User Manual

CS-IPRO

**Wireless Hand-Held Programmer
for CS-DMX Series Control Stations**

JOHNSON SYSTEMS INC.

www.johnsonsystems.com

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Warranty

The CS-IPRO comes with a standard one (1) year warranty against defects in parts and workmanship.

User Manual Copies

Additional copies of the most recent version of this manual can be downloaded at:

http://www.johnsonsystems.com/cs_ipro_user_manual.htm.

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CS-IPRO

Introduction

CS-IPRO is a wireless hand-held programmer used to communicate with and configure CS-DMX series control stations.

The CS-IPRO features a removable EEPROM Memory Module used to save/backup the DMX channel patch configuration. The EEPROM Memory Module can be easily removed and stored in a safe place. Additional EEPROM Memory Modules are available if multiple backups are required. An EEPROM Memory Module may also be provided for firmware updates.

Wireless communication between the CS-IPRO and CS-DMX control stations is via bidirectional infrared LED's. The CS-IPRO infrared LED is located behind the window at the top of the enclosure. The CS-DMX control station infrared LED window is located on the front, between the master slider and slider 1. The maximum range for sending and receiving data between the CS-IPRO and CS-DMX control stations is 12" (30 cm).

The CS-IPRO is capable of printing out various configuration settings when used in conjunction with a hand-held infrared printer (Johnson System Inc., Part Number: JS-IP). The maximum range for sending data from the CS-IPRO to the hand-held infrared printer is 6' (1.8 m).

Specifications

- Enclosure Dimensions: Width 2.75" (70 mm) x Height 4.95" (125 mm) x Depth 0.95" (24 mm)
- Total Weight: 0.33 lb. (150 g)
- Power Requirement: 2 x AA Batteries - Alkaline or Nickel Metal Hydride (NiMh) ONLY!
- Transmit Range from CS-IPRO to CS-DMX: 12" (30cm)
- Receive Range from CS-DMX to CS-IPRO: 12" (30cm)
- Transmit Range from CS-IPRO to JS-IP: 6' (1.8m)
- Operating Temperature Range: 50°F (10°C) to 104°F (40°C)

WARNING: *For indoor use only!*

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Battery Replacement

2 x AA Batteries
Alkaline or Nickel Metal Hydride (NiMh) ONLY!

Ensure batteries are installed as indicated inside the battery compartment.

The combined voltage of the batteries must be greater than 1.9 VDC for the CS-IPRO to power on.

Security

If the SECURITY jumper on the rear of CS-DMX control station is installed in the ENABLED position, the security KEY set in the CS-IPRO must match the security KEY set in the CS-DMX control station to make any changes to the DMX channel patch configuration. The SECURITY jumper is installed in the DISABLED position by factory default. If security is required, it should be implemented at the time of installation. Refer to SECURITY menu items EDIT KEY, SET KEY and GET KEY on page 10 for further details.

User Interface

The user interface provides access to all of the configuration menu items. It consists of an LCD display, four (4) programming switches and a power ON/OFF switch. Within a few minutes most users will find the menu structure very intuitive and easy to navigate. All configuration settings are automatically stored into an on-board internal EEPROM.

LCD Display

The LCD display is capable of displaying 2 lines of 8 characters. The LCD backlight automatically turns on when there is activity and turns off after two (2) minutes of inactivity. The LCD contrast can be easily adjusted for optimum viewing. Refer to menu item "LCD VIEW ADJUST" on page 8 for further details.

Programming Switches

The MENU UP/DOWN (↕) switches are used for navigating through the various configuration menu items. They also allow for programming of other specific parameters within a selected menu. Pressing and holding either switch will speed up the scroll rate, which can be helpful to speed up the configuration time.

The EXECUTE (➤) switch is normally used to select/enter a menu item, advance forward within a selected menu item, toggle between parameters within a selected menu item or select parameters within a menu.

The ESCAPE (◄) switch is normally used to back up within a selected menu item one step at a time or exit the menu completely.

Power ON/OFF Switch

Press the ON/OFF switch to power on. Press and hold the ON/OFF switch to power off.
The CS-IPRO will automatically power off after 10 minutes of inactivity.

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System Status - LCD Display

The top line of the LCD display always shows "JSI IPRO" unless the configuration menu items are being accessed.

The bottom line of the LCD display shows the current status. In normal run mode it will show ">REMOTE<". If a low battery level (2.0V to 2.1V) is sensed, it will show "LOW BAT!" indicating the batteries need to be replaced. If a critical battery level (1.9V or less) is sensed, it will show "CRITICAL" on the top line and "PWR DOWN" on the bottom line for 5 seconds and then automatically power off.

EEPROM Memory Module

Infrared LED Window (Top)

Power ON/OFF Switch

LCD Display

Programming Switches

Battery Compartment (Back)

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Quick Programming Reference to System Configuration Menu Items

1. **CHECK PATCH** — Check the DMX channel patch for each of the sliders.
Checks the patch saved in the CS-IPRO memory only.

2. **EDIT PATCH** — Edit the patch and assign DMX channel(s) to each of the sliders.
Edits the patch saved in the CS-IPRO memory only.

3. **CLEAR PATCH** — Clear the DMX channel patch for a selected slider or all sliders.
Clears the patch saved in the CS-IPRO memory only.

4. **SET CS PATCH** — Set the DMX channel patch for a CS-DMX control station.
Transfers the patch from CS-IPRO memory to control station memory.

5. **GET CS PATCH** — Get the existing DMX channel patch from a CS-DMX control station.
Transfers the patch from control station memory to CS-IPRO memory.

6. **SAVE PATCH** — Save the DMX channel patch into the removable EEPROM Memory Module.
Saves the patch in the CS-IPRO memory only.

7. **LOAD PATCH** — Load the DMX channel patch from the removable EEPROM Memory Module.
Loads and saves the patch into the CS-IPRO memory.

8. **EEPROM IPRO-X** — View the type of EEPROM memory module plugged into the CS-IPRO.

9. **EEPROM FW-LOAD** — Load new firmware into the CS-IPRO via the EEPROM memory module.

10. **EDIT KEY SECURITY** — Edit the security key for the CS-IPRO.

11. **SET KEY SECURITY** — Set the security key for a CS-DMX control station.

12. **GET KEY SECURITY** — Get the existing security key from a CS-DMX control station.

13. **MONITOR SLIDER** — Monitor the slider level on a CS-DMX control station.

14. **CHECK CS FIRMWARE** — Check the firmware version running on the CS-DMX control station.

15. **FIRMWARE VER X.X** — View the firmware version running on the CS-IPRO microcontroller.

16. **SERIAL # XXXXXX** — View the CS-IPRO unique six-character silicone serial number.

17. **BATTERY X.X OKAY** — View the CS-IPRO battery voltage level and status.

18. **PRINTOUT PATCH** — Printout the DMX channel patch for a selected slider or all sliders.
Prints out the patch saved in the CS-IPRO memory only.

19. **LCD VIEW ADJUST** — Adjust the contrast of the LCD Display for optimum viewing.

NOTE: Refer to page 11 for typical application procedures.

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Detailed Programming of System Configuration Menu Items

The sequence of the following system configuration menu items appear as the MENU DOWN (↓) switch is pressed. Pressing the MENU UP (↑) switch will sequence the system configuration menu items in the opposite order. Pressing and holding either of the MENU UP/DOWN (↕) switches will speed up the scroll rate, which can be helpful to speed up the configuration time.

1.	**CHECK**	*Check the DMX channel patch for each of the sliders*
	PATCH	*Checks the patch saved in the CS-IPRO memory only.*

Provides a quick way to check the DMX channel (001 to 512) patch for each of the sliders (01 to 12) saved in the CS-IPRO memory.

	Press EXECUTE to enter the menu.
SS CH#	Indicates the selected slider (SS) and DMX channels (CH#) patched.
01< ???	Indicates slider 01 is not patched (???) to any DMX channel(s).
12< 012	Press MENU (↕) to select the slider number from 01 to 12 to check.
12< 512	Press EXECUTE to toggle through all of the DMX channels patched to the slider.
	Press ESCAPE to exit the menu.

2.	**EDIT**	*Edit the patch and assign DMX channel(s) to each of the sliders.*
	PATCH	*Edits the patch saved in the CS-IPRO memory only.*

Each of the sliders on a CS-DMX control station can be assigned to control any combination of DMX channels from 1 to 512. The patch is saved in the CS-IPRO memory.

	Press EXECUTE to enter the menu.
SS CH# P	Indicates the selected slider (SS), DMX channel (CH#) and patch (P) status.
01<000 ?	The pointer (<) indicates the selected slider to be edited.
12<000 ?	Press MENU (↕) to select the slider number from 01 to 12.
12 000 ?	Press EXECUTE to edit the DMX channel(s) to patch to the selected slider.
12 0<u>0</u>0 ?	Press EXECUTE to move the cursor to the right, under the digit to be edited.
12 0<u>0</u>0 ?	Press ESCAPE to move the cursor to the left or to exit the menu.
12 512	Press MENU (↕) to select the DMX channel from 001 to 512.
12 512 _	Press EXECUTE to move the cursor to the right, into the patch (P) position.
12 512 *_	Press EXECUTE to patch (*) the selected DMX channel to the selected slider.
12 512 _	Press EXECUTE to toggle the patch status asterisk (*) on and off.
12 512 *_	Repeat the previous 8 steps until the DMX channel patch is complete.
12<512 *	Press ESCAPE to exit the menu and save the DMX channel patch.
	The menu will automatically timeout after 2 minutes of inactivity and save.

3.	**CLEAR**	*Clear the DMX channel patch for a selected slider or all sliders.*
	PATCH	*Clears the patch saved in the CS-IPRO memory only.*

Provides a quick way to clear the DMX channel patch for a selected slider (01 to 12), or all (ALL) sliders can be cleared at the same time. The revised patch is saved in the CS-IPRO memory.

CLEAR	Press EXECUTE to enter the menu.
SS>01	Indicates the selected slider (SS) to clear.
SS>ALL	Press MENU (↕) to select the slider number from 01 to 12 or ALL to clear.
SURE ???	Press EXECUTE to clear the selected slider(s). Are you sure?
DONE !!!	Press EXECUTE again to clear the selected slider(s).
	Press ESCAPE to exit the menu.

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4. **SET CS PATCH**   *Set the DMX channel patch for a CS-DMX control station.*
Transfers the patch from CS-IPRO memory to control station memory.

The DMX channel patch data in the programmer memory is sent and saved into a CS-DMX control station. The total transfer time to set the patch is approximately 110 milliseconds.

Point the CS-IPRO infrared LED window directly at the CS-DMX infrared LED window, within 12" (30 cm).

SET CS	Press EXECUTE to set the CS-DMX control station patch.
SENDING	Displayed briefly while data is being sent from the CS-IPRO.
OKAY	Indicates data has been successfully transferred.
COMM ERR	Indicates a communication error has been detected. Try again.
CRC ERR!	Indicates a CRC data checking error has been detected. Try again.
KEY ERR!	Indicates a security key error. Try again.
INVALID	Indicates the security key data contains an invalid range. Try again.

5. **GET CS PATCH**   *Get the existing DMX channel patch from a CS-DMX control station.*
Transfers the patch from control station memory to CS-IPRO memory.

The existing DMX channel patch is read from the CS-DMX control station and loads the patch into the CS-IPRO transfer buffer. The data is checked and verified and then loaded into the CS-IPRO memory. The patch can then be viewed in the CHECK PATCH menu or modified in the EDIT PATCH menu.

Point the CS-IPRO infrared LED window directly at the CS-DMX infrared LED window, within 12" (30 cm).

GET CS	Press EXECUTE to get the CS-DMX control station patch.
CHECKING	Displayed briefly while data is being read and transferred.
OKAY	Indicates data has been successfully transferred to the CS-IPRO.
COMM ERR	Indicates a communication error has been detected. Try again.
DATA ERR	Indicates a data error has been detected. Try again.

6. **SAVE PATCH**   *Save the DMX channel patch into the removable EEPROM Memory Module.*
Saves the patch in the CS-IPRO memory only.

The DMX channel patch saved in the CS-IPRO memory is saved into the removable EEPROM Memory Module. Note that previously saved DMX channel patch data in the EEPROM Memory Module will be overwritten.

SAVE	Press EXECUTE to enter the menu and save the DMX channel patch.
SURE ???	Press EXECUTE again to save the DMX channel patch. Are you sure?
DONE !!!	Indicates the DMX channel patch has been successfully saved.
CRC ERR!	Indicates a CRC data checking error has been detected. Try again.
TYPE ERR	Indicates the wrong type of EEPROM memory module has been detected.
MEM ERR!	Indicates a defective EEPROM memory module has been detected.
NO MEM !	Indicates an EEPROM memory module has not been detected (not installed). Automatically exits the menu when the patch has been successfully saved.

7. **LOAD PATCH**   *Load the DMX channel patch from the removable EEPROM Memory Module.*
Loads and saves the patch into the CS-IPRO memory.

The DMX channel patch saved in the EEPROM Memory Module is loaded and saved into the CS-IPRO memory. Note the previous DMX channel patch data in the CS-IPRO memory will be overwritten.

LOAD	Press EXECUTE to enter the menu and load the DMX channel patch.
SURE !!!	Press EXECUTE again to load the DMX channel patch. Are you sure?
DONE !!!	Indicates the DMX channel patch has been successfully loaded.
CRC ERR!	Indicates a CRC data checking error has been detected. Try again.
TYPE ERR	Indicates the wrong type of EEPROM memory module has been detected.
MEM ERR!	Indicates a defective EEPROM memory module has been detected.
NO MEM !	Indicates an EEPROM memory module has not been detected (not installed). Automatically exits the menu when the patch has been successfully loaded.

1923 Highfield Cres. S.E.
Calgary, Alberta T2G 5M1 Canada
tel: 403.287.8003 · fax: 403.287.9003
info@johnsonsystems.com

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8. **EPPROM IPRO-X**

View the type of EEPROM memory module plugged into the CS-IPRO.

The CS-IPRO comes with a removable EEPROM memory module. The EEPROM memory module inserts into the connector located on the front face of the CS-IPRO, and may be removed for safe storage.
The EEPROM type is factory configured for parameter (P) or firmware (F) operation. A parameter EEPROM is used to backup the DMX channel patch configuration. A firmware EEPROM is used to update the current firmware version running on the CS-IPRO microcontroller to the firmware version saved on the EEPROM.

The EEPROM memory module supplied with all CS-IPRO is a parameter type.

IPRO-P	Indicates the EEPROM memory module is for a CS-IPRO microcontroller.
IPRO-P	Indicates the EEPROM type is configured for parameter (P) operation.
XXXXXX	Press EXECUTE to display the silicone serial number parameter.
DISABLED	Press EXECUTE and menu feature is disabled for factory use only.
IPRO-F	Indicates the EEPROM type is configured for firmware (F) operation.
VER X.X	Press EXECUTE to display the version (VER) of the firmware.
DISABLED	Press EXECUTE and menu feature is disabled for factory use only.
PROD ERR	Indicates the wrong product type of EEPROM memory module is detected.
NO MEM !	Indicates an EEPROM memory module has not been detected (not installed).

9. **EEPROM FW-LOAD**

Load new firmware into the CS-IPRO via the EEPROM memory module.

If a firmware update is required, Johnson Systems Inc. may supply an EEPROM memory module with the latest firmware version. The firmware EEPROM memory module can be inserted into the EEPROM memory module connector and the firmware can then be loaded into the CS-IPRO microcontroller.

EEPROM	Press EXECUTE to enter the menu.
DISABLED	This menu is disabled for inadvertent use. Proceed to enable.
ENABLED	Press and hold MENU (↑) and MENU (↓) at the same time for 4-5 seconds.
MEMCHECK	Automatically checks the EEPROM memory module for firmware type.
CRC-TEST	Automatically does a CRC test on the firmware code in the EEPROM.
>>>>>>>>	The CRC test in progress.
VER X.X	Displays the firmware version on the EEPROM memory module.
UPDATE ?	Press EXECUTE to proceed.
SURE ???	Press EXECUTE to proceed.
UPDATING	Firmware update in progress.
WILL	Firmware update in progress.
AUTO	Firmware update in progress.
RESTART	Firmware update in progress.
PLEASE	Firmware update in progress.
WAIT....	When firmware update is complete the LCD backlight flashes and restarts.
NO MEM !	Indicates an EEPROM memory module has not been detected (not installed).
WRONG	Indicates if the wrong type (parameter) of EEPROM memory module detected.
MEM TYPE	Indicates if the wrong type (parameter) of EEPROM memory module detected.
WRONG	Indicates if the wrong product type of EEPROM memory module detected.
PRODUCT	Indicates if the wrong product type of EEPROM memory module detected.
CRC ERR!	Indicates if the CRC test fails and the EEPROM memory module is defective.

10. **EDIT KEY SECURITY**

Edit the security key for the CS-IPRO.

The 8-digit security key for the CS-IPRO can be edited to any combination of digits. The default security key is set at all zeros (00000000).

The purpose of the security key is to provide security against other CS-IPRO programmers inadvertently making changes to the DMX channel patch on a CS-DMX control station. With the security jumper on a CS-DMX control station installed in the enabled position, the security key in the control station must match the security key in the CS-IPRO to make any changes.

EDIT KEY	Press EXECUTE to enter the menu.
00000000	Displays the 8 digit security key to be edited.
00000000	Press EXECUTE to move the cursor to the right, under the digit to be edited.

00000000	Press ESCAPE to move the cursor to the left or to exit the menu.
00000090	Press MENU (⬍) to adjust the selected digit (0 to 9).
00000093	Repeat the previous 3 steps until the security key is complete.
00000093	Press ESCAPE to exit the menu and save the security key.
	The menu will automatically timeout after 2 minutes of inactivity and save.

11. SET KEY SECURITY

Set the security key for a CS-DMX control station.

To set the security key, the security jumper on the CS-DMX control station must be installed in the disabled position. Once the security key has been set, the security jumper on the CS-DMX control station needs to be installed in the enabled position to lock the security key in the control station.

Once the security key for the CS-DMX control station has been set, and the security jumper is installed in the enabled position, the security key set in the CS-IPRO must match the security key in the control station to make any changes.

Point the CS-IPRO infrared LED window directly at the CS-DMX infrared LED window, within 12" (30 cm).

SET KEY	Press EXECUTE to set the CS-DMX security key.
SENDING	Displayed briefly while data is being sent from the CS-IPRO.
OKAY	Indicates data has been successfully transferred from the CS-IPRO.
COMM ERR	Indicates a communication error has been detected. Try again.
CS LOCK!	Indicates the security jumper on the CS-DMX is enabled and locked.
INVALID!	Indicates a data error has been detected.

12. GET KEY SECURITY

Get the existing security key from a CS-DMX control station.

To get the security key from a CS-DMX control station, the security jumper on the control station must be installed in the disabled position.

Getting the existing security key from a CS-DMX control station, automatically loads the 8-digit security key into the CS-IPRO memory.

Point the CS-IPRO infrared LED window directly at the CS-DMX infrared LED window, within 12" (30 cm).

GET KEY	Press EXECUTE to get the CS-DMX security key.
CHECKING	Displayed briefly while data is being read and transferred.
00000093	Indicates the 8 digit security key.
COMM ERR	Indicates a communication error has been detected. Try again.
CS LOCK!	Indicates the security jumper on the CS-DMX is enabled and locked.

13. MONITOR SLIDER

Monitor the slider level on a CS-DMX control station.

Point the CS-IPRO infrared LED window directly at the CS-DMX infrared LED window, within 12" (30 cm).

MONITOR	Press EXECUTE to enter the menu.
S:01<00%	Indicates the selected slider (S) number (01) and level (00%) in percent.
S:12<00%	Press MENU (⬍) to select the slider to monitor from 01 to 12.
S:12<FL%	The monitored slider level ranges from 00% to FL% (full/100%).
S:12<??%	If the infrared communication link is lost, the slider level is unknown (??%).
	Press ESCAPE to exit the menu.

14. CHECK CS FIRMWARE

Check the firmware version running on a CS-DMX control station.

Point the CS-IPRO infrared LED window directly at the CS-DMX infrared LED window, within 12" (30 cm).

|	
CHECK CS	Press EXECUTE to enter the menu.
CHECKING	Displayed briefly while data is being read and transferred.
VER X.X	Indicates the firmware version running on the CS-DMX control station.
COMM ERR	Indicates a communication error has been detected. Try again.

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15. FIRMWARE VER X.X   *View the firmware version running on the CS-IPRO microcontroller.*

VER X.X   Indicates the firmware version running on the CS-IPRO microcontroller.

16. SERIAL # XXXXXX   *View the CS-IPRO unique six-character silicone serial number.*

XXXXXX   Indicates the CS-IPRO unique six-character silicone serial number.

17. BATTERY X.X OKAY   *View the battery voltage level and status.*

The batteries should be replaced when a low (LOW) battery voltage level is detected. Once the batteries are at a critical (CRIT) voltage level, the CS-IPRO will automatically save the DMX channel patch data and power down after 5 seconds.

3.0 OKAY   The bottom line indicates the battery voltage level (3.0) and status (OKAY).
2.2 LOW   Indicates a low (LOW) battery voltage level between 2.2 and 2.1 VDC.
2.2 CRIT   Indicates a critical (CRIT) battery voltage level of less than 2.1 VDC.

18. PRINTOUT PATCH   *Print the DMX channel patch for a selected slider or all sliders.*
Prints out the DMX channel patch saved in the CS-IPRO memory only.

TThe CS-IPRO is capable of printing out the DMX channel patch for a selected slider (01 to 12), or all (ALL) of the sliders at once.

Point the CS-IPRO infrared LED window directly at the hand-held printer (Johnson System Inc., Part Number: JS-IP) infrared LED window, within 6' (1.8 m).

PRINTOUT   Press EXECUTE to enter the menu.
SS>01   Indicates the selected slider (SS) number (01) to printout.
SS>ALL   Press MENU (⬍) to select the slider number from 01 to 12 or ALL to print.
PRINTING   Press EXECUTE to printout the DMX channel patch for the selected slider(s).
DONE !!!   Displayed briefly to indicate data has been sent to the hand-held printer.
Press ESCAPE to exit the menu.

19. LCD VIEW ADJUST   *Adjust the contrast of the LCD Display for optimum viewing.*

LCD VIEW   Press EXECUTE to enter the menu.
ADJUST⬍   Press MENU (⬍) to adjust the LCD contrast.
Press ESCAPE to exit the menu.

Typical Application Procedures

1. Configure the DMX channel patch for a CS-DMX control station from scratch.

A) CLEAR PATCH   be sure the DMX channel patch data is cleared (blank) in the CS-IPRO.
B) EDIT PATCH   edit and configure the DMX channel patch for each slider as required.
C) CHECK PATCH   confirm the DMX channel patch is correct for each slider. EDIT PATCH again if corrections are required.
D) SET CS PATCH   load the DMX channel patch into the CS-DMX control station.
E) SAVE PATCH   save (backup) the DMX channel patch into the EEPROM memory module.

2. Edit the DMX channel patch for a CS-DMX control station.

A) GET CS PATCH   load the DMX channel patch from the CS-DMX control station into the CS-IPRO.
B) EDIT PATCH   edit and reconfigure the DMX channel patch for each slider as required.
C) CHECK PATCH   confirm the DMX channel patch is correct for each slider. EDIT PATCH again if corrections are required.
D) SET CS PATCH   load the edited DMX channel patch into the CS-DMX control station.
E) SAVE PATCH   save (backup) the DMX channel patch into the EEPROM memory module.

CS-DMX Series

Programmable Manual DMX Control Stations

Model		Description	# Wires	Back Box	Minimum PCB Clearance
CS-DMX-3-?		3 channel manual control w/master slider, on, preset, and off	2 x #18 AWG +DMX	2 gang	3.60"W x 2.75"H x 2.00"D 9.1cm x 7.0cm x 5.1cm
CS-DMX-6-?		6 channel manual control w/master slider, on, preset, and off	2 x #18 AWG +DMX	3 gang	5.50"W x 2.75"H x 2.00"D 14.0cm x 7.0cm x 5.1cm
CS-DMX-9-?		9 channel manual control w/master slider, on, preset, and off	2 x #18 AWG +DMX	4 gang	7.30"W x 2.75"H x 2.00"D 18.5cm x 7.0cm x 5.1cm
CS-DMX-12-?		12 channel manual control w/master slider, on, preset, and off	2 x #18 AWG +DMX	5 gang	9.10"W x 2.75"H x 2.00"D 23.1cm x 7.0cm x 5.1cm
CS-SA-ENT2B-?		1 gang, 2 button (on/off) entrance station with adjustable "on" voltage for stand-alone applications	5 x #18 AWG	1 gang	1.80"W x 2.75"H x 2.00"D 4.6cm x 7.0cm x 5.1cm
CS-SA-ENT3B-?		3 button entrance station w/on, preset, and off	6 x #18 AWG	1 gang	1.80"W x 2.75"H x 2.00"D 4.6cm x 7.0cm x 5.1cm
CS-IPRO		Hand-held Infrared Station Programmer 2.75"W x 4.95"H x 1.00"D (70cm x 125cm x 25cm)	Wireless	N/A	N/A
DMX-6PIM		DMX 6 Port (6IN/1OUT) Cascading Merger 9.5"W x 12"H x 3.5"D (24cm x 30cm x 9cm)	120VAC + 7 DMX or CAT5E	Wall Mount or Flush Mount	N/A

NOTE: ? = B (black) or W (white)
E.g., CS-SA-6-B

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ENTERTAINMENT SERVICES & TECHNOLOGY ASSOCIATION

RETROFIT! REUSE RECYCLE