

ACTB系列电流互感器过压保护器

ACTB Series Over-voltage Protective device for Current Transformer

安装使用说明书

Installation and operation instruction

上海安科瑞电气有限公司
Shanghai Acrel Electric Co., Ltd.
地址: 上海市嘉定区棕坊桥洪德路99号
Add: No. 99 Hongde Road, Zong Fang Qiao,
 Jiading District, Shanghai
Tel: (86)21-59104850 59104851
Fax: (86)21-59104852
Http: //www.acrel.cn
P C: 201801

上海安科瑞电气有限公司
Shanghai Acrel Electric Co., Ltd.

申 明

DECLARATION

版权所有，未经本公司之书面许可，此手册中任何段落，章节内容均不得被摘抄、拷贝或以任何形式复制、传播，否则一切后果由违者自负。

本公司保留一切法律权利。

No part of this publication may be reproduced, stored in a retrieval system, or transmitted in any form by any means, electronic, mechanical photocopying, recording, or otherwise without prior permission of Acrel. All rights reserved.

本公司保留对本手册所描述之产品规格进行修改的权利，恕不另行通知。
订货前，请垂询当地代理商以获悉本产品的最新规格。

This company reserve power of revision of product specification described in this manual, without notice. Before ordering, please consult local agent for the latest specification of product.

目 录

CONTENTS

1 概述 General	1
2 型号说明 Type explanation	1
3 产品特点 Features	1
4 主要技术特性 Main technical characteristic	2
5 接线方法 Connection method	3
6 应用实例 Sample in application	5
7 检测方法 Detection method	8
8 订货范例 Sample for ordering	8

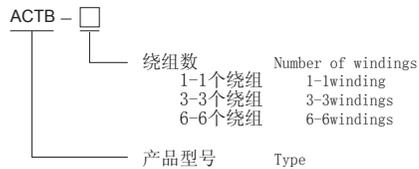
ACTB系列电流互感器过压保护器

ACTB Series Over-voltage Protective device for Current Transformer

1 概述 General

电流互感器（简称CT）在运行中二次回路绝不允许开路，一旦开路，或一次绕组流过异常电流（如雷电流、谐振过电流，电容充电电流、电感启动电流等），将会产生数千至数万伏开路过电压，造成CT和二次设备损坏，也严重威胁人身安全，造成重大经济损失。采用电流互感器二次过电压保护器（简称CTB）就能够有效的防止因电流互感器二次侧异常高压引起的事故。

2 型号说明 Type explanation



3 产品特点 Features

我公司生产的CTB主要应用于各种CT二次侧的异常过电压保护，正常工作时，互感器二次侧处于近似短路状态，输出电压很低。一旦CT二次开路出现异常尖峰过电压时它能立即响应限压，延时短路，从而起到完全的保护作用，面板上显示故障的部位，并有无源信号输出。当故障排除后，电路恢复正常状态，重新正常工作。

保护器应用于各种CT二次侧的差动绕组、过流绕组、测量绕组、母线保护绕组、备用绕组等。

Current transformer (CT, for short) in running, the open circuit of its secondary circuit is never allowable, if opening, or if the abnormal current (such as lightning current, resonant over current, capacitor charged current, inductive starting current etc.) flow through the primary winding, will result in open circuit over voltage of ten hundred up to ten thousands Volt to damage CT and the secondary equipment, to risk personnel safe and result in heavy economic loss. Using ACTB series secondary over-voltage protective device for current transformer (CTB, for short) can effectively prevent accident from excessive high voltage of secondary side of current transformer.

Our CTB are mainly used in various CT secondary side for excessive high over voltage protection, in normal condition, the secondary side of current transformer is near in short-circuit condition with very low output voltage. Once the abnormal peak over voltage occurs in CT secondary open circuit, the device respond immediately to limit voltage, delay short circuit, to get fully protection. The position of fault is shown on the faceplate, outgoing passive signal. After clearing faults, the circuit restore to normal condition, to start normal operation again. This device is applied to various differential winding of CT secondary side, over current windings, measuring windings, windings for bus protection, standby windings.

与同行比较如下：

Comparing with the craft brother

项目 Item	产品 Product	同行 Craft brother	本产品 This device
电源 Power		AC220V	AC/DC85 - 270V
晶闸管门电路保护 Thyristor gate circuit		无 No	有 Yes

4 主要技术特性 Main technical characteristic

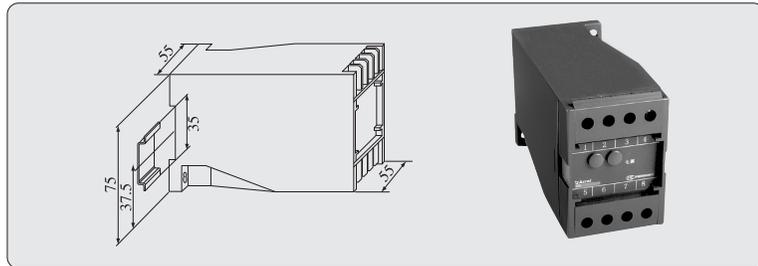
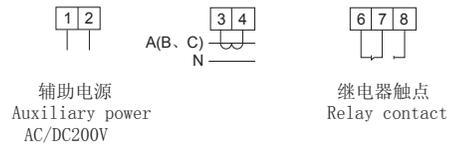
技术参数 Technical parameter	指标 Value	
正常漏电流 Normal leakage	< 20 μA	
输入电阻 Input resistance	大于 > 100M	
导通电压 ON-voltage	150V ± 10% (默认, 可根据用户要求设定) (default, set up by user's request)	
导通时间 On-time	50ms ≤ Ts ≤ 250ms	
动作寿命 Service life	1 × 10 ⁵ 次 times	
继电器接点容量 Capacity of relay contact	通信继电器接点容量 Communication relay	AC220V/5A; DC110V/5A
	保护继电器接点容量 Protective relay	AC220V/15A
使用的CT规格 Used spec.	二次侧峰值大于150V The secondary peak value is above 150V	
保护电流 Protection current	5A	
工作环境 Operating condition	温度 Temperature	-20℃ ~ 70℃
	湿度 Humidity	≤ 95%RH
	海拔 Altitude	≤ 2500米 m
复位方式 Reset mode	按压“复位”按钮或停电自动复位 Pressing down reset button, power cut	
抗震性能 Shock resisting	10~50~10 2g 3min	
工作电源 Operational power	AC (DC) 220V 允许 allowable 85~270V	
安装方式 Mounting mode	导轨式 Guide rail	
功耗 Power consumption	≤ 5VA	
可靠安全性 Reliability	工频耐压 Power frequency withstand voltage ≥ 2500V	
抗干扰 Anti-jamming	静电 Static	8kV接触式 Contact type
	浪涌 Surge	4kV

5 接线方法 Connection method

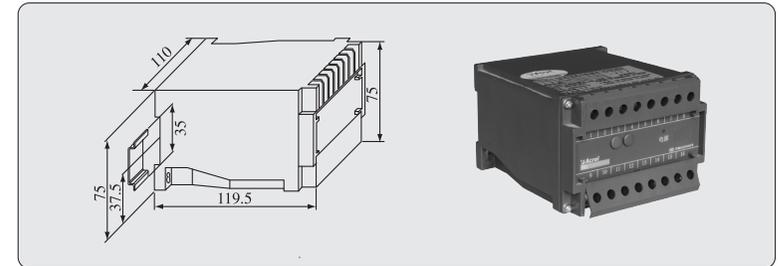
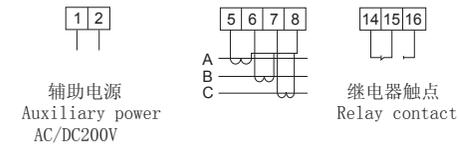
一般情况下，互感器均连接在A、B、C三相上，少数连接在两相上，个别连接在一相上。绝大多数均为星形连接，少数三角形连接。本产品电流互感器为二次绕组星形连接。二次绕组A、B、C对应连接在保护器A、B、C接线端子上。若只用A、B绕组，C相可以不接线，不会影响保护器的正常工作。

Generally speaking, the transformer is connected with three-phase of A,B,C, minority is connected with two-phase, very few is connected with single-phase. The most adopt the Wye connection, the minority adopt Delta connection. The current transformer in this product adopt secondary winding as Wye connection. The A, B, C, phase of secondary winding is connected with the A, B, C, connector terminal of the device. If only using A, B windings, not connecting C phase, the normal operation of the device is not affected.

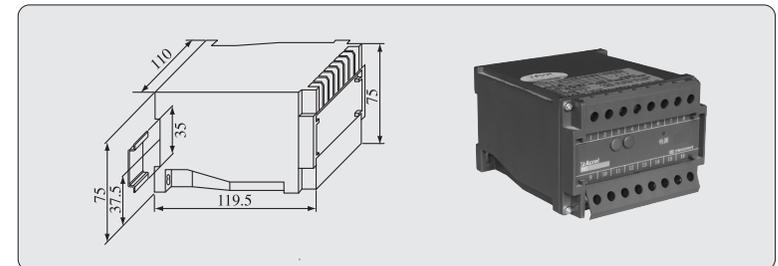
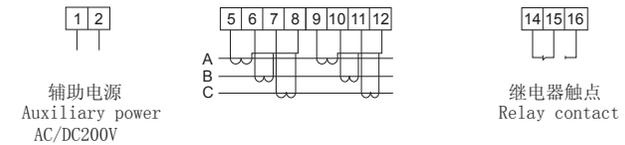
■ ACTB-1接线图 Wiring diagram



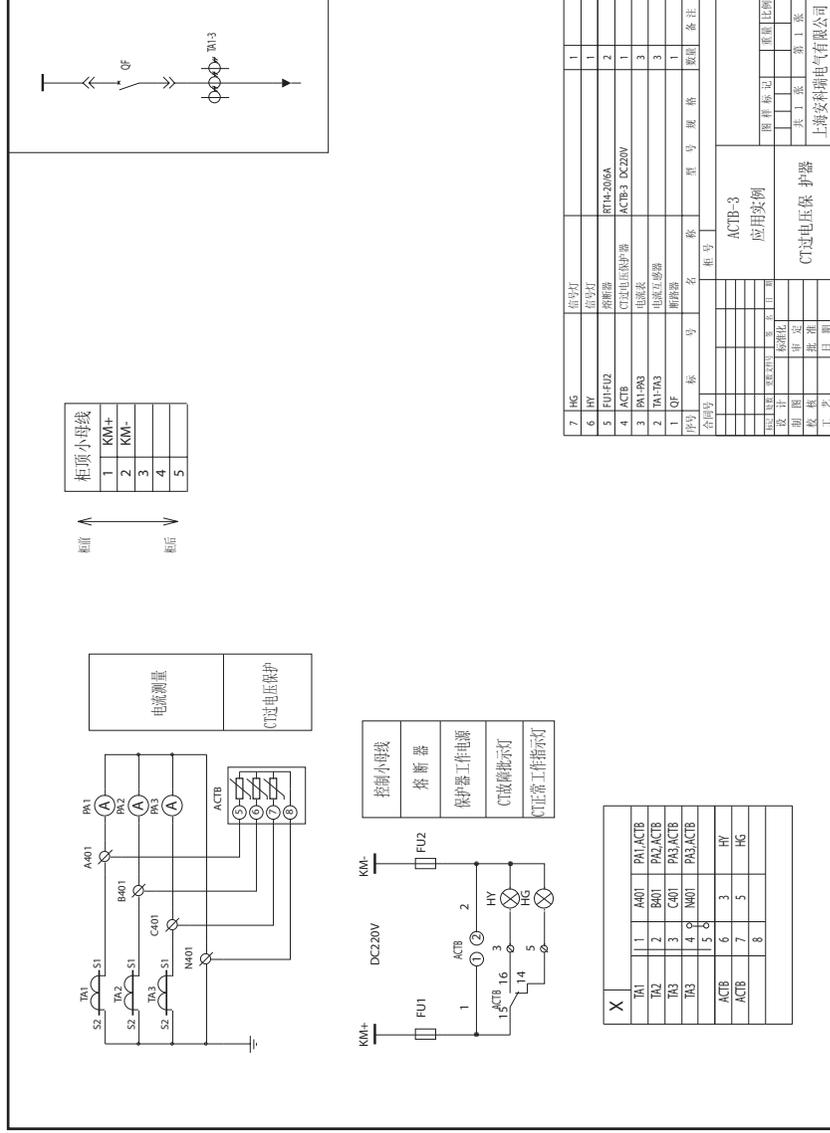
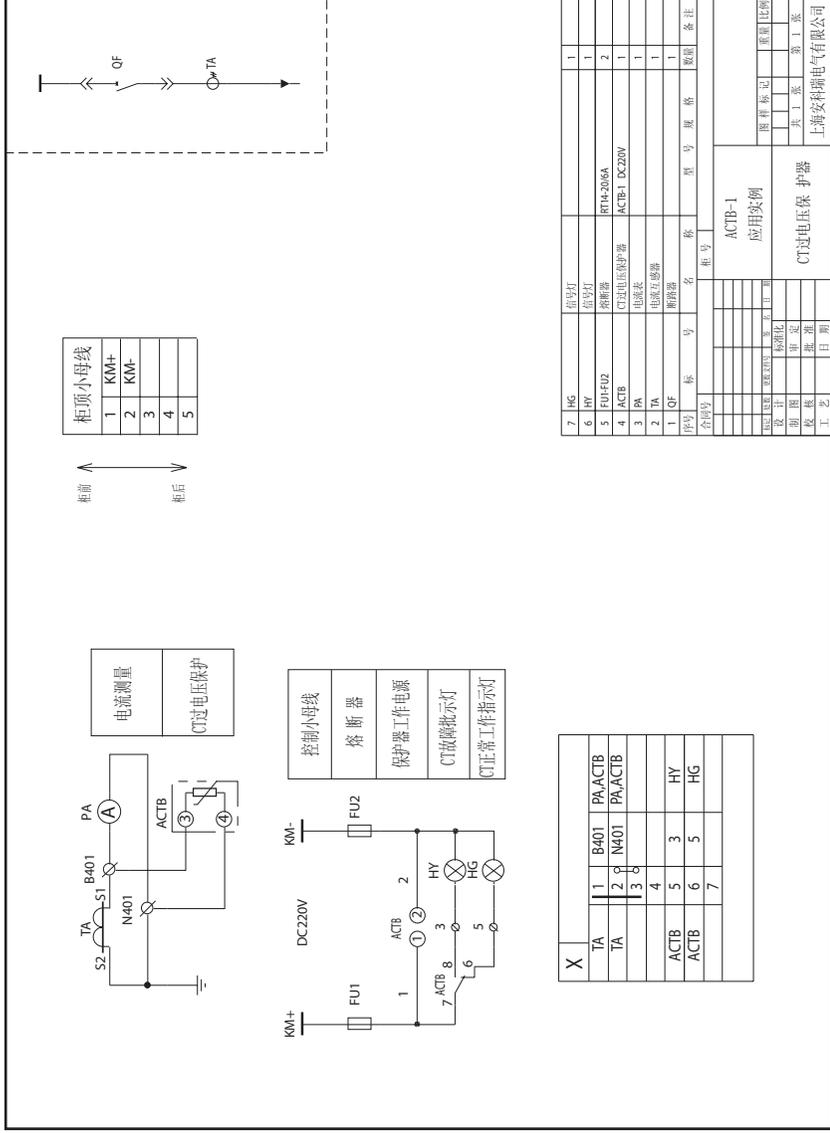
■ ACTB-3接线图 Wiring diagram



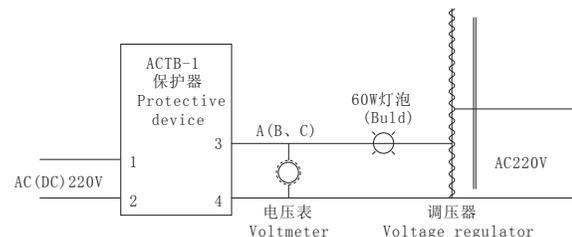
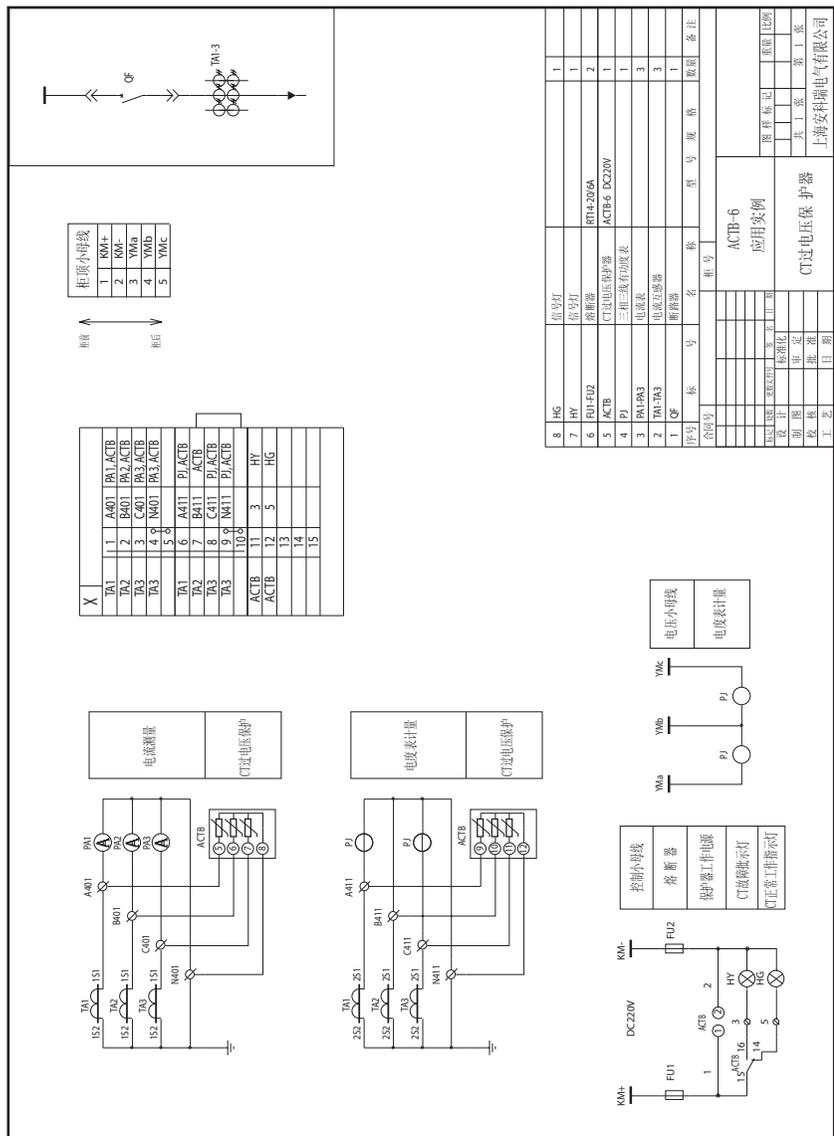
■ ACTB-6接线图 Wiring diagram



6 应用实例 Sample in application



7 检测方法 Detection method



保护器在使用前应进行检测，用万用表电阻档测量3、4两端时，电阻应大于100MΩ。

保护器在测量时，应按上图分别逐个接好电路，然后把调压器调到0V位置，在接通电源时，此时保护器内应自动“复位”，面板上的电源指示灯亮，其他灯均应熄灭，表示各条电路均“复位”。假如还有灯亮，说明没有全部自动“复位”，此时按一下“复位”按钮就可全部“复位”。按动“测试”按钮输出继电器动作，故障灯均亮。说明内部电路正常。按动一下“复位”按钮使之“复位”。慢慢转动调压器手柄，使电压逐渐升高，当电压升高到额定值后，灯泡突然点亮，面板上该相指示灯也亮。然后再调低电压，灯泡仍不会全灭，这说明CT保护器该相开路(异常高压)后保护器短路工作正常。

ACTB-3, ACTB-6按照上述操作方法，检查测试。

Before operating, the device shall be detected with the universal meter, the resistance between 3,4 terminal shall be greater than 100MΩ.

When measuring, connecting circuit respectively as per above diagram, then the Voltage regulator is put on 0V position, after energizing, the protective device shall be reset automatically, the power indicator on the faceplate lights, other indicators are extinguished, i.e. every circuit is in reset. If any indicator is lighting, it indicate that the automatic reset is not fully completed, at this time, pressing down the RESET button, full reset may be obtained. Pressing down the TEST button, the output relay is acting, the fault indicators are lighting, the inner circuit is in normal condition. Pressing down the RESET button, full reset can be obtained. Turn the handle of the voltage regulator slowly, to increase voltage gradually, when voltage is up to the rated value, the bulb lights suddenly, the faceplate indicator for this phase also lights. Then voltage shall be regulated down, the bulbs are not extinguished completely, it shows that so this phase of CT protector is in open circuit (excessive high voltage), the protector short circuit is in normal condition.

For ACTB-3, ACTB-6, as per the above mentioned method, the inspection and test are carried out.

8 订货范例 Sample for ordering

例 Sample:

型号 Type:

辅助电源 Auxiliary power:

输入 Input :

ACTB-3

220VDC

3个绕组 3 windings