Datasheet

30 mm Programmable Multicolor RGB Indicator with Flashing Input Control

- Bright, uniform indicator light
- Seven default colors in one device (Green, Red, Yellow, Blue, White, Cyan, Magenta)
- Programmable using Banner's Pro Editor software and Pro Converter Cable
- 22 mm threaded polycarbonate base
- Translucent polycarbonate dome
- Rugged IP67, IP69K per DIN 40050-9, UL Type 12, and UL Type 4X and UL Type 13 design
- Bimodal inputs (PNP/NPN), depending on source wiring
- All models have flashing input control
- Variety of connector options
- Terminal connection models available for panel wiring applications

Pro Editor

Use Banner's Pro Editor software and Pro Converter Cable to create custom configurations by selecting different colors, flash patterns, and animations. For more information visit www.bannerengineering.com/proeditor.

Models

<table>
<thead>
<tr>
<th>Family</th>
<th>Material</th>
<th>Color &amp; Input</th>
<th>Connector*</th>
</tr>
</thead>
<tbody>
<tr>
<td>K30L2</td>
<td></td>
<td>RGB7 = RGB Multicolor (7 Colors)</td>
<td>Q</td>
</tr>
</tbody>
</table>

Blank = Standard, RGB7 = RGB Multicolor (7 Colors)

* Models with a quick disconnect require a mating cordset

Blank = 2 m (6.5 ft) integral PVC cable
Q = Integral 5-pin M12 quick disconnect
QP = 150 mm (5.9 in) PVC cable with 5-pin M12 quick disconnect
T = Terminal screw
Wiring Diagrams

PNP

NPN

Key
1. Brown
2. White
3. Blue
4. Black
5. Gray

Gray wire (flashing input)

Table 1: Default Color Definition

<table>
<thead>
<tr>
<th></th>
<th>Red</th>
<th>Yellow</th>
<th>Green</th>
<th>Cyan</th>
<th>Blue</th>
<th>Magenta</th>
<th>White</th>
</tr>
</thead>
<tbody>
<tr>
<td>Input 1</td>
<td>X</td>
<td></td>
<td>X</td>
<td>X</td>
<td></td>
<td></td>
<td>X</td>
</tr>
<tr>
<td>Input 2</td>
<td>X</td>
<td></td>
<td>X</td>
<td>X</td>
<td></td>
<td></td>
<td>X</td>
</tr>
<tr>
<td>Input 3</td>
<td></td>
<td></td>
<td>X</td>
<td>X</td>
<td></td>
<td></td>
<td>X</td>
</tr>
</tbody>
</table>

An “X” denotes an active input, for example when Input 1 and Input 3 are active, the indicator will show Magenta.

Specifications

Supply Voltage and Current
10 V DC to 30 V DC
- 60 mA at 10 V DC
- 50 mA at 12 V DC
- 35 mA at 24 V DC
- 30 mA at 30 V DC

Supply Protection
Protected against reverse polarity and transient voltages

Leakage Current Immunity
400 µA

Input Response Time
250 milliseconds maximum

Flash
Default 1.5 Hz flash rate through flash input wire

Connections
Integral 5-pin M12 male quick-disconnect connector, 150 mm (6 in) PVC-jacketed cable with an M12 quick disconnect, or 2 m (6.5 ft) integral PVC-jacketed cable, depending on model
Models with a quick disconnect require a mating cordset

Mounting
M22 by 1.5 threaded base, maximum torque 2.25 N·m (20 inch·ibf)
Mounting nut included

Construction
Base, Dome, and Nut: Polycarbonate

Pro Editor Configuration
Connection to Pro Editor software enables control of:
- Animation: On, Flash, Two Color Flash, 50/50, 50/50 Rotate, Chase, Intensity Sweep, Demo
- Color: Green, Red, Yellow, Blue, White, Cyan, Magenta, Amber, Rose, Lime Green, Orange, Sky Blue, Violet, Spring Green
- Intensity: Low, Medium, High
- Speed: Slow, Standard, Fast

Pro Converter Cable required to interface between PC and indicator, see accessories

Default Indicator Characteristics

<table>
<thead>
<tr>
<th>Color</th>
<th>Dominant Wavelength (nm) or Color Temperature (CCT)</th>
<th>Color Coordinates (x, y)</th>
<th>Lumen Output (Typical at 25 °C)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Green</td>
<td>522</td>
<td>0.154</td>
<td>0.700</td>
</tr>
<tr>
<td>Red</td>
<td>620</td>
<td>0.689</td>
<td>0.309</td>
</tr>
<tr>
<td>Yellow</td>
<td>576</td>
<td>0.467</td>
<td>0.463</td>
</tr>
<tr>
<td>Blue</td>
<td>466</td>
<td>0.140</td>
<td>0.054</td>
</tr>
<tr>
<td>White</td>
<td>5700K</td>
<td>0.328</td>
<td>0.337</td>
</tr>
<tr>
<td>Cyan</td>
<td>493</td>
<td>0.157</td>
<td>0.331</td>
</tr>
<tr>
<td>Magenta</td>
<td>–</td>
<td>0.392</td>
<td>0.186</td>
</tr>
<tr>
<td>Amber</td>
<td>589</td>
<td>0.556</td>
<td>0.420</td>
</tr>
<tr>
<td>Rose</td>
<td>–</td>
<td>0.525</td>
<td>0.237</td>
</tr>
<tr>
<td>Lime Green</td>
<td>562</td>
<td>0.383</td>
<td>0.523</td>
</tr>
<tr>
<td>Sky Blue</td>
<td>486</td>
<td>0.145</td>
<td>0.240</td>
</tr>
<tr>
<td>Orange</td>
<td>599</td>
<td>0.616</td>
<td>0.370</td>
</tr>
<tr>
<td>Violet</td>
<td>–</td>
<td>0.224</td>
<td>0.059</td>
</tr>
<tr>
<td>Spring Green</td>
<td>508</td>
<td>0.155</td>
<td>0.524</td>
</tr>
</tbody>
</table>

\(\overline{x}\) Refer to the CIE 1931 (x,y) Chromaticity Diagram to show equivalent color with indicated color coordinates. Actual coordinates may differ ± 10%.
Vibration and Mechanical Shock
Meets IEC 60068-2-6 requirements (Vibration: 10 Hz to 55 Hz, 1.0 mm amplitude, 5 minutes sweep, 30 minutes dwell)
Meets IEC 60068-2-27 requirements (Shock: 30G 11 ms duration, half sine wave)

Operating Conditions
-40 °C to +50 °C (–40 °F to +122 °F)
90% at +50 °C maximum relative humidity (non-condensing)
Storage Temperature: –40 °C to +70 °C (–40 °F to +158 °F)

Environmental Rating
IP67, IP69K per DIN 40050-9. Cabled models also meet IP69K per DIN 40050-9 if the cable and cable entrance are protected from high-pressure spray. Indicator side of terminal models meet IP69K per DIN 40050-9 when installed in an enclosure. Screw connection points meet IP00.
Meets UL Type 12.
Meets UL Type 4X and UL Type 13 when used in a suitable enclosure.

Certifications


dimensions

Quick Disconnect Models

Cabled Models

Terminal Models

Accessories

Pro Editor Hardware

MQDC-506-USB
- Pro Converter Cable
  - 1.83 m (6 ft) length 5-pin M12 quick disconnect to Device and USB to PC
  - Required for connection to Pro Editor

PSW-24-1
- 24 V DC, 1 A power supply
  - 2 m (6.5 ft) PVC cable with M12 quick disconnect
  - Provides external power with splitter cable, sold separately

CSB-M12S1FM12S1M
- 5-pin parallel Y splitter (Male-Male-Female)
  - For full Pro Editor preview capability
  - Requires external power supply, sold separately

ACC-PRO-CABLES
- Mating accessory for cabled and terminal models
  - 150 mm (6 inch) PVC cable with M12 quick disconnect
  - Lever wire nuts included (qty 5)
  - Required to connect cabled models and screw terminal models to Pro Converter Cable, sold separately

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Required Overcurrent Protection

WARNING: Electrical connections must be made by qualified personnel in accordance with local and national electrical codes and regulations.
Overcurrent protection is required to be provided by end product application per the supplied table.
Overcurrent protection may be provided with external fusing or via Current Limiting, Class 2 Power Supply.
Supply wiring leads < 24 AWG shall not be spliced.
For additional product support, go to www.bannerengineering.com.

<table>
<thead>
<tr>
<th>Supply Wiring (AWG)</th>
<th>Required Overcurrent Protection (Amps)</th>
</tr>
</thead>
<tbody>
<tr>
<td>20</td>
<td>5.0</td>
</tr>
<tr>
<td>22</td>
<td>3.0</td>
</tr>
<tr>
<td>24</td>
<td>2.0</td>
</tr>
<tr>
<td>26</td>
<td>1.0</td>
</tr>
<tr>
<td>28</td>
<td>0.8</td>
</tr>
<tr>
<td>30</td>
<td>0.5</td>
</tr>
</tbody>
</table>

x5
Cordsets

5-Pin Threaded M12 Cordsets—Single Ended

<table>
<thead>
<tr>
<th>Model</th>
<th>Length</th>
<th>Style</th>
<th>Dimensions</th>
<th>Pinout (Female)</th>
</tr>
</thead>
<tbody>
<tr>
<td>MQDC1-501.5</td>
<td>0.5 m (1.5 ft)</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>MQDC1-503</td>
<td>0.9 m (2.9 ft)</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>MQDC1-506</td>
<td>2 m (6.5 ft)</td>
<td>Straight</td>
<td>M12 x 1</td>
<td>ø 14.5</td>
</tr>
<tr>
<td>MQDC1-515</td>
<td>5 m (16.4 ft)</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>MQDC1-530</td>
<td>9 m (29.5 ft)</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>MQDC1-560</td>
<td>18 m (59 ft)</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>MQDC1-506RA</td>
<td>2 m (6.5 ft)</td>
<td>Right-Angle</td>
<td>M12 x 1</td>
<td>ø 14.5</td>
</tr>
<tr>
<td>MQDC1-515RA</td>
<td>5 m (16.4 ft)</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>MQDC1-530RA</td>
<td>9 m (29.5 ft)</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>MQDC1-560RA</td>
<td>19 m (62.3 ft)</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

5-Pin Threaded M12 Washdown Cordsets with Shield—Single Ended

<table>
<thead>
<tr>
<th>Model</th>
<th>Length</th>
<th>Style</th>
<th>Dimensions</th>
<th>Pinout (Female)</th>
</tr>
</thead>
<tbody>
<tr>
<td>MQDCWD-506</td>
<td>2 m (6.56 ft)</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>MQDCWD-530</td>
<td>9 m (29.5 ft)</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Splitter Cables for Use with IO-Blocks

5-Pin Threaded M12 to 4-Pin Threaded M12 Combiner Cordset with Flat Junction

<table>
<thead>
<tr>
<th>Model</th>
<th>Branches (Male)</th>
<th>Trunk (Female)</th>
<th>Pinout</th>
</tr>
</thead>
<tbody>
<tr>
<td>CSF-M12F51M12M41</td>
<td>4-pin Quick Disconnect, 2 × 0.31 m (1.02 ft)</td>
<td>5-pin Quick Disconnect, 0.31 m (1.02 ft)</td>
<td>Female</td>
</tr>
</tbody>
</table>

Trunk, Branch 1, Branch 2

1 = Brown, 2 = White, 3 = Blue, 4 = Black, 5 = Gray
Brackets

**SMB22A**
- Right-angle bracket with curved slot for versatile orientation
- 12-ga. stainless steel
- Mounting hole for 22 mm sensor

**SMB22VK**
- V-clamp, flat bracket and fasteners for mounting to pipe or extensions
- Clamp accommodates 28 mm diameter tubing or 1 in. square extrusions
- 22 mm hole for mounting sensor

**Hole center spacing:** A to B = 26.0
**Hole size:** A = ø 4.6, B = 4.6 x 16.9, C = 22.2

**SMB22RAVK**
- V-clamp, right-angle bracket and fasteners for mounting to pipe or extensions
- Clamp accommodates 28 mm diameter tubing or 1 in. square extrusions
- 22 mm hole for mounting sensor

**Hole size:** A = ø 22.5

**SMBAMS22FVK**
- Flat SMBAMS series bracket with 22 mm hole for mounting sensors
- Articulation slots for 90° rotation
- 12-ga. (2.6 mm) cold-rolled steel

**Hole center spacing:** A = 26.0, A to B = 13.0
**Hole size:** A = ø 26.8 x 7.0, B = ø 6.5, C = ø 22.5

**SMBAMS22RA**
- Right-angle SMBAMS series bracket with 22 mm hole for mounting sensors
- Articulation slots for 90° rotation
- 12-ga. (2.6 mm) cold-rolled steel

**Hole center spacing:** A = 26.0, A to B = 13.0
**Hole size:** A = 26.8 x 7.0, B = ø 6.5, C = ø 22.5

**SMBAMS22P**
- Flat SMBAMS series bracket with 22 mm hole for mounting sensors
- Articulation slots for 90° rotation
- 12-ga. (2.6 mm) cold-rolled steel

**Hole center spacing:** A = 26.0, A to B = 13.0
**Hole size:** A = ø 22.5

**LMB22LPC**
- For 28 mm tubular racking
- Toolless mount to racking
- 22 mm mounting hole

**Hole size:** A = ø 22.5

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This device complies with Part 15 of the FCC Rules. This equipment generates, uses, and can radiate radio frequency energy and, if not installed and used in accordance with the instruction manual, may cause harmful interference to radio communications. Operation is subject to the following two conditions: 1) This device may not cause harmful interference; and 2) This device must accept any interference received, including interference that may cause undesired operation.

**Industry Canada**

This device complies with CANICES-3 (B)/NMB-3(B). Operation is subject to the following two conditions: 1) This device may not cause harmful interference; and 2) This device must accept any interference received, including interference that may cause undesired operation.
Cet appareil est conforme à la norme NMB-3(B). Le fonctionnement est soumis aux deux conditions suivantes : (1) ce dispositif ne peut pas occasionner d'interférences, et (2) il doit tolérer toute interférence, y compris celles susceptibles de provoquer un fonctionnement non souhaité du dispositif.