transformers can be installed at the incoming or outgoing end of the circuit breaker. During installation, the N line and PE line must be strictly distinguished.The N line should pass through the residual current transformer of the residual current fire monitoring system. The N line of the residual current transformer of the detector shall not be used as the PE line, and shall not be repeatedly grounded or connected to the exposed accessible conductor of the equipment. The PE line shall not intervene in the electrical fire monitoring device.

For the branch circuit where the detector is installed, its working neutral line can only be used as the neutral line of this circuit. It is forbidden to connect with the working neutral line of other circuits.And other lines or equipment cannot use lines or equipment that have adopted residual current protectors. the working zero line.

- After the installation is completed, the parameters should be set by professional technicians to meet the actual requirements of the site, and operation experiments should be carried out at the same time to ensure the normal operation of the detector.

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