

X2M LED Signal Light Bar

One-Piece Three-Color Machine Status Light

User Manual

Model X2M Series

DC 24 V - Red / Yellow / Green - 238 to 2074 mm

Kemotronics Industrial Lighting

sales01@birtechnology.com - www.cnclight.com

This manual covers the X2M series three-color LED signal bar in all 18 lengths and in both common-negative (PNP) and common-positive (NPN) input versions. Read section 5 before connecting the light to a machine control.

1. PRODUCT OVERVIEW

The X2M is a one-piece three-color LED signal bar. Red, yellow and green are separate LED groups inside a single white PC profile, so one slim bar reports machine status in the same three colors as a tower light. There are no stacked layers, no bulbs and no moving parts.

The housing has a trapezoid cross section with a 15 mm light face. It is designed to be bonded to a machine door or side panel, or held by lamp clips, and is made in 18 lengths from 238 mm to 2074 mm so it can follow the full height of a machining center.

Typical users: CNC machine builders, machine tool operators, automation integrators and maintenance teams that want a machine status indicator visible from the aisle.

2. TECHNICAL SPECIFICATIONS

Model	X2M (ONN-X2M series)
Product type	One-piece three-color LED signal light bar
Light colors	Red, yellow, green - three independent channels
Rated voltage	DC 24 V
LED type	2835 SMD LED
Power	4.8 W per meter per color
Current	0.2 A per meter per color
Housing material	PC engineering plastic
Housing color	White
Light face width	15 mm
Available lengths	238 mm to 2074 mm, 18 sizes
Rated life	50,000 hours
Wiring	4 cores: black common plus red, yellow, green
Input versions	Common negative (PNP) or common positive (NPN)
Mounting	Adhesive bonding or lamp clip
Note	Dimensions are measured manually, tolerance 1-3 mm

2.1 AVAILABLE LENGTHS

Lamp body length A is the overall length of the light body. Diffuser length B is the length of the illuminated face.

Lamp body length A (mm): 238, 346, 454, 562, 670, 778, 886, 994, 1102, 1210, 1318, 1426, 1534, 1642, 1750, 1858, 1966, 2074.

Diffuser length B (mm): 234, 342, 450, 558, 666, 774, 882, 990, 1098, 1206, 1314, 1422, 1530, 1638, 1746, 1854, 1962, 2070.

Sizes increase in 108 mm steps. Other lengths can be quoted on request.

3. PACKAGE CONTENTS

- 1 x X2M LED signal light bar, length as ordered
- 1 x Mounting screw set
- 1 x Wiring instruction sheet

Adhesive and lamp clips are NOT included. The bar is supplied with a mounting screw set; tell us if you need the clip-mount version.

4. INSTALLATION INSTRUCTIONS

Step 1 - Check the voltage: the nameplate rating is DC 24 V. Never connect the bar to AC mains, and check that the machine control output matches the PNP or NPN version you ordered.

Step 2 - Choose the position: pick a flat, clean, oil-free surface on the machine door or side panel where the light face is visible from the operator position and from the aisle.

Step 3 - Fix the bar: screw or bond the bar to the panel. Use the supplied screws through the fixing points at the ends of the profile, or for adhesive mounting degrease the surface, apply the bonding agent along the back of the profile and hold the bar until it sets. Do not drill through the light face.

Step 4 - Connect the wires: isolate the machine supply, then wire per section 5. Keep the cable clear of moving parts and hot surfaces, and leave a small service loop.

Step 5 - Test: restore the supply and switch each color on in turn from the machine control. Confirm that red, yellow and green each light independently and that no channel stays dimly lit when off.

5. WIRING

The bar has four cores. Black is the common core and changes meaning with the input version.

Core	Common negative (PNP)	Common positive (NPN)
Black	DC negative (0 V)	DC positive (+24 V)
Red	+24 V to switch red on	0 V to switch red on
Yellow	+24 V to switch yellow on	0 V to switch yellow on
Green	+24 V to switch green on	0 V to switch green on

Common negative (PNP): connect black to the 0 V rail and switch +24 V onto the red, yellow or green core through the machine output or a relay.

Common positive (NPN): connect black to +24 V and pull the red, yellow or green core to 0 V through the machine output or a relay.

Only DC 24 V. Switching an AC supply onto any core will destroy the LED groups and is not covered by warranty.

6. COLOR STATUS RECOMMENDATIONS

The three channels are independent, so you can use any logic your machine already has. The convention below matches most CNC and automation controls.

Color	Meaning	Typical machine state
Green	Normal	Cycle running, no fault, operator may load or unload
Yellow	Attention	Setup, tool change, material low, door open, waiting for operator
Red	Stop	Fault, emergency stop, over-travel, alarm requiring intervention

If the bar is fitted next to an existing three-color tower light, wire both from the same outputs so the bar repeats the tower status at eye level along the machine door.

7. MAINTENANCE AND CARE

- Wipe the diffuser with a soft dry cloth or a damp cloth and mild soap.
- Do not use solvents, thinners or abrasive pads on the PC profile.
- Check the cable entry and the adhesive joint every six months on machines with heavy vibration.
- Keep coolant and oil from pooling on the adhesive face; a lifted bar will let moisture behind the profile.
- Store spare bars flat, at -10 to +40 degrees C, away from direct sunlight.

8. SAFETY WARNINGS

- ALWAYS isolate the machine supply before installation, wiring or maintenance.
- This product is a DC 24 V device. Never connect it to 110 V or 230 V AC.
- Do not open the profile, cut the bar or drill the light face - the LED strip is not serviceable.
- Do not exceed 24 V DC; a higher supply will overheat the LED groups.
- Install out of reach of coolant jets and moving machine parts.
- Use only the wiring and connectors rated for the machine control circuit.
- Installation should be carried out by a qualified electrician.

9. TROUBLESHOOTING

Problem	Possible cause	Solution
No light at all	No 24 V supply, or black common not connected	Measure 24 V at the bar, check the common core
Only one color works	Open core or blown control output	Check the red, yellow or green core and the output
Colors inverted (on when should be off)	PNP bar used with an NPN output, or the reverse	Swap to the matching version or invert the output
Weak or uneven light	Supply below 24 V or volt drop on a long cable	Use a cable with a larger cross section, check the supply
Bar lifts off the machine	Surface was not degreased before bonding	Remove, clean, degrease and re-bond with fresh adhesive

10. WARRANTY POLICY

1 year warranty from the date of delivery, covering manufacturing defects in the LED groups, the driver circuit and the housing.

Not covered: damage from connection to the wrong voltage, water or coolant ingress after a damaged seal, cutting or drilling the bar, dismantling, impact, and normal color shift after the rated life.

11. AFTER-SALES SERVICE

Contact	Jude
Tel / WhatsApp	+86-15915305795
Email	sales01@birtechnology.com
Website	www.cnclight.com

Please quote model X2M, the length and the PNP or NPN version, plus your order number, when contacting us.