

DMX PROTOCOL

This section contains two DMX protocols (both apply to MAC 2000 Wash firmware version 1.7):

- “16-bit protocol” on page 28
- “8-bit protocol” on page 31

The 16-bit is the default protocol that is used. To modify this use the control menu. For more information see “Control menu” on page 34.

Ensure that you have the latest firmware installed. For the latest firmware updates, documentation, and other information about this and all Martin Professional products, please visit the Martin web site at <http://www.martin.com>.

16-bit protocol

DMX channel	Value	Percent	Function (Start code=0)	
1	0 - 19	0 - 7	Shutter, Strobe, Reset, Lamp On/Off Shutter Closed (lamp reduced to 700 W (E-ballast) after 10 sec.) No function (Shutter Open)	
	NOTE! 20 - 49	8 - 19		
	Lamp Off is only allowed with SPEC → Loff set "On" or with SPEC → Loff set to "OFF", Cyan & Magenta & Yellow = 255 and Ch. 1 between 248-255 (Lamp Off).	50 - 72	20 - 28	Strobe on fast → slow
		73 - 79	29 - 31	Shutter open, lamp reduced to 700 W (E-ballast)
		80 - 99	32 - 39	Pulse opening fast → slow
		100 - 119	40 - 47	Pulse closing fast → slow
		120 - 127	48 - 50	No function
		128 - 147	51 - 57	Random Strobe Fast
		148 - 167	58 - 65	Random Strobe Medium
	Reset is only allowed with SPEC → dRES set "On" or with SPEC → dRES set to "OFF", Cyan & Magenta & Yellow = 255 and Ch. 1 between 208-217 (Reset Fixture).	168 - 187	66 - 73	Random Strobe Slow
		188 - 190	74 - 74	No function
		191 - 193	75	Random pulse opening fast
		194 - 196	76	Random pulse opening slow
		197 - 199	77	Random pulse closing fast
		200 - 202	78 - 79	Random pulse closing slow
		203 - 207	80 - 81	No function
		208 - 217	82 - 85	Reset Fixture
		218 - 227	86 - 89	No function
		228 - 237	90 - 93	Lamp On (Power On)
	238 - 247	94 - 97	No Function	
	248 - 255	98 - 100	Lamp Off (Power Off) Note: Time >5 seconds	
2	0 - 255	0 - 100	Intensity (Dimmer Blades) 0 → 100% (When the optional dimmer wheel is installed this must be set to 100%)	
3	0 - 255	0 - 100	Cyan White → Cyan	
4	0 - 255	0 - 100	Magenta White → Magenta	
5	0 - 255	0 - 100	Yellow White → Yellow	
6	0 - 255	0 - 100	CTC White → CTC	

DMX channel	Value	Percent	Function (Start code=0)
7	0 1 - 31 32 33 - 63 64 65 - 95 96 97 - 127 128 129 - 159 160 161 - 165 166 - 170 171 - 175 176 - 180 181 - 185 186 - 214 215 - 243 244 - 247 248 - 251 252 - 255	0 1 - 12 13 14 - 24 25 26 - 36 37 38 - 49 50 51 - 61 62 63 - 64 65 - 66 67 - 68 69 - 70 71 - 72 73 - 83 84 - 95 96 97 - 98 99 - 100	Color Wheel 1 (Multi Color) White White → Color 1,1 Color 1,1 Color 1,1 → Color 1,2 Color 1,2 Color 1,2 → Color 1,3 Color 1,3 Color 1,3 → Color 1,4 Color 1,4 Color 1,4 → White White Fixed colors on wheel 1 Color 1,4 Color 1,3 Color 1,2 Color 1,1 White Continuous color wheel 1 scroll fast → slow CW slow → fast CCW Random Color (CMY) Random color fast, set min./ max. CMY limits on channels 3-5 Random color medium, set min./ max. CMY limits on channels 3-5 Random color slow, set min./ max. CMY limits on channels 3-5
8 <i>(if color wheel 2 is installed)</i>	0 1 - 31 32 33 - 63 64 65 - 95 96 97 - 127 128 129 - 159 160 161 - 165 166 - 170 171 - 175 176 - 180 181 - 185 186 - 214 215 - 243 244 - 255	0 1 - 12 13 14 - 24 25 26 - 37 38 39 - 50 51 52 - 62 63 64 - 65 66 - 66 67 - 68 69 - 70 71 - 72 73 - 84 85 - 95 96 - 100	Color Wheel 2 (Multi Color, MCW) - if installed White White → Color 2, 1 Color 2, 1 Color 2, 1 → Color 2, 2 Color 2, 2 Color 2, 2 → Color 2, 3 Color 2, 3 Color 2, 3 → Color 2, 4 Color 2, 4 Color 2, 4 → White White Fixed colors on wheel 2 Color 2, 4 Color 2, 3 Color 2, 2 Color 2, 1 White Continuous color wheel 2 scroll fast → slow CW slow → fast CCW No Function
8 <i>(if Dimmer Wheel is installed)</i>	0-255	0-100	Intensity - (Dimmer Wheel) - if installed 0 → 100% (see "Optional dimmer wheel" on page 17)
9	0 - 244 245 - 251 252 - 255	0 - 95 96 - 98 99 - 100	Zoom Zoom: wide → narrow No changes Open (Power mode)
10	0 - 255	0 - 100	Barn Door 1 (Upper) Out → In
11	0 - 255	0 - 100	Barn Door 2 (Lower) Out → In

DMX channel	Value	Percent	Function (Start code=0)
12	0 - 255	0 - 100	Barn Door 3 (Left) Out → In
13	0 - 255	0 - 100	Barn Door 4 (Right) Out → In
14	0 - 255	0 - 100	Rotate Barn Doors Right → Center → Left (Center = 127)
15	0 - 20 21 - 40 41 - 60 61 - 80 81 - 100 101 - 120 121 - 255	0 - 7 8 - 15 16 - 23 24 - 31 32 - 39 40 - 48 49 - 100	MACRO functions (Barn Doors) No Macro Action All doors at 50% No Macro Action Large doors at 80% and small doors a 0% No Macro Action Small doors at 80% and large doors at 0% No Macro Action
16	0 127 255	0 50 100	Pan coarse (most significant byte) Max Left Neutral Max Right
17	0 127 255	0 50 100	Pan fine (least significant byte) Max Left Neutral Max Right
18	0 127 255	0 50 100	Tilt coarse (most significant byte) Max Up Neutral Max Down
19	0 127 255	0 50 100	Tilt fine (least significant byte) Max Up Neutral Max Down
20	0 - 2 3 - 236 237 - 239 240 - 242 243 - 245 246 - 248 249 - 251 252 - 255	0 - 1 2 - 92 93 94 95 96 - 97 98 99 - 100	Speed: Pan/Tilt Movement Tracking Speed Fast → Slow Tracking (Slow speed - Overriding the PTSP menu setting) Tracking (Normal speed - Overriding the PTSP menu setting) Tracking (Fast speed - Overriding the PTSP menu setting) Fan speed (Regulation, min. noise level - Overriding the FAN menu setting) Fan speed (Full speed, max. cooling - Overriding the FAN menu setting) No function
21	0 - 2 3 - 239 240 - 242 243 - 245 246 - 248 249 - 251 252 - 255 0 - 2 3 - 239 240 - 242 243 - 245 246 - 248 249 - 251 252 - 255	0 1 - 93 94 - 95 96 97 - 98 99 100 0 1 - 93 94 - 95 96 97 - 98 99 100	Speed: Dimmer, Cyan, Magenta, Yellow, CTC, Zoom. Tracking Speed Fast → Slow Tracking (Studio mode disabled – Overriding the MOfE menu setting) Tracking (Studio mode enabled – Overriding the MOfE menu setting) Tracking (Shortcuts disabled - Overriding the SCUT menu setting) Tracking (Shortcuts enabled - Overriding the SCUT menu setting) Fast Speed Speed: Color 1, Color 2, Barn Door. Tracking Speed Fast → Slow Tracking (Studio mode disabled – Overriding the MOfE menu setting) Tracking (Studio mode enabled – Overriding the MOfE menu setting) Tracking (Shortcuts disabled - Overriding the SCUT menu setting) Tracking (Shortcuts enabled - Overriding the SCUT menu setting) No function

8-bit protocol

DMX channel	Value	Percent	Function (Start code=0)	
1	0 - 19	0 - 7	Shutter, Strobe, Reset, Lamp On/Off Shutter Closed (lamp reduced to 700 W (E-ballast) after 10 sec.)	
	20 - 49	8 - 19	No function (Shutter Open)	
	NOTE! Lamp Off is only allowed with SPEC→Loff set "On", or with SPEC→Loff set to "OFF", Cyan & Magenta & Yellow = 255 and Ch. 1 between 248-255 (Lamp Off).	50 - 72	20 - 28	Strobe on fast → slow
		73 - 79	29 - 31	Shutter open, lamp reduced to 700 W (E-ballast)
	80 - 99	32 - 39	Pulse opening fast → slow	
	100 - 119	40 - 47	Pulse closing fast → slow	
	120 - 127	48 - 50	No function	
	Reset is only allowed with SPEC→dRES set "On". or with SPEC→dRES set to "OFF", Cyan & Magenta & Yellow = 255 and Ch. 1 between 208-217 (Reset Fixture).	128 - 147	51 - 57	Random Strobe Fast
		148 - 167	58 - 65	Random Strobe Medium
		168 - 187	66 - 73	Random Strobe Slow
	188 - 190	74 - 74	No function	
	191 - 193	75	Random pulse opening fast	
	194 - 196	76	Random pulse opening slow	
	197 - 199	77	Random pulse closing fast	
	200 - 202	78 - 79	Random pulse closing slow	
	203 - 207	80 - 81	No function	
	208 - 217	82 - 85	Reset Fixture	
	218 - 227	86 - 89	No function	
	228 - 237	90 - 93	Lamp On (Power On)	
	238 - 247	94 - 97	No Function	
248 - 255	98 - 100	Lamp Off (Power Off) Note: Time > 5 seconds		
2	0 - 255	0 - 100	Intensity (Dimmer blades) 0 → 100% (When the optional dimmer wheel is installed this must be set to 100%)	
3	0 - 255	0 - 100	Cyan White → Cyan	
4	0 - 255	0 - 100	Magenta White → Magenta	
5	0 - 255	0 - 100	Yellow White → Yellow	
6	0 - 255	0 - 100	CTC White → CTC	

DMX channel	Value	Percent	Function (Start code=0)
7	0 1 - 31 32 33 - 63 64 65 - 95 96 97 - 127 128 129 - 159 160 161 - 165 166 - 170 171 - 175 176 - 180 181 - 185 186 - 214 215 - 243 244 - 247 248 - 251 252 - 255	0 1 - 12 13 14 - 24 25 26 - 36 37 38 - 49 50 51 - 61 62 63 - 64 65 - 66 67 - 68 69 - 70 71 - 72 73 - 83 84 - 95 96 97 - 98 99 - 100	Color Wheel 1 (Multi Color) White White → Color 1,1 Color 1,1 Color 1,1 → Color 1,2 Color 1,2 Color 1,2 → Color 1,3 Color 1,3 Color 1,3 → Color 1,4 Color 1,4 Color 1,4 → White White Fixed Colors 1 Color 1,4 Color 1,3 Color 1,2 Color 1,1 White Continuous Color 1 Scroll fast → slow CW slow → fast CCW Random Color (CMY) Random color fast (set min./ max. CMY limits on channels 3-5) Random color medium (set min./ max. CMY limits on channels 3-5) Random color slow (set min./ max. CMY limits on channels 3-5)
8 <i>(if color wheel 2 is installed)</i>	0 1 - 31 32 33 - 63 64 65 - 95 96 97 - 127 128 129 - 159 160 161 - 165 166 - 170 171 - 175 176 - 180 181 - 185 186 - 214 215 - 243 244 - 255	0 1 - 12 13 14 - 24 25 26 - 37 38 39 - 50 51 52 - 62 63 64 - 65 66 - 66 67 - 68 69 - 70 71 - 72 73 - 84 85 - 95 96 - 100	Color Wheel 2 (Multi Color, MCW) - if installed White White → Color 2, 1 Color 2, 1 Color 2, 1 → Color 2, 2 Color 2, 2 Color 2, 2 → Color 2, 3 Color 2,3 Color 2, 3 → Color 2, 4 Color 2, 4 Color 2, 4 → White White Fixed Colors 2 Color 2, 4 Color 2, 3 Color 2, 2 Color 2, 1 White Continuous Color 2 Scroll fast → slow CW slow → fast CCW No Function
8 <i>(if Dimmer Wheel is installed)</i>	0-255	0-100	Intensity - (Dimmer Wheel) - if installed 0 → 100% (see "Optional dimmer wheel" on page 17)
9	0 - 244 245 - 251 252 - 255	0 - 95 96 - 98 99 - 100	Zoom Zoom: wide → narrow No Changes. Open (Light buster mode)
10	0 - 255	0 - 100	Barn Door 1 (Upper) Out → In
11	0 - 255	0 - 100	Barn Door 2 (Lower) Out → In

DMX channel	Value	Percent	Function (Start code=0)
12	0 - 255	0 - 100	Barn Door 3 (Left) Out → In
13	0 - 255	0 - 100	Barn Door 4 (Right) Out → In
14	0 - 255	0 - 100	Rotate Barn Doors Right → Center → Left (Center = 127)
15	0 - 20 21 - 40 41 - 60 61 - 80 81 - 100 101 - 120 121 - 255	0 - 7 8 - 15 16 - 23 24 - 31 32 - 39 40 - 48 49 - 100	MACRO functions (Barn Doors) No Macro Action All doors at 50% No Macro Action Large doors at 80% and small doors a 0% No Macro Action Small doors at 80% and large doors at 0% No Macro Action
16	0 127 255	0 50 100	Pan Max Left Neutral Max Right
17	0 127 255	0 50 100	Tilt Max Up Neutral Max Down
18	0 - 2 3 - 236 237 - 239 240 - 242 243 - 245 246 - 248 249 - 251 252 - 255	0 - 1 2 - 92 93 - 94 95 96 97 98 99 - 100	Speed: Pan/Tilt Movement Tracking Speed Fast → Slow Tracking (Slow speed - Overriding the PTSP menu setting) Tracking (Normal speed - Overriding the PTSP menu setting) Tracking (Fast speed - Overriding the PTSP menu setting) Fan speed (Regulation, min. noise level – Overriding the FAN menu setting) Fan speed (Full speed, max. cooling – Overriding the FAN menu setting) No function
19	0 - 2 3 - 239 240 - 242 243 - 245 246 - 248 249 - 251 252 - 255 0 - 2 3 - 239 240 - 242 243 - 245 246 - 248 249 - 251 252 - 255	0 - 1 2 - 93 93 - 94 95 - 96 97 98 99 - 100 0 - 1 2 - 93 93 - 94 95 - 96 97 98 99 - 100	Speed: Dimmer, Cyan, Magenta, Yellow, CTC, Zoom Tracking Speed Fast → Slow Tracking (Studio mode disabled – Overriding the MOdE menu setting) Tracking (Studio mode enabled – Overriding the MOdE menu setting) Tracking (Shortcuts disabled - Overriding the SCUT menu setting) Tracking (Shortcuts enabled - Overriding the SCUT menu setting) Fast Speed Speed: Color 1, Color 2, Barn Door Tracking Speed Fast → Slow Tracking (Studio mode disabled – Overriding the MOdE menu setting) Tracking (Studio mode enabled – Overriding the MOdE menu setting) Tracking (Shortcuts disabled - Overriding the SCUT menu setting) Tracking (Shortcuts enabled - Overriding the SCUT menu setting) No function