

# P3 System Controllers™ DMX Protocol

As of P3 System Controller software release 5.3.0.

## Introduction

The P3 System Controllers have three different “fixture types” that can be patched:

- **P3 Global Control:** Can be patched only once per P3 System Controller as it affects the entire P3 System Controller and all fixtures attached to it.
- **P3 Motion Control:** Can be patched multiple times per P3 System Controller as it can be set to affect a single fixture or a group of fixtures.
- **P3 Fixture Control:** Can be patched multiple times per P3 System Controller as it can be set to affect a single fixture or a group of fixtures.

## P3 Global Control

When patched, this fixture affects the entire P3 System Controller and all fixtures attached to it.

### *P3 Global Control Fixture*

Channel	DMX Value	Default Value	Function
1	0-127	0	<b>Screen Control [SNAP]</b>
	128-135		Live Input
	136-143		Freeze
	144-151		Blackout
	152-159		Testpattern: Device Number
	160-167		Testpattern: White
	168-175		Testpattern: Red
	176-183		Testpattern: Green
	184-191		Testpattern: Blue
	192-199		Testpattern: Intensity Gradient
	200-207		Testpattern: Red Gradient
	208-215		Testpattern: Green Gradient
	216-223		Testpattern: Blue Gradient
	224-231		Testpattern: Colour Bars
	232-239		Testpattern: Scrolling Greyscale
	240-247		Testpattern: Scrolling Lines
248-255	Testpattern: Alignment Bar		
2	0-50	0	<b>Preset Recall [SNAP]</b>
	51-54		No Change
	55-58		Preset 1
	59-62		Preset 2
	63-66		Preset 3
	67-70		Preset 4
			Preset 5

	71-74 75-78 79-82 83-86 87-90 91-94 95-98 99-102 103-106 107-110 111-114 115-118 119-122 123-126 127-130 131-134 135-138 139-142 143-146 147-150 151-154 155-158 159-162 163-166 167-170 171-174 175-178 179-182 183-186 187-190 191-194 195-198 199-202 203-206 207-210 211-214 215-218 219-222 223-226 227-230 231-234 235-238 239-242 243-246 247-250 251-255		Preset 6 Preset 7 Preset 8 Preset 9 Preset 10 Preset 11 Preset 12 Preset 13 Preset 14 Preset 15 Preset 16 Preset 17 Preset 18 Preset 19 Preset 20 Preset 21 Preset 22 Preset 23 Preset 24 Preset 25 Preset 26 Preset 27 Preset 28 Preset 29 Preset 30 Preset 31 Preset 32 Preset 33 Preset 34 Preset 35 Preset 36 Preset 37 Preset 38 Preset 39 Preset 40 Preset 41 Preset 42 Preset 43 Preset 44 Preset 45 Preset 46 Preset 47 Preset 48 Preset 49 Preset 50 Unused (no change)
<b>3</b>	0 ↓ 8.738 ↓ 32.768	<b>32.768</b>	<b>Colour Temperature [FADE]</b> 2000°K ↓ 3200° K ↓ 6500° K ↓ 9600° K ↓ 11000°K
<b>4</b>	↓ 55.341 ↓ 65.535		

## P3 Motion Control

During patching on the P3 System Controller, this fixture can be set to affect a single fixture on the workspace or a group of fixtures on the workspace. It can be patched multiple times for multiple fixtures or fixture groups.

The range of the movement and rotation (min/max) can be set on the P3 System Controller.

### *P3 Motion Control Fixture*

Channel	DMX Value	Default Value	Function
1	0 ↓	32.768	<b>X Position [FADE]</b> Left ↓ No Shift ↓ Right
2	32.768 ↓ 65.535		
3	0 ↓	32.768	<b>Y Position [FADE]</b> Up ↓ No Shift ↓ Down
4	32.768 ↓ 65.535		
5	0 ↓	32.768	<b>Rotation [FADE]</b> Full CCW ↓ No Rotation ↓ Full CW
6	32.768 ↓ 65.535		

## P3 Fixture Control

The DMX control of fixtures driven via the P3 System Controller depends on the fixture type:

- **Fixtures with P3 Mix channel:** VDO Atomic Dot, VDO Atomic Bold, MAC Allure Profile, MAC Allure Wash PC, MAC Aura PXL, MAC Ultra Performance & MAC Ultra Wash.
- **Fixtures without P3 Mix channel:** VDO Sceptron, VDO Fatron, VDO Dotron, Exterior PixLine, Exterior Dot-HP, VC-Grid, VC-Strip, VC-Dot, LC(+) Panels, EC Panels & VDO Face Panels.

### **Fixtures with P3 Mix Channel**

For these fixtures the DMX modes and channel layout when used via the P3 System Controller is identical to when used with DMX straight into the fixtures. Therefore, for these fixtures the P3 System Controller does not offer any other/different DMX modes than when used without P3 System Controller. On these fixtures, the P3 Mix DMX channel(s) allow(s) you to control the output of the fixture with video, DMX or a mix of both.

## Fixtures without P3 Mix Channel

On these fixtures, the DMX modes when used via the P3 System Controller are different from the DMX modes when used with DMX straight into the fixture. The available DMX modes when used via the P3 System Controller are described below.

### *P3 Intensity Fixture*

Channel	DMX Value	Default Value	Function
1	0-255	0	<b>Intensity [FADE]</b> Zero → Full

- Fixture shows video, DMX only controls intensity of the video on the fixture.

### *P3 RGB Fixture*

Channel	DMX Value	Default Value	Function
1	0-255	255	<b>Red [FADE]</b> Zero → Full
2	0-255	255	<b>Green [FADE]</b> Zero → Full
3	0-255	255	<b>Blue [FADE]</b> Zero → Full

- Fixture shows video, DMX only controls color of the video on the fixture.

### *P3 Basic Fixture*

Channel	DMX Value	Default Value	Function
1	0-65.535	0	<b>Intensity [FADE]</b>
2			Zero → Full
3	0-255	255	<b>Red [FADE]</b> Zero → Full
4	0-255	255	<b>Green [FADE]</b> Zero → Full
5	0-255	255	<b>Blue [FADE]</b> Zero → Full

- Fixture shows video, DMX only controls intensity and color of the video on the fixture.

### P3 Hybrid Fixture

Channel	DMX Value	Default Value	Function
1	0-65.535	0	<b>Intensity [FADE]</b>
2			Zero → Full
3	0-127 128-255	0	<b>P3 Switch [SNAP]</b> DMX Mode Video Mode
4	0-255	255	<b>Red Segment 1 [FADE]</b> Zero → Full
5	0-255	255	<b>Green Segment 1 [FADE]</b> Zero → Full
6	0-255	255	<b>Blue Segment 1 [FADE]</b> Zero → Full
7	0-255	255	<b>Red Segment 2 [FADE]</b> Zero → Full
8	0-255	255	<b>Green Segment 2 [FADE]</b> Zero → Full
9	0-255	255	<b>Blue Segment 2 [FADE]</b> Zero → Full
...			
n-2	0-255	255	<b>Red Segment X [FADE]</b> Zero → Full
n-1	0-255	255	<b>Green Segment X [FADE]</b> Zero → Full
n	0-255	255	<b>Blue Segment X [FADE]</b> Zero → Full

- Fixture shows video when P3 Switch channel is above 50%, channels 4-6 control color of the video on the fixture.

- Fixture is purely DMX-controlled when P3 Switch channel is below 50%, channels 4 till n control color of the segments of the fixture.

- The number of RGB segments (X) per fixture can be set on the P3 System Controller. Common values are 1, 2, 4, 5, 8, 10, 16, 20, 25, 32, 50 and 100.

### P3 PixelMap Fixture

Channel	DMX Value	Default Value	Function
1	0-255	0	<b>Red Segment 1 [FADE]</b> Zero → Full
2	0-255	0	<b>Green Segment 1 [FADE]</b> Zero → Full
3	0-255	0	<b>Blue Segment 1 [FADE]</b> Zero → Full
4	0-255	0	<b>Red Segment 2 [FADE]</b> Zero → Full
5	0-255	0	<b>Green Segment 2 [FADE]</b> Zero → Full
6	0-255	0	<b>Blue Segment 2 [FADE]</b> Zero → Full
...			
n-2	0-255	0	<b>Red Segment X [FADE]</b> Zero → Full
n-1	0-255	0	<b>Green Segment X [FADE]</b> Zero → Full
n	0-255	0	<b>Blue Segment X [FADE]</b> Zero → Full

- Fixture is always purely DMX-controlled (never shows video) channels 1 till n control color of the segments of the fixture.

- The number of RGB segments (X) per fixture can be set on the P3 System Controller. Common values are 1, 2, 4, 5, 8, 10, 16, 20, 25, 32, 50 and 100.