K50R R-GAGE® Radar Sensor

Quick Start Guide

Radar-Based Sensors for Detection and Measurement of Moving and Stationary Targets. Patent pending.

This guide is designed to help you set up and install the R-GAGE K50R sensor. For complete information on programming, performance, troubleshooting, dimensions, and accessories, please refer to the Product Manual at www.bannerengineering.com. Search for part number 226219 to view the Product Manual. Use of this document assumes familiarity with pertinent industry standards and practices.

WARNING:
- **Do not use this device for personnel protection**
- Using this device for personnel protection could result in serious injury or death.
- This device does not include the self-checking redundant circuitry necessary to allow its use in personnel safety applications. A device failure or malfunction can cause either an energized (on) or de-energized (off) output condition.

WARNING:
- **N'utilisez pas ce dispositif pour la protection du personnel.**
- L'utilisation de ce dispositif pour la protection du personnel pourrait entraîner des blessures graves ou mortelles.
- Ce dispositif n'est pas équipé du circuit redondant d'autodiagnostic nécessaire pour être utilisé dans des applications de protection du personnel. Une panne ou un dysfonctionnement du dispositif peut entraîner l'activation ou la désactivation de la sortie.

WARNING:
- **Verwenden Sie dieses Gerät nicht zum Schutz des Personals**
- Die Verwendung dieses Geräts zum Schutz des Personals kann zu schweren Verletzungen oder zum Tod führen.
- Dieses Gerät verfügt nicht über die selbstüberwachenden redundanten Schaltungen, die für Personenschutz-Anwendungen erforderlich sind. Ein Geräteausfall oder Defekt kann zu unvorhersehbarem Schaltverhalten des Ausgangs führen.

IMPORTANT: To satisfy RF exposure requirements, this device and its antenna must operate with a separation distance of at least 20 cm from all persons.

Features and Indicators

K50R Standard—Features

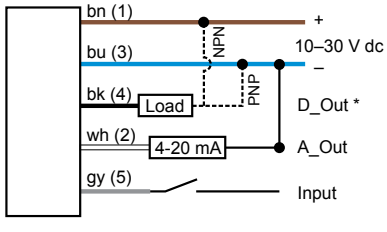


	LED	Color	Description
1	Output 1	Amber	Discrete output status
2	Power/Signal Strength	Green or Blue	Power ON and signal strength indication
3	Output 2	Amber	Discrete output status

Wiring

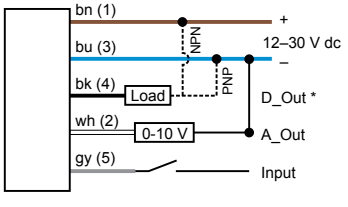
Quick disconnect wiring diagrams are functionally identical.

Push-pull Output and Analog Current Output



* Push-Pull output. User-configurable PNP/NPN setting.

Push-pull Output and Analog Voltage Output



* Push-Pull output. User-configurable PNP/NPN setting.

Continued on page 2

Original Instructions
28-Mar-25

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p/n: 226218 Rev. F

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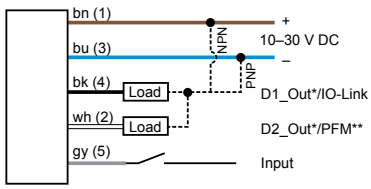
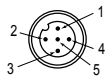
Dual Discrete Output



* Push-Pull output. User-configurable PNP/NPN setting.
** Pulse Frequency Modulation

Key:
1 = Brown
2 = White
3 = Blue
4 = Black
5 = Gray (Connect for use with remote input or Banner Radar Configuration software)



NOTE: IO-Link is for IO-Link Models only.

Banner Measurement Sensor Software

Use the Banner Measurement Sensor software to:

- Quickly configure the sensor
- Easily monitor device status via the software
- Visualize the application in real-time
- Make adjustments to sensor settings on the fly

For more information, visit www.bannerengineering.com/us/en/products/sensors/software/banner-measurement-sensor-software.html.

Specifications

For additional specifications, see the Instruction Manual, p/n 226219.

Range

The sensor can detect an object at the following ranges, depending on the material of the target.

K50Rxx-8060 Models:
Standard Mode: 0.1 m to 2.5 m (3.9 in to 8.2 ft)
Faster Response: 0.15 m to 1.0 m (6.0 in to 3.3 ft)
High Power Mode: 0.5 m to 3.0 m (19.7 in to 9.8 ft)

K50Rxx-4030 Models
0.05 m to 5.0 m (2 in to 16.4 ft)

Supply Voltage (Vcc)

Analog Voltage models: 12 V DC to 30 V DC

Analog Current and Dual Discrete models: 10 V DC to 30 V DC

Use only with a suitable Class 2 power supply (UL) or Limited Power Supply (CE)

Power and Current Consumption, exclusive of load

Standard models:
Power consumption: <1.0 W
Current consumption: <35 mA at 24 V

Pro models:
Power consumption: <1.5 W
Current consumption: <55 mA at 24 V

Operating Temperature

Standard models: –40 °C to +60 °C (–40 °F to +140 °F)

Pro models: –40 °C to +50 °C (–40 °F to +122 °F)

Telecom Approved

K50Rxx-8060 models: US, Canada, Europe, UK, Australia/New Zealand, and Taiwan

K50Rxx-4030 models: US, Europe, UK

Certifications

LISTED

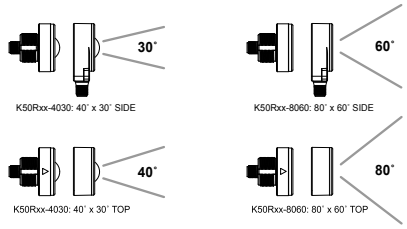
Meets IEC 61010-1 Impact Code IK07

Banner Engineering BV
Park Lane, Culliganlaan 2F bus 3
1831 Diegem, BELGIUM

Turck Banner LTD Blenheim House
Blenheim Court
Wickford, Essex SS11 8YT
GREAT BRITAIN

K50Rxx-8060 models: Contains FCC ID: 2AQ6KA1001
K50Rxx-4030 models: Contains FCC ID: 2AQ6KA1201
K50Rxx-8060 models: Contains IC: 24388-A111

Representative Beam Pattern



Refer to beam pattern charts in product manual for typical beam patterns on representative targets

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