



## Control I/O

The **Control I/O** is an RS-485-based peripheral for Symetrix DSP systems. Control I/O also has a stand-alone ASCII mode, which is compatible with third-party hardware such as those from AMX, Crestron, etc. Control I/O functions as a hardware interface for analog controls such as switches, pots, relays and binary outputs – including generic MIDI devices that can be configured to function as a mixing console-type interface for SymNet.

Control I/O functions as a hardware interface for analog controls, extending the capabilities and connectivity supported by Symetrix DSP models. The device provides an assortment of external control options that can be assigned to most parameters within a Symetrix DSP. Programming assignments and firmware version upgrades are handled by software included with Symetrix DSP hardware. The Control I/O package includes eight analog control inputs, eight open collector outputs,

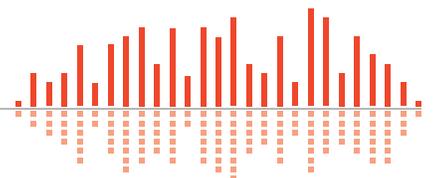
four single pole, double-throw relays, and four RJ-45 connectors to support four Symetrix ARC Wall Panels, each with a discrete channel of ARC Audio. A DB-15 connector functions as a MIDI interface. This allows communication from generic MIDI devices that can be configured to function as a mixing console-type interface for SymNet.

In ASCII mode the Control I/O may be integrated into other third-party hardware and systems, such as those from AMX, Crestron, and others. Compatible systems must be capable of communicating with Control I/O over RS-485. All of the capabilities listed above apply, with the exception of ARC Wall Panel support. ARC Wall Panels are proprietary and only work with Symetrix DSP systems.

## Specifications

### GENERAL SPECIFICATIONS

Analog control inputs	0-5 VDC
Recommended external control potentiometer	10k Ohm, linear
Recommended external control encoder	Mechanical, rotary
O.C. maximum external power supply voltage	50 VDC
O.C. maximum external power supply current sinking	100 mA
O.C. maximum output current	17 mA
O.C. off output voltage	4 VDC typical
O.C. output resistance	240 Ohms
RS-485 serial I/O	38.4 kbaud (default) 8 data bits, 1 stop bit, no parity, no flow control wired in parallel with STP cable.
ARC Cable	Standard CAT5, distance dependent upon load.
Maximum devices per RS-485 bus	32





- 1 Main Power:** Accepts power from Symetrix PS-4 (included) power supply only (100-240 VAC, 50-60 Hz, 15 VDC output, 20 Watts max).
- 2 Device Config:** Configures the RS-485 device address.
- 3 RS-485:** Connects the SymNet system’s RS-485 bus or 3rd-party serial device, wired in parallel (A to A, B to B and GND to GND) using shielded twisted pair. Port Settings: 38.4 kbaud (default), 8 data bits, 1 stop bit, no parity, no flow control.
- 4 ARC Audio (x4):** Splits a single analog line level audio signal off of the ARC port. Can be wired to a line level analog input or output jack for remote audio over CAT5.
- 5 Remote ARCs (x4):** Distributes power and RS-485 data to one or more ARC devices.
- 6 MIDI I/O:** Allows external MIDI control via a standard DB15 “joystick” to (2) DIN 5 MIDI IN and MIDI OUT cables adapter. (Adapter not included).
- 7 Relay Outputs:** 4 SPDT relays rated at 3 Amps, 24 VDC, resistive; 0.3 Amps, 60 VDC, resistive and can be wired normally open or normally closed. This relay can also be used for power failure detection or emergency alarm system integration.
- 8 Open Collector Outputs:** 8 open collector outputs with a paired common ground pin. O/C outputs go low (0V) when active, and are internally pulled high (5V) when inactive and can drive external LED indicators directly.
- 9 Analog Control Inputs:** 8 analog control inputs able to accommodate one potentiometer, one mechanical rotary encoder, or two switches (+5 VDC reference voltage supplied).

<b>Mechanical Data</b>		
Item	Specifications	Remarks
Space Required	1U (WDH: 48.3 cm x 15.6 cm x 4.37 cm / 19 in x 6.1 in x 1.72 in). Depth does not include connector allowance.	Allow at least 1 inch additional clearance for rear panel connections. Additional depth may be required depending upon your specific wiring and connections.
Electrical	100-240 VAC, 50-60 Hz, 15 VDC output, 20 Watts maximum.	No line voltage switching required.
Ventilation	Maximum recommended ambient operating temperature is 30 C / 86 F.	The ventilation should not be impeded by covering the ventilation openings with items such as newspapers, tablecloths, curtains, etc.
Shipping Weight	2.0 kg (4.4 lbs.)	

### Architect and Engineer Specifications: SymNet Control I/O.

The external control interface shall provide eight analog control inputs, eight open collector outputs, and four relay outputs on plug-in barrier-strip connectors. The device shall provide four ARC ports on RJ-45 connectors, four ARC Audio channels on plug-in barrier-strip connectors, MIDI interface on one 15-pin D-sub connector, and RS-485 interface on one plug-in barrier-strip connector. The device shall function as an external control interface for SymNet and other systems. A designer software application shall be provided for assigning control within DSP system components. RS-485 communications shall be utilized for software control and configuration. The external control interface shall be CE marked, CSA tested to UL 60065.

The external control interface shall be Control IO.