# CR-EXPAND1 Tesira Command Sheet

For Tesira Command String blocks · Version 1.0.3

**Every command the CR-EXPAND1 takes over the network, as fixed strings for Tesira Command String blocks.** The unit is controlled on its own control port (TCP 8000); no other KanexPro software is needed. The same strings, with their bytes, are in `KanexPro-CR-EXPAND1-Tesira-Command-Sheet-1.0.3.csv` for copying.

> **Before you start —** the Tesira server must reach the CR-EXPAND1 on TCP port 8000. Give the unit a fixed IP address (or a DHCP reservation).

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## 1. CONNECTION

| HOW THE UNIT IS CONTROLLED | |
|---|---|
| **Transport** | TCP, port 8000 (the unit's control port) |
| **Line ending** | "!" (hex `21`), after every string |
| **Pacing** | One string at a time. The unit answers within about 1.5 s; wait for the answer before the next string. |
| **A refused string** | The unit answers with an error line. |

## 2. USING THE STRINGS

1. Point the Command String block at the unit's IP address, TCP port 8000.
2. Add one command per row of section 3: its string, then the line ending (hex `21`).
3. Wire each command to the control that should send it. The Bytes column is the whole string as it goes on the wire, to compare with a network capture.

Settings that only the unit's own web page has (its network, logins and firmware) stay on that page.

## 3. COMMANDS

8 strings.

| # | Command | String | Bytes (hex, with the line ending) |
|---|---|---|---|
| 1 | **Relays: Relay 1: On on** | `cs relay 1 to 1` | `63 73 20 72 65 6C 61 79 20 31 20 74 6F 20 31 21` |
| 2 | **Relays: Relay 1: On off** | `cs relay 1 to 0` | `63 73 20 72 65 6C 61 79 20 31 20 74 6F 20 30 21` |
| 3 | **Relays: Relay 2: On on** | `cs relay 2 to 1` | `63 73 20 72 65 6C 61 79 20 32 20 74 6F 20 31 21` |
| 4 | **Relays: Relay 2: On off** | `cs relay 2 to 0` | `63 73 20 72 65 6C 61 79 20 32 20 74 6F 20 30 21` |
| 5 | **Digital I/O: I/O port = Input** | `cs i/o mode 1` | `63 73 20 69 2F 6F 20 6D 6F 64 65 20 31 21` |
| 6 | **Digital I/O: I/O port = Output** | `cs i/o mode 2` | `63 73 20 69 2F 6F 20 6D 6F 64 65 20 32 21` |
| 7 | **Digital I/O: Output high on** | `cs i/o output level 1` | `63 73 20 69 2F 6F 20 6F 75 74 70 75 74 20 6C 65 76 65 6C 20 31 21` |

| | | | |
|---|---|---|---|
| 8 | **Digital I/O: Output high off** | `cs i/o output level 0` | `63 73 20 69 2F 6F 20 6F 75 74 70 75 74 20 6C 65 76 65 6C 20 30 21` |

## 4. READING THE UNIT BACK

Send these to read the unit back (on a timer, or after a change).

| # | String | Bytes (hex) | The reply gives |
|---|---|---|---|
| 1 | `cr relay 1` | `63 72 20 72 65 6C 61 79 20 31 21` | On |
| 2 | `cr relay 2` | `63 72 20 72 65 6C 61 79 20 32 21` | On |
| 3 | `cr i/o mode` | `63 72 20 69 2F 6F 20 6D 6F 64 65 21` | I/O port |
| 4 | `cr i/o output level` | `63 72 20 69 2F 6F 20 6F 75 74 70 75 74 20 6C 65 76 65 6C 21` | Output high |
| 5 | `cr status` | `63 72 20 73 74 61 74 75 73 21` | Firmware, I/O input |

## 5. TROUBLESHOOTING

**Nothing happens.**
Check the unit's IP address and that TCP 8000 is open between the Tesira server and the unit (same network or VLAN, or routed; no firewall in between). Check the line ending is sent after each string.

**The unit answers with an error.**
The string or its value is not one it takes, or the unit is in standby: turn it on first.