Robocolor Pro 400

users guide

CONTENTS

INTRODUCTION

Congratulations on your choice of the Robocolor Pro 400 which is a professional high performance, intelligent lighting projector that features:

- 200 Watt MSD lamp.
- 32 different colors + white (including 'cold' and 'hot' filter).
- 0 to 100% smooth dimming.
- High speed shutter for 'instant' blackout and very fast strobe.
- 3 field angle gobos plus wash-effect.
- Lamp can be remotely switched on and off in order to prolong lamp life.
- Multi-coated precision optics with adjustable focus.
- Can be controlled via DMX 512 Desk or Martin Controller.
- Stand alone chase with or without music trig.
- Power Factor Correction to allow low current consumption.
- Efficient fan cooling and over-heat protection.
- Fan speed can be reduced from controller when absolute low noise performance is required.

Note: This user's guide applies for units fitted with software version 6.5.

HOW TO INSTALL THE ROBOCOLOR PRO 400

The Robocolor Pro 400 is delivered fully adjusted from the factory so only a few basic procedures are necessary, and you will be ready to operate your new professional lighting equipment.

Your Robocolor Pro 400 package comes complete with the following items:

- 1 Robocolor Pro 400.
- 1 Mounting bracket including fittings.
- 5 metres XLR/XLR cable for control.
- 1 Mains cable.
- 1 Users guide.

C A U T I O N !

Before attempting any of the following please ensure that the unit is disconnected from any mains power.

Fitting the mains plug and checking the voltage and frequency setting:

1 The Robocolor Pro 400 may be delivered from the factory without a plug on the mains cable. You will have to fit a suitable plug (one that fits your local mains outlet) before you can connect the unit to the mains. The double insulated mains cable contains three wires: The brown wire should be connected to the LIVE pin, the blue wire to the NEUTRAL pin and the yellow/green wire to the EARTH pin (ground).

2 Make sure that the factory settings for voltage and frequency are matching your local power supply.

Installing the lamp:

1 Remove the 3 finger screws which secure the access plate of the lamp socket assembly at the rear of the Robocolor and withdraw the lamp socket assembly.
2 Hold the lamp in a clean cloth, avoiding touching the glass part with your fingers, and carefully insert it into the lamp socket. **If you do touch the glass part with your fingers you must clean it thoroughly with the cleaning cloth that came with the lamp.**
3 Replace the lamp socket assembly and tighten the finger screws.

Note that it may be necessary to adjust the position of the lamp. This procedure is described in the section named ’SETUP AND SERVICE INFORMATION’.

Fitting the mounting bracket and locating the Robocolor Pro 400:

On each side of the Robocolor you will see a short length of studding coming out.

1 Fit a white plastic washer, a star washer, and then the mounting bracket onto both of these studs.
2 Finally secure the mounting bracket using the two black lever handles.

The bracket will now allow you to turn or tilt the Robocolor into the desired position. You may now connect the unit to the mains but do not switch on before you have addressed the unit by setting the DIP-switch as described in the following sections.

OPERATING WITHOUT A CONTROLLER (STAND ALONE)

You are now able to operate your Robocolor Pro 400 in what is called **Stand Alone** mode, meaning that your Robocolor Pro 400 will perform a sequence on its own. Please follow this procedure:

1 Use the DIP-switch located on the rear end of the unit to select a stand alone sequence (program). The following table shows the various DIP-switch settings for Stand Alone Sequences. The sequence described as "music trig" will use the beat of the music picked up by the in-built microphone to trigger the sequence. The sequence described as "auto" will run at a pre-set speed using an internal trig source.
2 Switch on the unit and it will now perform the chosen sequence.

Note: Some sequence settings shown in the table are for service use only and should not be chosen for light performances.

Sequence/stand-alone settings for Robocolor Pro 400	
Description	Pin(s) switched ON
Protocol auto-detect (DMX 512 / Martin RS-485)	All pins switched ON
Stand Alone Auto-trig	2,10
Stand Alone Music-trig	1,2,10
Lamp ON (for lamp adjustment)	8,10
Mechanical stop (for service use only)	5,10
Adjustment (for service use only)	1,5,10
L.E.D. Chase Auto-trig (for service use only)	4,10
L.E.D. Chase Music-Trig (for service use only)	1,4,10

OPERATING VIA A LIGHTING CONTROLLER

The way to get the most out of your Robocolor Pro 400 is by operating it via a lighting controller. The Robocolor Pro 400 'accepts' two different protocols (languages) - **Martin RS-485** and **DMX 512**. All data (instructions) go from the controller, via a standard balanced microphone cable, to the data **input** (3 pin male XLR) on the Robocolor. The data **output** (3 pin female XLR) on the Robocolor allows you to continue the serial data link to further lighting units.

The following instructions describe how to make a proper serial data link:

1 Connect the data output on your lighting controller to the data input on the Robocolor Pro 400. If you are using a Martin lighting controller then use the XLR-XLR / DSUB-XLR cable that came with the controller. Otherwise, use a cable that fits your DMX 512 lighting controller and the Robocolor Pro 400. This would normally be a cable that adapts from 5 pin XLR to 3 pin XLR. The following table shows the proper connections in such a cable. Please note that the (+) and (-) wires swap from the DMX output to the input on the Robocolor Pro 400.
2 If you are using one Robocolor Pro 400 only, then insert a XLR terminating plug into the unused data output socket on the Robocolor Pro 400. If a Martin lighting controller is being used then insert the termination plug that came with the controller (120 Ohm XLR-male). Otherwise, use a termination plug as specified by the DMX controllers manual.

3 If you are using more than one lighting unit with the controller then connect the data output on each unit to the data input on the following unit using XLR-XLR cables. The order, in which you connect the units, is not important and has no influence on the channels as far as the controller is concerned - use an order which gives the easiest and shortest cable routing. To ensure proper transmission on the data link it is **very** important to insert the XLR terminating plug in the last unit on the link.

4 Use the DIP-switch to select the desired controller channel(s) on each of the Robocolors. If you are not familiar with this, read the section named 'ADDRESS SETTING'. **Ensure that none of the Robocolors are set to Stand Alone mode.**

5 Switch on and configure the controller (please refer to the controller's manual).

6 Apply power to the Robocolors. A short start-up and test routine will now be performed and the Robocolors will await data to be transmitted from the controller.

7 You can now start operating the Robocolors. As soon as the Robocolors receive data from the controller they will be able to determine whether it's the DMX 512 or the Martin protocol that is being send. It is possible to re-activate the protocol auto detect function by switching on all ten DIP-switches and then re-selecting the address.

5 pin XLR to 3 pin XLR cable		
Description	5 Pin male XLR	3 Pin female XLR
Ground (screen)	1	1
(-) signal	2	3
(+) signal	3	2
Not used	4	
Not used	5	

This table shows the proper connections for the 5 to 3 pin XLR adapter. The adapter cable is available on Martin stock# 309 162.

ABOUT FAN CONTROL

The Pro 400 cooling fan can be controlled via your Martin or DMX controller, thus allowing you to achieve low-noise operation. As reduced fan speed affects cooling of the Pro 400, it should only be used when ambient temperature is 25 degrees Celsius or below. Please also note the following:

- Fan speed is automatically reduced to 50% right after protocol auto-detect.
- Fan is automatically stopped 1 minute after protocol auto-detect, unless the lamp is being switched on.
- When the lamp is ON the fan runs at the programmed speed.
- When switching OFF the lamp, fan speed is automatically reduced to 50% and after 1 minute it is switched completely OFF.

ADDRESS SETTING

Setting a Martin Channel:

1 The DIP-switch located on the rear end of the unit allows you to set the channel, between 1 and 32, on which you want the Robocolor Pro 400 to respond from the controller. Please note that the Robocolor Pro 400 requires 1 channel only, when operated via a Martin lighting controller.

2 The channel number is selected by switching ON one or more of the first six DIP-switch pins. Each pin that you switch ON will be assigned the value written on the DIP-switch figure at the top left-hand corner of the rear end-plate. These values are also listed in the following table. Pins that you switch OFF assign the value 0. The channel number is then determined by adding the values from pin 1 to 6. Note that pin 7 to 10 should all be switched OFF.

Example: Pin 1, 2 and 5 ON selects channel = 1 + 2 + 0 + 0 + 16 + 0 = 19.

Setting a DMX 512 Channel:

1 The DIP-switch located on the rear end of the unit allows you to set the first DMX channel, between 1 and 511, from which you want the Robocolor Pro 400 to respond from the controller. Please note that the Robocolor Pro 400 requires 7 DMX channels when using the extended DMX protocol and 5 DMX channels when omitting the speed control on dimmer and color. Please refer to the protocol in the following section. Setting the DIP-switch to channel 1 means that the Robocolor Pro 400 will use DMX channels number 1 to 7 for operation with the extended DMX protocol - the DMX channel offsets listed in the protocol are added to the DIP-switch channel.

2 The channel number is selected by switching ON one or more of the first nine DIP-switch pins. Each pin that you switch ON will be assigned the value written on the DIP-switch figure at the top left-hand corner of the rear end-plate. These values are also listed in the following table. Pins that you switch OFF assign the value 0. The channel number is then determined by adding the values from pin 1 to 9. Note that pin 10 should be switched OFF.

Example: Pin 2, 3, 7 and 8 ON selects DMX channel = 0 + 2 + 4 + 0 + 0 + 0 + 64 + 128 + 0 = 198.

DIP-Switch values			
Pin No	Value	Pin No	Value
1	1	6	32
2	2	7	64
3	4	8	128
4	8	9	256
5	16	10	Always OFF for address setting

DMX 512 PROTOCOL

DMX Mode	PL11 Jumper Location	Channels
Mode 1: Tracking **(DEFAULT MODE)**	No jumper	5
Mode 2: Vector	Pin 4 and 5	7
Mode 3: Tracking + Lamp Off via DMX	Pin 5 and 6	5

DMX Channel	DMX Values	Percent	Effect	
1			**Strobe /Stand-Alone/Reset fixture/Lamp On**	
	0-3	0-1	Strobe Off	
	4-7	2-3	Strobe Off / Fan Low*	
	8-199	3-78	Strobe on (Fast -> Slow)	
	200-218	78-85	Remote music trig	
	219-238	86-93	Remote auto trig	
	239-248	94-97	Reset fixture	
	249-252	98-99	Lamp ON	
	253-255	99-100	Lamp OFF (only in DMX mode 3)	
2			**Intensity**	
	0 - 10	0 - 4	Light Off	
	11 - 237	4 - 93	0 -> 100 %	
	238 - 255	93 - 100	Light On	
3 and 4			**Color 1**	**Color 2**
			Scrolling Colors	
	0	0	White	White
	26	10	Yellow	Pink
	52	20	Fern Green	Light Green
	78	31	Flame Red	Magenta
	104	41	Cyan Blue	Dark Lavender
	130	51	Turquoise	CC 5500-3400
	156	61	Purple	CC 3500-5600
			Fixed Colors	
	157-171	62 - 67	Purple	CC 3500-5600
	172-185	67 - 73	Turquoise	CC 5500-3400
	186-199	73 - 78	Cyan Blue	Dark Lavender
	200-214	78 - 84	Flame Red	Magenta
	215-227	84 - 89	Fern Green	Light Green
	228-241	89 - 95	Yellow	Pink
	242-255	95 - 100	White	White
5			**Gobo**	
	0-50	0 - 20	Wash	
	51-101	20 - 40	Wide beam	
	102-152	40 - 60	Medium beam	
	153-203	60 - 80	Narrow beam	
	204-255	80 - 100	Black Out	
6 (vector mode)	0-255	0 - 100	**Color Speed** Fast -> Slow	
7 (vector mode)	0-255	0 - 100	**Dimmer Speed** Fast -> Slow	

*Automatic fan control instead of control via DMX implemented from version 6.5.

SET-UP AND SERVICE INFORMATION

The Robocolor Pro 400 comes fully adjusted from the factory, however, lamp adjustment and some pre-settings may be necessary before you can operate the unit properly. The procedures for doing this are carefully described in this section.

IMPORTANT

We recommend that you read the following descriptions carefully before attempting to make any corrections. If you do not feel completely safe to do the corrections you should consult you Martin dealer for assistance.

ADJUSTING THE LAMP FOR MAXIMUM LIGHT OUTPUT

The Robocolor Pro 400 comes fully adjusted from the factory, however, readjustment of the lamp assembly may be necessary because of lamp tolerances. Please follow this procedure carefully:

1 At the rear of the Robocolor the access plate of the lamp housing is held in place by 3 finger screws. On the access plate there are 3 Phillips screws which are used to adjust the lamp-holder in the lamp housing. Turning these clockwise will pull the lamp towards the rear of the lamp housing and vice versa.

2 Start making a rough adjustment by positioning the lamp-holder so that there is a distance of 35 mm measured between the back-plate of the lamp-socket to the access plate of the lamp housing.

3 Select the service setting named 'Lamp ON' from the sequence setting table in the section named 'OPERATING WITHOUT A CONTROLLER (STAND-ALONE)', and turn on the Robocolor Pro 400. This will produce a white light with open gobo for adjustment purposes. Wait approximately 5 minutes until the lamp has reached full brightness.

4 If the hot-spot of the light is not centred, make adjustments by turning one or more of the screws.

5 If you are not satisfied with the light-output you can try to adjust the lamp-holder further by turning all of the screws a 1/4 turn clockwise, making sure that the hot-spot is centred. If the result is an improvement then repeat the procedure until there is no more improvement. If the light-output decreases then turn the screws a 1/4 turn counter-clockwise a few times and observe the result.

6 Note: It is important that the lamp is firmly in place in the lamp-holder at all times. Make sure that this is the case, especially after you have made an adjustment because the inner-rim of the parabolic reflector can dislodge the lamp, especially if you use an excessive numbers of turns of the adjusting screws.

NOTE The lamp is not a hot-restrike type, so you must wait approximately 10 minutes after having turned off the lamp before you can turn it back on again.

DMX MODE SETUP

Inside the Robocolor Pro 400 is a jumper which allows you enable/disable the extended DMX mode (speed channels) and lamp off function (via DMX) as listed in the section named 'DMX 512 PROTOCOL'.

C A U T I O N !

Before attempting any of the following, you must ensure that the unit is disconnected from any mains power.

1 Release the 4 self-tapping bolts that secure the top cover to the fixture and then carefully remove the cover.
2 Locate the PCB at the left hand side of the fixture. On this PCB you will see a 6 pin connector named PL11 - please see the label located on the inside of the top cover. Now, place the jumper according to the table on page 8 in order to enable the desired mode.
3 Reassemble the unit before connecting to the mains.

TECHNICAL SPECIFICATIONS

Robocolor Pro 400	
Length incl./excl. bracket Width incl./excl. bracket Height incl./excl. bracket	306 mm (12.0") / 306 mm (12.0") 337 mm (13.3") / 225 mm (8.9") 282 mm (11.1") / 198 mm (7.8")
Weight incl. bracket	11.0 Kg (24 lb)
Power and current consumption	250 W , 290 VA, 1.3 A at 230 V
AC voltage and frequency (EU model) AC voltage and frequency (US model)	230V/50Hz , 240V/50Hz , 250V/50Hz 210V/60Hz , 225V/60Hz , 225V/50Hz
Mains fuse	T 3.15 A
Lamp type	Philips MSD 200
Beam angle - Standard Focus Objective Beam angle - Optional Focus Objectives	21° (part# 375185) 33° (part# 375186) 15° (part# 375183)

PS-970213