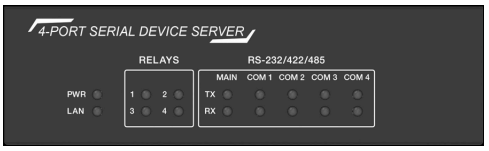


4-Port AV Control Expander — Serial, Relay & Ethernet

Extend multi-device serial and relay control to remote locations over your existing network

MPN: CR-EXPAND4

Version 2.0

Important: Read these instructions carefully before connecting or operating this product.

Caution: Use direct interconnection (T568B) for network cables. Do not cross connect.

TABLE OF CONTENTS

1. INTRODUCTION

The KanexPro CR-EXPAND4 is a 4-port network serial port expander with MAIN COM uplink, 4 extended serial ports, 4 relay outputs, and a NEXT COM daisy-chain output. It communicates with central control systems or PCs over RS-232 and Ethernet. COM 1–2 support RS-232/RS-422/RS-485 with hardware flow control. COM 3–4 support RS-232 with hardware flow control.

2. FEATURES

- ✓ MAIN COM (RS-232) + 4 extended serial ports — 5 serial connections total
- ✓ COM 1–2: RS-232/RS-485/RS-422 with hardware flow control
- ✓ COM 3–4: RS-232 with hardware flow control
- ✓ NEXT COM daisy-chain output for cascading multiple expanders
- ✓ All serial ports: 2400–115200bps, 7/8 data bits, odd/even/none parity, 1/2 stop bits
- ✓ 4× relay outputs, normally open (1A 24VDC/AC)
- ✓ 10/100M Ethernet with TCP/UDP — TCP ports 8001–8004 per serial
- ✓ Built-in web server for browser-based configuration
- ✓ Compatible with AMX, Crestron, RTI, and all third-party controllers
- ✓ DC 24V/1A power (adapter included) — no PoE

3. PACKAGE CONTENTS

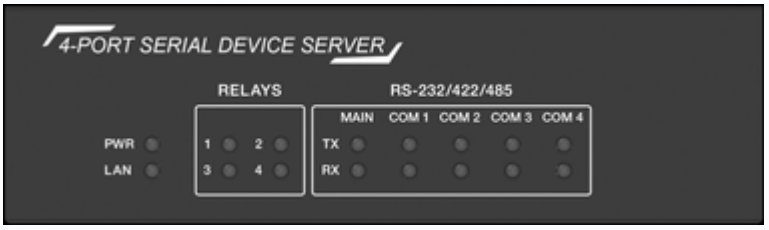
- 1× Network Serial Port Expander
- 2× 5-pin Phoenix (3.81mm)
- 2× 7-pin Phoenix (3.81mm)
- 1× 8-pin Phoenix (3.81mm)
- 2× 9-pin Phoenix (3.81mm)
- 4× Machine Screw
- 2× Mounting Ear
- 1× 24V/1A Power Adapter
- 1× User Manual

Specifications

Technical	
RS-232	Full duplex, configurable hardware flow control
RS-485	Half duplex (COM 1–2 only)
RS-422	Full duplex (COM 1–2 only)
Baud Rate	2400, 4800, 9600, 14400, 19200, 38400, 56000, 57600, 115200
Relays	Up to 1A 24VDC/AC loading per channel
Connection	
Inputs	1× LAN (RJ45), 1× MAIN COM (7-pin Phoenix), 1× DC 24V (2-pin Phoenix)
Outputs	1× NEXT COM (7-pin Phoenix), 2× COM 1/2 (9-pin Phoenix), 2× COM 3/4 (5-pin Phoenix), 1× RELAY (8-pin Phoenix)
Mechanical	
Housing	Metal enclosure, black
Dimensions	5.79″ × 5.12″ × 1.65″ (147 × 130 × 42 mm)
Weight	1.48 lbs (673g)
Power	DC 24V/1A (no PoE) — <2W
Operating Temp	32°F – 104°F (0°C – 40°C)
Storage Temp	-4°F – 140°F (-20°C – 60°C)
Humidity	20%–90% RH (non-condensing)

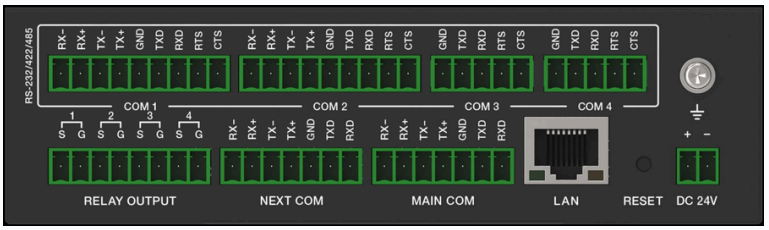
Operation Controls

5.1 FRONT PANEL



#	NAME	DESCRIPTION
1	**PWR LED**	Green — on when powered
2	**LAN LED**	Green — flashes during network communication
3	**RELAYS 1–4**	Green — on when relay is closed (2×2 grid)
4	**MAIN TX/RX**	Red (TX) / Yellow (RX) — main COM port activity
5	**COM 1–4 TX/RX**	Red (TX) / Yellow (RX) — per-port serial activity

5.2 REAR PANEL



#	NAME	DESCRIPTION
1	**COM 1–2**	RS-232/RS-422/RS-485 + HW flow (9-pin Phoenix: RX−/RX+/TX−/TX+/GND/TXD/RXD/RTS/CTS)
2	**COM 3–4**	RS-232 + HW flow (5-pin Phoenix: GND/TXD/RXD/RTS/CTS)
3	**RELAY OUTPUT**	4× relay (8-pin Phoenix: S/G per channel), normally open, 1A 24VDC/AC
4	**NEXT COM**	Daisy-chain serial output (7-pin Phoenix) to cascade additional expanders
5	**MAIN COM**	Primary serial to control processor (7-pin Phoenix). RS-232 mode. RS-422/485 reserved.
6	**LAN**	10/100M Ethernet (RJ45). Default: 192.168.1.100
7	**RESET**	Hold 5s to factory reset. IP restores to 192.168.1.100
8	**Ground**	Chassis ground terminal
9	**DC 24V**	DC 24V/1A power input (+/−)

TCP/UDP PORT MAPPING

PORT	TCP	UDP LOCAL	UDP REMOTE (DEFAULT)
`System Config`	8005	9005	1005
`COM 1`	8001	9001	1001
`COM 2`	8002	9002	1002
`COM 3`	8003	9003	1003
`COM 4`	8004	9004	1004

Note: Serial data is forwarded bidirectionally between each COM port and its corresponding TCP/UDP port. The MAIN COM uplinks to the control processor. The NEXT COM cascades to additional expanders.

Web GUI & API Summary

The CR-EXPAND4 includes a built-in web server and API command interface for configuration and control.

WEB GUI

Connect to the device IP (default: 192.168.1.100) via any browser. Three configuration pages are available:

Overview Page: Firmware version, serial port status, IP info, TCP/UDP ports, relay status

Configurations Page: Set baud rate, data bits, stop bits, parity, and serial type for each COM port. Toggle relays. Name the device.

System Page: DHCP ON/OFF, IP/subnet/gateway, TCP/UDP mode selection, UDP port configuration, factory reset.

API COMMANDS (VIA SERIAL OR TCP/UDP)

All ASCII commands terminate with `!`. Send via MAIN COM (RS-232, 115200 8N1) or TCP port 8005.

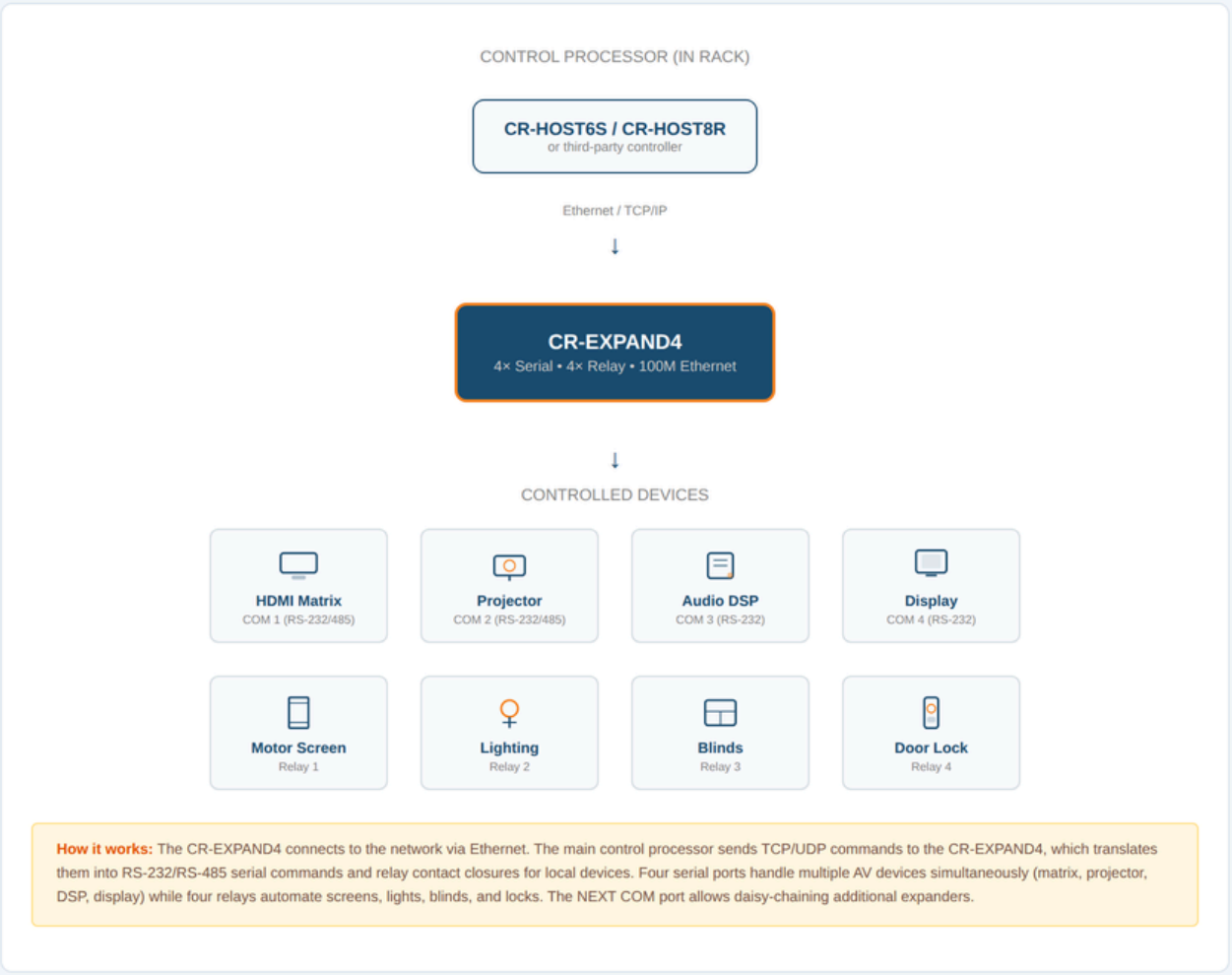
COMMAND	DESCRIPTION
`help!`	Get command list
`get ip!`	Get IP address
`set ip:192.168.1.50!`	Set IP address
`get baud1!`	Get COM 1 baud rate
`set baud1:9600!`	Set COM 1 baud rate
`set relay1:on!`	Turn on relay 1
`set relay1:off!`	Turn off relay 1
`get relay1!`	Get relay 1 status
`set uarttype1:rs485!`	Set COM 1 to RS-485
`get version!`	Get firmware version
`set name:RoomA!`	Set device name
`set factory!`	Factory reset
`reboot!`	Reboot device

Hex commands: The CR-EXPAND4 also supports binary (hex) API commands. See the original equipment manual for full hex protocol reference.

Application Example

APPLICATION DIAGRAM

4-Port AV Control Expander — Serial, Relay & Ethernet — CR-EXPAND4



How it works: The CR-EXPAND4 connects to the network via Ethernet. The main control processor sends TCP/UDP commands to the CR-EXPAND4, which translates them into RS-232/RS-485 serial commands and relay contact closures for local devices. Four serial ports handle multiple AV devices simultaneously (matrix, projector, DSP, display) while four relays automate screens, lights, blinds, and locks. The NEXT COM port allows daisy-chaining additional expanders.

TROUBLESHOOTING

ISSUE	SOLUTION
Device does not power on	Verify DC 24V adapter is connected. Check PWR LED (green). No PoE — must use adapter.
Serial device not responding	Confirm baud rate and protocol (RS-232/422/485) via Web GUI. Check TX/RX LEDs. Verify pin wiring for 9-pin (COM 1–2) or 5-pin (COM 3–4).
Cannot access web GUI	Default IP: 192.168.1.100. Ensure PC is on same subnet. Use Chrome.
Relay not triggering	Check RELAY LED on front panel. Verify wiring (S/G). Test via Web GUI or API. Max: 1A 24VDC/AC.
Daisy-chain not working	Verify NEXT COM wiring. Confirm cascaded device is on same baud rate. Check for latency.
Factory reset	Hold RESET 5 seconds. IP restores to 192.168.1.100. All settings reset.