RS485 Distribution Unit

(ZCA-DS4/8/16)

Installation & Setup Guide

Version 1.1

00-6H77S1CSEA1

Preface

The information given in this manual was current when published. The company reserves the right to revise and improve its products. All specifications are subject to change without notice.

Notice

To work with the RS485 Distribution Unit, any installer or technician must have the following minimum qualifications:

- A basic knowledge of CCTV systems and components
- A basic knowledge of electrical wiring and low-voltage electrical hookups
- Have read this manual completely

Copyright

Important Information

Before proceeding, please read and observe all instructions and warnings in this manual. Retain this manual with the original bill of sale for future reference and, if necessary, warranty service. When unpacking your unit, check for missing or damaged items. If any item is missing, or if damage is evident, DO NOT INSTALL OR OPERATE THIS PRODUCT. Contact your dealer for assistance.

Regulation

CE

This device complies with Part 15 of the FCC Rules. Operation is subject to the following two conditions:

(1) this device may not cause harmful interference, and (2) this device must accept any interference received, including interference that may cause undesired operation.

Disposal of your old appliance

1. When this crossed-out wheeled bin symbol is attached to a product it means the product is covered by the European Directive 2002/96/EC.
2. All electrical and electronic products should be disposed of separately from the municipal waste stream via designated collection facilities appointed by the government or the local authorities.
3. The correct disposal of your old appliance will help prevent potential negative consequences for the environment and human health.
4. For more detailed information about disposal of your old appliance, please contact your city office, waste disposal service or the shop where you purchased the product

Cautions

- **Handle the unit carefully**
  Avoid striking, shaking, etc. The RS485 Distribution Unit could be damaged by improper handing or storage.

- **Do not disassemble the unit**
  To prevent electric shock, do not remove screws or covers. There are no user serviceable parts inside. Ask a qualified service person for servicing.

- **Do not operate the unit beyond the specified temperature and power source ratings**
  Use the unit under conditions where temperature is between -10°C ~ 50°C (14°F ~ 122°F).

- **Do not expose the unit to rain or moisture, or try to operate it in wet areas**
  Turn the power off immediately if the unit is wet and ask a qualified service person for servicing. Moisture can damage the product and also create the danger of electric shock.

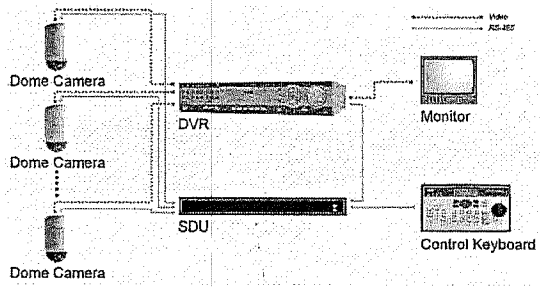
- **Do not use strong or abrasive detergents when cleaning**
  Use a dry cloth to clean the unit when dirty. In case the dirt is hard to remove, use a mild detergent and wipe gently.

Contents

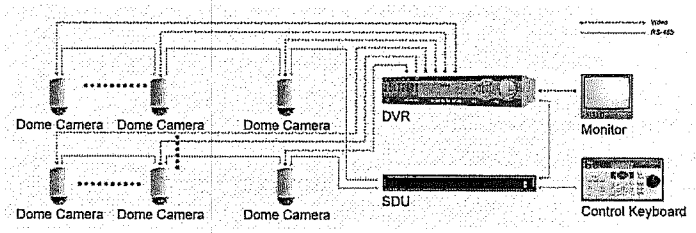
1. Overview

The RS485 Distribution Unit (SDU) is designed to relay and amplify control signals to PTZ cameras. It is capable of communicating with cameras up to 1 kilometer away. The SDU can be installed in either "star" or "daisy chain" configuration with up to 160 cameras (see the configuration diagrams below). Its versatile installation configuration makes an easy integration into expanding surveillance systems; ideal large-scale installation sites include air port, hospitals, schools, stadiums, etc.

Star Configuration



Daisy Chain Configuration

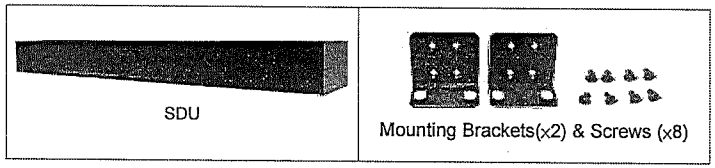


2. Product Features

- Up to sixteen RS-485 Outputs (model option)
- Capability to output to 160 cameras maximum
- Power and Code LEDs
- Maximum data transmission distance is 1 km
- Can be deployed in "star" or "daisy chain" configuration

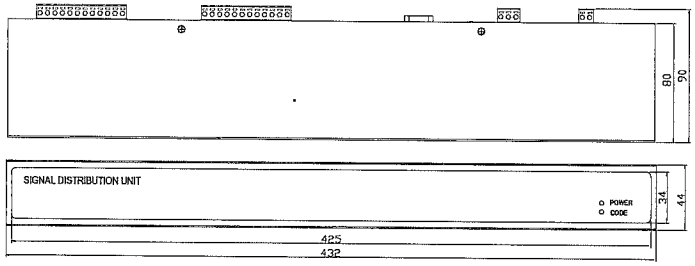
3. Package Contents

Before proceeding, please check the box contains the items listed here. If any item is missing or has defects, DO NOT install or operate the product and contact your dealer for assistance.



4. Dimensions and Setting

4.1 SDU Dimensions

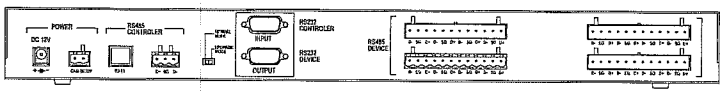


4.2 Functions and Pin Definitions

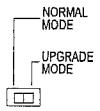
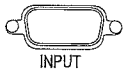
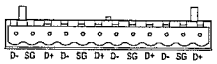
Front Panel

The power LED (red light) will be on when the SDU is powered on. The code LED (green light) flashes to indicate signal transmitting/receiving, i.e. when joystick or camera controls on the keyboard occurs. The LED light conditions of power and code show uptime.

Rear Panel

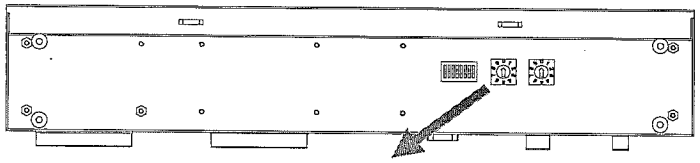


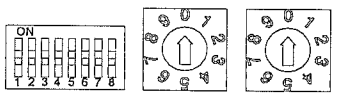
Power Input		
DC 12V + - GND DC12V	DC Jack DC 12V Power Input	Connect the power adapter to the DC jack. When cabling, connect the GND wire to the left pin of the terminal.
RS-485 Input		
RJ-11	RJ-11 Jack/ RS-485 Input	This jack is a quick connection jack for demo purpose. It only supports half-duplex communication.
D+ SG D-	RS-485 Input Terminal	Connect each wire of a keyboard or other control device to the corresponding pin on the terminal.
NORMAL MODE UPGRADE MODE	Download Switch	Before executing firmware upgrade, remember to set the switch right to the **Upgrade Mode**; otherwise, firmware upgrade will be failed. After firmware upgrade is finished, set the switch back to the **Normal Mode**.

	Download Switch	The default setting is: Normal Mode. **NOTE:** Under the **Upgrade Mode**, any control or operation on the keyboard cannot be implemented. Therefore, keep the switch at the **Normal Mode** during operation except for in the period of download.
	Download Terminal/ RS-232 Input	The terminal is for firmware upgrade and RS-232 input.
	Reserved	
RS-485 Output		
	RS-485 Output Terminal	There are four sets of port on one terminal block. Each port has three connections: D-, SG and D+ for connecting with one camera. Connect each wire of the camera to the corresponding pin on one port.

4.3 Protocol Setting

Bottom View

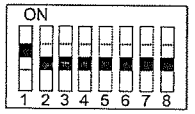




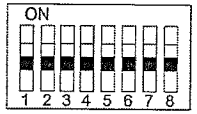
Mode Switch Protocol Switch

4.3.1 Mode Setting

If communication input is RS-232, set the SW1 to **ON** position; if the input is RS-485, set the SW1 to **OFF** position.



RS-232



RS-485

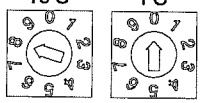
4.3.2 Protocol Setting

Refer to the following table of protocol switch setting and select one set of protocol basing on the remote controller and cameras in the surveillance system.

Protocol Switch		RS-232 / RS-485 Communication Format			
10's	1's	Baudrate (bps)	Byte Length(bits)	Parity	Stop Bit(s)
8	0	2400	8	None	1
8	1	2400	8	Even	1
8	2	4800	8	None	1
8	3	4800	8	Even	1
8	4	9600	8	None	1
8	5	9600	8	Even	1
8	6	19200	8	None	1
8	7	19200	8	Even	1
8	8	38400	8	None	1
8	9	38400	8	Even	1

If your selected communication format is baud rate: 2400 and parity: None, i.e. the protocol switch No. should be 80, set the switch left for 8(10's) and right for 0(1's), as shown below.

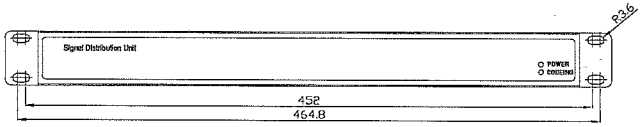
10'S 1'S



5. Installation: Rack Mount

The SDU could also be mounted on a rack other than placed on the top desk. Before mounting the SDU on the rack, it is required to screw the two supplied mounting brackets on the sides of the SDU, as illustrated below. Also refer to the figure below for the dimension of the mounting bracket.

A: Mounting Bracket; B: Supplied Screws



Appendix A: Technical Specification

Item	[illegible]
Electrical	
Operating Voltage	DC 12V
Power	8W
Indicators	
Power	LED
Code	LED
Connectors	
Input	RS-232, 9-pin D sub connector, or RS-485 2-wire
Output	16 RS-485 ports (4 ports model available)
Maximum Cable Distance	1.0 km
Maximum Camera Output	Up to 160
Communication Speed	2400, 4800, 9600, 19200, 38400 bps (selectable)
Operating Temperature	-10 to 50 ℃ (14 to 122 °F)
Mechanical	
Dimensions	432 x 44 x 80 mm
Weight	1.2 kg