Modular ARC Installation

Overview

The Modular ARCs are a series of two base remotes and one expansion device. The Modular ARCs, as their name implies, are expandable within a familiar Decora® form factor.

Note: Cooper brand Decora® plates are recommended for use with the Modular ARCs due to their better fit.

The Modular ARC devices

ARC-K1e

The ARC-K1e modular remote control wall panel features a push-button rotary encoder that provides simple control of two parameters in the Symetrix DSP hardware. The 8-segment LED ladder on the ARC-K1e provides instant user feedback, clearly showing relative volume level. Two additional LEDs illuminate to indicate which of the two available controls are active. All control assignments, including parameter limits and firmware version upgrades, are handled by the software included with Symetrix DSP hardware.

A single channel RJ-45 connection provides power and data to the ARC-K1e. ARC-K1e has an "idle" mode option for light-sensitive environments like theaters. Hardware lockout pins accommodate an installer supplied key switch. Furnished with a standard white single gang Decora® faceplate and splash resistant overlay. The ARC-K1e fits in standard US wall boxes (sold separately) for in-wall or surface mount applications.
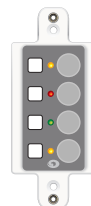
ARC-SW4e
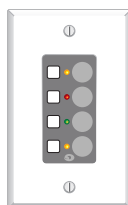
The ARC-SW4e is a modular remote control wall panel with four switches that are programmable as momentary, latched or radio buttons. ARC-SW4e provides simple control over mutes, source selection and preset triggering.

Corresponding tricolor LEDs provide user feedback. LEDs may be linked to buttons, or, LEDs and buttons may be programmed independently. Symetrix DSP software performs all control assignments, including button and LED functionality, parameter limits and firmware version upgrades.

A single channel RJ-45 connection provides power and data to the ARC-SW4e. ARC-SW4e has an "idle" mode option for light-sensitive environments like theaters. Hardware lockout pins accommodate an installer supplied key switch.
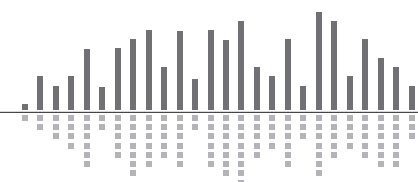
Furnished with a standard white single gang Decora® faceplate and splash resistant overlay. The ARC-SW4e fits in standard US wall boxes (sold separately) for in-wall or surface mount applications.

ARC-EX4e

The ARC-EX4e is identical in form to the ARC-SW4e. Couple the ARC-EX4e with ARC-K1e or ARC-SW4e to expand remote control capabilities. The ARC-EX4e cannot be used standalone nor can it be combined with an ARC-2e. Up to four ARC-EX4e may be combined with an ARC-K1e and up to three ARC-EX4e may be combined with an ARC-SW4e. The ARC-EX4e is furnished with a splash resistant overlay and mounts into a Decora® faceplate (sold separately) alongside its Modular ARC host.
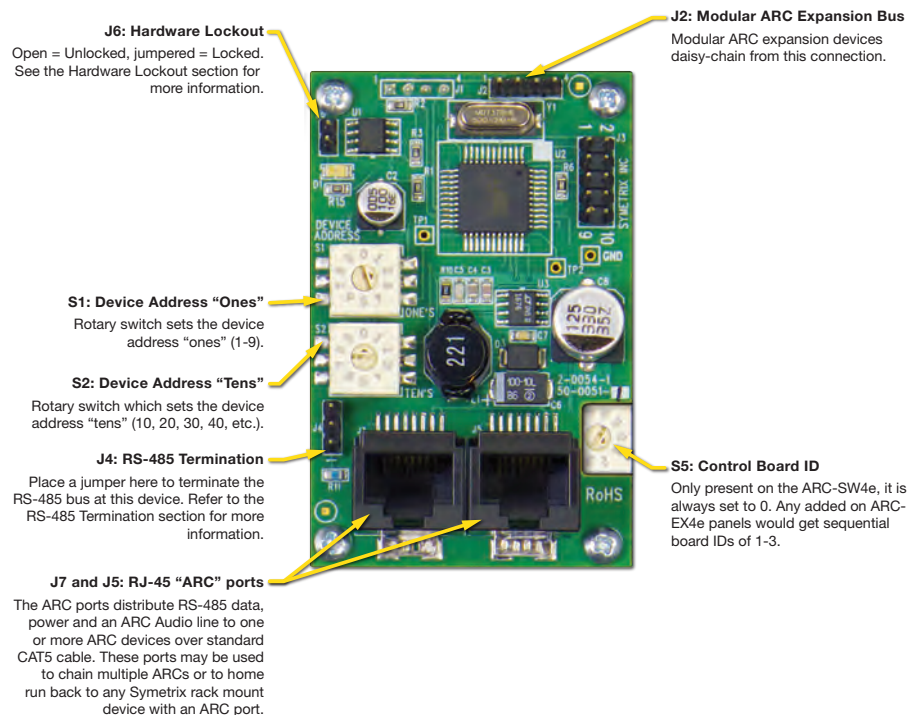
To these base Modular ARC units, one can add a maximum of:	ARC-EX4e
ARC-K1e	4
ARC-SW4e	3

Modular ARC Anatomy

The Modular ARCs, true to their modular construction, utilize an expansion board (which provides the user interface) and a brain board (which provides the system connections, device addressing, processing, etc.). Each Modular ARC has one brain board and an expansion boards attached. The brain board possesses the host processor, system connection and power jacks, configuration jumpers and device address rotary switches. To quickly identify a brain board, look for the RJ45 jacks. The anatomy of a brain board is outlined below:

J6: Hardware Lockout
Open = Unlocked, jumpered = Locked. See the Hardware Lockout section for more information.

J2: Modular ARC Expansion Bus
Modular ARC expansion devices daisy-chain from this connection.

S1: Device Address "Ones"
Rotary switch sets the device address "ones" (1-9).

S2: Device Address "Tens"
Rotary switch which sets the device address "tens" (10, 20, 30, 40, etc.).

J4: RS-485 Termination
Place a jumper here to terminate the RS-485 bus at this device. Refer to the RS-485 Termination section for more information.

S5: Control Board ID
Only present on the ARC-SW4e, it is always set to 0. Any added on ARC-EX4e panels would get sequential board IDs of 1-3.

J7 and J5: RJ-45 "ARC" ports
The ARC ports distribute RS-485 data, power and an ARC Audio line to one or more ARC devices over standard CAT5 cable. These ports may be used to chain multiple ARCs or to home run back to any Symetrix rack mount device with an ARC port.

System Connection

ARCs connect to the system via an RS-485 bus. This is typically via a single CAT5 cable that carries both RS-485 data and power. For full information, refer to the ARC Network Design topic in the help file of SymNet Composer and/or SymNet Designer.

RS-485 Termination

The ARC Wall Panels feature an RS-485 termination jumper. Jumper J4 at the bottom left of a Modular ARC's brain board enables and disables termination. Jumping pins 1 and 2 = terminated. For maximum signal integrity, it is advisable to terminate the last ARC device in the chain if the total length of the chain is over 200 feet.

Note: Never terminate a single RS-485 bus at more than two devices.

Device Addressing

Every RS-485 device connected to the same RS-485 bus must be uniquely identified. The Modular ARCs use two rotary switches (S1 and S2) to designate one of 99 device addresses. S1 determines the device's ones address and S2 determines the device's tens address. For example: to set an Modular ARC to device address 24, you would place S1 in the 4 position and S2 in the 2 position.

If the remote has had its RS-485 address changed, be sure to power cycle the remote. The recommended way to power cycle the remote is to actually power cycle the DSP, as yanking the ARC cable out may cause voltage spikes and other issues.

Before performing a power cycle, always be sure that the amplifiers hooked up to the units outputs are powered off.

Hardware Lockout

J6 on the Modular ARC provides a hardware lockout feature. Installers may wire a key switch to this jumper to provide a simple means to secure a remote in an installation. This function may be inverted or selectively enabled/disabled from the Remote Control Manager.

Modular ARC Expansion Bus

As detailed previously, J2 allows the daisy-chaining of expansion boards which, together with the brain board, can make up to a 5-gang Modular ARC panel (one knob and up to 16 switches). Each board must have a unique Board ID. This ID is set by S5 on the ARC-EX4e.

The ARC-EX4e's Board IDs will range from 0 to 3 when connected to an ARC-K1e or 1 to 3 when connected to an ARCSW4e. (An ARC-K1e has a board ID of 4 while an ARC-SW4e has a Board ID will of 0 from the factory).
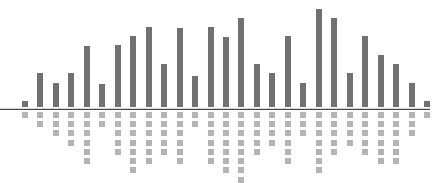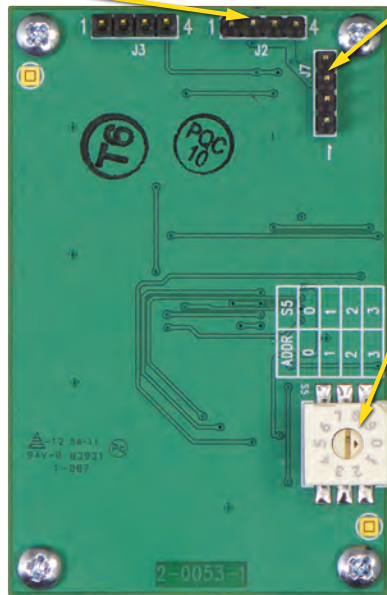
ARC-EX4e Anatomy

J2: Modular ARC Expansion Bus

Connects to the brain board or expansion board with the next lowest Board ID.

J7: Modular ARC Expansion Bus

Modular ARC expansion devices daisy-chain from this connection.

S5: Board ID

ARC-EXe's added on to an ARC-K1e will use sequential board IDs of 1-3.

ARC EX4e's added on to an ARC-SW4e will use sequential board IDs of 1-3 as the ARC-SW4e itself already contains a board ID of 0.

If adding an EX4e to an SW4e, the expansion bus address of the EX4e will be addressed to (1), as the control board underneath the brain board on the SW4e is actually an EX4e and it will be addressed to (0) already. If adding an EX4e to a K1e, address the expansion address of the EX4e to (0), as the control board underneath the brain board on the K1e is a rotary encoder, not another EX4e as it is when expanding an SW4e.