

# **XRC-200 DMX Recorder**

XRC-200  
DMX Recorder  
User Manual

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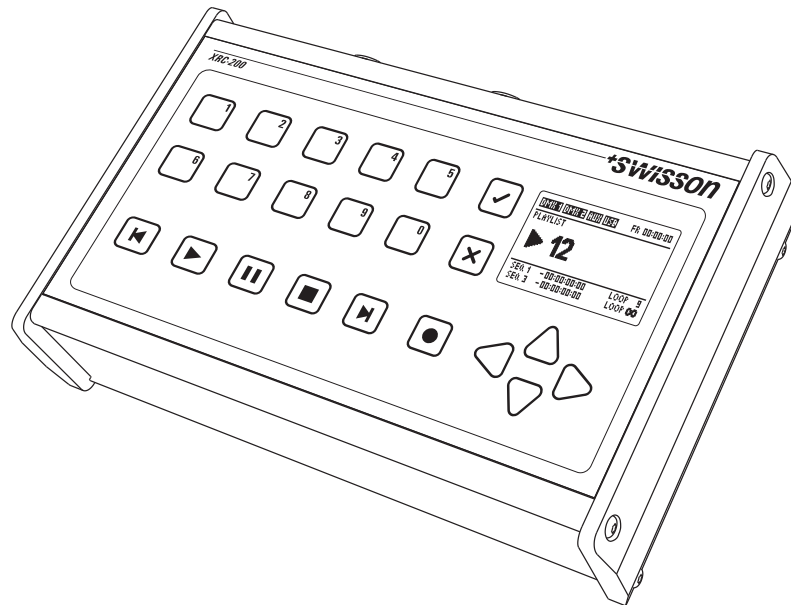
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**+SWISSON**

# XRC-200

**DMX Recorder / Replay Unit**



## Safety Information

Consider the following notes absolutely when you set up, connect and use the XRC-200.

This product is not for household use. Read this manual before operating the device, follow the safety precautions and observe all warnings in this manual.

Use this device only in accordance with local laws and regulations.

### Safety precautions

- Disconnect the device from AC power before removing any cover or part, including fuse and when not in use.
- Ensure that the device is electrically connected to ground (earth).
- Use only a source of AC power that complies with local building and electrical codes and has both overload and ground-fault (earth fault) protection.
- Connect the device to AC power using the supplied power cable.
- Before using the device, check that the power distribution equipment and cables are in perfect condition and rated for the current required of all connected devices.
- Isolate the device from power immediately if the power cable or power plug is damaged in any way, defective or wet, or if they show signs of overheating.
- Do not expose the device to rain or moisture.
- Do not operate the device if any cover or component is missing, damaged or deformed.
- Refer any service operation not described in this manual to Swisson.
- Provide unrestricted airflow around the device.
- Do not operate the device if the ambient temperature exceeds 55°C (131°F).
- Do not modify the device in any way not described in this manual or install other than genuine Swisson parts.
- Do not attempt to bypass any fuse. Replace any defective fuse with one of the specified type and rating only.
- Do not use the device in areas where it is exposed to direct sunlight.
- Do not use the device in areas that are considered to be 'highly combustible'.

## Unpacking

The XRC-200 is packaged in a cardboard box. The following items are included:

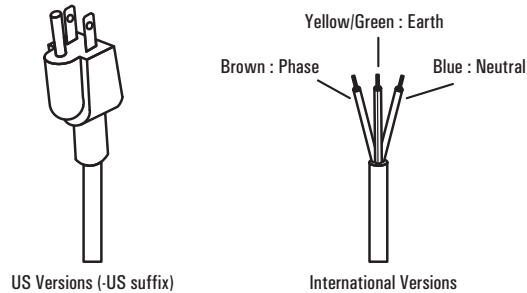
- The device
- This user manual

## Mains Connection

Two different mains connections are available:

The US versions are delivered by Swisson with a "Edison Plug" (NEMA-5-15). These models has a "-US" suffix.

The International versions are delivered without any plug. *Swisson distributors or dealers may deliver the devices with a country specific plug.*



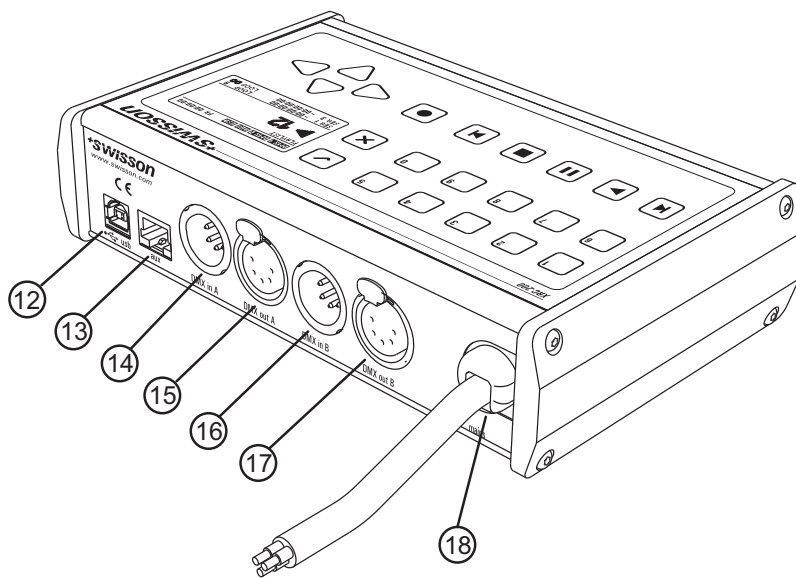
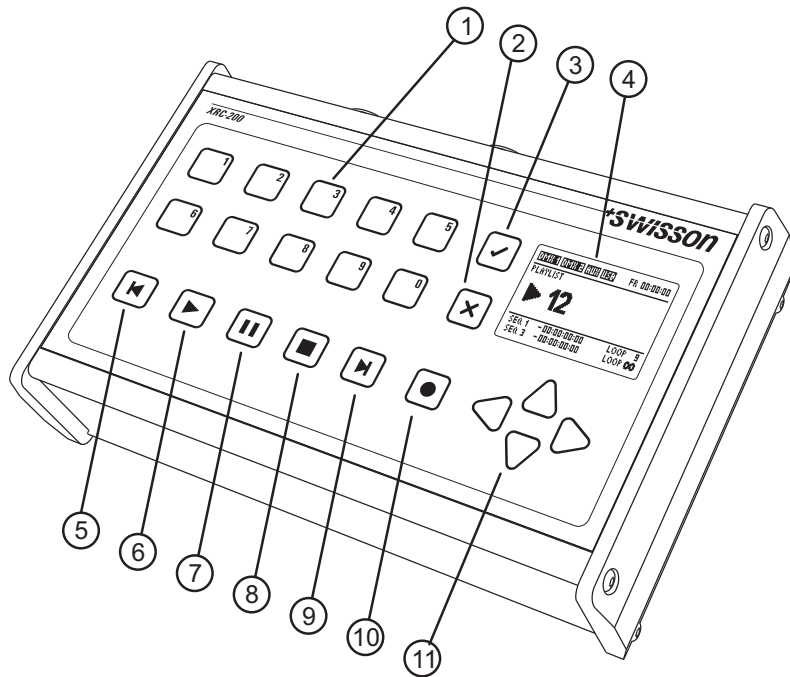
	Wire (US System)	Wire (EU System)	Symbol
Live	black	brown	L
Neutral	white	blue	N
Ground (Earth)	green	yellow/green	⏏ or ⏚




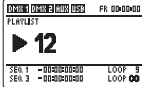














**Consult a qualified electrician if you have any doubts about proper installation.**

**The socket where the device is plugged in must be close to the device and easily accessible.**

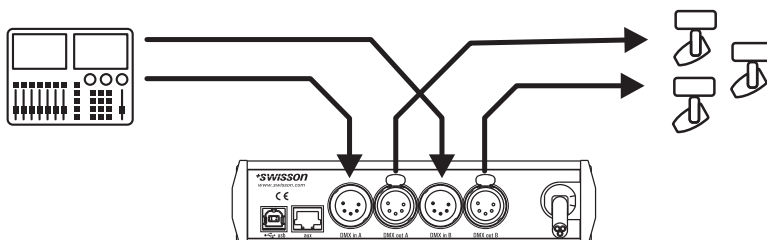
## Overview



- ①  Selection buttons. These buttons are used to select a sequence, a playlist or to enter numeric values.
- ②  Cancel button. This button is used to abort processes and to close dialogs.
- ③  Ok button. This button is used to confirm.
- ④  LCD screen.
- ⑤  Step backward within playlist.
- ⑥  Play a sequence or playlist.
- ⑦  Pause a sequence or a playlist.
- ⑧  Stop a sequence or a playlist.
- ⑨  Step forward within playlist.
- ⑩  Record a sequence or a playlist.
- ⑪  Navigation buttons.
- ⑫  USB connector. Used to backup and restore the data of the device. Also used for firmware updates.
- ⑬  AUX Port. Used for auxiliary devices like the CT-15b (External Contacts).
- ⑭ ⑮  DMX In A & B. Port for light control equipment.
- ⑯ ⑰  DMX Out A & B. Port for DMX lighting fixtures.
- ⑱  Mains power cable.

## Recording a sequence

- Make sure, that the XRC-200 is in NORMAL mode (see p. 11) , before trying to record. Hint: This is the case after resetting the XRC-200 to the FACTORY SETTINGS (see p. 14).
- Connect the XRC-200 between your light controller and your light equipment.



- Enter the number of the sequence to record (from 1 to 64) and press the record button.



Now the XRC-200 is ready to record.



- Press play to start the recording process.



It's possible to interrupt recording with the pause button. Press play to resume recording.

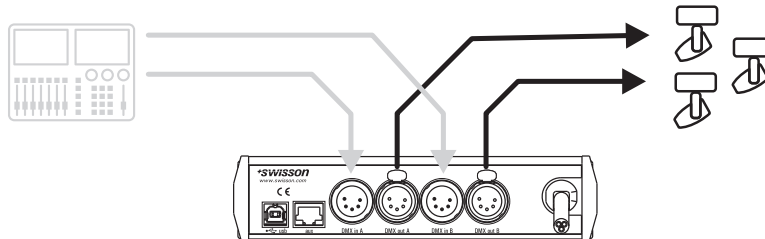


- Press stop to end the recording process.



## Playing a sequence

The light controller is not needed to play and can be disconnected.



- Enter the number of the sequence to play (from 1 to 64) and press the play button.



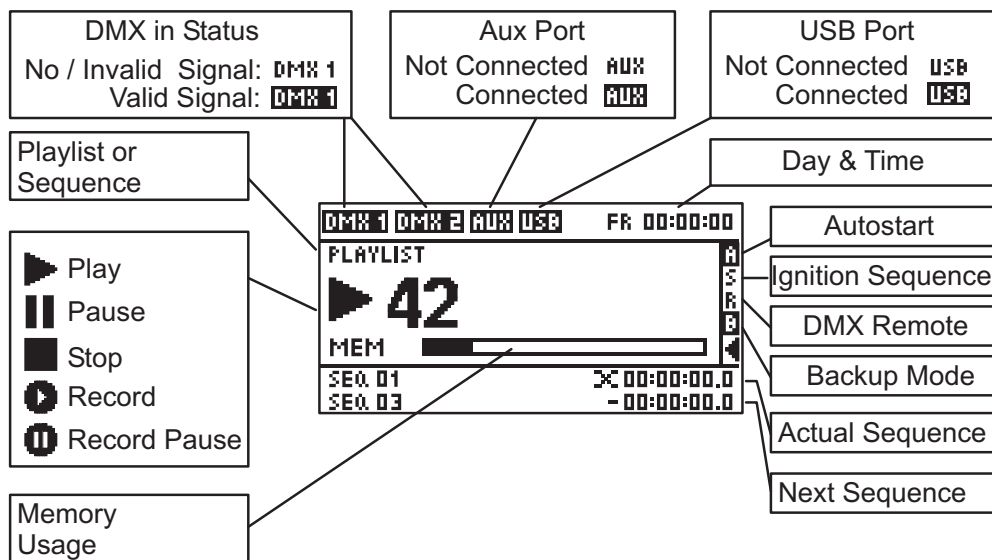
- Now the sequence is playing.



- It's possible to interrupt the sequence with the pause button. Press play to resume.







## Main Screen

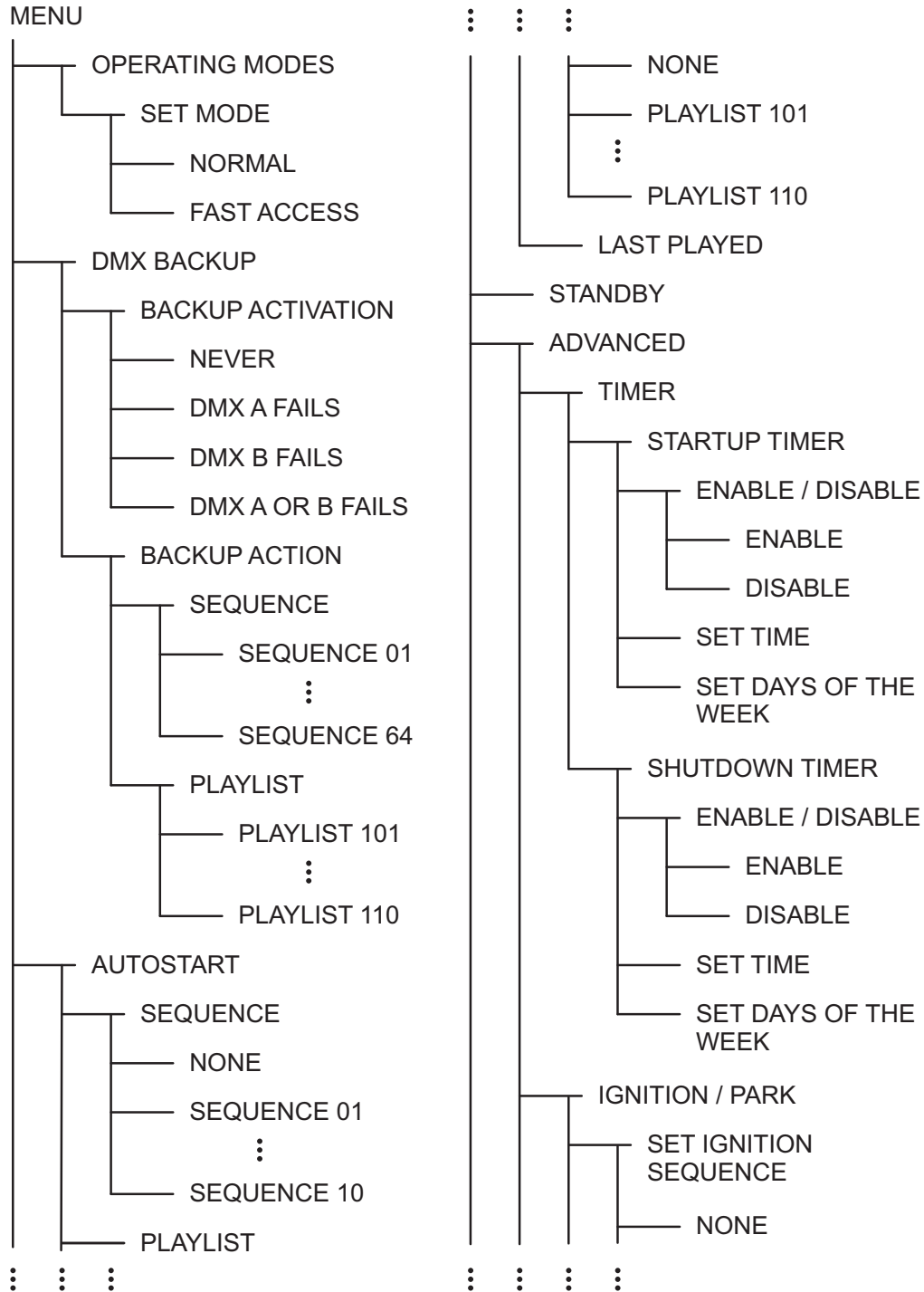


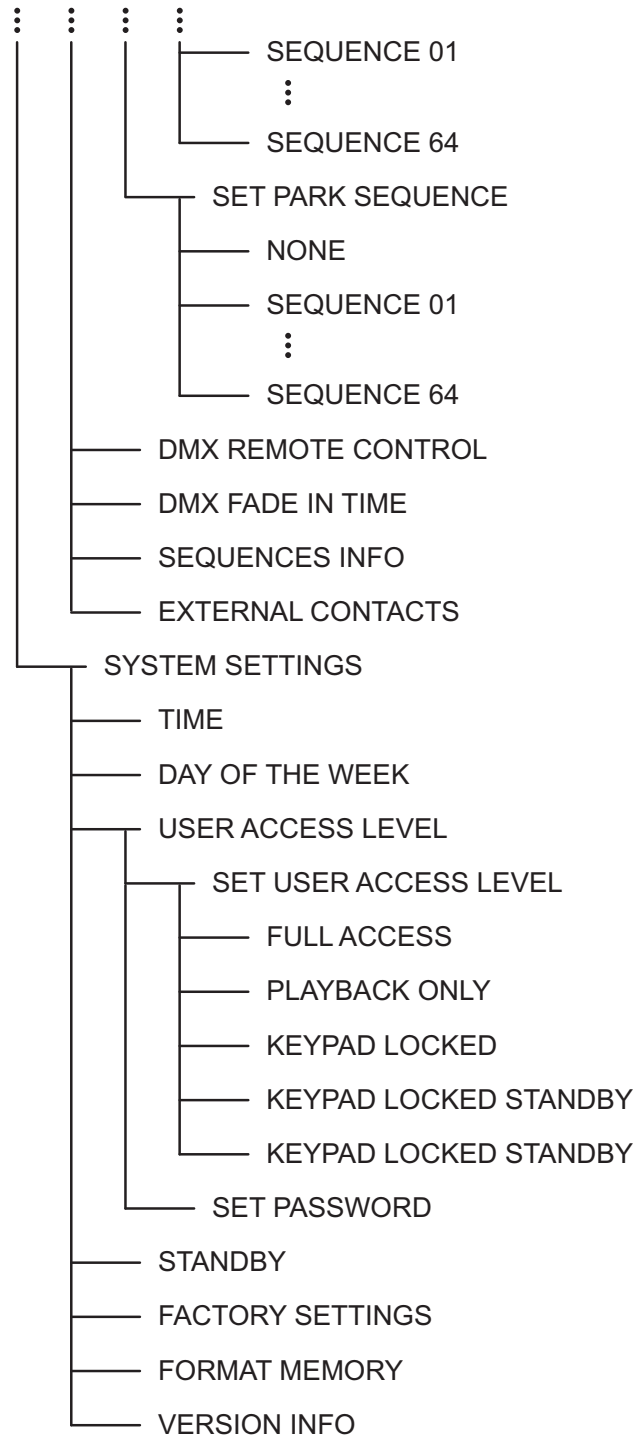


## Menu

The menu may be accessed by pressing the  OK button, when the XRC-200 is stopped. The  up and the  down arrow keys are used to highlight menu items. The  OK button is used to enter a highlighted submenu. **Any setting changes but the time of the day and the day of the week are applied only when you return to the main screen.**

The figure below provides an overview of the menu.





Below the menu items of the XRC-200's menu are briefly described.

## OPERATING MODES

### SET MODE

Use the  $\Delta$  up and the  $\nabla$  down arrow keys to navigate to the desired mode. By pressing the  $\square$  OK key, the highlighted mode is activated. The available modes are NORMAL and FAST ACCESS.

### NORMAL mode

When the XRC-200 is started in NORMAL mode, the user may select sequences or playlists by entering a sequence or a playlist number using the number keys. Selected sequences or playlists may be replayed using the  $\square$  play key. In order to record to an empty sequence, the user presses the  $\square$  record button after entering the number of the desired sequence. If the sequence is empty and the memory is not yet full, this causes the recorder to prepare itself for recording. When the recorder is ready to record to a sequence, the actual recording may be started using the  $\square$  play button or the DMX Recording Trigger (see **ADVANCED>DMX REMOTE CONTROL**, page 13).

### FAST ACCESS mode

In FAST ACCESS mode, a sequence or a playlist may be assigned to each of the number keys. By default, the sequences 1 to 9 are mapped to the buttons 1 to 9 and the sequence 10 is mapped to the button 0. This configuration may be changed under **OPERATING MODES>FAST ACCESS CONFIG** (page 11). Recording is not possible in this mode.

### FAST ACCESS CONFIG

In the FAST ACCESS CONFIGURATION, a table is displayed where each row of the table corresponds to one of the number buttons on the key pad. The leftmost column references the button to which the table row corresponds. The user may use the arrow keys to navigate within the table. When the  $\square$  OK key is pressed while a cell in the second column is highlighted, a menu will show up, where an action may be selected. Available actions are (NONE, PLAY PLAYLIST and PLAY SEQUENCE). When a cell in the rightmost column is highlighted, pressing the  $\square$  OK key will display a list of sequence numbers if the action of the row of the highlighted cell is PLAY SEQUENCE. A list of playlist numbers will be displayed if the action of the row of the highlighted cell is PLAY PLAYLIST.

## DMX BACKUP

### BACKUP ACTIVATION

The  $\Delta$  up and the  $\nabla$  down arrow keys are used to navigate to the desired BACKUP ACTIVATION mode. Before any of the arrow keys have been pressed, the currently selected mode is highlighted. By pressing the  $\boxtimes$  cancel key, the menu item is left and the BACKUP ACTIVATION mode stays unchanged. When the  $\square$  OK key is pressed, the highlighted mode is selected. The XRC-200 supports the following BACKUP automation modes NEVER, DMX A FAILS, DMX B FAILS, DMX A OR B FAILS.

### NEVER

The BACKUP ACTIVATION is disabled. This is the default mode.

### DMX A FAILS

The DMX BACKUP sequence or playlist is played when the DMX universe A loses the DMX signal.

### **DMX B FAILS**

The DMX BACKUP sequence or playlist is played when the DMX universe B loses the DMX signal.

### **DMX A or B FAILS**

The DMX BACKUP sequence or playlist is played, when either or both of the universes fail.

### **BACKUP ACTION**

The user may choose what the XRC-200 plays in the case of a BACKUP ACTIVATION. Using the arrow keys, the desired type is highlighted. Pressing the  OK button will cause a list of sequences or playlists to show up, where an item may be selected by hitting  OK, when the desired playlist or sequence is highlighted.

### **AUTOSTART**

In this menu, the XRC-200 may be configured to automatically play a sequence or a playlist when the recorder is powered on or when the STANDBY mode is exited. The user may configure a given playlist or a sequence by using the  $\Delta$  up and the  $\nabla$  down arrow keys to highlight the desired option (PLAYLIST or SEQUENCE) and pressing the  OK button, which will cause a list of available sequences or playlists to appear. A playlist or a sequence is selected by pressing the  OK button after highlighting the desired sequence or playlist using the arrow keys. Alternatively, the user may choose to let the XRC-200 play whichever sequence has been played last when the device is started by highlighting the item LAST PLAYED and pressing the  OK button. In order to configure the XRC-200 to be stopped at startup, choose SEQUENCE, hit  OK and select NONE in the list of sequences, then hit  OK again to confirm.

Note: If an IGNITION SEQUENCE is configured, the IGNITION SEQUENCE is played once first.

### **ADVANCED**

#### **TIMER**

It is possible to configure a STARTUP TIMER as well as a SHUTDOWN TIMER. Use the arrow keys to highlight the timer you want to configure, and then press the  OK button. Note: The STARTUP TIMER will cause the XRC-200 to start up only, if the XRC-200 has been in the STANDBY mode when the built in clock reaches the time configured and if the STARTUP TIMER has been configured. The device will automatically switch to the STANDBY mode, when it is powered up, if the STARTUP TIMER is enabled.

#### **STARTUP TIMER and SHUTDOWN TIMER**

##### **ENABLE / DISABLE**

Use the arrow keys to highlight the desired option. Highlight ENABLE and press  OK in order to enable the timer. Highlight DISABLE and press the  OK button in order to disable the timer.

##### **SET TIME**

The SET TIME dialog allows for setting the hours, the minutes and the seconds of the startup or shutdown time respectively. Use the  $\triangleleft$  left and the  $\triangleright$  right arrow keys to underline the currently configured value for the hours, minutes or seconds. Use the  $\Delta$  up and the  $\nabla$  down arrow buttons or the number buttons to change the underlined value. Press  OK to store the new values. Press  cancel to abort.

##### **SET DAYS OF THE WEEK**

This dialog is used to select at which days of the week the timer is enabled. Use the arrow keys to select a week day, and then hit the  OK button to put or remove the tick from that weekday. Hit  cancel to store the displayed setting.

## IGNITION / PARK

### IGNITION SEQUENCE

Select an IGNITION SEQUENCE by pressing  OK after highlighting the desired sequence number using the  $\Delta$  up and the  $\nabla$  down arrow key. The IGNITION SEQUENCE is played once when the XRC-200 is powered on, or when the STANDBY mode is exited.

### PARK SEQUENCE

Select a PARK SEQUENCE by pressing  OK after highlighting the desired sequence number using the  $\Delta$  up and the  $\nabla$  down arrow keys. The PARK SEQUENCE is played once before the XRC-200 is put into the STANDBY mode.

## DMX REMOTE CONTROL

This dialog enables the configuration of the remote controllability via DMX of the XRC-200. The arrow buttons are used to select one of the 6 fields. When the dialog is opened, the field in the top left is selected. Press the  OK button to enable or disable DMX REMOTE FAST ACCESS. Push the  $\triangleright$  right arrow key. Now the DMX universe to which DMX REMOTE FAST ACCESS is patched, is highlighted. Press  OK, if you want to change the universe. Press the  $\triangleright$  right arrow button again to highlight the DMX address, to which the DMX REMOTE FAST ACCESS is sensitive. Use the number buttons to change the DMX address. Note: DMX REMOTE FAST ACCESS is sensitive to a range of 10 DMX addresses. Press the  $\triangleright$  right arrow key again and repeat the above procedure to configure the DMX RECORDING TRIGGER. Note: The DMX RECORDING TRIGGER requires only one DMX address.

### DMX REMOTE FAST ACCESS

This feature allows to start and stop sequences or playlists from a lighting desk or another DMX source. The DMX REMOTE CONTROL is sensitive to a range of 10 DMX addresses starting at the address which has been configured. Each of the 10 addresses corresponds to one of the FAST ACCESS BUTTONS. The first address of the DMX address range corresponds to the FAST ACCESS BUTTON 1, the second address corresponds to the FAST ACCESS BUTTON 2, etc. In order to start playing a sequence or a playlist that is mapped to a FAST ACCESS BUTTON, the level of the corresponding DMX channel is changed from a low value (<20%) to a high value (>80%). When the started sequence or playlist should be stopped again, the level has to be set back to a low value.

### DMX RECORDING TRIGGER

The DMX RECORDING TRIGGER is used to start and stop recording a DMX sequence remotely from a lighting desk or another connected DMX source. In order to start recording via DMX, the recorder is first prepared to record to an empty sequence by entering the desired sequence number while the main screen is displayed. Then the record button is pressed. Now the level of the DMX channel configured for the DMX RECORDING TRIGGER is set to a low value (<20%). As soon as the level changes to a high value (>80%), the XRC-200 starts to record. In order to stop recording, the DMX RECORDING TRIGGER channel is again set to a low level. When the channel level becomes high again, the XRC-200 immediately stops recording.

### DMX FADE IN TIME

Use the number buttons to enter the DMX FADE IN TIME in milliseconds. Note: The value will be rounded down, to the next smaller multiple of 40ms. The DMX FADE IN TIME specifies for how long a sequence is faded in, before it is being replayed. The DMX FADE IN TIME must be within the range of 0 to 65520.

## SEQUENCES INFO

This screen shows information about recorded sequences. Non recorded sequences won't be shown. Using the  $\Delta$  up and the  $\nabla$  down arrow key any non empty sequence may be selected. A selected sequence may be deleted by pressing the  $\square$  OK button twice.

## EXTERNAL CONTACTS

External contacts can only be used with the Swisson XRC-CT15b. The EXTERNAL CONTACTS are configured the same way as the FAST ACCESS CONFIG (see OPERATING MODES>FAST ACCESS CONFIG). However, for EXTERNAL CONTACTS, STOP and PAUSE are available as additional actions.

## SYSTEM SETTINGS

### TIME

Set the current time of day. Use the  $\triangleleft$  left and the  $\triangleright$  right arrow keys to underline the currently configured value for the hours minutes or seconds. Use the  $\Delta$  up and the  $\nabla$  down arrow buttons or the number buttons to change the underlined value. Press  $\square$  OK, to store the new values.

### DAY OF THE WEEK

Use the  $\Delta$  up and the  $\nabla$  down arrow keys to highlight the current week day and hit the  $\square$  OK button to change the day of the week.

## USER ACCESS LEVELS

### SET USER ACCESS LEVEL

This menu item lists all available USER ACCESS LEVELS. Use the  $\Delta$  up and the  $\nabla$  down arrow keys to highlight the preferred USER ACCESS LEVEL. Press  $\square$  OK, to activate the highlighted USER ACCESS LEVEL. Available USER ACCESS LEVELS are FULL ACCESS, PLAYBACK ONLY, KEYPAD LOCKED, KEYPAD LOCKED STANDBY.

#### FULL ACCESS

No restrictions.

#### PLAYBACK ONLY

User may not record. A restricted menu allows for unlocking the keypad and switching to the standby mode.

#### KEYPAD LOCKED

User may not play, record or enter the menu. Main screen is shown.

#### KEYPAD LOCKED STANDBY

Standby screen is shown. All keys are locked.

### SET PASSWORD

Launches a dialog to set the password.

## FACTORY SETTINGS

Restores the unit to the original factory settings.

## FORMAT MEMORY

Formats the entire memory. This deletes all sequences.

## VERSION INFO

Displays the hardware version and the installed firmware version, as well as the amount of available memory.

## Creating a Playlist

Recorded sequences may be concatenated in a playlist. XRC-200 playlists offer the following features:

- The fade in time may be set individually for each sequence change.
- Sequences may be repeated for a given number of times or until an External Contact is triggered.
- Playlists may wait for a given time of the day or for an External Contact to be triggered.

Playlists are edited as follows. In the main screen, simply enter the number of a playlist (101 to 110), and then press the record button. If the playlist has not yet been edited, a table will appear that looks as depicted.

01			
02			
03			
04			
05			

When a cell of the second column is highlighted, simply press  OK to get a list of available playlist commands. Using the  $\Delta$  up and the  $\nabla$  down arrow keys, a command may be highlighted. By pressing the  OK button, the command is stored in the playlist. If the command has a parameter, the cell in the next column on the same row of the table becomes highlighted.

The parameter is then set in the same way as the command itself. If the command has a second parameter, the cell in the last row of the table becomes highlighted. The same procedure may then be repeated again in order to set the second parameter.

XRC-200 has the following playlist commands.

### STOP

The playlist is stopped when this line is reached.

### GOTO <LINE NBR>

When this command is executed, the playlist continues on <LINE NBR> rather than on the line below.

### WAIT PARAM1 PARAM2

Available values for PARAM1 are FOR CONTACT, UNTIL TIME and FOR PLAY PRESSED.

#### FOR CONTACT

Causes the playlist to be halted until the contact, which is specified by the second parameter is triggered

#### UNTIL TIME

Halts the playlist until the XRC-200's clock reaches the time of the day specified by the second parameter.

#### FOR PLAY PRESSED

Pauses the playlist. The playlist may be resumed by pressing the play button.

## SET FADE TIME

Sets the fade time for sequences started from this playlist to the value specified by the parameter.

### Example

PLAYLIST 101			
01	SEQ. 01		
02	WAIT	CONTACT	01
03	SEQ. 05	REPEAT	2
04	SEQ. 07	REP UNTIL	CONTACT 2
05	GOTO	03	

The image to the left is an example of a playlist. When this playlist is replayed, it will start to play the sequence 1 once and then the recorder will wait for the External Contact 01 to be triggered. As soon as the External Contact 01 has been triggered, the playlist will be continued on line 3, which will cause the XRC-200 to replay the sequence 5 twice. Then it will repeatedly replay the sequence 7 until the Contact 2 is triggered.

Triggering the External Contact 2 will lead to the evaluation of line 5, which causes the XRC-200 to jump back to line 3.



**Technical Data**

Mains Voltage	100 - 240 [VAC]
Main Frequency	50/60 [Hz]
Fuse	Delay-action fuse, 2 A, 250V
Current Consumption Single Units	0.2 [A]
Operating Temperature	0F to 131F (-17°C to 55°C)
Protocol Standard	ANSI E1.11 (DMX-512)
Safety Standards	EN60950-1
EMC emmision	EN55103-1
EMC immunity	EN55103-2
DMX Channels	1024
Sequences	64
Playlists	10
Memory	64 MByte

