

YGM Panel Mount LED Signal Light

One-Piece Three Color Warning Bar - DC 24V, IP67

User Manual

Models YGM-150 / 250 / 350 / 450

Red / Yellow / Green - Embedded panel mount - 70,000 hours

Kemotronics Industrial Lighting

sales01@birtechnology.com - www.cnclight.com

This manual covers the YGM series panel mount signal light in all four lengths and in both input versions (common positive NPN and common negative PNP). Read it before machining the panel cut-out.

1. PRODUCT OVERVIEW

The YGM series is a panel mount LED signal light in which red, yellow and green sit in one bar behind a tempered glass lens. The light drops into a cut-out in a machine panel or equipment enclosure and is fixed with screws, so the lit face sits flush with the machine surface. There is no bracket, no stem and no tower body to mount, which keeps the light out of the working area and out of the coolant stream.

The bar is made in four lengths: YGM-150, YGM-250, YGM-350 and YGM-450, where the number is the overall face length in millimetres. Each length is available with a frosted lens for an even, soft light or a crystal lens for a brighter, more contrasty look, and with either a common positive (NPN) or a common negative (PNP) input so the light can be driven directly from a machine controller, PLC or relay board.

Typical users: machine tool builders and retrofitters, automation and assembly cells, medical equipment cabinets.

2. TECHNICAL SPECIFICATIONS

Models	YGM-150 / YGM-250 / YGM-350 / YGM-450 (number = face length in mm)
Rated power	3 W
Rated voltage	DC 24 V standard; DC 12 V on request
Light colors	Red, yellow, green - other colors on request
Light source	SMD LEDs, three independent channels behind one lens
Face size	150 x 88 mm (YGM-150); window 104 x 60 mm
Other lengths	250 / 350 / 450 mm face; windows 204 / 304 / 404 x 60 mm
Housing	Aluminium body, tempered glass lens
Protection	IP67 - dust tight and protected against water jets
Rated life	70,000 hours
Temperature	Ambient -30 to +50 C; surface below 60 C
Mounting	Embedded panel mount, screw fixing through the flange; screws not included
Fixing holes	Dia. 4.2 mm with dia. 9 mm counterbore
Wiring	4 cores: black common plus red, yellow and green channels
Input version	Common positive (NPN) or common negative (PNP) - state when ordering
Lens option	M = frosted, X = crystal
Ordering code	YGM-length-inputversion-lens, e.g. YGM-450-Z(common positive)-M(frosted)
Note	Dimensions are taken from the supplier drawing; tolerance 1-3 mm. Check the drawing against your machine before cutting the panel

3. PACKAGE CONTENTS

- 1 x YGM signal light of the ordered length and version
- 1 x User manual

Check the model code on the label before cutting the panel. Mounting screws are NOT included in the package.

4. INSTALLATION INSTRUCTIONS

Step 1 - Check the supply: confirm the machine supply is DC 24 V (or DC 12 V for a 12 V version) and that the light is the input version your controller needs, NPN or PNP. A 12 V light on 24 V will be destroyed.

Step 2 - Cut the opening: mark the cut-out from the drawing or from the light itself and cut it so the glass face sits flush and the flange covers the edge. Deburr all edges and remove swarf.

Step 3 - Fit the light: seat the light in the opening, square to the panel, and fix it through the flange holes. Tighten evenly so the gasket is compressed all round and the lens does not distort.

Step 4 - Wire it: route the 4-core cable away from spindle drives and high-current cables, then wire per section 5 with the machine isolated.

Step 5 - Test: switch on and trigger each channel from the controller. Confirm red, yellow and green are on the channels you expect and that the light can be read from the operator position.

5. WIRING

The cable has four cores. The black core is the common return for all three colors; each of the other three cores drives one color channel.

Core colour	Function	Connect to
Black	Common line	DC minus in the common negative version, DC plus in the common positive version
Red	Red LED channel	Controller output for red
Yellow	Yellow LED channel	Controller output for yellow
Green	Green LED channel	Controller output for green

Which way the black core is connected depends on the version you ordered:

Version	Black common to	R / Y / G driven by
Common negative (PNP)	DC minus (0 V)	PNP outputs, positive switching
Common positive (NPN)	DC plus (+24 V)	NPN outputs, negative switching

The two versions are not interchangeable. If the light is driven from a relay or a dry contact, use the common negative version and switch each channel to DC plus.

Wire with the machine isolated. Never connect the light to mains voltage and never reverse the DC supply: reversed polarity destroys the LED channels and is not covered by warranty.

6. COLOUR STATUS RECOMMENDATIONS

One bar, three colours, three machine states. The convention below matches the way the light is normally used on machine tools and automation cells.

Colour	Meaning	Typical machine state
Green	Normal running	Cycle running, process in tolerance, no operator action needed
Yellow	Attention	Setup, tool change, material low, cycle finished, operator action soon
Red	Fault or stop	Alarm, fault, emergency stop, machine halted

All three channels can be lit together for a general alert, and any channel can be flashed if the controller supports it. Write the site convention into the machine documentation and keep every panel on the line consistent, so an operator reads the same colour the same way everywhere.

7. MAINTENANCE AND CARE

- Wipe the glass lens with a soft damp cloth. Coolant film and oil mist cut the light output long before the LEDs age.
- Never use solvents, thinners or abrasive pads on the lens or the anodised body.
- Check the fixing screws and the flange seal every six months, and after any crash or heavy impact on the panel.
- Keep the cable entry dry and the cable gland tight; a loose gland is the usual path for coolant into the housing.
- Do not paint over the lens and do not cover it with tape or a protective film during machining.
- Store spare units indoors, between -30 and +50 C, in a dry place.

8. SAFETY WARNINGS

Isolate the machine before installation, wiring or maintenance. The light sits on a machine that can start automatically.

- Never connect the light to mains voltage. DC 24 V or DC 12 V only, and only the version stated on the label.
- Do not look into the lens at close range for long periods, especially with the crystal lens option.
- Do not open the housing. It is sealed for IP67 and has no user-serviceable parts inside; opening it voids the warranty.
- IP67 protects against jets and dust, not against immersion. Do not submerge the light or clean it with a high-pressure jet held against the seal.
- Make sure the cut-out and the flange are clean and flat: a distorted flange will leak and will crack the glass.
- Do not use the light as the only safety device on a machine. It is a status indicator, not a guard or an interlock.
- Dispose of the unit as electronic waste at the end of its life.

9. TROUBLESHOOTING

Problem	Possible cause	Solution
No colour lights up	No supply, reversed polarity, or wrong input version	Check DC 24 V at the cable, check polarity, confirm NPN or PNP matches the controller
One colour dead	Open channel core, blown controller output, or faulty channel	Swap the channel to a known output; check continuity of that core
All colours dim	Low supply voltage or long thin cable	Measure voltage at the light under load; use a heavier cable
Light works but is hard to read	Lens dirty or fogged, or wrong colour convention used	Clean the lens; align the colour convention with the machine documentation
Water or coolant inside	Flange seal not compressed, gland loose, housing opened	Dry and reseal, retighten the gland, replace the unit if the LED board is corroded
Cracked glass	Impact, deformed panel, or screws overtightened	Replace the light; check the panel flatness before refitting

10. WARRANTY POLICY

One year warranty from the date of delivery, covering manufacturing defects in the LED channels, the lens, the housing and the cable.

Not covered: reversed polarity, connection to mains voltage, water ingress after a loose gland or an opened housing, cracked glass from impact, damage from overtightened or wrong screws, unauthorised modification, and normal colour shift after long service.

Claims must quote the model code, the order number and the installation date, and are handled as repair or replacement at our option.

11. AFTER-SALES SERVICE

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

Please quote the model code (for example YGM-150-F-M) and your order number when contacting us, and send a photo of the light lit, plus a photo of the label.