

RTGOM-02, Ready-to-Go Optical Monitor

Precision, Wide Dynamic Range, Versatile Light Detection

RTGOM-02



- Precision light detection
- Standard and custom diodes from UV to 5um
- Simple, easy-to-use, versatile measurement and recording
- Eight decades of light sensitivity
- Several integration options including:
 - USB
 - RS485
 - 0-4V DC
 - 4-20mA
 - Integrated or wired photodiode
- Isolated "Zero" Trigger Input
- Extensible yet simple, well-documented API for custom programming
- MIT License Open Source sample code available for custom system integration

The RTGOM, Ready-to-Go Optical Monitor

The RTGOM-02 is the next generation of precision, industrial-hardened, fully programmable light-detection device for use in process monitoring applications. Its robust, simple design allows easy and confident usage in a variety of manufacturing environments. Its wide dynamic range (8 decades of light sensitivity achieved via seamless, proprietary range switching) brings precision detection to a wide range of demanding optical monitoring operations. With a variety of FREE applications and available open source sample code, the RTGOM is ready for immediate use in your toughest environments while giving you everything you need to quickly create your own custom monitoring systems.

Built-In Support for Several Standard Interfaces

The RTGOM-02 extends the L&M light detection technology to include a variety of interfaces for integration into any monitoring and control system. Whether your system design uses USB connectivity, a more traditional RS485 interface, or tried-and-true analog interfaces including 0-4V DC and 4-20mA current loop, the RTGOM-02 has you covered. With low-cost, off-the-shelf protocol converters (USB<->Network, RS485<->Network, RS485<->RS232, etc.) there are many connectivity options.

Industrial-Strength, In-Situ Optical Monitoring

With its numerous interface and diode options, the RTGOM-02 enables a number of system design options for in-situ optical monitoring. A low-cost "headless" design includes leveraging the 0-4V or 4-20mA output to drive LED displays as well as using the isolated "Zero" trigger input to instruct each unit to calculate 0.00 OD (100% light transmission). A more elaborate system can easily add a tablet or industrial computer for real-time graphical feedback and centralized reporting.

Powerful, FREE software for custom programming, single, and multiple device configurations

For Windows 7, 8, and 10 environments.

CLI: Command line utility for basic, yet flexible interaction with the device. The utility is also an excellent tool for familiarizing yourself with the RTGOM API for custom applications.

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Return Values:
echooff      : 0 on success.
echoon       : 0 on success.
set100perc   : Voltage for 100% transmission in microvolts, -500 if not set
getcurrent   : Sensor current in nanoamps
setdarkmode  : 0 = NO DARK, 1 = FACTORY SET, or 2 = USER SET
getfactorydark : Factory-set dark value in microvolts, -500 if not set
getversionion : Device firmware version
getmodelname : Device model name
setod        : Optical density (x100), -500 if 100 percent not set
getserialnumber : Device serial number, -500 if not set
gettemp      : Internal temperature of the sensor logic in deg F
gettrans     : Transmission (x10), -500 if 100 percent not set
setuserdark  : User-set dark value in microvolts, -500 if not set
getvoltage   : Sensor voltage in microvolts
getref       : RIM ON reference voltage in microvolts
set100v      : 100 % voltage in microvolts, 1 if too low, 2 if too high
setuserdark : User dark voltage in microvolts
getfactorydark : 0 on success, -500 if factory-set dark voltage not set
setuserdark : 0 on success
getuserdark  : 0 on success, -500 if user dark voltage not set
    
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Trend: GUI interface for laboratory use for monitoring instantaneous and trends of optical density, % transmission, irradiance and more. Includes log-to-file capability. Supports reference configurations.

RTGOM-Trend interface showing a graph of Irradiance over Time. The graph shows a fluctuating signal between 0 and 3.00. Below the graph, the following data is displayed:

Wavelength (nm) for Irradiance	344
Current (uA)	113.9
Irradiance (uW)	1.5
Voltage (V)	0.011
Sensor Temperature	36.0

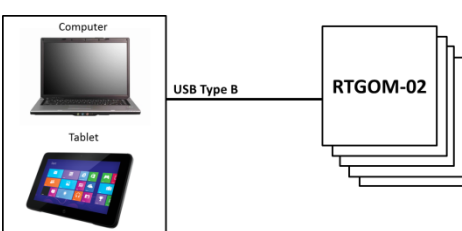
Bar: This powerful application automatically detects multiple RTGOM's and provides production-ready in-situ monitoring and logging capability. Includes color-coded level detection.

RTGOM-Bar interface showing a bar chart of Optical Density over Time. The chart has 12 bars with varying heights and colors (green, yellow, red). The Y-axis is labeled 'Optical Density' and ranges from 0 to 3.0. The X-axis is labeled 'Time' and ranges from 1 to 12.

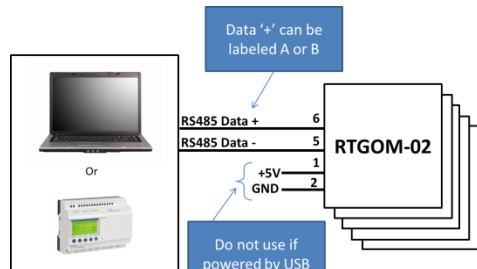
Key Specifications

Dimensions	3.4 x 3.0 x 1.5 in 8.6 x 7.5 x 3.8 cm	Optical Filter Size	1" 25.4mm
Weight	0.50 Lbs.	Diode Material*: RTGOM-02-GaP RTGOM-02-Si RTGOM-02-InGsAs RTGOM-02-InAsSb	Wavelength 190nm – 450nm 350nm – 1100nm 0.9um – 2.6um 2.5um – 5.0m
Operating Temperature	0. 32 Kg		
USB/+5V Current Drawer	250mA Max 150mA Typ.	Operating System Support for RTGOM FREE/Included Applications	Windows 7,8,10
Connectivity	USB 2.0, RS485, 4-20mA, 0-4VDC		
Dynamic Range	7+ Decades 50pA to 1ma	Programming support available on any OS supporting FTDI USB Serial or RS232/422/RS485, including WinCE and other embedded designs. Contact L&M for MIT-License sample source code.	

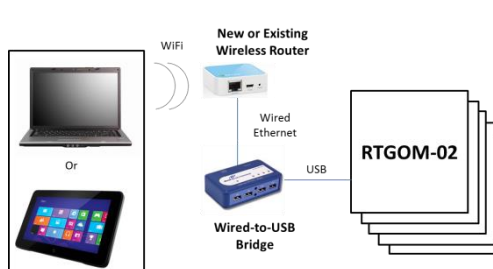
RTGOM-02 Design Versatility



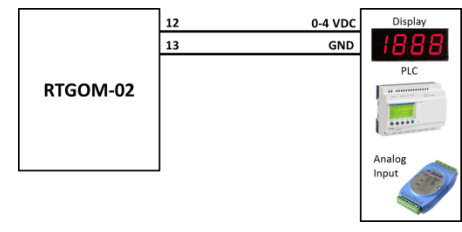
USB Connectivity



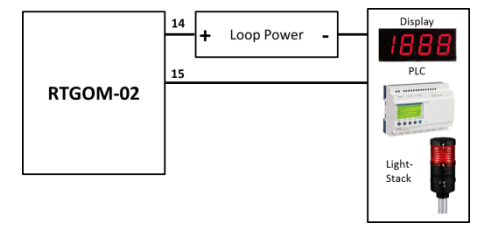
RS485 Connectivity



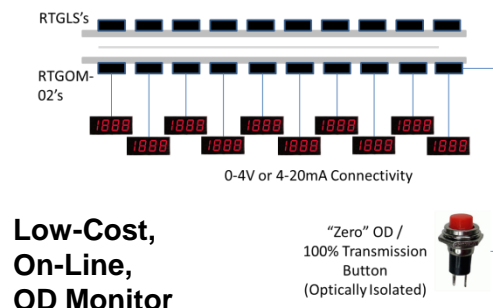
WiFi Connectivity



0-4VDC Connectivity



4-20mA Connectivity



Low-Cost, On-Line, OD Monitor

Model Number: RTGOM-02

RTGOM-02-GaP, RTGOM-02-Si

RTGOM-02-InGaAs, RTGOM-02-InAsSb

MTOMK-02 (RTGOM-02-Si + RTGLS-Ar01 Kit)

*Custom photodiode and optic-attachment designs available based on minimum order quantity and/or NRE fees



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