

DXNA1 系列户内高压带电显示器

DXNA1 Series high voltage electrified display

安装使用说明书 V1.2

Installation and Operation Instruction V1.2

申 明

DECLARATION

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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.

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一 产品概述 General

DXNA1 系列高压带电显示器是一种安装在户内交流 50Hz、额定电压为 3.6kV-40.5kV 高压开关柜或高压电气设备中，与 CG 系列传感器配合使用，通过发光二极管显示以反映电气设备是否带有运行电压并具有强制电气闭锁功能的安全装置。该装置符合 DL/T538-2006《高压带电显示装置技术条件》。

DXNA1 series high voltage electrified display is a safety device, which is fitted in high voltage switchgear or high voltage electric equipment of indoor 50Hz, rated voltage 3.6kV-40.5kV, matched with CG series sensor, via LED display to show that if the equipment possess the proper running voltage, and possess the forced electrical locking function. This device meets the technical requirements of DL/T538-2006 of "Technical conditions for High Voltage Electrified Display".

二 型号说明 Type explanation

表 (Table) 1

功能说明 Explain mode	验电/核相孔 Check hole	显示方式 Display mode	自检功能 Examine self	闭锁功能 Lock function	面框 Panel(mm)	开孔 Trepanning(mm)
DXNA1-□/T	无 No	常亮（无按键） Lights(without switch)	无 No	无 No	48×96	45×92
DXNA1-□/Q	有 Yes	按键显示 Lights without switch	有 Yes	有 Yes	48×96	45×92
DXNA1-□/Q-2J	有 Yes	常亮（无按键） Lights(without switch)	有 Yes	有 Yes	48×96	45×92

例：DXNA1-12/Q 就代表着开孔尺寸为 45×92，有按键，有自检功能，有验电/核相孔，额定电压为 12kV 的强制型户内高压带电显示器。

For example: DXNA1-12/Q denote indoor high voltage electrified display with Trepanning 45×92, keystroke, self-test function, hole for live/phase, forcing type, rated voltage 12kV.

DXNA1-3.6/T 就代表着开孔尺寸为 45×92，有按键，有验电/核相孔，额定电压为 3.6kV 的提示型户内高压带电显示器。

DXNA1-3.6/T denote indoor high voltage electrified display with trepanning 45×92, no keystroke, no hole for check live/phase, hint type, rated voltage 3.6kV.

DXNA1-20/Q-2J 就代表着开孔尺寸为 45×92，有按键，有自检功能，有验电/核相孔，有两路继电器闭锁功能，额定电压为 20kV 的强制型户内高压带电显示器。

DXNA1-12/Q-2J denote indoor high voltage electrified display with Trepanning 45×92, keystroke, self-test function, hole for live/phase, forcing type, two relays Locking function, rated voltage 20kV.

三 产品特点 Features

1、显示器使用超高亮发光二极管。在高压设备带有运行电压时，以发光的方式提醒工作人员设备带电。

The display is fitted with ultrahigh brightness LED. When high voltage equipment with the running voltage, the LED lights to warn user that equipment is energized.

2、使用寿命长。克服了以往显示器采用氖灯显示寿命短的问题，平均连续无故障工作时间大于 70000h。

Long service life. The problem of short service life resulting from neon lamp is overcome, the average work time without stoppage can exceed 70000 hours.

- 3、运行可靠。其中强制型采用了高可靠性能的开关电源，既解决了采用电容或者功率电阻降压的简单电源容易受到电压波动影响的问题，同时又解决了采用该简单电源的显示器发热量高影响使用寿命的问题。

Reliable running. For the forcing type, due to adopting the switched power supply with high reliability, the trouble that the simple power using capacitor or power resistance for decreasing voltage is affected by fluctuating voltage; and the trouble when the display use this simple power supply, the service life is affected by high heat productivity of equipment are eliminated.

- 4、强制型工作电源适性强，交直流通用，输入电压范围可达 AC85~265V DC100~300V。

The power supply of forcing type with high adaptability is suitable for both AC application and DC application, range of input voltage are up to AC85~265V DC100~300V.

- 5、强制型采用高可靠性能的数字检测技术，最大限度的提高了检测的灵敏度（额定电压值的 50%或更小就可有效闭锁）并防止了继电器输出的误动作。

The forcing type adopts high reliable digital detecting technology to get the maximum detecting sensitivity (the effective locking occurs at 50% or less of rated voltage) to prevent relay output misoperation.

- 6、由于外壳的面框采用了前端可卸式，所以该装置运行时，万一发生故障，可以在不打开开关柜门的情况下，检测或更换装置内部芯片或发光管，解决了停电处理难的问题。

The front panel of the case may be dismantled, during running, if fault occur, detecting or replacing the inner chip or LED without cutting off the high voltage and open the door of switch cabinet.

- 7、用户配置灵活。在实际使用中，用户若需要自己配置传感器，只需在选定相匹配的电压等级的传感器后，保证其对地短路输出电流大于 200 μ A 即可。

For user, the configuration is flexible. In practice, if user need configuring sensor by himself, selecting sensor to be matched with the voltage grade and assuring the output current shorted to earth exceed 200 μ A.

四 技术指标 Technical data

- 1、工作条件(Operating condition)

相对湿度(Relative humidity) $\leq 90\%$

海拔(Altitude) $\leq 2500\text{m}$

工作温度(Operational temperature) $-25\sim+55^{\circ}\text{C}$

贮存温度(Storage temperature) $-35\sim+65^{\circ}\text{C}$

- 2、电气参数(Electrical parameter)

显示部分 (Display part):

额定频率 (Rated frequency): 50Hz

输入阻抗（单相）(Input impedance(each phase)): 210k Ω ~260k Ω

闭锁部分(Locking part):

额定电压 (Rated voltage): AC/DC 220V $\pm 20\%$

功率消耗 (Power consumption): $< 5\text{VA}$

继电器输出容量 (Contact capacity of relay): AC5A/250V DC5A/30V

提示 (T) 型显示器: 当测试端的相电压在额定值的 15%~65%时显示器的指示灯就开始显示电气设备的带电情况。

Hint (T) type display: When phase voltage at detecting end is up to rating 15%~65%, indicator of the display begin to show the electrified condition of electrical equipment.

强制 (Q) 型显示器: 具有 T 型显示器的所有特性。同时还具有(1)当所监测端任一相电压达到额定值的 65%~100%时, 强制闭锁处于“闭锁”状态(继电器输出 K 断开)同时“LOCK”指示灯亮起;(2)还有自检功能, 当按下自检按键, 可检测显示器是否正常。

Forcing (Q) type display: Possess all the characteristic of T type display, when phase voltage at any monitoring end exceed rating 50%~100%, the forcing lock is in the “locking” condition (contact K is closed), “LOCK” indicator lights; with self-test function, it can test whether the display is normal or not while pressing self-test keystroke.

注: 在额定工作相电压小于或等于 15%时, 强制闭锁处于“解锁”状态, K 接点闭合。在额定工作相电压大于或等于 65%时, 强制闭锁处于“闭锁”状态, K 接点打开。

- a. 只有在高压 A. B. C 三相均无运行电压时, 闭锁部分才解锁 (K 接点闭合) A. B. C 三相任意一相有运行电压时, 闭锁部分都会可靠闭锁 (K 接点断开)。
- b. 强制闭锁控制电源: AC/DC220V \pm 20%, 可保证闭锁部分可靠工作; 运行中控制电源消失, 闭锁接点 K 不会误动作, 被闭锁设备仍然可靠闭锁。
- c. 在正常运行情况下, 按键显示开关打在“OFF”时, 三相显示灯会熄灭(可以延长显示灯的使用寿命)。但并不表示不带电, 所以闭锁部分仍然会可靠闭锁。

抗干扰能力: 系统正常运行时, 三相正常显示; 系统任意相接地不影响其他相的正常显示。

Note: When rated operational phase voltage is equal to or less than 15% of rated voltage, the forcing lock is in “unlocking” condition, contact K is closed. When rated operational phase voltage exceed 50% of rated voltage, the forcing lock is in “locking” condition, contact K is opened.

- a. Only when high voltage A.B.C three phases have no running voltage, the lock part is unlocking (Contact K is closing), if any phase of A.B.C three-phase has running voltage, the lock part is locking reliably (Contact K is closed).
- b. Forcing lock control power supply: AC/DC100~220V, ensure the lock part operation reliably; During running, if control power supply is closed, contact K has no misoperation, the locked equipment is still in locking reliably.
- c. When it working, turn off key display switch, the lamp of three phases will be off. (Can be long life), but it don't means no electrification, so lock part can be lock.

Anti-interference feature: When system is running normally, the display for three-phase is in normal condition; the grounding of any phase has no affect to the normal display of other phase.

五 产品及附件选配表 Matching table for product and accessory

连接线 Connecting wire

名称 Name	规格 Specification	长度 Length	备注 Note
ACW1-3	专用屏蔽导线 Special shielded conductor	3m	
ACW1-5		5m	
ACW1-7		7m	

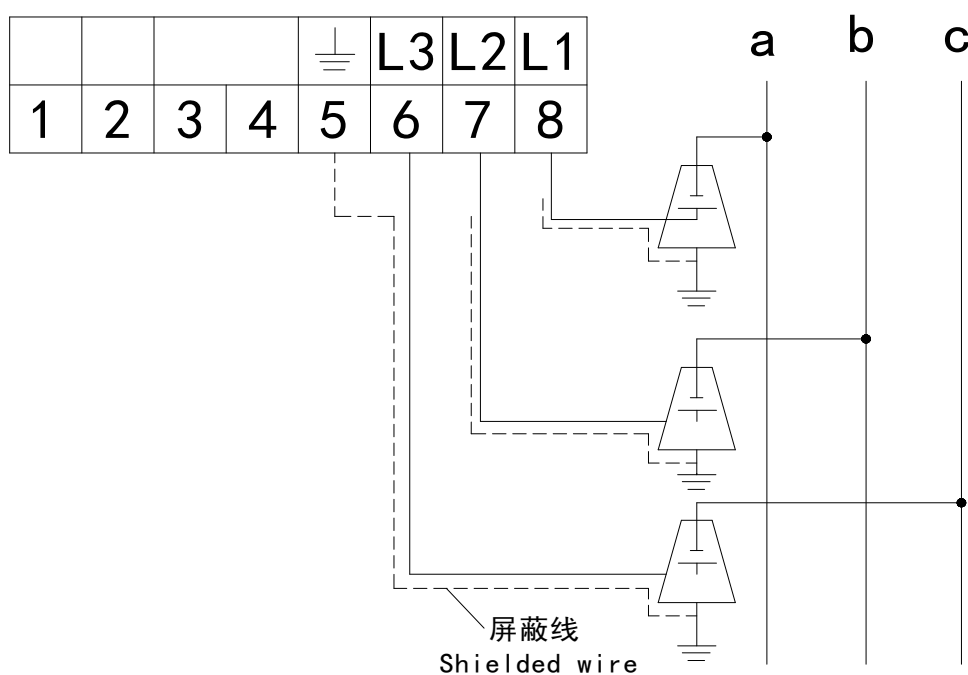
传感器 Sensor

传感器型号 Sensor type	额定电压 Rated voltage	直径 (mm) Diameter	高度 (mm) Height	工频耐压 Withstand voltage	爬电距离(mm) Creepage distance	抗弯强度(N) Bend strength	局部放电(PC) Partial discharging
CG106-12 Q	3.6kV~12kV	95	140	45kV/5nin	≥240mm	>8000	<10
CG203-40.5 Q	35kV~40.5kV	175	320	100kV/1nin	≥810mm	>14000	<8

核相器 Phase checker

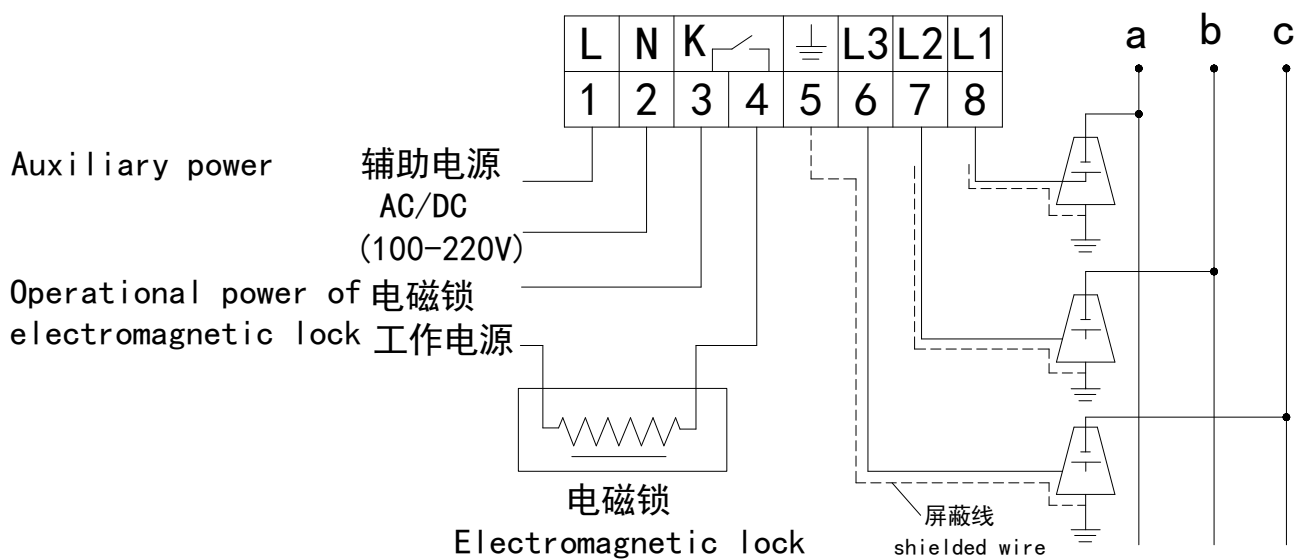
名称 Name	连接线长度 Length of conductor
ACC1-1	3m

六 接线图 Wiring diagram



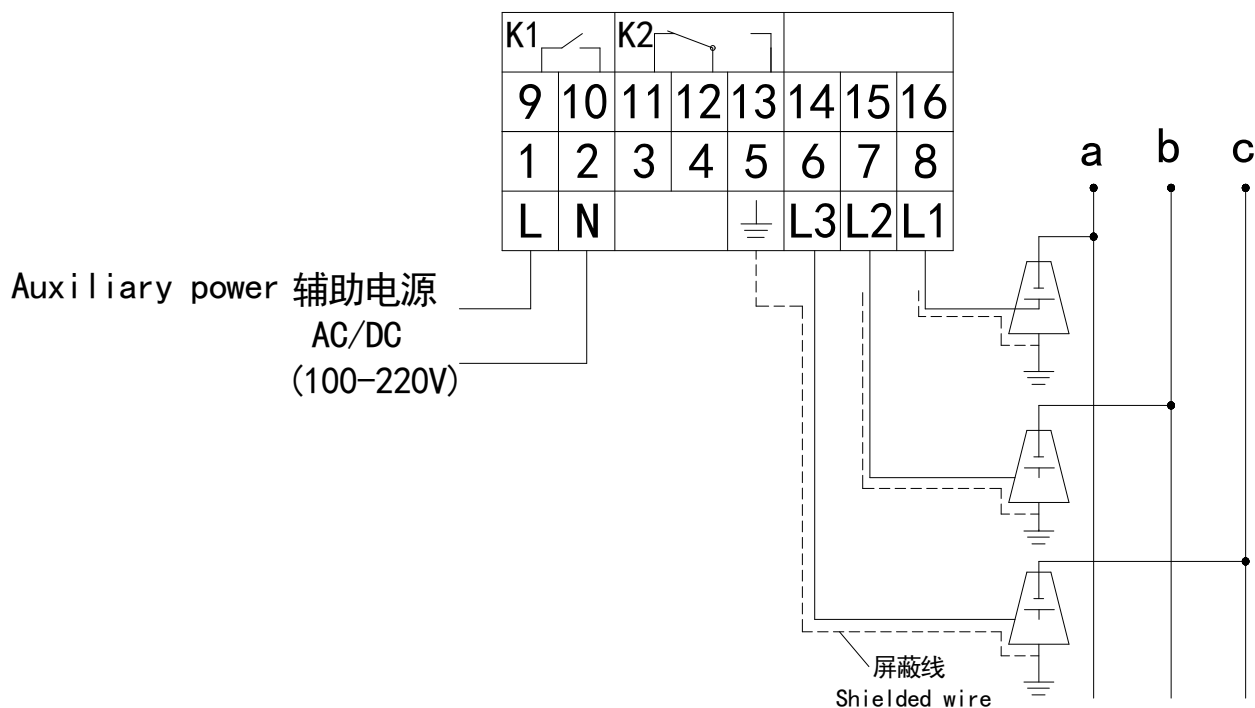
接线图1 DXNA1-□/ T显示器

Diagram 1 of wiring DXNA1-□/ T display



接线图2 DXNA1-□/Q显示器

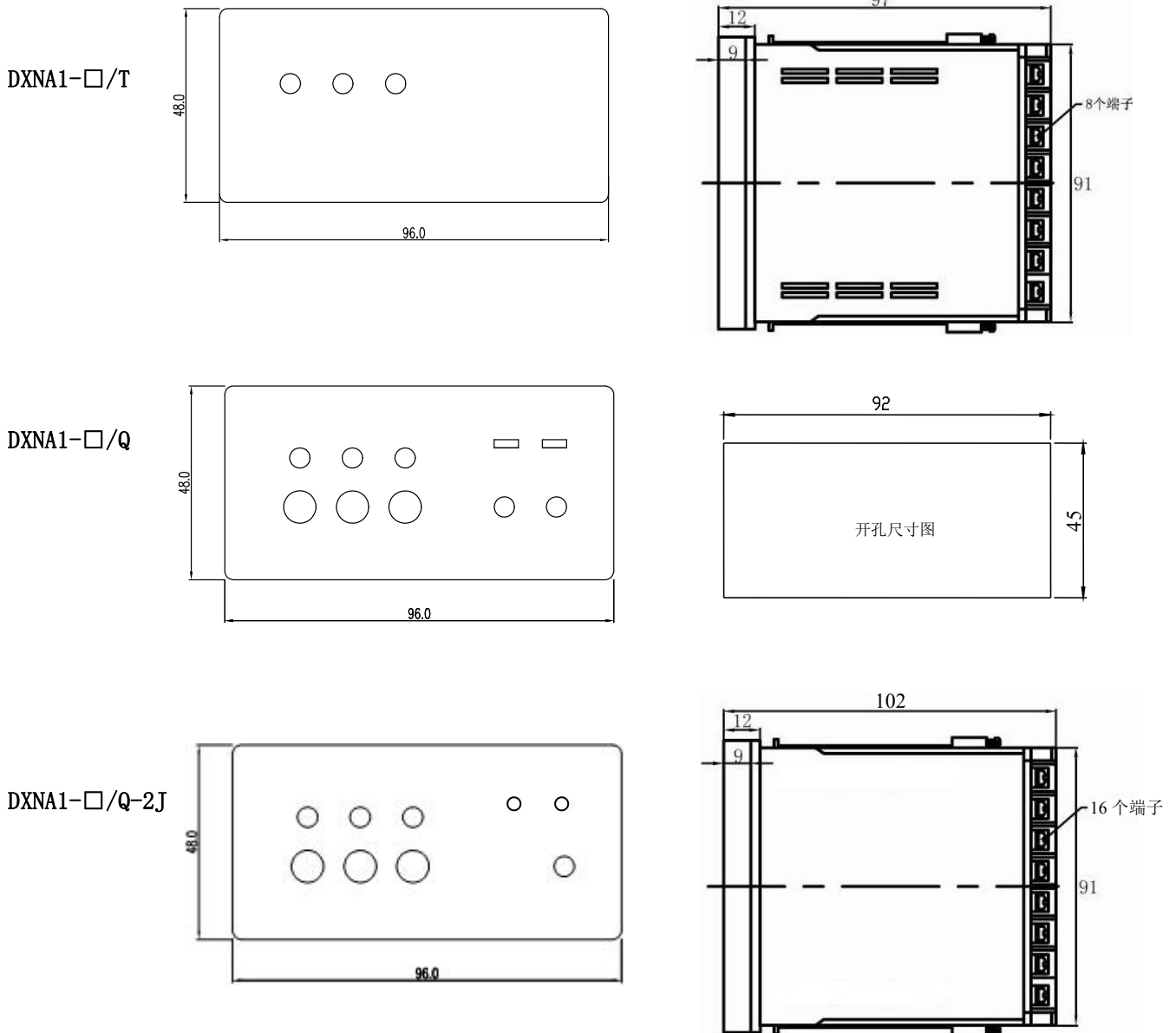
Diagram 2 of wiring DXNA1-□/Q display



接线图3 DXNA1-□/Q-2J显示器

Diagram 3 of wiring DXNA1-□/Q-2J display

七 外形及开孔尺寸Outline and trepanning size



八 订货说明及范例Explanation of ordering and example

1、 在定货时请说明是否需要配备传感器，需配传感器请说明传感器规格和数量。

When ordering, if matching sensor is needed, please state its specification and quantity clearly.

2、 请详细说明所定显示器的产品型号、电压等级及定货数量。

When ordering, please state product specification, type voltage grade and ordering quantity of display detailedly.

3、 对本系列显示器产品的技术规格有特殊要求，请附详细说明。

About technical specifications of this series products, if special request is needed, please state detailedly.

4、 产品的规格及配置如有变化，恕不另行通知。

About technical specifications and configuration of this series products, subject to change without notice.

例(Example):

型 号(Type): DXNA1-12/Q
辅 助 电 源(Auxiliary power): DC/AC 220V
电 压 等 级(Voltage grade): 12kV
连 接 线(Connecting wire): ACW-3
传感器 配备 否: 需要 不需要 (Sensor is needed: yes no)
传 感 器 型 号(Type of sensor): CG106-12Q
传感器电压等级(Voltage grade of sensor): 12kV
备 注(Note):

九 注意事项Attention for all display

1、显示器A. B. C. 信号输入端子通过电子元件与地已经形成了回路，因此严禁对信号输入端子与地之间进行工频耐压实验，否则将烧毁电子元件

A.B.C. signal input terminal of display have formed loop with earth via electronic component, frequency withstand voltage test between signal input terminal and earth is forbidden strictly, otherwise. The electronic components may be burnt out.

2、可以进行2kv/1min工频耐压试验的端子为继电器输出端并联对地，辅助电源端并联对地，继电器输出端并联对辅助电源端，信号输入端并联对电源端，信号输入端并联对继电器输出端并联端。

The parallel connection terminal which can be tested by 2kV/1min power-frequency is output terminal of relay to earth; auxiliary power terminal to earth; the output terminal of relay to auxiliary power terminal; input signal terminal to output terminal of relay. Parallel connection to power terminal; input signal terminal to output terminal of relay.

3、如果用户自备CG系列传感器，其对地短路输出电流必须大于200 μ A，并且对其质量负全部责任。

If CG series sensor is prepared by user, its output current shorted to earth must exceed 200 μ A, the user shall be in full responsibility of its quality.

4、屏蔽线层的接头应可靠接地，绝对不允许悬空。

The connector of shielding wire layer shall be grounding reliably, forbid being suspended in midair.

5、该装置运行前，应将其“监视部位”填写清楚。如：“211-2线路侧”、“260-3母线侧”等。

Before running, clearly fill out the “monitoring position” such as: ”211-2 line side” ”260-3 bus side” etc.

6、该装置如出现异常运行，应及时请专业人员处理或与本公司联系。

If this unit is in abnormal running, please call professional technician for treating or contact with our company.

更改记录：

1. “二 型号说明” 新增DXNA1-□/Q-2J的说明；
2. “六 接线图” 中修改Q型、T型的接线图，并新增Q型两路继电器的接线图（顺序也做调整）；
3. “七 外形及开孔尺寸” 新增Q型两路继电器的外形和开孔尺寸（图形顺序也做调整）。

总部：安科瑞电气股份有限公司

Headquarter: Acrel Co., LTD.

地址：上海市嘉定区育绿路 253 号

Address: No.253 Yulv Road Jiading District, Shanghai, China

电话：0086-21-69158338 0086-21-69156052 0086-21-59156392 0086-21-69156971

TEL. : 0086-21-69158338 0086-21-69156052 0086-21-59156392 0086-21-69156971

传真：0086-21-69158303

Fax: 0086-21-69158303

网址：www.acrel-electric.com

Web-site: www.acrel-electric.com

邮箱：ACREL008@vip.163.com

Email: ACREL008@vip.163.com

邮编：201801

Postcode: 201801

生产基地：江苏安科瑞电器制造有限公司

Manufacturer: Jiangsu Acrel Electrical Manufacturing Co., LTD.

地址：江苏省江阴市南闸街道东盟工业园区东盟路 5 号

Address : No.5 Dongmeng Road,Dongmeng industrial Park, Nanzha Street, Jiangyin City, Jiangsu Province, China

电话：0086-510-86179966

TEL: 0086-510-86179966

传真：0086-510-86179975

Fax: 0086-510-86179975

网址：www.jsacrel.com

Web-site: www.jsacrel.com

邮箱：sales@email.acrel.cn

Email: sales@email.acrel.cn

邮编：214405

Postcode: 214405