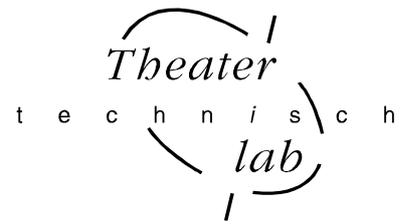


# MANUAL SPRING-V3

software version from V2.0(D)



## General

The SPRING is a 24channel memory lighting control desk with a DMX512 out- and input. You can extend the SPRING to a 72-channel desk with extra software. The SPRING has two fader banks with 24 faders, a split up crossfader and a MASTER fader. Each channel has a level led and a push button. These buttons are channel pointers for: channel level flashing, level view/preview, DMX soft patch and to set the control curve. In 72 channel mode the faders of the upper fader bank are channel faders and the faders of the lower bank are all Sub-MASTERS. In 24 channel mode you can choose under set-up for Sub-MASTERS or not. In Sub-MASTER mode you can assign a memory to a Sub-MASTER and flash Sub-MASTERS or channels or else only channels.

This desk has been designed to play back manual made pre-sets as well as pre-sets recorded in memory. You can store 768 pre-sets in memory. You can fade-in these pre-sets with the crossfader or with a GO-button action in a programmable fade-in, delay in, fade-out and delay out time.

The SPRING has a LOOP/chase section. You can add 3 pre-programmed loops or user defined loops of memories to the output signal. These memories follow each other by cross-fades in the programmed fade-and delay times. You get a stepped chase of these memories by giving the rhythm with the TEMPO button

The SPRING has several possibilities for remote control: external GO-button, pre-set controller and MIDI.

Remote control by means of an 8(64) button pre-set controller explores a powerful extra possibility. Because SPRING-V3 owns 4 independent fade-engines. Fade-engine1 is controllable by the cross-faders and the on board GO/stop button and the pre-set controller. Fade-engine 2,3,4 are only controllable by the the buttons of a pre-set controller. The output of the SPRING is the highest takes precedence of the output of the four fade-engines (and a extra linked fade-engine), the 3 fade engines of the Loop-unit and, in Sub-MASTER mode, the Sub-MASTER contribution.

The facilities for controlling moving heads and scroller etc. are: 16bits fades, NON-FADE control curve, displaying levels in percent or byte values.

You can backup all your settings and memories on a USB memory stick.

Optional you can connect a VGA monitor. This monitor must have the capability to handle a resolution of 800x600.

Mostly an 15-inch monitor or smaller will be nice. For the VGA option there must placed a VGA-module and the software number must have the extension D.

You can lock the interface with a pin-number.

## Definitions

A **SCENE** is the visible result of the setting of 24/72 control channels (on stage).

A **PRE-SET** is a level setting of 24/72 control channels, made with the faders on the bank whose led doesn't burn (manual pre-set). The result becomes visible after a cross-fade.

A **MEMORY** or **SCENE RECORD** is a pre-set stored in memory.

A **LOOP** is an automatically repeating sequence of memory fade-ins . The fade-in speed is determined by the programmed fade-in, delay-in, fade-out and delay-out times of the memories that are used to build-up the loop.

**STEPPED LOOP-mode** of a loop is the situation in which memories follow up each other step by step (no cross-fade)

The **FADER-BUTTONS** are the rectangle black buttons between the fader-banks.

**H.T.P.** stands for highest takes precedence.

The **cursor** is a blinking hyphen in the display. It points the selected item for changing.

## Legend

[.....] points to a button, <.....> points to a led and “...” is a displayed text.

For example: [GO/stop] means: the button 'GO/stop', <live> burns, means: the led 'live' burns.

## User situations

### Manual play

The SPRING has two fader-banks. Each bank has 24 faders and a red indication led in the middle. This led indicates whether the faders of the corresponding bank control 'live scene' or not. In the latter case this fader-bank controls 'next' pre-set or memory. You can make a pre-set or next memory visible on stage with the crossfader or with a GO-button action in a programmable fade time.

The level-leds indicate:

a) the channel levels of 'live scene' if led <live>, located by button [SELECT live or blind control/view], is ON.

b) the channel levels of 'next pre-set' or 'next memory' if led <live> is OFF. So you get a preview of what is coming.

c) the channel levels of the output if there is a fade going. You have to realize that the output is the H.T.P of all the fade-engines, Sub-MASTER account (72 channel mode or sub-MASTER mode in 24 channel mode) and going loops. Each fader has a button. By pressing a button you point the corresponding channel, 1 up till 24 (or 1 up till 72 in combination with the three fader-bank buttons). If channel flash is enabled the corresponding channel output level will directly set on 100%. If Sub-MASTER flash is enabled (72 channel mode) the corresponding Sub-MASTER is directly set on 100%. If both are disabled you can see the level of the corresponding channel in percent's at the LCD-display. If led <live> is ON you get levels of live scene or if OFF you get the levels of next memory/pre-set.

### Memory play

The SPRING can store 768 pre-sets in memory. Each memory gets a name, which exists of a letter (A up till X) and a number (1 up till 32). For example: "A17". You can select a memory with the buttons [select digit] and/or [<<] and [>>]. You can make a memory visible on stage with the crossfader or a GO-button action, just like you make a manual made pre-set visible. You can directly change the channel levels of the live scene or next memory by using the faders of the bank of which the red led <live> is respectively ON and OFF. See for more information page 3: to set and to view output level of each channel. You can directly switch to manual play by pressing [MANUAL PLAY] any time you want.

### To store a scene as

In this menu you can store/save a pre-set or live scene in memory as "Yxx". Y=A,B,...,X. x=1, 2,...up until 32. It is also possible to change or copy a memory.

### Define loop

You can define a loop in the memory sequence list which will effect 'next' memory by pressing the GO-button or sliding the cross-faders. You can also define a loop for the LOOP-engine by selecting 'first' and 'last' memory for that loop out of the sequence list. You can define 3-loops at a time and assign to the three loop GO/stop buttons.

### Fade time

In these two menus you can set the fade-in time, delay-in time and the fade-out, delay-out time separately for each pre-set or memory and you can check previous fade times. Default fade-in and fade-out time is programmable under set-up. The factory default is 3[s]. Default delay-in and delay-out times is 0[s].

### Delete memory

In the delete memory menu you can remove a memory or delete all memories.

### Sequence

You can change the auto sequence in which you can play back memories. You can set auto-follow for a memory if you want the automatic fade-in of that memory after the fade-in of the previous memory in the sequence list. You can also link a fade-in of a memory (or a sequence of auto-followed memories) on a separate fade-engine, so two independent fades are going at the same time. You can rearrange the sequence list in an alphanumeric way and you can rename the memories on an alphanumeric way.

### Assign

With this button you can select three menus. You can set to start the fade-in of a particular memory at power-on. You can assign external Start/stop buttons (pre-set controller) to memories and Fade-engines. In 72 channel mode and Sub-MASTER mode for 24 channels you can assign 24 Sub-MASTERS to a memory.

### Set-up

The set-up possibilities are: Soft patch (you can define the soft patch from 24/72 control channels to 512 DMX channels), proportional patch, test the soft patch, reset/clear/shift the soft patch, select a control curve for each channel, adjust the default fade time, select what the SPRING must do with the DMX-in data, pair channels to get a 16bit fade, set the selected memories under memory control visible on stage, set channel levels displayed in percent or byte value, enable or not Sub-MASTER mode in case of 24 channels, choose between MIDI or remote pre-set controller, and create and restore a backup on USB memory stick and finally lock the user-interface by means of a pin-code.

## Operation in general

About the buttons around the LCD-display. With [select item] you can change the position of the cursor in a particular display menu; select a item which you want to change. With the scroll buttons [<<] & [>>] and in some cases [select digit] you can change the value of the selected item.

In case the question mark: "?" appears on the display you answer with [YES] or [NO].

To return from MEMORY CONTROL you push [EXIT memory control]. After that you get the following main display:

live: B16
next: B18

"live: B16 " means that the memory what is seen on stage is B16

"next: B18 " means that memory B18 is loaded to fade-in.

“next: ‘MANUAL’ ” means a pre-set created on the fader-bank with led <live> is OFF is loaded to be fade in. If you scroll to the beginning or to the end of the memory list, you see the text “Start of MEMORY list reached” or “End of MEMORY list reached”.

At power-on the software version is displayed for 2 seconds. After that the SPRING automatically fades in the memory that was faded in at power-off. If the SPRING acted in ‘manual play’ when turned off, than the desk automatically goes back to manual play after power on.

All channel levels are processed 40 times per second. Also the DMX data-rate =40[1/s].

## BASIC OPERATIONS

### The SPRING as a manual desk

#### Create a pre-set

```
live: D23
next: 'MANUAL'
```

Select with [MANUAL PLAY] for next “manual” on the display. You get this display. Check if both parts of the crossfader are together in the same end position. You can make a pre-set on that fader-bank whose led <live> is OFF. (In case of Sub-MASTER mode counts: you only work on the upper fader bank and you have to switch OFF the led <live>, with button [live or blind

control/view].) You put the faders in the right position. The level leds indicate the channel levels. To get the exact channel level output in percent (or byte value) on display you simply press the corresponding fader-button.

#### Manual crossfade

```
FadeOUT:016% MAN
Fade IN:016% A10
```

To make a pre-set or memory visible on stage: move both faders of the crossfader in the direction of the burning crossfader led. The crossfader part whose led burns, makes all channel level increases visible. The other crossfader part makes all channel level decreases visible. As soon as both crossfader parts are on the side of the burning led, this led goes off and the other one goes on; the

crossfade has finished, the fader-banks have exchanged their function. During the fade you see on the display in percents the progress of the fade and you see the concerning recorded scene. “MAN” means: manual made pre-set.

#### Automatic cross-fade

Push the green [GO/stop]: now there is an automatic cross-fade. The present scene disappears and the pre-set appears on stage. Push this button again, to stop to fade.

How to change fade times: see below. The default fade-in and fade-out times you can adjust under set-up. The default delay in and delay out times are 0[s].

Notice the fader-banks don't exchange their function when the automatic cross-fade has finished.

Now, of course, you can also change a channel level in the scene. First you have to check if the fader is 'active': the channel level must correspond with the fader's position. Therefore you have to move the fader up/down till you have picked up the level. To do it smoothly you can check the channel level in percent's on the display by pressing the corresponding channel-button.

#### To view and to adjust channel levels in percent(or byte value)

```
Adjust 'LIVE'
Ch04, Level=075%
```

Fade-engine1 contribution to the output levels. At the right side of the middle of the upper fader-bank you will find [SELECT live or blind control/view]. By pressing this button you can change the state of the adjacent led <live>. If <live> is ON you can adjust/view the contribution to the output of fade-engine1 by pushing the fader-button of the channel you want to view or change. At the

display you see the corresponding channel contribution to the output level in percent's. To change this level with the corresponding fader of the fader-bank whose red led <live> is ON you first have to match the fader position with the current level value.

```
Adjust 'NEXT'
Ch22, Level=022%
```

Pre-set levels of fade-engine1. At the right side of the middle of the upper fader-bank you will find [SELECT live or blind control/view]. By pressing this button you can change the state of the adjacent led <live>. If <live> is OFF you can adjust/view the pre-set of fade-engine1 by pushing the fader-button of the channel you want to view or change. At the display you see the corresponding

channel contribution to the pre-set level in percent's. To change this level with the corresponding fader of the fader-bank whose red led <live> is OFF you first have to match the fader position with the current level value.

### To flash a channel level

At the right side of the fader buttons you find the button [ENABLE flash]. Press this button so led <channels> flashes ON/OFF. Push the fader-button of the channel you want to flash. You put the channel output level at once at 100%.

### The SPRING as memory control desk

#### Create a memory

```
Save as? A13
Source:LIVEscene
```

You make a scene on the fader-bank, whose led <live> is ON. Push [STORE scene as]. With the scroll buttons [<<], [>>] and button [select digit] you can chose a memory name. For example A13. If the name you have chosen already exists, than you see: "Modify ? A13" Otherwise you see: "Save as?". Push [YES] to store the scene. After this the SPRING returns to the main display. You can leave this mode

without saving anything by pushing [EXIT memory control] or [NO].

Push [select item] to select the second line on the display. Push [<<] or [>>] to choose the "source" of your record. You have four options:

1. OUTPUT: you record the current output, this is often the present light-scene you see on stage. This makes it possible to record a light-scene you have frozen during a fade-in.
2. LIVEscene: you record the scene that you have made on the fader-bank whose led <live> is ON.
3. NEXT mem': you record the channel setting from a, in 'NEXT' loaded memory (possibly modified) or a manual created, pre-set that you have made on the fader-bank whose led <live> is OFF.
4. DMX-in: on this way you create a memory from the incoming DMX-data.

#### To change a memory: live

```
Modify? D18
Source:Livescene
```

Get the main display. Select for "next", the memory you want to change. For example: D18. Make this memory visible with the crossfader. Now you can adjust the levels of the memory with the fader-bank of which led <live> is ON. Push on [STORE scene as]. The display shows 'Modify?.....Press [YES] to do so. You can also select a name of a not yet made memory.

#### To change a memory invisible: blind

```
Modify? A13
Source:NEXTmem'
```

Get the main display. Select for "next", the memory you want to change. For example: A13. Adjust the levels of the memory with the fader-bank of which led <line> is OFF. The level-leds indicate the channel levels in case 'blind control/view' is selected. By pressing a channel-button you see the level in percent. Push [STORE scene as]. You will see the adjacent display. Push [YES]

if you want to save the modification of the memory.

#### To copy a memory

Get the main display. Select for "NEXT", the memory you want to copy. Make this memory visible with the crossfader or do not. Push [STORE scene as]. Use the scroll buttons [<<] and [>>] and button [select digit] to select the memory name for the copy. Make sure the source is set on "LIVEscene" in case the memory is made visible else it had to be "NEXT mem' Push [YES]. After this the SPRING returns to the main display.

#### To delete a memory

```
DEL memory? A03
Delete all?
```

Push [delete memory]. The display shows the number of the actual memory. Select with [<<], [>>] and [select digit] the memory you like to delete. Confirm your choice by pushing [YES]. You can delete all the memories at once. Go with [select item] to the second line of the display. Push [YES].

Push on [NO] or on [EXIT memory control] to quite the delete mode.

#### To insert a memory in the sequence list

```
A01 ,must be
followed by:A02
```

Create the memory you want to insert, for example E30. It will be placed at the end of the MEMORY list. Push twice on [memory sequence]. For example you see the adjacent display. The cursor is blinking at A01. Select with [<<], [>>] and [select digit] the memory you like to insert, in this case E30. This memory is followed by 'END'. Move the cursor to 'END'. Select the memory you want E30

to be followed by. For example A02. In this way you have inserted E30 between A01 and A02. If you want to place E30 at the beginning of the MEMORY list you simply scroll down with [<<] from END to the first memory in the list.

**To rearrange the sequence of the memories on an alphanumeric way.**

```
SequenceMemories
Alphanumeric?
```

Push three times on [memory sequence]. You see the adjacent display. By pressing [YES] the sequence of the memories in the sequence list will be rearranged on an alphanumeric way. For example the sequence list A05,A02,B05,A01(end) will be changed in A01,A02,A05,B05(end). The memories themselves will not be changed.

**To rename the memories in the sequence list on an alphanumeric way.**

```
Rename Memories
Alphanumeric?
```

Push four times on [memory sequence]. You see the adjacent display. By pressing [YES] the names of the memories in the sequence list will be changed on an alphanumeric way. For example the sequence list A05,A02,B05,A01(end) will be changed in A01,A02,A03,A04(end); A05 will be transferred in A01, A02 will be not changed, B05 will be transferred in A03 etc.

**To change or to view the fade-in time.**

```
A32:t_IN=005.0
delay=002.0 sec.
```

Push [fade-IN time]. Select with [<<], [>>] and [select digit] the memory whose fade-in time you want to change or to view. The display shows the current fade-in time. Move the cursor to "t\_IN". Change the displayed time with [<<], [>>] and [select digit]. If it concerns a manual pre-set ("MAN"), this is the time for the first automatic crossfade you make. In the same way you can change the

"delay" value. Delay-in is the time between the GO-command and the start of the fade-in. In this example: 2.0 sec after you have given the GO-command.

**To change or to view the fade-out time**

```
B10:t_OUT=010.0
delay=015.0 sec.
```

Push [fade-OUT time]. Select with [<<], [>>] and [select digit] the memory whose fade-out time you want to change. The display shows the current fade-out time. Move the cursor to "t\_OUT". Change the displayed time with [<<], [>>] and [select digit]. If it concerns a manual pre-set ("MAN"), this is the time for the first automatic crossfade you make. In the same way you can change the

"delay" value. Delay-out is the time between the GO-command and the start of the fade-OUT of the memory that precedes the selected memory; in other words the time current live memory disappears out of view. In this example: 15 sec after you have given the GO-command, the memory that precedes B10 starts to fade-out, in 10 sec.

Attention: the fade-out time is the same as the fade-in unless you change the fade-out time explicitly.

**To make a memory visible on stage**

Select with [EXIT memory control] the main display, if necessary. Push [<<], [>>] and [select digit] to select for "next" the memory you want to fade-in. Manual fade-in: move the crossfader in the direction of the crossfader led that burns. The crossfader part whose led burns, makes the increase of all channel-levels visible. The other crossfader part makes the

```
Del'OUT:013s E20
Del' IN:013s E21
```

decrease of all channel level visible. Automatically: push on [GO/stop]. In both cases the display shows in percent the progression of the fade. The MASTER must be set 'open' to make the memory visible on stage. In case of a programmed delay the display shows a count down in seconds of that delay, see the picture.

**Go-fade: stop/cancel/overrule**

To stop a going auto fade push once again on [GO/stop]; with this button you can toggle between GO and stop. The displays shows the warning: "...stop!". To cancel a fade push on [MANUAL PLAY]. 'Overrule' takes place when you move the crossfader to the crossfader led that burns; with overrule you can only speed up the crossfade time.

**To set auto-follow**

```
E30,autofollow:n
Linked Fade:...
```

Push [memory sequence]. Select with [<<], [>>] and [select digit] the memory you want to follow (fade-in) automatically on the preceding fade-in. With [YES] you can turn on the auto-follow: "autofollow:y" and with [NO] you can turn off the auto-follow: "autofollow:n". If auto-follow is set for a certain memory, the fade-in of this memory starts automatically after the fade of previous memory has

finished; you don't have to push [GO/stop] to fade-in E30 . For an auto-sequence and loop the auto-follow must be set on YES for all the memories of the sequence or loop.

**To set a Linked Fade**

```
E30,autofollow:n
Linked Fade:D04
```

First at all, a linked fade is fade-in of a memory or auto sequence of memories what will start on a separate fade-engine at the same time as the fade-in from the memory on which it is linked. In the adjacent example the fade-in of D04 is linked at the fade-in of E30; these fade-ins start on the same time in there own

fade-in/out times. D04 could be the start of a special effect, for example thunder. To create such a special effect, make a sequence what starts with D04. Then push [memory sequence]. Move the cursor to “linked Fade:...” and select with [←], [→] and [select digit] memory D04.

**To create a loop in the memory list**

```
A03,back to:...
Loop count=...
```

A loop consists of succeeding memories in the MEMORY list what will be repeated fade-in automatically. Create the memories you need for the loop. Then auto-follow must be set for all of these memories. Then you had to set the END and START of the loop => Push on [define loop]. You get for example the adjacent display. Select with [←], [→] and [select digit] the END memory in

the sequence. Move the cursor to :... and select the START memory . On the lower line you can set how many times the sequence must repeated. You can set 1,2,....,254, INF. INF means infinite.

**The loop-section: define a loop for the loop section**

```
Loop 1:start=---
end=---
```

The loop section exist of 3 independent fade-engines. To create a user defined loop of memories first you have to create the memories. You do not need to set auto-follow for these memories. Then push twice on [define loop]. The display shows the adjacent menu. With [←] or [→] you can select the loop number: 1, 2 of 3. If there is no definition made already you see “start=...” and “end=...” like the adjacent

picture.

```
Loop1:start=A10
end=--- , Erase?
```

Move the cursor with button [select item] to item “start=---“ and with [←], [→] and [select digit] you select the memory which should start the loop.

```
Loop1:start=A10
end=C14 , Erase?
```

After that you move the cursor to “end=---“ and select the memory which should end the loop. In the adjacent example by pressing [GO/stop 1] A10 will be faded in followed by the fade-in of the next memory in the memory list up till memory C14. After this is done A10 will be fade in and so on. Each memory will be faded in in its own fade in/out & delay in/out time.

By pressing [EXIT memory control] you get the main display.

**Removing a loop definition**

Push twice on [define loop]. With [←] or [→] you select the number of the loop you want to remove(erase). By pressing [YES] the loop definition will be erased.

By pressing [EXIT memory control] you get the main display.

**To start /stop loops**

You can start and stop a loop on several manners. You can select a memory of a loop for NEXT in the main display and push on [GO/stop]. If the loop count is set on infinite you can quit the sequence by pressing [MANUAL PLAY] => cancel fade. You can start the loop by linking the fade-in of a memory of the loop to the fade-in of an other memory. For example B06. You select in the main display for NEXT memory B06 and press [GO/stop]. Now B06 will be faded in and on the same time, on a separate fade-engine, the loop will be started.

You can also start a loop with the buttons [GO/stop] in the LOOP CONTROL section (right upper corner). These loops are pre-defined stepped loops or user defined loops. The step tempo from a loop can be adjusted by pressing twice the button [TEMPO] in the desired rhythm while pressing the button [GO/stop] of that loop..

**REMOTE PRESET controller**

```
Button-01 -> ...
On Fade Engine-1
```

First you have to set ‘remote control = PRESET selector ‘(under SETUP). Repeat pressing [assign scene to:] till you see the adjacent menu. The cursor points to the button number. By pressing [←] or [→] you can select a particular button. Move the cursor to “...” and select with [←] or [→] the memory of which the fade-in must be start by that button. Move the cursor to the number of

the fade engine. You can set 1,2,3 or 4.Example ‘Button-12 => B05, On Fade Engine-2’ means: by pressing remote button-12 you will start the fade in of memory B05 on fade engine-2. All memories faded in on the other fade engines will still be present in the out going DMX signal! A setting can be removed by pressing [NO]. Than the display shows “...”.

**To assign a sub-MASTER to a memory**

```
sub-Master01
fades in ...
```

This is only possible if you have enable Sub-MASTER mode under set-up. Create the memories you want to assign. Push on [assign]. You get the next display. “...” means no assignment made yet. Select with [←] or [→] the number of the sub-master, for example “05”. You can also point a sub-MASTER by

```
sub-Master05
fades in D12
```

pressing the 'corresponding' fader-button. Move the cursor with [select item] to "...". With [<<], [>>] and [select digit] you select one of the memories you created before. For example "D12".

### To add a memory to the scene on stage with a sub-master

Assign as described above the memories to the sub-masters. By moving the sub-masters (the faders of the lower fader bank) you can add 24 memories simultaneously to the actual scene.

## The Spring24/72 in 72 channel mode

### General instructions and remarks

When you set up the Spring for 72 channels to use 72 channels and 24 sub-masters. This is only possible for a Spring-V3(24/72).

Attention: As soon as you set up the Spring for 72 channel all settings will be re-set.. The user interface is as follows:

1. The upper fader-bank are the channel faders. With three buttons(on the right side) you can select channel 1-24, 25-48 or 49-72. With button [SELECT live or blind control/view] you switch between 'live control' and 'pre-set/next control'. Corresponding the level-leds switch between indicating the output contribute of 'LIVE' memory or indicating a pre-view of the next scene.
2. The lower fader bank are sub-MASTER. With button [assign] you can assign a sub-master to a memory.

Read in the above parts of this manual 72 channels instead of 24 channels.

### To create or change a scene/memory of 72 channels: live

Select with [SELECT live or blind control/view] 'live level control', <live> is ON. With the upper fader-bank and with the button [1-24], [25-48] and [49-72] you can set or change the levels of 72 channels visible on stage. The level-leds indicate the levels of the channels. You can see the channel levels in percent on the display, by pushing the corresponding fader-button. To change a channel level: keep the fader button pressed while moving the corresponding fader slowly until you see the value at the display changing. Move the fader to the desired position. You do not have to use this view possibility to change the levels you can also watch the level-leds to pick-up the channel-levels on a smoothly way.

### To create or to change a pre-set/memory of 72 channels: 'blind'(not visible on stage)

Select in the main display for NEXT 'manual'(press [MANUAL PLAY] or a memory. Select with [SELECT live or blind control/view] blind level control, led <live> is OFF. With the upper fader-bank and with the buttons [1-24], [25-48] and [49-72] you can set or change the levels of 72 channels NOT visible on stage. The level-leds indicate the levels of the channels. You can see the channel value of the pre-set/memory in percent on the display, when you push the corresponding fader button. Push [MANUAL PLAY] to force at once all the channel levels to the level according the positions of their faders.

### To assign a sub-MASTER to a memory

```
sub-Master01
fades in ...
```

Create the memories you want to assign. Push on [assign]. You get the next display. "...“ means no assignment made yet. Select with [<<] or [>>] the number of the sub-master, for example "05". You can also point a sub-MASTER by pressing the 'corresponding' fader-button. Move the cursor with [select item] to "...". With [<<], [>>] and [select digit] you select one of the memories you created before. For example "D12".

```
sub-Master05
fades in D12
```

### To add a memory to the scene on stage with a sub-master

Assign as described above the memories to the sub-masters. By moving the sub-masters (the faders of the lower fader bank) you can add 24 memories simultaneously to the actual scene.

## The SET-UP menus

There are 13 setup menus. A setup menu is meant to control the operation of the SPRINGin general. You can select these menu's by pressing [next menu] or [previous menu] repeatedly under SETUP.

### Soft patch menu-1: Patching a CONTROL channel proportional on one or more DMX channels

```
Ch001 patched on
DMXch001:y, 100%
```

Repeat pressing [next menu] or [previous menu] till you see the adjacent menu.. On the upper line you can select a control channel with the buttons [select digit], [<<] or [>>]. To select a control channel quickly: push the corresponding fader-

button. The second line shows you the DMX channel(s) on which there is made a patch. In case of more than one patch the numbers will be displayed in a continue chase. In the right under corner you see which percentage of the control channel value will be send trough the displayed DMX channel. This is called the proportionality of the patch. You can remove a patch by pressing [NO]. You can create a patch by moving the cursor to “DMXch”, selecting the desired channel number and pressing [YES]. If the display shows “DMXch---“ there is no patch at all for the selected control channel.

### Soft patch menu-2: Testing a DMX channel and creating a patch to a Control channel

```
Test DMXch001 ?
patch'on Ch001:y
```

Repeat pressing [next menu] or [previous menu] till you see the adjacent menu. On the upper line you can select a DMX channel with the buttons [select digit], [<<] or [>>]. By pressing [YES] the data on that channel goed ‘full’. So you can check which device on stage is driven by this DMX channel. Searching the channel number for a particular device goes easily by scrolling the DMX channel

number with [<<] or [>>] while pressing [YES] and watching the devices. After you have found the DMX channel you make a patch to the desired control channel by moving the cursor to the second line and selecting that control channel and pressing [YES]. To select a control channel quickly: push the corresponding fader-button. You remove a patch by pressing [NO].

### Soft patch menu-3: RESETTING, CLEARING and SHIFTING the patch table

```
SoftPatch:RESET?
CLEAR?,SHIFT=000
```

Repeat pressing [next menu] or [previous menu] till you see the adjacent menu. Moving the cursor to “RESET?” and pressing [YES] will create a patch from control channel-N on DMX channel-N with N=1,2,3, etc. Moving the cursor to “CLEAR?” and pressing [YES] will remove any patch. Moving the cursor to “SHIFT=000” and select a value other than 000, lets say 012, cause that the

original patch from control channel-X on DMX channel-Y will be changed in a patch from control channel-X on DMX channel-(Y+12). The default setting is “SHIFT=000”.

### Setting a control CURVE

```
Control Curve:
Ch001 -> Linear
```

Repeat pressing [next menu] or [previous menu] till you see the adjacent menu. Here you select a control curve for each control channel. By choosing a curve you can for example correct a typical non linear response of a device what is controlled by that channel. There are 5 possibilities: *Linear* =no correction, *S-curve*= correct the non linear response of halogen lamps, ‘non-dim’ = the channel

acts like a switch (on/off), *Trafo12V* special correction for 12V halogen lamps with an electronic transformer, ‘non-fade’ = means a level change will be stepwise. Procedure: select a control channel number by pressing [select digit], [<<] or [>>] or push the corresponding fader-button. Move the cursor to the curve name and select by pressing [<<] or [>>] the desired curve. The default curve is ‘LINEAR’.

### Setting the switch point for NON-dim and resetting all curve settings

```
NONdim:ON ->050%
all Ch.->Linear?
```

Repeat pressing [next menu] or [previous menu] till you see the adjacent menu. By pressing [<<] or [>>] you can set the level at which the value of the control channel will be transformed in ‘full’ or ‘off’. Example: Channel-5, NON-dim is set, NON-dim switch point is set on 20%. Lets consider the cross fade from memory B03(level channel-5 is 0%) to B04(level channel-5 is 100%). The DMX

output for this channel will be 0% as long as the (internal) fade algorithm output a value lower then 20%. After that the DMX output value is 100%. So if the fade time is 3[s], the switch action is 0.6[s] after the start of the cross fade. The second line of the menu gives the possibility to set the same curve for all channels. Move the cursor by pushing [select item] to the curve name(right under). Select by pushing [<<] or [>>] the desired curve and then press [YES].

### Setting the DMX input mode and “hold DMX-in data on loss of signal”.

```
DMXin:MERGEmode_
Hold Data Set=y
```

Repeat pressing [next menu] or [previous menu] till you see the adjacent menu. Here you can choose, by pressing [<<] or [>>], what the SPRING will do with the DMX-input data. Choosing “SCENEmode”: the input data will be seen as a memory; it can be selected for ‘next’ under memory play and faded in by pressing [GO stop]. Choosing “MERGEmode”: the DMX input data will be

merged with the SPRINGDMX data according highest takes precedence. So the SPRING functions as a control desk and a merger at the same time. On the second line you can set the DMX-in data to hold(= y) or fade out(= n) on loss of DMX-in signal. You can change the setting by pressing button [YES] or [NO].

### Setting the default fade time

```
Default fade  
time=003.0s
```

Repeat pressing [next menu] or [previous menu] till you see the adjacent menu. Here you can set the fade-in/out time which a memory automatically gets at create time. It is also the time 'MANUAL' will fade-in in an automatic fade. Change it by pressing [<<] or [>>] and/or selecting a digit.

### Creating 16-bits fades

```
PAIR Ch001&002_  
for 16bit fade:n
```

Repeat pressing [next menu] or [previous menu] till you see the adjacent menu. The default minimal stepping size of a fade is 1/255 (=8 bits) of the total change in value. With this menu you can set a smaller stepping size for particular control channels by pairing them. Move the cursor to "PAIR CHxxx&xxx" and select by pressing [<<] or [>>] the desired channel pair. Press on [YES] to confirm. Each

pair builds up one 16 bit control channel: channel N is the high byte and channel N+1 the low byte. This makes the minimal stepping size for a fade 1/65535 (16 bits) of the total change in value. The real stepping size of the corresponding byte values in the DMX signal depends on the DMX-rate and the fade time. Channel pairing is only useful if the DMX steered devices can handle this. For example in case of moving lights; channel pairing gives the opportunity of a 16 bits positioning. With [NO] you can undo a previous pairing.

### Viewing the selected memories in a Memory Control menu.

```
Show Memory in  
Mem'ctrl menu:n
```

Repeat pressing [next menu] or [previous menu] till you see the adjacent menu. Here you can enable live seeing a selected memory in a Memory Control menu. There is one exception: is for example A04 next-memory in the main menu than will A04 automatically the memory what is selected by pressing on [fade-in time]. This memory will not shown live so you can change the fade time

'blind'. If you select an other memory it will shown live, of course if yes is selected.

### Displaying levels in byte value.

```
Display levels  
in byte value:y
```

Repeat pressing [next menu] or [previous menu] till you see the adjacent menu. Here you can set the way a channel level will be displayed if you pressed on a fader button. Default it will be done in percents(0-100%) but here you can choice for a byte value, 0-255. This is more comfortable if you drive color wheels and scrollers.

### Selecting Sub-MASTER mode in case of 24 channel mode or SPRING24-V3.

```
Enable  
Sub MASTERS:y
```

Repeat pressing [next menu] or [previous menu] till you see the adjacent menu. (this is only possible in 24 channel mode). Default this is set on NO by pressing [YES] you can enable Sub-MASTERS. Here you can set the way a channel level will be displayed if you pressed on a fader button. Default it will be done in percents(0-100%) but here you can choice for a byte value, 0-255. This is

more comfortable if you drive color wheels and scrollers.

### Setting the remote control type

```
Remote control=  
PRESET selector_
```

Repeat pressing [next menu] or [previous menu] till you see the adjacent menu. Here you can enable and selecting the remote control type. By pressing [<<] or [>>] you can select "OFF", "PRESET selector" or "MIDI, Channelxx". For both types of remote control you have to take account of the channel number. So if you set "PRESET selector" you have aware of the channel number. The channel

number depends on the jumper setting on the remote controller. The default channel number is 1.

### Create a BACKUP.

```
CREATE memory  
backup 0001?
```

Repeat pressing [next menu] or [previous menu] till you see the adjacent menu. You can create 1000 different copies (backups) of the whole set up and all memories. These backups will be stored in an USB memory stick placed at right side of the SPRING. Some older sticks does not work! Push on [<<], [>>] and [select digit] to select the backup number and confirm this choice by pushing

[YES]. De file what will be created has the name P24-XXXX.TTL or P72-XXXX.TTL (SPRING-V3-24/72 only), XXXX=1,2,...,1000. You can lock this file on a PC by setting the read only attribute. Do not edit the file because that will damage the backup file.

### Restore a BACKUP.

```
RESTOREmemory  
backup0001?
```

Repeat pressing [next menu] or [previous menu] till you see the adjacent menu. With this menu you can restore a backup(if exist) from a USB memory stick By pressing [←], [→] and [select digit] you select the backup number(1,2,...,1000). Then, press on [YES] to confirm your choice. The display shows “Memory will be overwrite!, Sure?”. Press on [YES] to start the operation. After that the

SPRING will make a restart. Press on [NO] to cancel the restore operation. **Caution: if you want to restore a P72-XXXX.TTL backup file the SPRING must be set-upped for 72 channels. A P24-XXXX.TTL file can only restored on a SPRING set-upped for 24 channels.**

### LOCKING the interface

```
Set LOCK with  
PIN code: ****?
```

Repeat pressing [next menu] or [previous menu] till you see the adjacent menu. With this menu you can lock the interface of the SPRING. In this condition you cannot change the settings and modify the memories. You have to select a four digit PIN CODE: select the digit by pressing [select digit] and select a value by pressing [←] or [→]. After that you have to press [YES]. The only things you

can do now are playing memories or unlock the interface. For the latter case you can press any button. The display shows “LOCKED! PIN code: \*\*\*\*”. Now you can fill in the PIN code and then press on [YES]. **PIN code forgotten?** In case the SPRING is locked you can view the PIN code by: removing mains power, keep pressing button [next menu](SETUP) while power on the SPRING. Attention after showing the PIN code the display shows the total reset menu. Press on [NO] for bypasses this menu.

### FINALLY

#### Total Re-Set

```
RESET ALL!, with  
24 channels?
```

You can create a total reset by connecting the SPRING to mains power while pressing [next menu](SETUP). You will see the adjacent menu. Here you can select, if you wish, another channel count:24 or 72(only SPRING24/72-V3). By pressing [YES] the display shows “Memory will be overwrite!, Sure?”. By pressing again on [YES] all settings will be set to default and the scene list will

be cleared. By pressing [NO] all actions will be canceled followed by a normal power-on. Default settings are: reset soft patch, all channels 100% proportional patch, Patch shift=000, all curves LINEAR, NON-dim on at 50%, DMX in: MERGE-mode, NO channel-pairing and Remote control=PRESET selector.

#### Remote GO button

On the right side you will find a 5-pole DIN connector. You can plug in an external GO-button; this must be a momentary make contact connected on pin 2 and 3.

## Appendix-1: The SPRING versus MIDI

The SPRING can be a slave in a MIDI configuration. The SPRING reacts on MIDI channel messages of type 'program change' and 'control change'. You can use MIDI to remotely command the SPRING to fade-in a particular memory or to change the MASTER fader.

### More about MIDI-connection

A MIDI-connection is a digital serial electronic connection, type current loop.

Explanation:

- '..... serial electronic.....': a two wired connection across which digital data is send bit by bit.
- 'digital....current loop': the messages exist of current pulses.

### Connecting MIDI to SPRING

The SPRING can only **accept** MIDI messages. For that purpose the SPRING has a MIDI **input** on the right side. The connector used is a 5-pin DIN (180 degree) male. Pin4=MIDI+, pin5=MIDI-. Note that pin 1, 2 and 3 are not used and should be left unconnected. Only in case of a shielded cable, pin 2 should be used to connect the shielding of the cable. The maximum length of the MIDI cable is 6 meters.

### More about MIDI-messages

In a system where several devices are connected with each other by means of a MIDI-connection, one of the devices is the MASTER. This MASTER controls the others (SLAVES) by means of messages. These messages imply several commands. In general not every message is meant for all connected slaves; there are SLAVE specific messages. Each SLAVE has a number between 1 up to 16 and SLAVE specific messages involve also a number between 1 up to 16. This number is called the MIDI CHANNEL number and in this sense a SLAVE is called a CHANNEL. So it must be possible to set for a SLAVE a channel number. A slave selective message is called 'CHANNEL MESSAGE'; this kind of messages involves always a channel number.

### Channel message of type: Program change

There are several types of channel messages. The SPRING acts on type Program - and Control Change.

#### Case Program Change

This message exists of two bytes and is used to start a fade-in of a memory. Byte-1, status byte, specifies the message type and the channel number. The value is Cn[hex], n=channel number (1,...16). Byte-2, data byte. Bit-7 is always zero, byte value=0,...,127. By pressing [assign scene to] you can set which memory has to be faded in for a particular byte value.

#### Case Control Change

This message exists of three bytes and is used to change the master fader or to get a remote GO-button. Byte-1, status byte. Specifies the message type and the channel number. The value is Bn[hex], n=channel number (1,...16). Byte-2, data byte. Bit-7 is always zero, byte value=0,...,127. This byte value specifies a controller. We use: 96=GO button, 97=master fader UP and 98=master fader DOWN. Byte-3, data byte. Bit-7 is always zero, byte value does not matter for the SPRING.

### Running status

The MIDI-handler of the SPRING knows 'RUNNING STATUS'. This means: when a status byte is received and processed, the MIDI-handler remains in that status until a different status byte is received. This means that, during the time the status is not changed, the midi master have to send only the data bytes of the succeeding messages. Further, the SPRING recognizes SYSTEM REAL-TIME messages, in that way that RUNNING STATUS remains maintained. The relation table below is applicable in case of the SPRING.

MIDI message = status byte	+ data byte	--> start fade-in scene
Cn[h]	0	Xxx
Cn[h]	1	Xxx
Cn[h]	2	Xxx
,	,	Xxx
,	,	Xxx
Cn[h]	99	Xxx

'n' is the under 'SET-UP' chosen MIDI channel number. [h] means hexadecimal.

### Setting the SPRING for MIDI control

- Define a channel number for SPRING: set under [SET-UP] "Remote control= MIDI, channelXX". Select in the same menu the desired channel number.
- Create the memories you need.
- Repeat pressing [assign] till you get the menu for attaching data byte values with memories.

### An example

For example: the SPRING is set on “MIDI channel=4” and “MIDI data= 14 fades in A03”. At the moment the MIDI master sends the bytes “0C4[h]” and “0E[h]” (E[h]=14 decimal), the SPRING reacts by canceling the going fade and fading in scene A03.

## 2: The optional VGA-output

The VGA-output gives the possibility to connect a VGA-monitor to the SPRING. This monitor must have the capability to display a resolution of 800x600. In general an 15-inch monitor or smaller works well.

What will be displayed depends on the user mode of the SPRING. In general every change made on the SPRING will be displayed on the monitor directly. There is one exception; a change of a channel value made with the channel fader will be displayed on the monitor directly if the corresponding fader button is pressed('Sequence list' displayed in main mode).

## Layout of the front panel

Beneath you find the front panel of the SPRING. Fader buttons are not visible.

