

Kincony Smart Controller Macro Module

Crestron SIMPL Windows Integration & Signal Specification Reference

Module Version: v1.0.0

Target System: Crestron 3-Series / 4-Series

Protocol: TCP/IP Socket

1. OVERVIEW & FILE PACKAGE

This macro module enables TCP/IP communication and hardware control between Crestron processors and Kincony smart relay/controller devices. The package includes five (5) core files that must reside in your active SIMPL Windows project directory:

USH Kincony_Ctrl.ush	USP Kincony_Ctrl.usp	UM2 Kincony_Module.um2	UMC Kincony_Module.umc	CLZ KinconyHelper.clz
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2. INTEGRATION & SIGNAL DIRECTION GUIDELINES

QUICK INTEGRATION STEPS

- Copy all **five (5)** files into your SIMPL Windows project folder.
- Re-open or refresh **SIMPL Windows**.
- In the **Symbol Library** window, expand Project Modules → Relay Control.
- Drag and drop the **"Kincony_Module"** symbol into your logic.

IMPORTANT NOTICE: SIGNAL DIRECTION VS HARDWARE PORTS

To prevent confusion between macro pins and hardware ports:

- Module Input Pins (From Logic):** Signals driven by SIMPL Logic to send commands *TO* the controller.
- Module Output Pins (To Logic):** Signals generated by the module to report feedback/status *FROM* the controller.
- Hardware Interfaces (DI/DO/AI/AO/IR):** Refers to the physical terminals on the Kincony board.

3. NETWORK PARAMETERS & SYSTEM STATUS

SIGNAL / PARAMETER	SIMPL PIN TYPE	DIRECTION (SIMPL)	DESCRIPTION & VALUE RANGE
IP	PARAMETER	Input (Parameter)	Target IP address of the Kincony controller (e.g., 192.168.1.200).
Port	PARAMETER	Input (Parameter)	TCP Port number (Configured in Kincony Web UI: Protocol → General → TCP Server).
Connected	DIGITAL OUTPUT PIN	Output (To Logic)	TCP Socket Connection Feedback. High (1) = Connected / Active. Low (0) = Disconnected.

4. DIGITAL INPUT (DI PORTS) & DIGITAL OUTPUT / RELAY (DO PORTS)

Digital Inputs (DI Ports)

SIGNAL NAME	SIMPL PIN TYPE	HARDWARE INTERFACE	DESCRIPTION & LOGIC BEHAVIOR
Di_FB[1] .. [128]	DIGITAL OUTPUT PIN	Physical DI Port [x]	Reports real-time status of physical input port. High (1): Input active / contact closed. Low (0): Input inactive / contact open.

Digital Outputs / Relay Control (DO Ports)

SIGNAL NAME	SIMPL PIN TYPE	HARDWARE INTERFACE	DESCRIPTION & LOGIC BEHAVIOR
Do_All_On	DIGITAL INPUT PIN	All DO Ports	Pulse High (1) to energize/close all physical relay ports.
Do_All_Off	DIGITAL INPUT PIN	All DO Ports	Pulse High (1) to de-energize/open all physical relay ports.
Do_On[1] .. [128]	DIGITAL INPUT PIN	Target DO Port [x]	Pulse High (1) to energize/close specific relay port.
Do_Off[1] .. [128]	DIGITAL INPUT PIN	Target DO Port [x]	Pulse High (1) to de-energize/open specific relay port.
Do_Toggle[1] .. [128]	DIGITAL INPUT PIN	Target DO Port [x]	Pulse High (1) to toggle state of specific relay port.
Do_FB[1] .. [128]	DIGITAL OUTPUT PIN	Target DO Port [x]	Real-time status feedback of relay port. High (1): Closed / ON. Low (0): Open / OFF.

5. ANALOG INPUTS (AI PORTS) & ANALOG OUTPUTS (AO PORTS)

Analog Inputs (AI Ports)

SIGNAL NAME	SIMPL PIN TYPE	HARDWARE INTERFACE	DESCRIPTION & RESOLUTION RANGE
Ai_FB[1] .. [64]	ANALOG OUTPUT PIN	Physical AI Port [x]	Reports raw sensor readings (4–20mA current or 0–5V voltage). • ESP32 Board (12-bit ADC): 0 – 4095 • ADS1115 Board (16-bit ADC): 0 – 26489

Analog Outputs (AO Ports)

SIGNAL NAME	SIMPL PIN TYPE	HARDWARE INTERFACE	DESCRIPTION & RESOLUTION RANGE
Ao_Value[1] .. [32]	ANALOG INPUT PIN	Physical AO Port [x]	Sets output voltage for target AO port. Range: 0 – 255 (maps linearly to DC 0–10V).

SIGNAL NAME	SIMPL PIN TYPE	HARDWARE INTERFACE	DESCRIPTION & RESOLUTION RANGE
Ao_FB[1] .. [32]	ANALOG OUTPUT PIN	Physical AO Port [x]	Feedback of current output voltage on target AO port. Range: 0 - 255 (maps linearly to DC 0–10V).

6. INFRARED CONTROL (IR PORTS & COMMANDS)

SIGNAL NAME	SIMPL PIN TYPE	HARDWARE DOMAIN	DESCRIPTION & FUNCTIONALITY
IR_ID	ANALOG INPUT PIN	Command Index	Index ID for the IR command. Range: 1 - 192 .
IR_Tube	ANALOG INPUT PIN	Physical IR Port	Physical IR emitter port index (e.g., Port 1 or Port 2).
IR_Learn	DIGITAL INPUT PIN	IR Receiver Window	Rising edge triggers IR learn mode for IR_ID via IR_Tube.
IR_Send	DIGITAL INPUT PIN	Physical IR Port	Rising edge transmits IR command at IR_ID.
IR_Delete	DIGITAL INPUT PIN	Memory Storage	Rising edge deletes stored IR command at IR_ID.
IR_Learn_FB_ID	ANALOG OUTPUT PIN	System Feedback	Reports IR_ID corresponding to latest Learn result event.
IR_Learn_OK	DIGITAL OUTPUT PIN	Status Pulse	Pulsed High indicates IR learning succeeded for IR_Learn_FB_ID.
IR_Learn_Timeout	DIGITAL OUTPUT PIN	Status Pulse	Pulsed High indicates IR learning timed out for IR_Learn_FB_ID.
IR_Learn_Error	DIGITAL OUTPUT PIN	Status Pulse	Pulsed High indicates IR learning error (e.g., ID > 192).