

## RI-EC-PRO Series



### 16 or 128 Device Communication Gateway - GSM or GSM + Ethernet

- Compact size - 2 module (35mm width) DIN Rail mounting
- Connect up to 16 x Modbus devices - RI-EC16-PRO  
Connect up to 128 x Modbus devices - RI-EC128-PRO
- 4G LTE Cat M1 (with 2G fallback)
- Ethernet TCP Connection (RI-EC128-PRO)
- RS485 Modbus RTU Master
- 1 x Relay output (230VAC/24VDC, 10A)
- 5VDC/1.5A Auxiliary Supply
- Quad band 850, 900, 1800, 1900MHz (RED Certified)
- Optional external 1.5m, 3m or 5m extension antenna (SMA)
- USB-C port for diagnostics and firmware update
- XVM programmable action engine

### Product Description

The RI-EC-PRO Series are robust and easy to use DIN rail mounted data acquisition communication and control gateways. The RI-EC-PRO Series are part of a growing family of gateway devices designed to be used with the **rayleighconnect™** cloud based software platform.

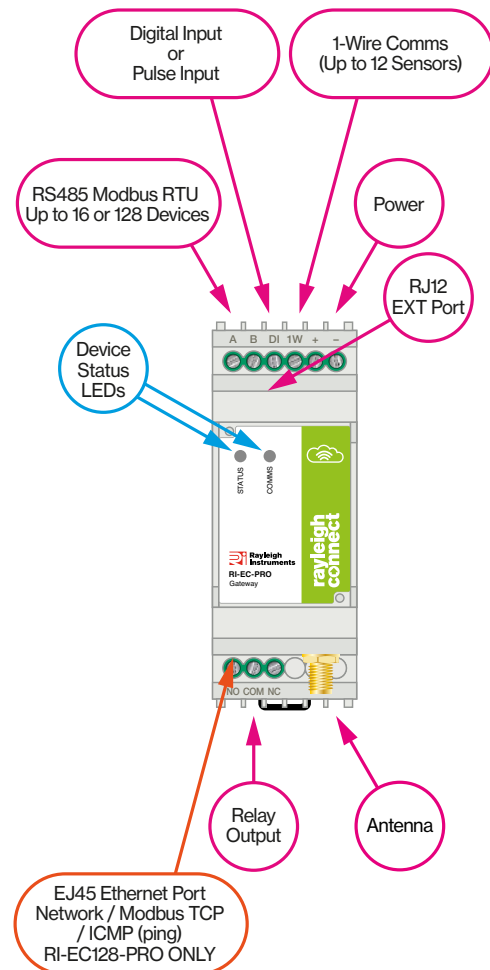
Two versions are available:-

**RI-EC16-PRO** RS485 Modbus RTU for up to 16 devices and 1MB (100,000 data points) non volatile Backup Memory

**RI-EC128-PRO** RS485 Modbus RTU and Ethernet\* for up to 128 devices and 16MB (2 Million data points) non volatile Backup Memory

Data from the RI-EC-PRO devices is encrypted and securely transmitted via 4G LTE Cat M1 or Ethernet\* to the **rayleighconnect™** cloud software platform. Both versions have a backup capability to store the data should there be an interruption in communication.

\* RI-EC-128-PRO only



## Display

Display Type	2 x LEDs	
LED indicators	<b>STATUS LED</b>	GREEN slow flashing light = Connected to the cloud system. GREEN fast flashing light = Started /restarted within last 10 seconds. YELLOW light = Not connected to the cloud system. RED light Used only in recovery mode.
	<b>COMMS LED</b>	GREEN solid light = Connected to network, PDP context active. YELLOW solid light = PDP context inactive, check APN configuration. RED solid = Usually indicates a SIM issue (e.g. no SIM detected)

## Connection (RI-EC128-PRO ONLY)

Ethernet	10/100Mbps (10 Base T/100 Base TX)
IP address	DHCP (Default) or Static
Modbus (RTU)	RS485
Modbus (TCP)	RJ45

## Input

Antenna (Type SMA Male)	5dBi - Standard Version (High-gain antenna available)
Quadband	850/900/1800/1900 MHz
SIM card type	Micro SIM - 3FF

## Auxiliary Supply

Voltage range	5VDC/1.5A
Operating frequency	47...50...63Hz
Power consumption	<18VA

## Outputs

Communication type	RS485
Communication protocol	Modbus
Address	1...255
Number of bits	8bits (default) or 7bits
Stop bits	1bits (default) or 2bits
Parity	None (default), odd, even
Baud rate	2400, 4800, 9600 (default), 19200, 38400, 57600, 115200
Required response time to request	≤100ms
Number of Modbus devices connected on the bus	Up to 16 with RI-EC16-PRO Up to 128 with RI-EC128-PRO (Note: requires a booster every 31 devices)
Max distance from Master device	1200M (longer with booster)
Relay Output	230VAC/24VDC (10A)

## Insulation

Installation category	III
Pollution degree	2
Insulation voltage rating	300V L-N

**Environmental Conditions**

Reference temperature	23°C
Specified temperature operating range	-10°C...+55°C
Storage temperature	-20°C...+70°C
Relative humidity	0...85%, non condensing

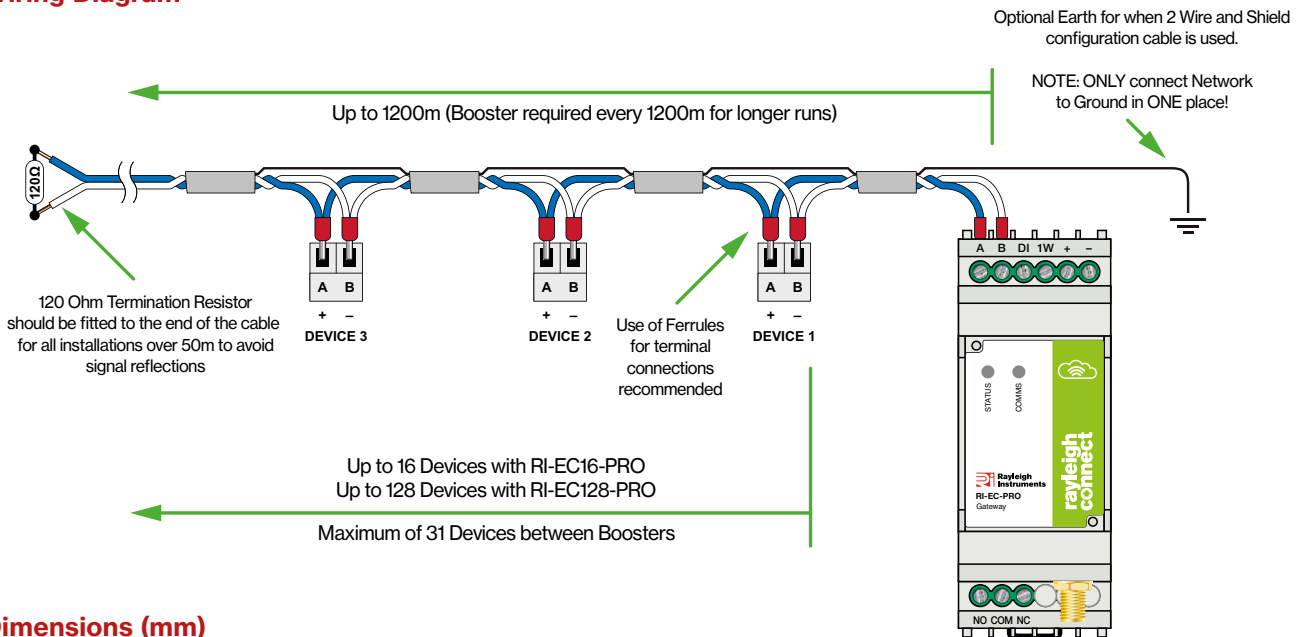
**Mechanical**

Housing	2 module DIN 43880
Mounting	Snap-on 35mm DIN rail
Housing material	Self-extinguishing polycarbonate (UL94 V-0)
Weight	<116g

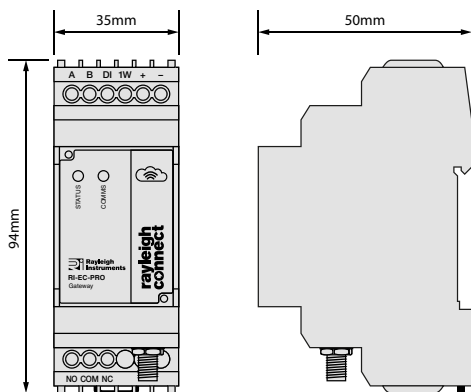
**Conformity**

Electromagnetic compatibility	IEC/EN55032, IEC/EN55016-2-3 Class B, IEC/EN61000-4-2, IEC/EN61000-4-3, IEC/EN61000-4-4, IEC/EN61000-4-5, IEC/EN61000-4-6, IEC/EN61000-4-11
Safety	IEC/EN61010
Radio Equipment Directive (RED)	Yes (Directive 2014/53/EU)

**Wiring Diagram**



**Dimensions (mm)**



**Model Selection Table**

Communications	Model
GSM Gateway - Connect up to 16 Modbus RTU devices	RI-EC16-PRO
GSM + Ethernet Gateway - Connect up to 128 Modbus RTU devices	RI-EC128-PRO