CDPS-RLY

Auxiliary Relay Control System

Operation Manual

Ver 1.01

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SAFETY PRECAUTIONS

Please read all instructions before attempting to unpack, install or operate this equipment and before connecting the power supply. Please keep the following in mind as you unpack and install this equipment:

- Always follow basic safety precautions to reduce the risk of fire, electrical shock and injury to persons.
- To prevent fire or shock hazard, do not expose the unit to rain, moisture or install this product near water.
- Never spill liquid of any kind on or into this product.
- Never push an object of any kind into this product through any openings or empty slots in the unit, as you may damage parts inside the unit.
- Do not attach the power supply cabling to building surfaces.
- Use only the supplied power supply unit (PSU). Do not use the PSU if it is damaged.
- Do not allow anything to rest on the power cabling or allow any weight to be placed upon it or any person walk on it.
- To protect the unit from overheating, do not block any vents or openings in the unit housing that provide ventilation and allow for sufficient space for air to circulate around the unit.
- Please completely disconnect the power when the unit is not in use to avoid wasting electricity.

VERSION HISTORY

REV.	DATE	SUMMARY OF CHANGE
RDV1	2014/09/25	Preliminary release
RDV2	2016/02/25	Adaptor Spec.
Ver 1.10	2024/10/22	Update power consumption and connection diagram

CONTENTS

1. INTRODUCTION

The Auxiliary Relay Control System is designed for multi-purpose and multi-task trigger system usage. It features 8 Relays for triggering, 8 PWM (Pulse-Width Modulation) to set the duty cycle, 8 Voltages for setting the trigger voltage, and 1 customizable setting that allows control through command inputs. This customizable setting supports RS-232/422/485 and DMX512 interfaces, allowing connection of up to 25 devices for control. The device's control interfaces, such as RS-232, Telnet, and the built-in PoE (PD), provide users with a completely user-friendly experience.

2. APPLICATIONS

- Control system
- Lighting performance control
- System trigger control

3. PACKAGE CONTENTS

- 1× Auxiliary Relay Control System
- 1× 5V/2.6A Power Adaptor
- 1× Rack Ear Set
- 1× Operation Manual

4. SYSTEM REQUIREMENTS

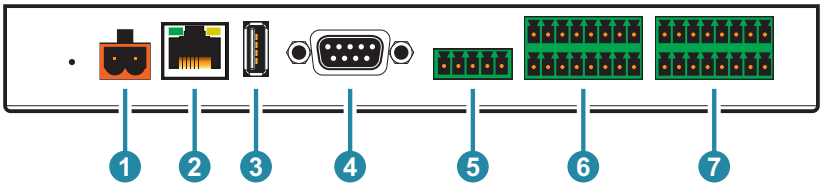
- Relay trigger input source equipment, such as motion detection cameras, TVs, power switches, etc.
- Relay-triggered output equipment, such as LED drivers and RS-232/422/485 or DMX512 devices.
- Relay command transmission devices, such as RS-232 equipped PCs, laptops, and other serial control devices.
- An active Internet connection from a switch or router is highly recommended for controlling Ethernet devices.

5. FEATURES

- Supports 8 Relays, 8 PWM, 8 Voltage outputs, and 1 customizable setting
- Relay supports close, open and toggle controls with LED illuminators and power up to 30V/DC, 10A
- PWM supports 10 volts with 0 – 100% duty cycle adjustable
- Voltage output supports from 0 – 10 volts with an adjustment from 0 – 100% (0, 0.1, 0.2 – 10 volts)
- Customizable setting supports RS-232/422/485 with adjustable baud rate
- DMX-512 data transmission supports up to 250Kbps with unidirectional, serial transmission and daisy-chain configuration up to 512 nodes , with a maximum response time of 22ms (roughly 44Hz)
- RS-232/Console supports up to 256 bytes per command
- Supports 5V/2.6A – 24V/0.5A DC power supply
- Supports USB and WebGUI firmware updates
- Supports RS-232 and Telnet controls
- Control port supports PoE function

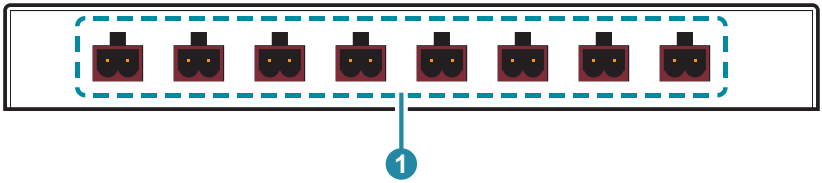
6. OPERATION CONTROLS AND FUNCTIONS

6.1 Front Panel



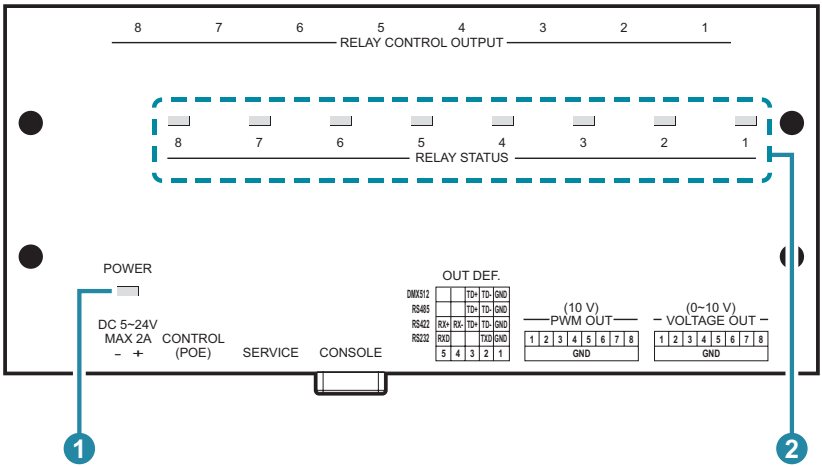
1. **POWER DC 5~24V:** Plug the 5V/2.6A DC power adapter into this port and connect it to an AC wall outlet for power.
2. **CONTROL:** Connect to an active LAN system for IP control.
3. **SERVICE:** This slot is reserved for firmware update use only.
4. **CONSOLE:** Connect directly to a PC, laptop, or other serial control device using an RS-232 terminal and a D-Sub 9-pin cable to send RS-232 commands for controlling the unit.
5. **OUT DEF.:** Connect to COM port control devices such as RS-232/422/485 or DMX512, with a fixed DMX baud rate of 250Kbps, supporting unidirectional serial transmission and a daisy-chain configuration for up to 512 nodes, with a maximum response time of 22ms (roughly 44Hz).
6. **PWM OUT (10V):** Connect up to 8 devices with a voltage set at 10 for control over PWM, adjustable from 0 – 100% duty cycle at 30 – 1200 Hz.
7. **VOLTAGE OUT (0~10V):** Connect up to 8 devices with voltages ranging from 0 – 10 volts, allowing control via DAC with adjustable voltage of 0.1 per scale through command settings.

6.2 Rear Panel



1 **RELAY CONTROL OUTPUT 1~8:** Connect to the control devices' power ± line cables, such as IR sensors or curtain sensors, to send control signals that activate the devices. Trigger events can be set with 3 control types: Close, Open, and Toggle through command settings.

6.3 Top Panel



1 **POWER LED:** This LED will illuminate to indicate the unit is on and receiving power.

2 **RELAY STATUS LEDs:** These LEDs will illuminate according to relay's activation status.

6.4 RS-232 Protocol

DATA TERMINAL EQUIPMENT	
Pin	**Assignment**
1	NC
2	RxD
3	TxD
4	NC
5	GND
6	NC
7	NC
8	NC
9	NC

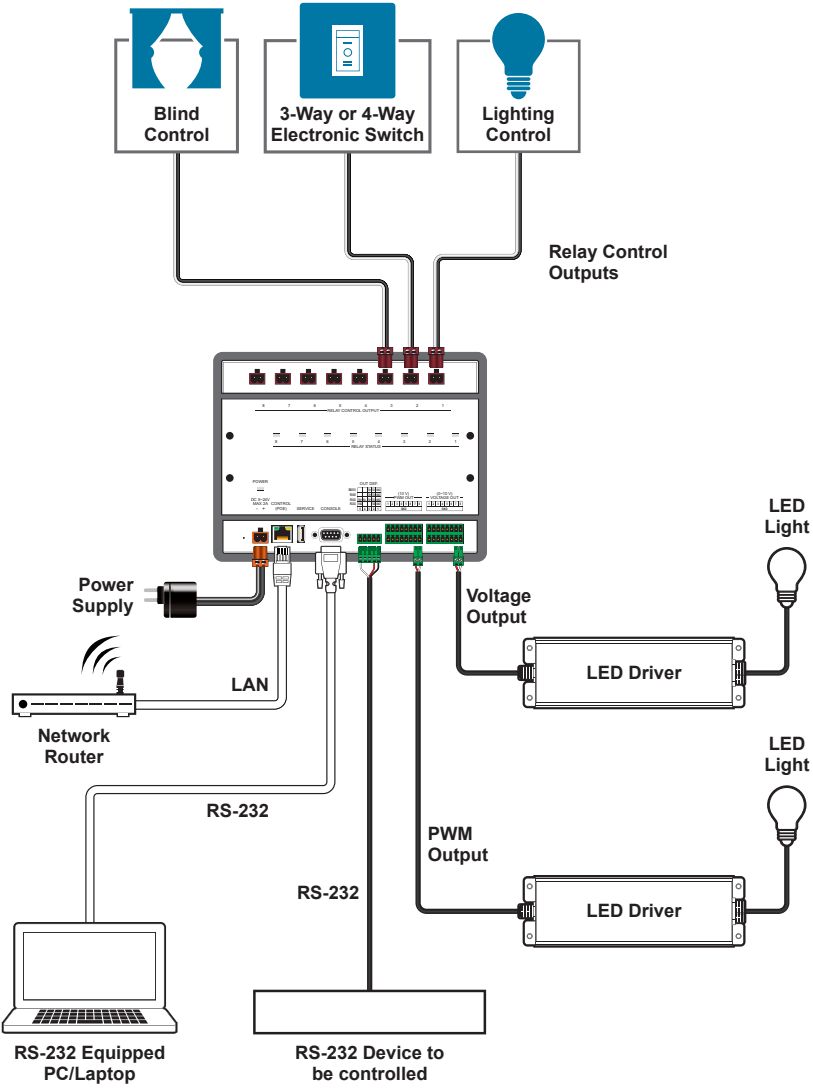
6.5 RS-232 and Telnet Commands

COMMAND	DESCRIPTION	PARAMETER
IPCONFIG	*Display the current IP configure*	NONE
SIPADDR XXX.XXX.XXX.XXX	*Set Ethernet IP address*	XXX=0~255
SNETMASK XXX.XXX.XXX.XXX	*Set Ethernet net mask*	XXX=0~255
SGATEWAY XXX.XXX.XXX.XXX	*Set Ethernet gateway*	XXX=0~255
SIPMODE N	*Set Ethernet IP mode*	N=STATIC/DHCP
VER	*Show unit firmware version*	NONE
FADEFAULT	*All configure set to factory default*	NONE
ETH_FADEFAULT	*All Ethernet configure set to factory*	NONE
REBOOT	*System reboot*	NONE

COMMAND	DESCRIPTION	PARAMETER
CYP	*Write MAC address to eeprom*	CYP WRITE MAC ADDRESS TO EEPROM, XX-XX-XX-XX-XX-XX
RELAY N1 N2	*Relay control*	N1=1~8 (Port Number), N2=OPEN/CLOSE/TOGGLE
PWM N1 N2	*PWM duty cycle control*	N1=1~8 (Port Number), N2=0~100 (Duty Cycle)
DAC N1 N2	*DAC voltage control*	N1=1~8 (Port Number), N2=0~100 (Percent of Voltage)
COMCONF N1 N2	*COM port setting*	N1=DMX512/RS485/RS422/RS232, N2=Bitrate or Not Support (DMX512)
COMSEND N1	*COM data send*	N1=Character Data For Comport (Max 256 Bytes)
READ N1 N2	*Show all port configure*	N1=RELAY/PWM/DAC/COM/ALL, N2=Port Number (1~8)
DMX_S_CH S N CHs~CHs+n	*DMX512 channel setting*	S=Start Channel, N=Counter of Channel, CHs~CHs+n=Channel Data ex: DMX_S_CH 9 6 200 0 255 0 0 255, CH9~CH14= 200,0,255,0,0,255
PWM_FREQ N	*Setting PWM (DAC) frequency*	N=50~1200Hz
UPDATE	*Update firmware from USB*	NONE
HELP (?)	*Show command list*	NONE
HELP N	*Show descript of command*	N=COMMAND NAME

Note: *Any commands will not be executed unless followed by a carriage return. Commands are case-sensitive.*

7. CONNECTION DIAGRAM



8. SPECIFICATIONS

Input Ports	1×IP Control (RJ-45) 1×RS-232 (9-pin D-sub)
Output Ports	8×Relay (Terminal Block) 8×Voltage (Terminal Block) 8×PWM (Terminal Block) 1×RS-232/422/485/DMX512 (Terminal Block)
Baud Rate	Up to 115200bps
Power Supply	5V/2.6A DC or PoE (US/EU standards, CE/FCC/UL certified)
ESD Protection	Human body model: ±8kV (air-gap discharge) ±4kV (contact discharge)
Dimensions (W×H×D)	200mm×26mm×90mm /Jack Excluded 200mm×31mm×95mm /Jack Included
Weight	548g
Chassis Material	Metal
Color	Black
Operating Temperature	0˚C – 40˚C/32˚F – 104˚F
Storage Temperature	-20˚C – 60˚C/-4˚F – 140˚F
Relative Humidity	20 – 90% RH (Non-condensing)
Power Consumption	10.12W

9. ACRONYMS

ACRONYM	COMPLETE TERM
IP	Internet Protocol
PD	Powered Device
PoE	Power over Ethernet
PWM	Pulse-Width Modulation
USB	Universal Serial Bus

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