Acrel 安科瑞电气

ATU 系列监控触摸屏产品
ATU series monitoring touch screen products

规格说明书
Specification Instruction

安科瑞电气股份有限公司
Acrel Co., Ltd.

申　明

DECLARATION

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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

ATU173 产品说明 4
ATU173 Product Description 4
ATU156 产品说明 8
ATU156 Product Description 8
ATU133 产品说明 12
ATU133 Product Description 12
ATU116 产品说明 16
ATU116 Product Description 16
附录 20
Appendix 20

ATU173 产品说明

ATU173 Product Description

产品功能

Product features

★ 实时监测：实时监测各回路电压、电流、功率、功率因数等电参数信息，动态监视各配电回路断路器、隔离开关、地刀等合、分闸状态及有关故障、告警等信号

★ Real time monitoring: Real time monitoring of electrical parameters such as voltage, current, power, and power factor of each circuit, dynamic monitoring of the closing and opening status of circuit breakers, isolating switches, ground knives, and related fault, alarm, and other signals of each distribution circuit.

★ 电参量查询：在配电一次图中，可以直接查看该回路详细电参量，包括三相电流、三相电压、三相总有功功率、总无功功率、总功率因数、正向有功电能，并可以查看 24 小时电流趋势曲线

★ Electrical parameter query: In the distribution diagram, detailed electrical parameters of the circuit can be directly viewed, including three-phase current, three-phase voltage, three-phase total active power, total reactive power, total power factor, forward active energy, and 24-hour current trend curve can be viewed.

★ 运行报表：查询各回路或设备指定时间的运行参数，报表中显示电参量信息应包括：电流、电压、功率因数、有功功率、无功功率、有功电能等

★ Operation report: query the operating parameters of each circuit or equipment at a specified time. The electrical parameter information displayed in the report should include: current, voltage, power factor, active power, reactive power, active energy, etc.

★ 实时告警：系统能够对配电回路断路器、隔离开关、接地刀分、合动作等遥信变位，保护动作、事故跳闸等事件发出告警。系统具有实时报警功能。告警方式有弹窗、图元闪烁告警等

★ Real time alarm: The system can issue alarms for remote signaling changes, protection actions, accident tripping, and other events such as circuit breakers, isolating switches, and grounding switches in the distribution circuit. The system has real-time alarm function. Alarm methods include pop ups, flashing graphics alerts, etc.

★ 历史事件查询：能够对遥信变位，保护动作、事故跳闸，以及电压、电流、功率、功率因数越限等事件记录进行存储和管理，方便用户对系统事件和报警进行历史追溯，查询统计、事故分析等

★ Historical event query: It can store and manage event records such as remote signal displacement, protection action, accident tripping, as well as voltage, current, power, power factor exceeding limits, etc., making it convenient for users to trace system events and alarms, query statistics, accident analysis, etc.

★ 智能语音控制：通过预设唤醒词和指令库实现语音交互。操作员说出唤醒词激活系统后，系统生成控制请求并反馈执行提示。所有指令需通过权限核查与设备状态逻辑双重验证，确保操作安全合规。实现语音控制与安全防护的闭环管理，兼顾操作效率与电网安全

★ Intelligent voice control: achieve voice interaction through preset wake-up words and instruction libraries. After the operator says the wake-up word to activate the system, the system generates a control request and provides feedback on the execution prompt. All instructions must undergo dual verification through permission verification and device status logic to ensure safe and compliant operations. Realize closed-loop management of voice control and security protection, balancing operational efficiency and grid safety.

★ 一键顺控：系统根据需要下发一键停电或送电指令。智能开关柜会根据底盘车、接地刀和接触器的机械位置和电气状态，自动完成这三个器件的顺序化操作，无需多个命令分布执行。如在运行状态下需进行检修，则操作员在集控室内根据调度命令可启动一键分闸操作，开关柜在接到操作指令后自动跳开接触器，接触器确认分断并检测无电流后驱动电动底盘车自动移至试验位置，底盘车到达试验位置后驱动接地刀闸

自动闭合。开关柜“运行、热备用、冷备用”三种状态间的转换操作。在遥控命令执行的过程中，接触器和底盘车的位置状态能通过视频上传后台，操作人员在监控室即可以实现开关柜的操作并全程监控开关柜动作过程

★ One click sequential control: The system issues one click power-off or power on instructions as needed. The intelligent switchgear will automatically complete the sequential operation of the chassis, grounding knife, and contactor based on their mechanical position and electrical status, without the need for multiple commands to be distributed and executed. If maintenance is required while in operation, the operator can initiate a one key disconnection operation in the control room according to the dispatch command. The switchgear will automatically trip the contactor upon receiving the operation command. After the contactor confirms disconnection and detects no current, it will drive the electric chassis vehicle to automatically move to the test position. When the chassis vehicle reaches the test position, it will drive the grounding knife switch to automatically close. The switching operation between the three states of "operation, hot standby, and cold standby" of the switchgear. During the execution of remote control commands, the position status of the contactor and chassis vehicle can be uploaded to the background through video, and the operator can operate the switchgear in the monitoring room and monitor the entire process of the switchgear action.

★ 局放实时图谱：系统通过外置的高灵敏度特高频或超声波传感器，持续捕捉设备内部因绝缘缺陷产生的局部放电信号，并实时生成与刷新多维度局放图谱，实现开关柜等电气设备提供在线、实时、可视化的绝缘状态监测与诊断

★ Partial discharge real-time map: The system continuously captures partial discharge signals generated by insulation defects inside the equipment through external high-sensitivity ultra-high frequency or ultrasonic sensors, and generates and refreshes multi-dimensional partial discharge maps in real time, achieving online, real-time, and visual insulation status monitoring and diagnosis of electrical equipment such as switchgear.

产品特性

Product Features

液晶屏：17.3″TFT 液晶屏，分辨率(1920×1080)

LCD screen: 17.3 "TFT LCD screen, resolution (1920 × 1080)

CPU 主板：Intel N97

CPU motherboard: Intel N97

内存：8GB

Memory: 8GB

存储设备：512GB 固态硬盘

Storage device: 512GB solid-state drive

触摸屏：电容式

Touch screen: capacitive type

接口： 6×RS485, 2×USB3.0, 2×USB2.0, 2×LAN, 1×HDMI, 8×DI, 6×DO

Interface: 6 x RS485, 2 x USB 3.0, 2 x USB 2.0, 2 x LAN, 1 x HDMI, 8 x DI, 6 x DO

*若用到多个 RS485，可选配 Aport 串口服务器或者 ANet 智能网关

*If multiple RS485s are used, Aport serial port server or ANet intelligent gateway can be optionally selected





触摸屏规格

Touch screen specifications

类型：10 点电容式触摸屏

Type: 10 point capacitive touch screen

透光率：≥85%

Transmittance: ≥ 85%

控制：USB 接口

Control: USB interface

表面硬度：莫氏硬度 7H

Surface hardness: Mohs hardness 7H

液晶屏规格

LCD screen specifications

显示类型：17.3″TFT 液晶屏

Display type: 17.3 "TFT LCD screen

分辨率：1920×1080

Resolution: 1920 × 1080

亮度：250cd/m2

Brightness: 250cd/m2

工作温度：-10~50℃

Working temperature: -10~50 ℃

背光寿命：30,000 小时

Backlight lifespan: 30000 hours

产品规格

Product specifications

结构：全金属结构

Structure: All metal structure

外型颜色：亚光银色

Appearance color: matte silver

安装：嵌入式

Installation: Embedded

电源：12VDC

Power supply: 12VDC

外观尺寸：430.5×271×66mm

Exterior dimensions: 430.5 × 271 × 66mm

开孔尺寸：418.5×259mm

Hole size: 418.5 × 259mm

净重：3.59Kg

Net weight: 3.59Kg

应用环境

Application Environment

工作温度：-10~50℃

Working temperature: -10~50 ℃

存储温度：-20~60℃

Storage temperature: -20~60 ℃

相对湿度：5~90% 无凝结

Relative humidity: 5-90% without condensation

防水：前面板达到 IP65 防护等级

Waterproof: The front panel reaches IP65 protection level

相关软件

related software

操作系统：支持 Windows10、Linux 等操作系统

Operating system: Supports Windows 10, Linux, and other operating systems

外观尺寸

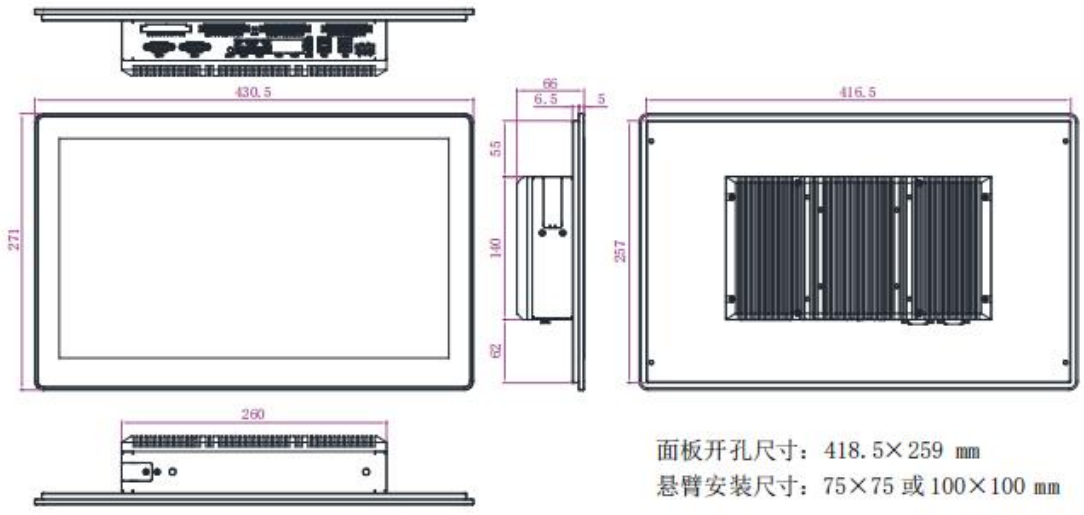
External dimensions

面板开孔尺寸：418.5×259mm

Panel opening size：418.5×259mm

悬臂安装尺寸：75×75 或 100×100mm

Suspended arm installation dimensions:75×75 or 100×100mm



ATU156 产品说明

ATU156 Product Description

产品功能

Product features

★ 实时监测：实时监测各回路电压、电流、功率、功率因数等电参数信息，动态监视各配电回路断路器、隔离开关、地刀等合、分闸状态及有关故障、告警等信号

★ Real time monitoring: Real time monitoring of electrical parameters such as voltage, current, power, and power factor of each circuit, dynamic monitoring of the closing and opening status of circuit breakers, isolating switches, ground knives, and related fault, alarm, and other signals of each distribution circuit.

★ 电参量查询：在配电一次图中，可以直接查看该回路详细电参量，包括三相电流、三相电压、三相总有功功率、总无功功率、总功率因数、正向有功电能，并可以查看 24 小时电流趋势曲线

★ Electrical parameter query: In the distribution diagram, detailed electrical parameters of the circuit can be directly viewed, including three-phase current, three-phase voltage, three-phase total active power, total reactive power, total power factor, forward active energy, and 24-hour current trend curve can be viewed.

★ 运行报表：查询各回路或设备指定时间的运行参数，报表中显示电参量信息应包括：电流、电压、功率因数、有功功率、无功功率、有功电能等

★ Operation report: query the operating parameters of each circuit or equipment at a specified time. The electrical parameter information displayed in the report should include: current, voltage, power factor, active power, reactive power, active energy, etc.

★ 实时告警：系统能够对配电回路断路器、隔离开关、接地刀分、合动作等遥信变位，保护动作、事故跳闸等事件发出告警。系统具有实时报警功能。告警方式有弹窗、图元闪烁告警等

★ Real time alarm: The system can issue alarms for remote signaling changes, protection actions, accident tripping, and other events such as circuit breakers, isolating switches, and grounding switches in the distribution circuit. The system has real-time alarm function. Alarm methods include pop ups, flashing graphics alerts, etc.

★ 历史事件查询：能够对遥信变位，保护动作、事故跳闸，以及电压、电流、功率、功率因数越限等事件记录进行存储和管理，方便用户对系统事件和报警进行历史追溯，查询统计、事故分析等

★ Historical event query: It can store and manage event records such as remote signal displacement, protection action, accident tripping, as well as voltage, current, power, power factor exceeding limits, etc., making it convenient for users to trace system events and alarms, query statistics, accident analysis, etc.

★ 智能语音控制：通过预设唤醒词和指令库实现语音交互。操作员说出唤醒词激活系统后，系统生成控制请求并反馈执行提示。所有指令需通过权限核查与设备状态逻辑双重验证，确保操作安全合规。实现语音控制与安全防护的闭环管理，兼顾操作效率与电网安全

★ Intelligent voice control: achieve voice interaction through preset wake-up words and instruction libraries. After the operator says the wake-up word to activate the system, the system generates a control request and provides feedback on the execution prompt. All instructions must undergo dual verification through permission verification and device status logic to ensure safe and compliant operations. Realize closed-loop management of voice control and security protection, balancing operational efficiency and grid safety.

★ 一键顺控：系统根据需要下发一键停电或送电指令。智能开关柜会根据底盘车、接地刀和接触器的机械位置和电气状态，自动完成这三个器件的顺序化操作，无需多个命令分布执行。如在运行状态下需进行检修，则操作员在集控室内根据调度命令可启动一键分闸操作，开关柜在接到操作指令后自动跳开接触器，

接触器确认分断并检测无电流后驱动电动底盘车自动移至试验位置，底盘车到达试验位置后驱动接地刀闸自动闭合。开关柜“运行、热备用、冷备用”三种状态间的转换操作。在遥控命令执行的过程中，接触器和底盘车的位置状态能通过视频上传后台，操作人员在监控室即可以实现开关柜的操作并全程监控开关柜动作过程

★ One click sequential control: The system issues one click power-off or power on instructions as needed. The intelligent switchgear will automatically complete the sequential operation of the chassis, grounding knife, and contactor based on their mechanical position and electrical status, without the need for multiple commands to be distributed and executed. If maintenance is required while in operation, the operator can initiate a one key disconnection operation in the control room according to the dispatch command. The switchgear will automatically trip the contactor upon receiving the operation command. After the contactor confirms disconnection and detects no current, it will drive the electric chassis vehicle to automatically move to the test position. When the chassis vehicle reaches the test position, it will drive the grounding knife switch to automatically close. The switching operation between the three states of "operation, hot standby, and cold standby" of the switchgear. During the execution of remote control commands, the position status of the contactor and chassis vehicle can be uploaded to the background through video, and the operator can operate the switchgear in the monitoring room and monitor the entire process of the switchgear action.

★ 局放实时图谱：系统通过外置的高灵敏度特高频或超声波传感器，持续捕捉设备内部因绝缘缺陷产生的局部放电信号，并实时生成与刷新多维度局放图谱，实现开关柜等电气设备提供在线、实时、可视化的绝缘状态监测与诊断

★ Partial discharge real-time map: The system continuously captures partial discharge signals generated by insulation defects inside the equipment through external high-sensitivity ultra-high frequency or ultrasonic sensors, and generates and refreshes multi-dimensional partial discharge maps in real time, achieving online, real-time, and visual insulation status monitoring and diagnosis of electrical equipment such as switchgear.

产品特性

Product Features

液晶屏：15.6″TFT 液晶屏，分辨率(1920×1080)

LCD screen: 15.6"TFT LCD screen, resolution (1920 × 1080)

CPU 主板：Intel N97

CPU motherboard: Intel N97

内存：8GB

Memory: 8GB

存储设备：512GB 固态硬盘

Storage device: 512GB solid-state drive

触摸屏：电容式

Touch screen: capacitive type

接口： 6×RS485, 2×USB3.0, 2×USB2.0, 2×LAN, 1×HDMI, 8×DI, 6×DO

Interface: 6 x RS485, 2 x USB 3.0, 2 x USB 2.0, 2 x LAN, 1 x HDMI, 8 x DI, 6 x DO

*若用到多个 RS485，可选配 Aport 串口服务器或者 ANet 智能网关

*If multiple RS485s are used, Aport serial port server or ANet intelligent gateway can be optionally selected





触摸屏规格

Touch screen specifications

类型：10 点电容式触摸屏

Type: 10 point capacitive touch screen

透光率：≥85%

Transmittance: ≥ 85%

控制：USB 接口

Control: USB interface

表面硬度：莫氏硬度 7H

Surface hardness: Mohs hardness 7H

液晶屏规格

LCD screen specifications

显示类型：15.6″TFT 液晶屏

Display type: 15.6 "TFT LCD screen

分辨率：1920×1080

Resolution: 1920 × 1080

亮度：250cd/m2

Brightness: 250cd/m2

工作温度：-10~50℃

Working temperature: -10~50 ℃

背光寿命：30,000 小时

Backlight lifespan: 30000 hours

产品规格

Product specifications

结构：全金属结构

Structure: All metal structure

外型颜色：亚光银色

Appearance color: matte silver

安装：嵌入式

Installation: Embedded

电源：12VDC

Power supply: 12VDC

外观尺寸：392×247×66mm

Exterior dimensions: 392 × 247 × 66mm

开孔尺寸：379×234mm

Hole size: 379 ×234mm

净重：3.34Kg

Net weight: 3.34Kg

应用环境

Application Environment

工作温度：-10~50℃

Working temperature: -10~50 ℃

存储温度：-20~60℃

Storage temperature: -20~60 ℃

相对湿度：5~90% 无凝结

Relative humidity: 5-90% without condensation

防水：前面板达到 IP65 防护等级

Waterproof: The front panel reaches IP65 protection level

相关软件

related software

操作系统：支持 Windows10、Linux 等操作系统

Operating system: Supports Windows 10, Linux, and other operating systems

外观尺寸

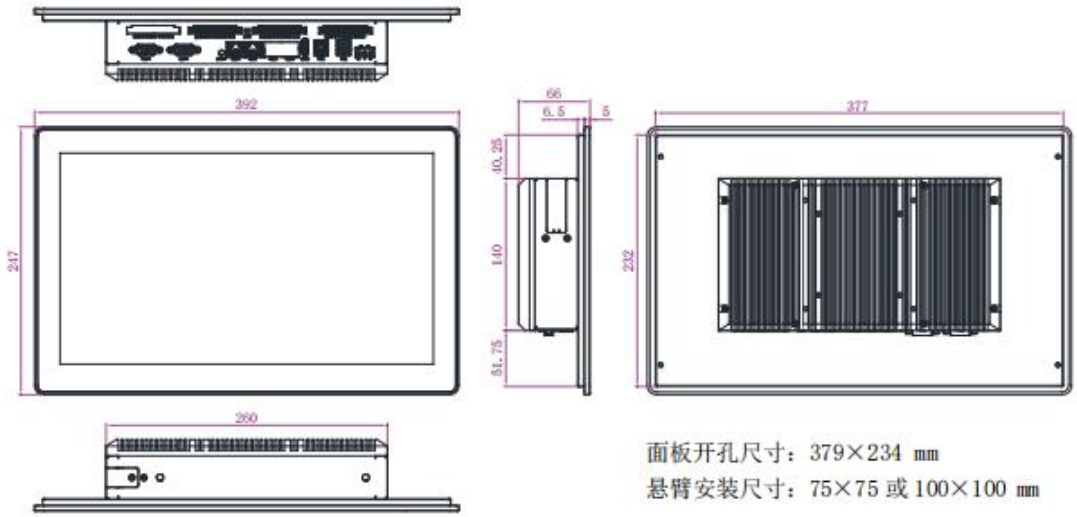
External dimensions

面板开孔尺寸：379×234mm

Panel opening size：379×234mm

悬臂安装尺寸：75×75 或 100×100mm

Suspended arm installation dimensions:75×75 or 100×100mm



ATU133 产品说明

ATU133 Product Description

产品功能

Product features

★ 实时监测：实时监测各回路电压、电流、功率、功率因数等电参数信息，动态监视各配电回路断路器、隔离开关、地刀等合、分闸状态及有关故障、告警等信号

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★ Electrical parameter query: In the distribution diagram, detailed electrical parameters of the circuit can be directly viewed, including three-phase current, three-phase voltage, three-phase total active power, total reactive power, total power factor, forward active energy, and 24-hour current trend curve can be viewed.

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★ Real time alarm: The system can issue alarms for remote signaling changes, protection actions, accident tripping, and other events such as circuit breakers, isolating switches, and grounding switches in the distribution circuit. The system has real-time alarm function. Alarm methods include pop ups, flashing graphics alerts, etc.

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★ 智能语音控制：通过预设唤醒词和指令库实现语音交互。操作员说出唤醒词激活系统后，系统生成控制请求并反馈执行提示。所有指令需通过权限核查与设备状态逻辑双重验证，确保操作安全合规。实现语音控制与安全防护的闭环管理，兼顾操作效率与电网安全

★ Intelligent voice control: achieve voice interaction through preset wake-up words and instruction libraries. After the operator says the wake-up word to activate the system, the system generates a control request and provides feedback on the execution prompt. All instructions must undergo dual verification through permission verification and device status logic to ensure safe and compliant operations. Realize closed-loop management of voice control and security protection, balancing operational efficiency and grid safety.

★ 一键顺控：系统根据需要下发一键停电或送电指令。智能开关柜会根据底盘车、接地刀和接触器的机械位置和电气状态，自动完成这三个器件的顺序化操作，无需多个命令分布执行。如在运行状态下需进行检修，则操作员在集控室内根据调度命令可启动一键分闸操作，开关柜在接到操作指令后自动跳开接触器，接触器确认分断并检测无电流后驱动电动底盘车自动移至试验位置，底盘车到达试验位置后驱动接地刀闸

自动闭合。开关柜“运行、热备用、冷备用”三种状态间的转换操作。在遥控命令执行的过程中，接触器和底盘车的位置状态能通过视频上传后台，操作人员在监控室即可以实现开关柜的操作并全程监控开关柜动作过程

★ One click sequential control: The system issues one click power-off or power on instructions as needed. The intelligent switchgear will automatically complete the sequential operation of the chassis, grounding knife, and contactor based on their mechanical position and electrical status, without the need for multiple commands to be distributed and executed. If maintenance is required while in operation, the operator can initiate a one key disconnection operation in the control room according to the dispatch command. The switchgear will automatically trip the contactor upon receiving the operation command. After the contactor confirms disconnection and detects no current, it will drive the electric chassis vehicle to automatically move to the test position. When the chassis vehicle reaches the test position, it will drive the grounding knife switch to automatically close. The switching operation between the three states of "operation, hot standby, and cold standby" of the switchgear. During the execution of remote control commands, the position status of the contactor and chassis vehicle can be uploaded to the background through video, and the operator can operate the switchgear in the monitoring room and monitor the entire process of the switchgear action.

★ 局放实时图谱：系统通过外置的高灵敏度特高频或超声波传感器，持续捕捉设备内部因绝缘缺陷产生的局部放电信号，并实时生成与刷新多维度局放图谱，实现开关柜等电气设备提供在线、实时、可视化的绝缘状态监测与诊断

★ Partial discharge real-time map: The system continuously captures partial discharge signals generated by insulation defects inside the equipment through external high-sensitivity ultra-high frequency or ultrasonic sensors, and generates and refreshes multi-dimensional partial discharge maps in real time, achieving online, real-time, and visual insulation status monitoring and diagnosis of electrical equipment such as switchgear.

产品特性

Product Features

液晶屏：13.3″TFT 液晶屏，分辨率(1920×1080)

LCD screen: 13.3"TFT LCD screen, resolution (1920 × 1080)

CPU 主板：Intel N97

CPU motherboard: Intel N97

内存：8GB

Memory: 8GB

存储设备：512GB 固态硬盘

Storage device: 512GB solid-state drive

触摸屏：电容式

Touch screen: capacitive type

接口： 6×RS485, 2×USB3.0, 2×USB2.0, 2×LAN, 1×HDMI, 8×DI, 6×DO

Interface: 6 x RS485, 2 x USB 3.0, 2 x USB 2.0, 2 x LAN, 1 x HDMI, 8 x DI, 6 x DO

*若用到多个 RS485，可选配 Aport 串口服务器或者 ANet 智能网关

*If multiple RS485s are used, Aport serial port server or ANet intelligent gateway can be optionally selected





触摸屏规格

Touch screen specifications

类型：10 点电容式触摸屏

Type: 10 point capacitive touch screen

透光率：≥85%

Transmittance: ≥ 85%

控制：USB 接口

Control: USB interface

表面硬度：莫氏硬度 7H

Surface hardness: Mohs hardness 7H

液晶屏规格

LCD screen specifications

显示类型：13.3″TFT 液晶屏

Display type: 13.3 "TFT LCD screen

分辨率：1920×1080

Resolution: 1920 × 1080

亮度：250cd/m2

Brightness: 250cd/m2

工作温度：-10~50℃

Working temperature: -10~50 ℃

背光寿命：30,000 小时

Backlight lifespan: 30000 hours

产品规格

Product specifications

结构：全金属结构

Structure: All metal structure

外型颜色：亚光银色

Appearance color: matte silver

安装：嵌入式

Installation: Embedded

电源：12VDC

Power supply: 12VDC

外观尺寸：339×216×66mm

Exterior dimensions: 339 × 216 × 66mm

开孔尺寸：327×204mm

Hole size: 327 × 204mm

净重：2.79Kg

Net weight: 2.79Kg

应用环境

Application Environment

工作温度：-10~50℃

Working temperature: -10~50 ℃

存储温度：-20~60℃

Storage temperature: -20~60 ℃

相对湿度：5~90% 无凝结

Relative humidity: 5-90% without condensation

防水：前面板达到 IP65 防护等级

Waterproof: The front panel reaches IP65 protection level

相关软件

related software

操作系统：支持 Windows10、Linux 等操作系统

Operating system: Supports Windows 10, Linux, and other operating systems

外观尺寸

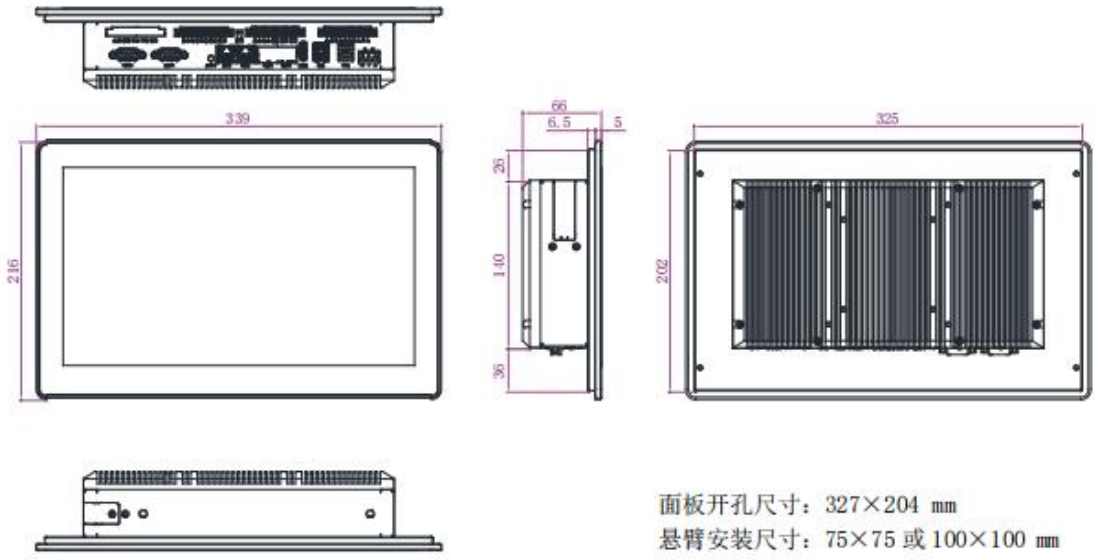
External dimensions

面板开孔尺寸：327×204mm

Panel opening size：327×204mm

悬臂安装尺寸：75×75 或 100×100mm

Suspended arm installation dimensions:75×75 or 100×100mm



ATU116 产品说明

ATU116 Product Description

产品功能

Product features

★ 实时监测：实时监测各回路电压、电流、功率、功率因数等电参数信息，动态监视各配电回路断路器、隔离开关、地刀等合、分闸状态及有关故障、告警等信号

★ Real time monitoring: Real time monitoring of electrical parameters such as voltage, current, power, and power factor of each circuit, dynamic monitoring of the closing and opening status of circuit breakers, isolating switches, ground knives, and related fault, alarm, and other signals of each distribution circuit.

★ 电参量查询：在配电一次图中，可以直接查看该回路详细电参量，包括三相电流、三相电压、三相总有功功率、总无功功率、总功率因数、正向有功电能，并可以查看 24 小时电流趋势曲线

★ Electrical parameter query: In the distribution diagram, detailed electrical parameters of the circuit can be directly viewed, including three-phase current, three-phase voltage, three-phase total active power, total reactive power, total power factor, forward active energy, and 24-hour current trend curve can be viewed.

★ 运行报表：查询各回路或设备指定时间的运行参数，报表中显示电参量信息应包括：电流、电压、功率因数、有功功率、无功功率、有功电能等

★ Operation report: query the operating parameters of each circuit or equipment at a specified time. The electrical parameter information displayed in the report should include: current, voltage, power factor, active power, reactive power, active energy, etc.

★ 实时告警：系统能够对配电回路断路器、隔离开关、接地刀分、合动作等遥信变位，保护动作、事故跳闸等事件发出告警。系统具有实时报警功能。告警方式有弹窗、图元闪烁告警等

★ Real time alarm: The system can issue alarms for remote signaling changes, protection actions, accident tripping, and other events such as circuit breakers, isolating switches, and grounding switches in the distribution circuit. The system has real-time alarm function. Alarm methods include pop ups, flashing graphics alerts, etc.

★ 历史事件查询：能够对遥信变位，保护动作、事故跳闸，以及电压、电流、功率、功率因数越限等事件记录进行存储和管理，方便用户对系统事件和报警进行历史追溯，查询统计、事故分析等

★ Historical event query: It can store and manage event records such as remote signal displacement, protection action, accident tripping, as well as voltage, current, power, power factor exceeding limits, etc., making it convenient for users to trace system events and alarms, query statistics, accident analysis, etc.

★ 智能语音控制：通过预设唤醒词和指令库实现语音交互。操作员说出唤醒词激活系统后，系统生成控制请求并反馈执行提示。所有指令需通过权限核查与设备状态逻辑双重验证，确保操作安全合规。实现语音控制与安全防护的闭环管理，兼顾操作效率与电网安全

★ Intelligent voice control: achieve voice interaction through preset wake-up words and instruction libraries. After the operator says the wake-up word to activate the system, the system generates a control request and provides feedback on the execution prompt. All instructions must undergo dual verification through permission verification and device status logic to ensure safe and compliant operations. Realize closed-loop management of voice control and security protection, balancing operational efficiency and grid safety.

★ 一键顺控：系统根据需要下发一键停电或送电指令。智能开关柜会根据底盘车、接地刀和接触器的机械位置和电气状态，自动完成这三个器件的顺序化操作，无需多个命令分布执行。如在运行状态下需进行检修，则操作员在集控室内根据调度命令可启动一键分闸操作，开关柜在接到操作指令后自动跳开接触器，接触器确认分断并检测无电流后驱动电动底盘车自动移至试验位置，底盘车到达试验位置后驱动接地刀闸

自动闭合。开关柜“运行、热备用、冷备用”三种状态间的转换操作。在遥控命令执行的过程中，接触器和底盘车的位置状态能通过视频上传后台，操作人员在监控室即可以实现开关柜的操作并全程监控开关柜动作过程

★ One click sequential control: The system issues one click power-off or power on instructions as needed. The intelligent switchgear will automatically complete the sequential operation of the chassis, grounding knife, and contactor based on their mechanical position and electrical status, without the need for multiple commands to be distributed and executed. If maintenance is required while in operation, the operator can initiate a one key disconnection operation in the control room according to the dispatch command. The switchgear will automatically trip the contactor upon receiving the operation command. After the contactor confirms disconnection and detects no current, it will drive the electric chassis vehicle to automatically move to the test position. When the chassis vehicle reaches the test position, it will drive the grounding knife switch to automatically close. The switching operation between the three states of "operation, hot standby, and cold standby" of the switchgear. During the execution of remote control commands, the position status of the contactor and chassis vehicle can be uploaded to the background through video, and the operator can operate the switchgear in the monitoring room and monitor the entire process of the switchgear action.

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★ Partial discharge real-time map: The system continuously captures partial discharge signals generated by insulation defects inside the equipment through external high-sensitivity ultra-high frequency or ultrasonic sensors, and generates and refreshes multi-dimensional partial discharge maps in real time, achieving online, real-time, and visual insulation status monitoring and diagnosis of electrical equipment such as switchgear.

产品特性

Product Features

液晶屏：11.6″TFT 液晶屏，分辨率(1920×1080)

LCD screen: 11.6"TFT LCD screen, resolution (1920 × 1080)

CPU 主板：Intel N97

CPU motherboard: Intel N97

内存：8GB

Memory: 8GB

存储设备：512GB 固态硬盘

Storage device: 512GB solid-state drive

触摸屏：电容式

Touch screen: capacitive type

接口： 6×RS485, 2×USB3.0, 2×USB2.0, 2×LAN, 1×HDMI, 8×DI, 6×DO

Interface: 6 x RS485, 2 x USB 3.0, 2 x USB 2.0, 2 x LAN, 1 x HDMI, 8 x DI, 6 x DO

*若用到多个 RS485，可选配 Aport 串口服务器或者 ANet 智能网关

*If multiple RS485s are used, Aport serial port server or ANet intelligent gateway can be optionally selected





触摸屏规格

Touch screen specifications

类型：10 点电容式触摸屏

Type: 10 point capacitive touch screen

透光率：≥85%

Transmittance: ≥ 85%

控制：USB 接口

Control: USB interface

表面硬度：莫氏硬度 7H

Surface hardness: Mohs hardness 7H

液晶屏规格

LCD screen specifications

显示类型：11.6″TFT 液晶屏

Display type: 11.6 "TFT LCD screen

分辨率：1920×1080

Resolution: 1920 × 1080

亮度：250cd/m2

Brightness: 250cd/m2

工作温度：-10~50℃

Working temperature: -10~50 ℃

背光寿命：30,000 小时

Backlight lifespan: 30000 hours

产品规格

Product specifications

结构：全金属结构

Structure: All metal structure

外型颜色：亚光银色

Appearance color: matte silver

安装：嵌入式

Installation: Embedded

电源：12VDC

Power supply: 12VDC

外观尺寸：294×181×66mm

Exterior dimensions: 294 × 181 × 66mm

开孔尺寸：283×170mm

Hole size: 283 × 170mm

净重：2.65Kg

Net weight: 2.65Kg

应用环境

Application Environment

工作温度：-10~50℃

Working temperature: -10~50 ℃

存储温度：-20~60℃

Storage temperature: -20~60 ℃

相对湿度：5~90% 无凝结

Relative humidity: 5-90% without condensation

防水：前面板达到 IP65 防护等级

Waterproof: The front panel reaches IP65 protection level

相关软件

related software

操作系统：支持 Windows10、Linux 等操作系统

Operating system: Supports Windows 10, Linux, and other operating systems

外观尺寸

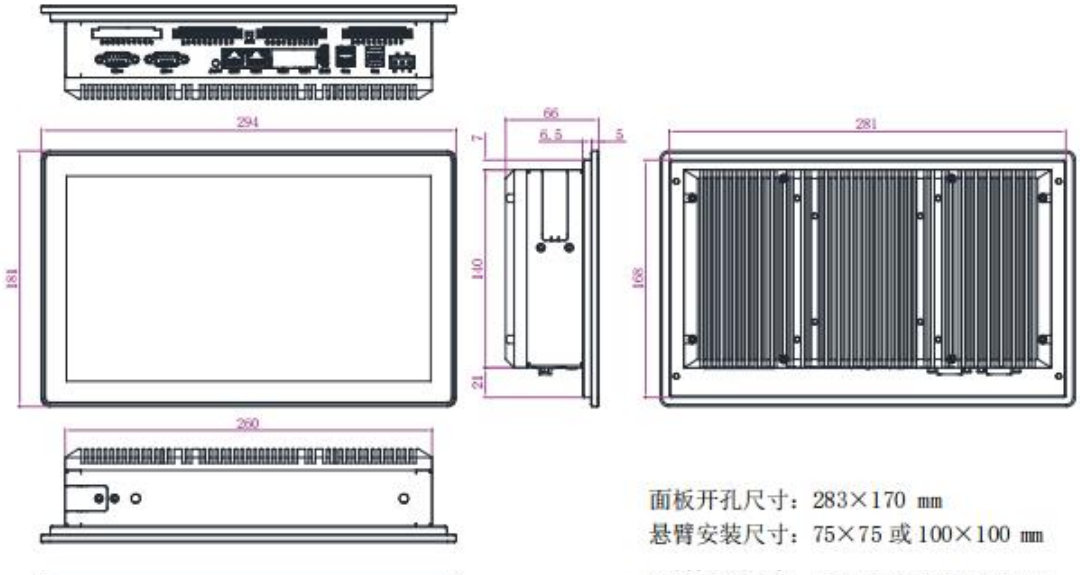
External dimensions

面板开孔尺寸：283×170mm

Panel opening size：283×170mm

悬臂安装尺寸：75×75 或 100×100mm

Suspended arm installation dimensions:75×75 or 100×100mm

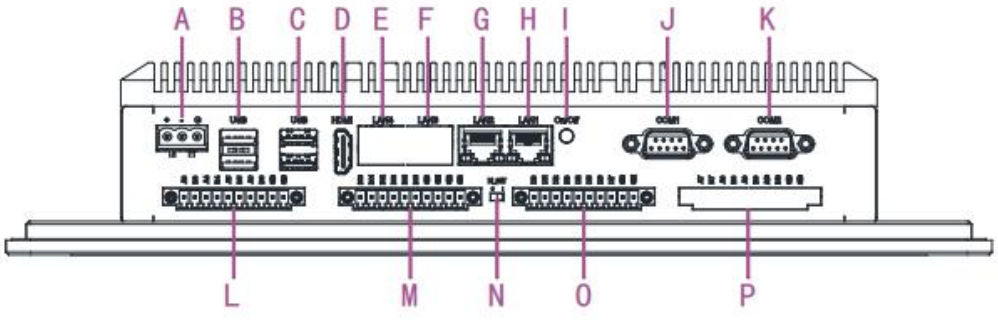


附录

Appendix

接口视图

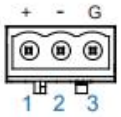
Interface View



A. DC In
B. 2×USB2.0
C. 2×USB3.0
D. HDMI
E. LAN4(可选)
F. LAN1(可选)
G. LAN2
H. LAN1
I. Power Button
J. COM1(RS232/RS485)
K. COM2(RS485)
L. COM3~COM6(RS485)
M. DO(继电器输出)
N. DI信号选择
O. DI(数字量输入)
P. 预留
Q. 1×内置USB2.0

电源输入

Power Input

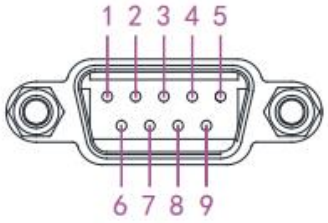
DC In	引脚号	信号名称	内容
	1	+	12V DC +
	2	-	12V DC -
	3	G	接地

串口定义

Serial port definition

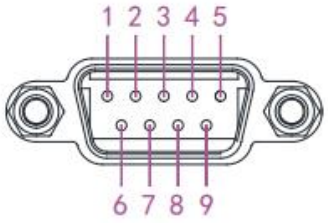
作为 RS485：

As RS485:

COM1/2	引脚号	信号名称	内容
	1	485+	RS485+
	2	485-	RS485-
	3		
	4		
	5	GND	GND
	6		
	7		
	8		
	9		

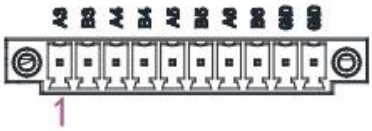
作为 RS232：

As RS232：

COM1	引脚号	信号名称	内容
	1		
	2	RXD	RS232 RXD 接收数据
	3	TXD	RS232 TXD 发送数据
	4		
	5	GND	GND
	6		
	7		
	8		
	9		

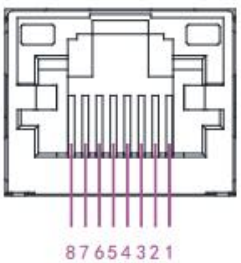
端子 RS485：

Terminal RS485:

COM3-6	引脚号	信号名称	内容
	1	A3	COM3:RS485+
	2	B3	COM3:RS485-
	3	A4	COM4:RS485+
	4	B4	COM4:RS485-
	5	A5	COM5:RS485+
	6	B5	COM5:RS485-
	7	A6	COM6:RS485+
	8	B6	COM6:RS485-
	9	GND	GND
	10	GND	GND

网口定义

Definition of network port

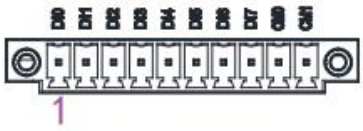
LAN1/2	引脚号	信号名称	内容
	1	TX_D1+	Tranceive Data1+（发信号+）
	2	TX_D1-	Tranceive Data1-（发信号+）
	3	RX_D2+	Receive Data2+（收信号+）
	4	BI_D3+	Bi-directional Data3+（双向信号）
	5	BI_D3-	Bi-directional Data3-（双向信号）
	6	RX_D2-	Receive Data2-（收信号-）
	7	BI_D4+	Bi-directional Data4+（双向信号）
	8	BI_D4-	Bi-directional Data4-（双向信号）

DI 定义

Definition of DI

8 路数字量输入，支持有源和无源两种方案，引脚对应如下所示的信号：

8-channel digital input, supporting both active and passive schemes, with pins corresponding to the signals shown below:

DI 输入	引脚号	信号名称	内容
	1	DI0	GPIO 地址：0xA00 bit5
	2	DI1	GPIO 地址：0xA02 bit3
	3	DI2	GPIO 地址：0xA05 bit5
	4	DI3	GPIO 地址：0xA07 bit4
	5	DI4	GPIO 地址：0xA07 bit0
	6	DI5	GPIO 地址：0xA07 bit1
	7	DI6	GPIO 地址：0xA07 bit2
	8	DI7	GPIO 地址：0xA07 bit3
	9	CM0	无源公共端
	10	CM1	有源公共端

DI 接线说明

DI wiring instructions

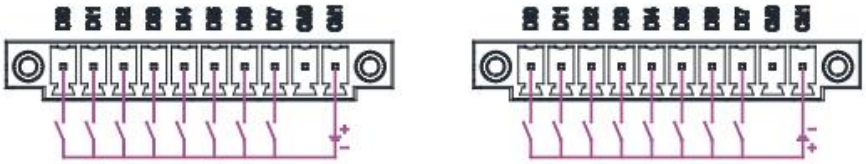
拨码在 0 是有源方案、拨码在 1 是无源方案：

Button at 0 is an active solution, button at 1 is a passive solution:

DI 信号选择	信号名称	内容
	0	拨码在 0 的位置，有源方案
	I	拨码在 I 的位置，无源方案

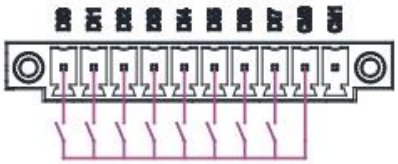
有源信号输入时，支持 NPN 和 PNP 两种方式，CM1 为公共端，接线如下图所示：

When active signal input is used, NPN and PNP are supported, with CM1 as the common terminal. The wiring is shown in the following figure:



无源信号输入时，只有一种接线方式，CM0 为公共端，接线如下图所示：

When passive signal input is used, there is only one wiring method, CM0 is the common terminal, and the wiring is shown in the following figure:

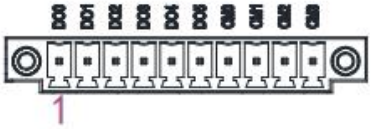


DO 定义

Definition of DO

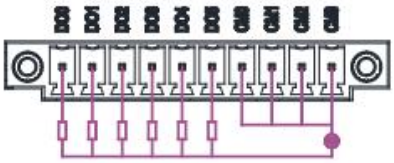
6 路继电器输出，干触点，30VDC/250VAC。

6-channel relay output, dry contact, 30VDC/250VAC.

DO 输出	引脚号	信号名称	内容
	1	DO0	GPIO 地址：0xA00 bit1
	2	DO1	GPIO 地址：0xA00 bit6
	3	DO2	GPIO 地址：0xA03 bit7
	4	DO3	GPIO 地址：0xA07 bit5
	5	DO4	GPIO 地址：0xA07 bit7
	6	DO5	GPIO 地址：0xA07 bit6
	7	CM0	公共端
	8	CM1	公共端
	9	CM2	公共端
	10	CM3	公共端

DO 接线参考下图：

DO wiring reference diagram:



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