Acrel

Intelligent Motor Protector

- U, I, P, Q, S, PF, EP, EQ Measurement
- 2-63rd harmonic measurement
- Phase loss, overload, locked rotor, blockage, three-phase unbalance protection
- 10 channels DI inputs, 6 channels DO outputs programmable

- Support immediate restart after power shaking, restart after loss of pressure
- 2 channels Modbus-RTU (standard) Profibus DPV1, Ethernet, Profinet (optional)
- Chinese/English LCD display

Are you still worrying about the burning of the motor?

Acrel can help you solve it.

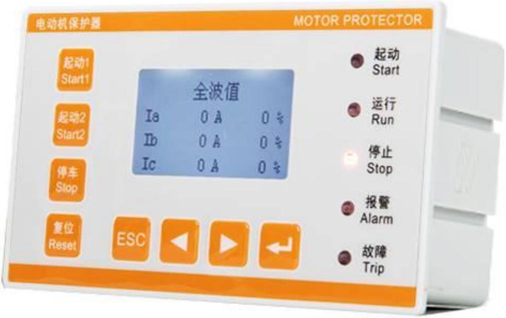
× Short circuit burns the motor

× Loss of phase burns the motor

× Overload burned

× Stalled and burned

TECHNOLOGY PARAMETER


电动机保护器
MOTOR PROTECTOR
起动1 Start1
起动2 Start2
停车 Stop
复位 Reset
全波值
Ia 0 A 0 %
Ib 0 A 0 %
Ic 0 A 0 %
ESC
起动 Start
运行 Run
停止 Stop
报警 Alarm
故障 Trip

Voltage Specification	AC380V/AC660V,50Hz/60Hz
Current Specification	1A(0.1-9999)、5A(0.1-9999)、1.6A(0.4-1.6A) 6.3A(1.6-6.3A) 25A(6.3-25A)、100A(25-100A) 、250(100-250A)、800A((250-800A)
Auxiliary Power	AC85V~265V/DC100V~350V

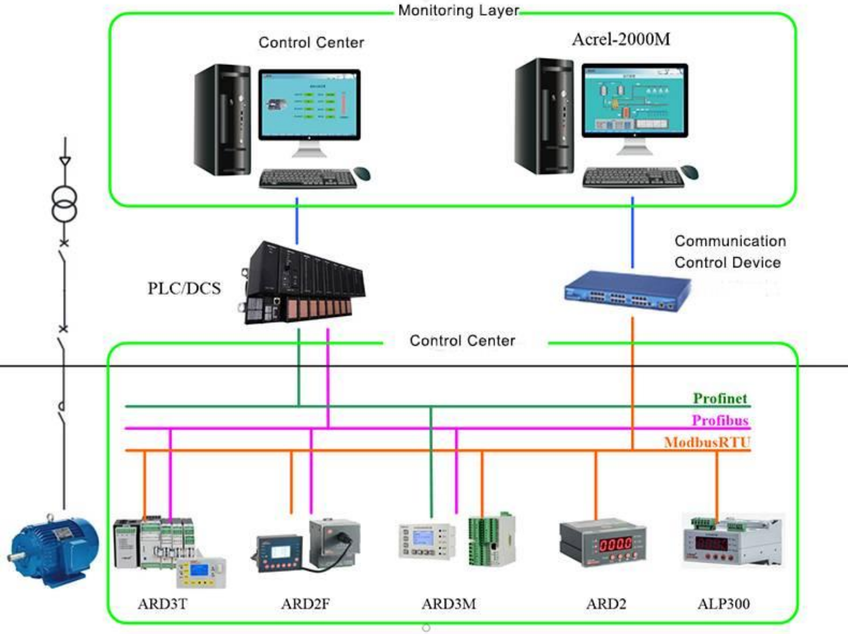
Protection Level	Main body IP20, split display module IP65

PRODUCT SELECTION

Type		ALP300	ARD2/2L	ARD2F	ARD3M	ARD3T
Functional position		Protection + Networking		Protection + Control + Networking		
Applicable cabinet		Automatic control cabinet, control box	Chest of drawers, vertical cabinets			
Protective function	Current protection	✓	✓	✓	✓	✓
	Voltage protection	✗	✗	✓	✓	■
	Temperature protection	✗	✗	■	■	■(max3)
	Operation and maintenance protection	✗	✗	✗	✓	✗
	Current Anti-shake	✗	✗	■	■	■
	Current Leakage	■	■	■	■	■
Communication function	MODBUS-RTU	■	■	■	✓(max2)	✓(max2)
	PROFIBUS-DP	✗	✗	■	■(max2)	■
	PROFINET	✗	✗	✗	■	✗
	MODBUSTCP	✗	✗	✗	■	✗
	WIFI	✗	✗	✗	■	✗
Switch input(optional)		2	2	9	10(standard)	8
Switch output (optional channels after "+")		2+2	2+2	2+3	6(standard)	4+3
Start Control		✗	✗	■	✓	✓
4-20mA output		■	■	■	■(max2)	■(max2)
Event Record	Disturbance recorder	■	■	■	■	✓
	Operation and	✗	✗	✗	■	✗
	Waveform record	✗	✗	✗	■	✗
Measurement Function	Measure current	✓	✓	✓	✓	✓
	Leakage current	✗	✗	■	■	■
	Measure voltage	✗	✗	✓	✓	■
	2-63rd harmonics	✗	✗	✗	■	✗
	PTC/NTC	✗	✗	■	✓	■
Display Panel	Digital Tube	✓	■	✗	✗	✗
	Monochrome LCD	✗	■	■	■	■
	Color LCD	✗	✗	✗	■	✗

✓:srandard; ✗:no; ■:optional

TYPICAL CONNECTION


Monitoring Layer
Control Center
Acrel-2000M
PLC/DCS
Communication
Control Device
Control Center
Profinet
Profibus
ModbusRTU
0000
ARD3T
ARD2F
ARD3M
ARD2
ALP300

PRODUCT PRESENTATION

Acrel
MOTOR PROTECTOR
ESC
起动 Start
运行 Run
停止 Stop
报警 Alarm
脱扣 Trip

Acrel
复位
停车 起动 运行 报警 脱扣
就绪
起动1
起动2
停车
起动
运行
报警
脱扣

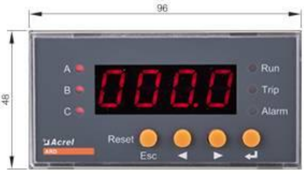
电动机保护器
MOTOR PROTECTOR
就绪 Ready
起动 Start
起动1 Start1
运行 Run
起动2 Start2
报警 Alarm
停车 Stop
脱扣 Trip
ESC
起动1 Start1
起动2 Start2
停车 Stop
复位 Reset

Acrel
ARD
COMM
Run
Trip
Alarm
Reset
Esc

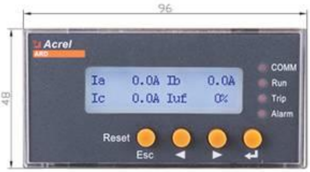
A
B
C
ALP300电动机保护器
Acrel
Run
Trip
Alarm
Esc

INSTALLATION METHOD

THE INSTALLATION METHOD OF ARD2 IS EMBEDDED INSTALLATION. (UNIT: MM)

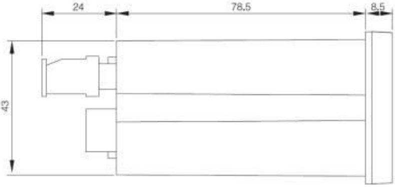

96
48
A
B
C
000.0
Run
Trip
Alarm
Acrel
ARD
Reset
Esc

ARD2

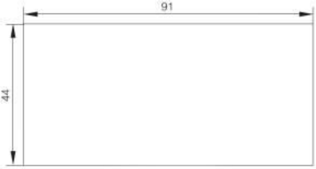

96
48
Acrel
ARD
Ia 0.0A Ib 0.0A
Ic 0.0A Iuf 0%
COMM
Run
Trip
Alarm
Reset
Esc

ARD2L

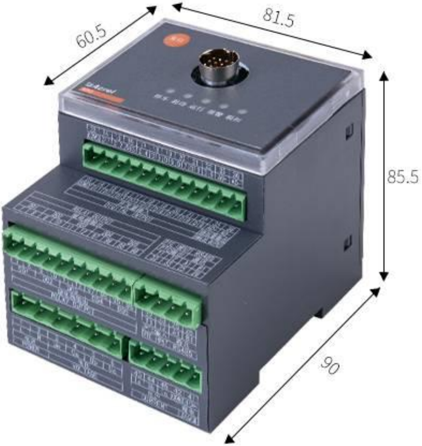
Left view

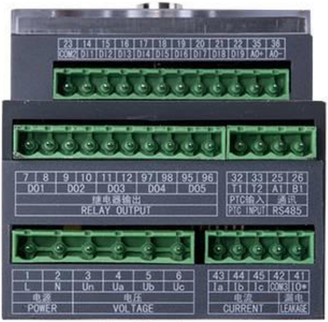


Panel hole size

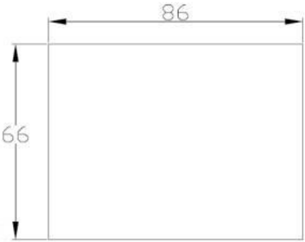


ARD2F/ARD3 MAIN BODY INSTALLATION DIMENSION DRAWING

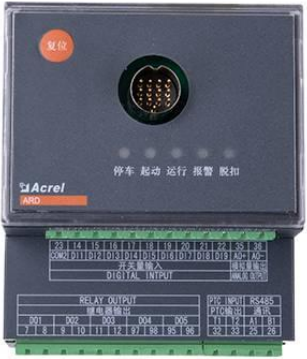

60.5
81.5
85.5
90


23 14 15 16 17 18 19 20 21 22 35 36
COM2 DI1 DI2 DI3 DI4 DI5 DI6 DI7 DI8 DI9 AO+ AO-
7 8 9 10 11 12 97 98 95 96
DO1 DO2 DO3 DO4 DO5
继电器输出
RELAY OUTPUT
32 33 25 26
T1 T2 A1 B1
PTC输入 通讯
PTC INPUT RS485
1 2 3 4 5 6
L N Un Ua Ub Uc
电源
POWER
电压
VOLTAGE
43 44 45 42 41
Ia Ib Ic COM3 IO
电流
CURRENT
漏电
LEAKAGE

Left view

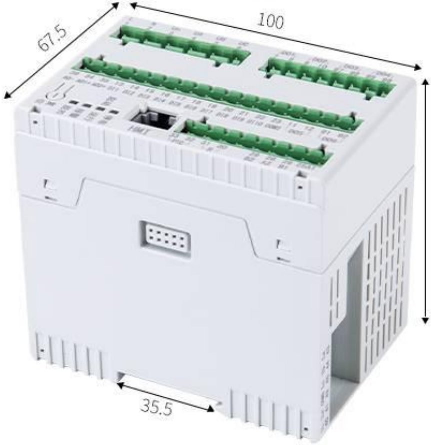


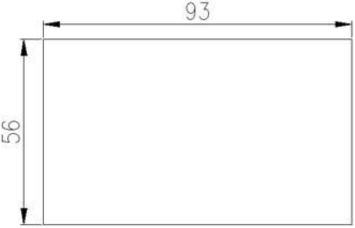
Panel hole size:
ARD2F/ARD3 display unit installation dimension drawing


复位
停车 起动 运行 报警 脱扣
Acrel
ARD
开关量输入
DIGITAL INTPUT
模拟量输出
ANALOG OUTPUT

Top view

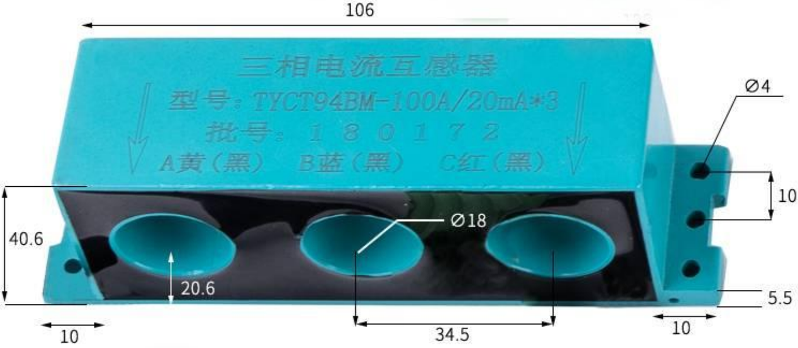
ARD3M MAIN BODY ADOPTS 35MM RAIL INSTALLATION


100
67.5
90
35.5

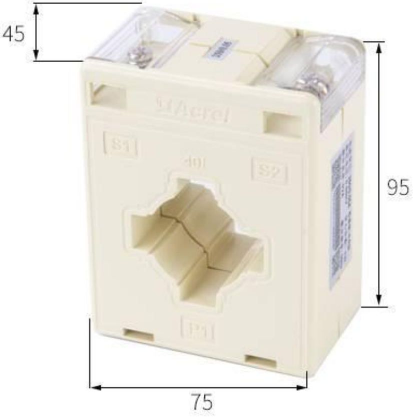


Panel hole size

INSTALLATION SIZE OF 1000A CT

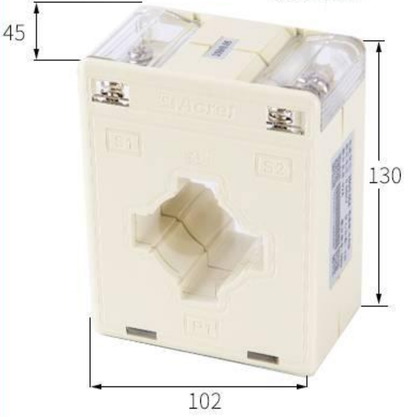

106
三相电流互感器
型号：TYCT94BM-100A/20mA*3
批号：1 8 0 1 7 2
A黄（黑） B蓝（黑） C红（黑）
Ø4
10
Ø18
40.6
20.6
5.5
10
34.5
10

INSTALLATION SIZE OF 250A CT



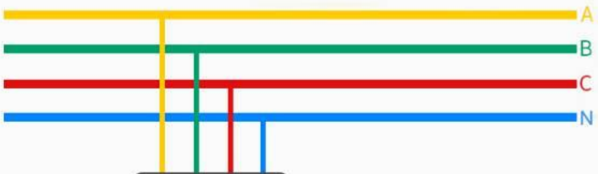
INSTALLATION SIZE OF 800A CT

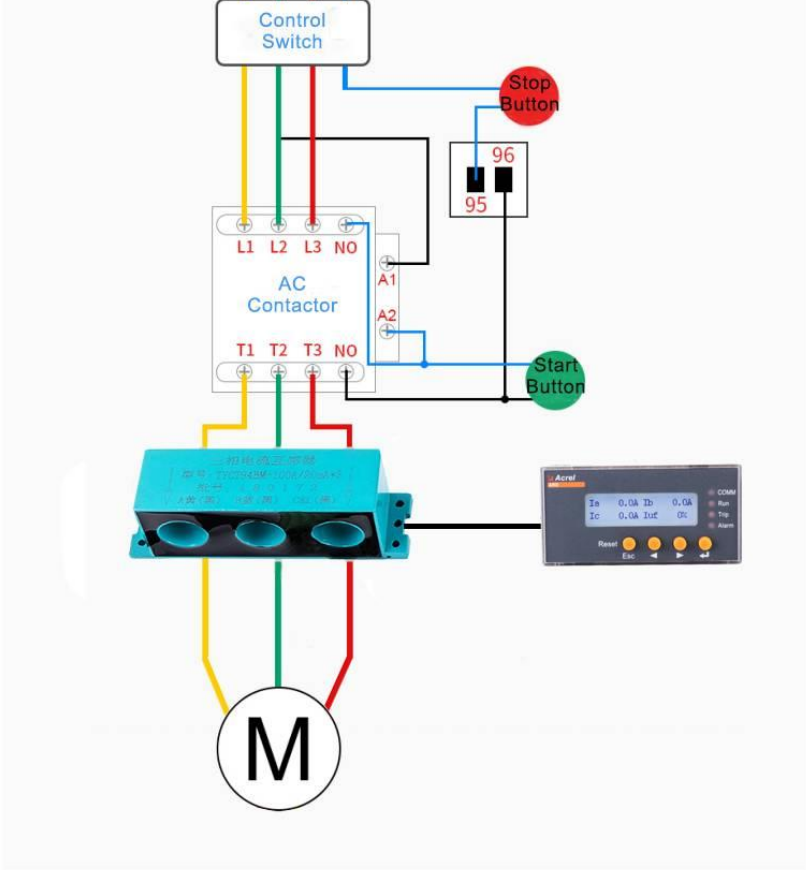
unit: mm



WIRING

AC220V CONTROL VOLTAGE WIRING DIAGRAM




Control Switch
Stop Button
96
95
L1
L2
L3
NO
AC Contactor
A1
A2
T1
T2
T3
NO
Start Button
Acrel
Ia 0.0A Ib 0.0A
Ic 0.0A Iuf 0%
COMM
Run
Trip
Alarm
Reset
Esc
◄
►
M

APPLICATION FIELD

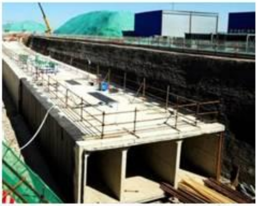
Cement, chemical industry

Oilfield

Power Plant

Rail

Metallurgy

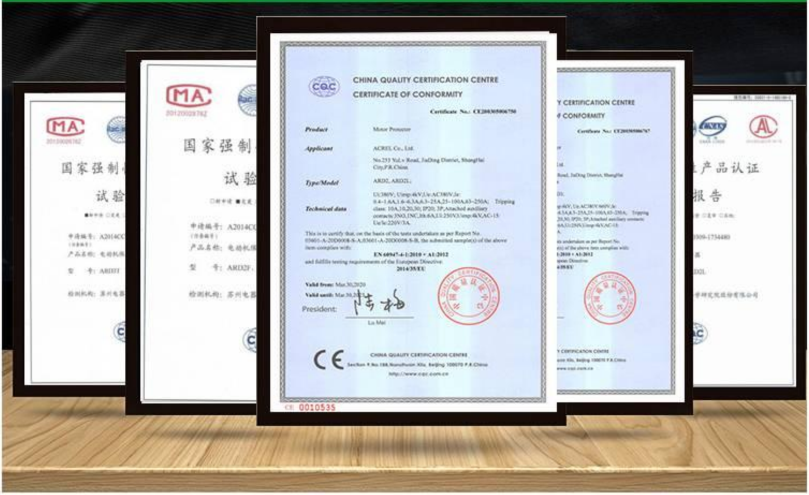


Colligate Alure

Pump station

Steel

QUALIFICATION CERTIFICATE QUALITY ENTERPRISE



CHINA QUALITY CERTIFICATION CENTRE

CERTIFICATE OF CONFORMITY

Certificate No.: CE200305006750

Product Motor Protector

Applicant ACREL Co., Ltd.

No.253 Yul.v Road, JiaDing District, ShangHai City,P.R.China

Type/Model ARD2, ARD2L;

Technical data Ui:380V; Uimp:4kV,Ue:AC380V,Ie: 0.4~1.6A,1.6~6.3A,6.3~25A,25~100A,63~250A; Tripping class: 10A,10,20,30; IP20; 3P;Attached auxiliary contacts:3NO,1NC,Ith:6A,Ui:250V,Uimp:4kV,AC-15 Ue/Ie:220V/3A.

This is to certify that, on the basis of the tests undertaken as per Report No. 03601-A-20D0008-S-A,03601-A-20D0008-S-B, the submitted sample(s) of the above item complies with:

EN 60947-4-1:2010 + A1:2012

and fulfills testing requirements of the European Directive:

2014/35/EU

Valid from: Mar.30,2020

Valid until: Mar.30,20

President:

Lu Mei

CHINA QUALITY CERTIFICATION CENTRE

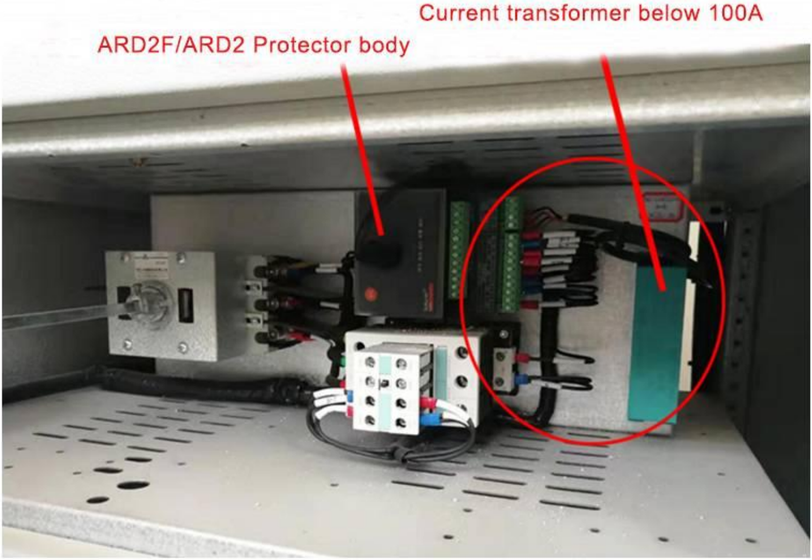
Section 9, No.188, Nanshuxin Xilu, Beijing 100070 P.R.China

http://www.cqc.com.cn

CE 0010535

LIVE APPLICATION PICTURES

LCD DISPLAY


Current transformer below 100A
ARD2F/ARD2 Protector body

Q & A

1

Q Does ARD standard configure with current transformers?

A Standard configured with CT, 1A/5A specification, no primary transformer.

2

Q Can ARD be used for single-phase motor protection?

A Yes, the motor type can be set as single-phase motors in the menu

3

Q Can ARD be connected to AC 660V/1140V system?

A Yes, Auxiliary and control power supply need AC220V, 1140V or higher voltage class current transformer is converted into 1A or 5A signal to be connected to the protector through PT.

4

Q Why protector report phase failure during the motor startup?

A Phase failure means that the current of a certain phase is lower than 5% of the rated current. It is necessary to confirm whether the actual current is lower than 5%, and confirm whether the current specification of the protector matches the motor.