

Ranger Pro Wireless Gateway

Datasheet

Bently Nevada Machinery Condition Monitoring

157M8584 Rev. B



154M7484-01-01

Description

Bently Nevada's Ranger Pro Wireless Gateway is a wireless network access device that is engineered for quick installation and setup to communicate with Ranger Pro ISA100 sensors.

The Ranger Pro Wireless Gateway complies with the ISA100 international, industrial standard.

The Ranger Pro Wireless Gateway is an integrated RF access point and gateway that manages all aspects of ISA 100 network and provides the conversion between wireless and Ethernet networks. It hosts the relevant routing, system management, security management and gateway functions in a compact rugged enclosure suitable for outdoors and harsh environments with effortless deployment.

System Features

A typical wireless network uses one or more Ranger Pro Wireless Gateway devices to connect to wireless field devices.

Features include:

- Seamless Integration with System 1 Condition Monitoring Software
- Features include RF access and network gateway.
- Power-over-Ethernet to reduce cabling
- Rugged IP66/67 rated housing for outdoor mounting.
- Web configuration Interface
- Modbus interface to monitor systems
- Various accessories are available to aid with the installation and maintenance of Ranger Pro Wireless Gateway devices.



Compliance and Certifications

This device complies with part 15 of the FCC Rules. Operation is subject to the following two conditions:

1. This device may not cause harmful interference.
2. This device must accept any interference received, including interference that may cause undesired operation.

EMC conformity standards	ETSI EN 301 489-1, EN 55032, CISPR32
	ETSI EN 301 489-17
	EN 61326-1, EN 55011, CISPR11
Radio Spectrum	EN 300 328
	FCC Part 15.247 Subparts b and c
Safety	IEC 61010-1
	IEC 62311
Conformity	Compliant with all CE and FCC/IC requirements
RoHS	Compliant
Valid for RangerPro Gateway P/N	154M7484-01-01

Hazardous Area Approvals

WARNING

HAZARDOUS ENVIRONMENT

Risk of explosive atmosphere.

Avoid electrostatic potential, especially on plastic components. Adapters, isolation valves, or sealing rings that are not compatible with process gasses will corrode and fail. This failure may result in gas leaks, fire, explosion, or projectiles.

De-energize all devices before placement or removal. To prevent corrosion and failure, verify that all components are compatible. Verify that hazardous materials, atmospheres, and conditions have been removed or that relevant risk mitigation measures have been implemented.

North America (US and Canada)	Class I, Zone 2, AEx ec IIC T4, Ex ec IIC T4
	Class II, Zone 22, AEx tc IIIC T135°C, Ex tc IIIC T135°C
IECEX	Class I, Div. 2, Grp A, B, C, D T4 Class II, Div. 2, Grp G, F T135°C
	TAmb = -40°C to +70°C
ATEX	Ex ec IIC T4 Gc Ex tc IIIC T135°C Dc
	II 3G Ex e IIC T4 Gc II 3D Ex t IIIC T135°C Dc

Specifications

Wireless

Network standards	ISA100.11a
Radio standard	IEEE 802.15.4
Radio frequency	2.45 GHz ISM band
Encryption/Security	128-bit AES encrypted packets
Output power (peak)	< 10 dBm
Max RF output power	4 mW/MHz
Antenna connector	N-Type, Female, 50 Ω
Ranger Pro Device Capacity	50 ISA 100 Ranger Pro Devices (Includes up to 15 I/O Router Devices)

Ethernet

Physical	Ethernet 10BASE-T and 100BASE-TX Auto-MDIX
Connector type	RJ45
Protocols	ISA100.11a GCMODBUS TCP
Cable type	CAT5 or better

Power Supply*

External supply	20-57 Vdc
External supply connector	M12 4-pin A-coded female connector
PoE supply	IEEE 802.3af/at Type 1 Mode B (Midspan) compliant PSE
PoE supply connector	RJ45 socket connector
Maximum Power consumption	4 W

* The user can elect to use both the PoE and External power supply options concurrently.

RTC Backup Battery

Type	CR2032X 220mAH Manganese Dioxide Lithium Coin Battery
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Operating Conditions

Operating temperature	-40°C to 70°C (-40°F to 158°F) (Operating at extreme temperatures or beyond may damage the device)
Humidity	5 to 95 % (noncondensing)
Altitude	Maximum 3,000 m (9,842 ft.) outdoors

Physical

Weight	1.65 kg (3.64 lb)
Dimensions	202 x 165 x 66 mm (7.95 x 6.50 x 2.60 in)
Case material	Powder coated, anodised aluminum
Mounting	Pole or surface mount using supplied accessories
IP Rating	IP64 IP66/67



County/region specific approvals are not listed. Contact your local Bently Nevada sales representative for details.

Ordering Information



For the detailed listing of country and product specific approvals, refer to the *Approvals Quick Reference Guide* (108M1756) available from Bently.com.

Ranger Pro Gateway ISA100

70M320 – AA-BB-CC-DD-EE-FF

Description: Ranger Pro ISA 100 Gateway

A: Power Supply Option

00	None
01	Industrial POE
02	24 Vdc
03	24 Vdc & Industrial POE

B: Antenna Option

01	2 dBi
02	6 dBi

C: Power and Reset Cable Option

00	None
05	5 m (16 ft)
10	10 m (32 ft)
20	20 m (65 ft)

D: RF Extension Cable Option*

00	None
02	2 m (6 ft)
04	4 m (13 ft)
10	10 m (32 ft)

E: Accessory Options

00	None
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01	Lightning Arrester†
02	Field-Installable Connector (for Power-Reset Cable only)
03	Lightning Arrester & Field-Installable Connector†

F: Agency Approvals

01	North America CII Div2
02	ATEX/IECEx Zone 22

* RF antenna extension cables will attenuate signals. Use the shortest length for the application. Additionally, the extension cable application is dependent on the installation area and local regulations. Please consult with Bently Nevada prior to ordering.

† Application is dependent on installation topology and local regulations. Please consult with Bently Nevada prior to ordering.


Accessories

Use the following part numbers to order spare parts and accessibility for the Ranger Pro Gateway.

Product or Document	Item
147M0794	2 dBi Omnidirectional Antenna
147M0795	6 dBi Omnidirectional Antenna
147M0796*	Lightning Arrester
147M0800	Cable - Power + Reset (5 m)
147M0801	Cable - Power + Reset (10 m)
147M0802	Cable - Power + Reset (20 m)
151M0471	Field installable A-Coded Connector for Power and Reset Cable
154M1343	RJ45 Connector Gland
151M1117	PoE Injector (industrial use)
151M0474†	RF Extension Cable (2 m)
151M0473†	RF Extension Cable (4 m)
151M0475†	RF Extension Cable (10 m)

* Application is dependent on installation topology and local regulations. Please consult with Bently Nevada prior to ordering.

† RF antenna extension cables will attenuate signals. Use the shortest length for the application. Additionally, the extension cable application is dependent on the installation area and local regulations. Please consult with Bently Nevada prior to ordering.

Catalog Order Number (1)	Part Number	Figure
70M320-XX-XX-XX-XX-XX-XX	154M7484-01-01	 <p data-bbox="649 1701 1380 1774">Figure 1: Ranger Pro Gateway 154M7484-01-01 Views Front (Top), Left Side (Middle), Right Side (Bottom)</p>

Drawings and Figures

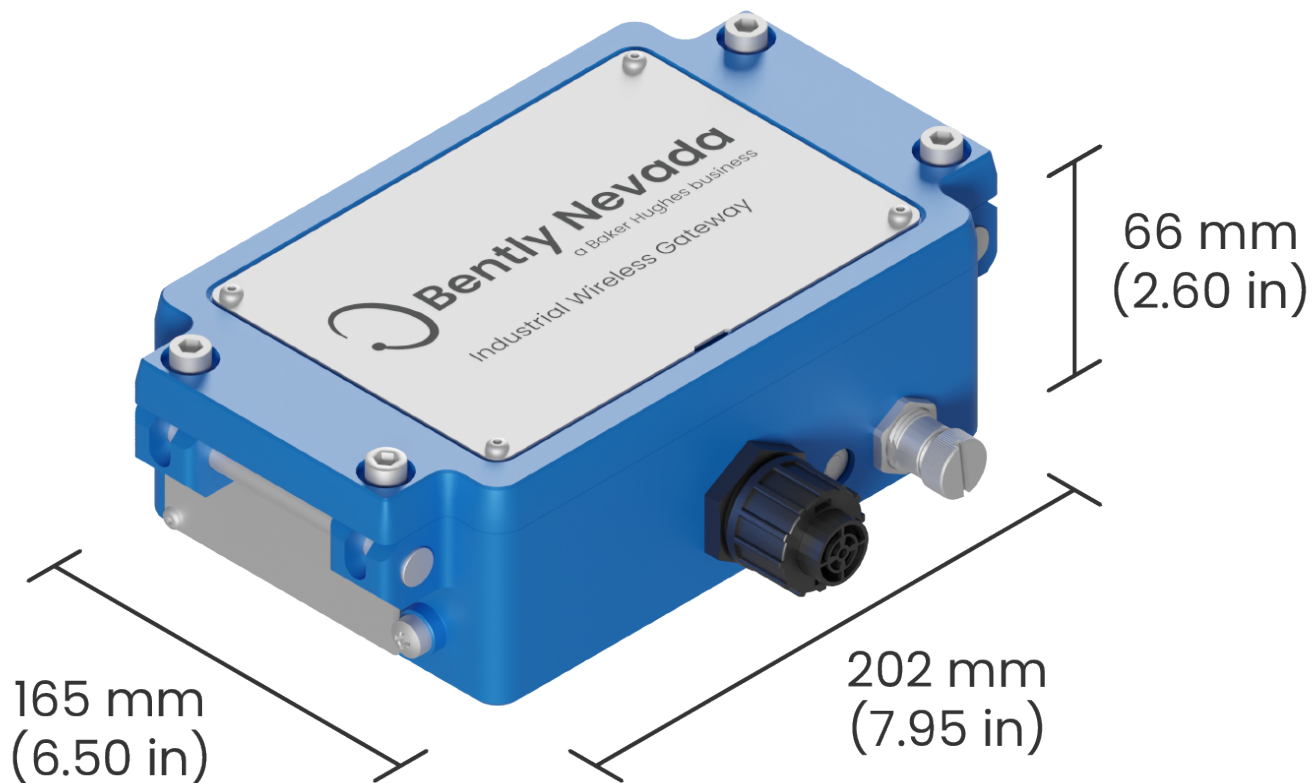


Figure 1: Ranger Pro Wireless Gateway Catalog Number 70M320

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