

**Remotely monitor,
collect data and control
from anywhere in the world!**

**Rayleigh
Instruments
NEWS**

rayleighconnect™



**Software solutions
tailor made for you!**



Telephone : 01245 428556

Email : rayleighconnect@rayleigh.com

www.rayleigh.com

rayleighconnect™

So what is it?

The **rayleighconnect™** energy management solution is a cloud based metering software package that allows you to record data from one, up to an 'infinite' number of meters or other inputs. It can be used to monitor Electricity, gas, water and heat meters, in fact anything that has a Modbus or pulse output. Communication with the **rayleighconnect™** software is via GPRS, or Ethernet.

Access to the software functions can be via any terminal (PC, iPad, smart phone etc.) that has access to the internet, from anywhere in the world. Applications are available for iPhone*, iPad*, and Android devices.

A particular feature of the program is that pages can be laid out in a way that best suits the user. You simply drag and drop widgets to the

desired position on the page to create your own dashboard.

The software can be configured to measure just one piece of information from a meter, such as energy consumption. This is typically from meters with pulse outputs. For devices such as multifunction energy meters, any parameter that the meter reads can be displayed and recorded by the software.

Automated energy billing.

Remote monitoring and control.

Asset management and tracking.

Available in multiple languages.

Fully customizable.

Meters from any manufacturer may be connected, providing the meter has a pulse or RS485 Modbus RTU compatible output.

Because the system is cloud based there are no up-front charges for buying software. You simply pay a very small annual charge for the data hosting, website access and maintenance, which is related to the number of meters to be monitored ■



Customisable screens with 'snap where you want' widgets

How does it work?

rayleighconnect™ has 2 ways in which it sends the data to the cloud.

GSM SIM Card Option

Choosing the GSM SIM option is best for installations where there are no internet ports in that part of the building or on sites where there is no internet connection the cost of laying the cables for internet connection along with the labour as well means it can be more cost effective to use the GSM range of gateways. Another thing to bear in mind is the buildings internet security if the building has high internet security then sometimes the GSM is the best option.



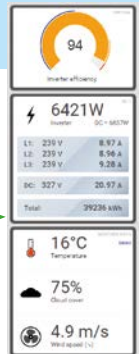
Ethernet Connection Option

Ethernet connection is the preferred choice on sites where there is easy access to local network, this option is generally more cost effective as this solution does not require SIM cards the needs for a SIM card.

Ethernet is also the preferred solutions when installing rayleighconnect™ in areas where there is poor GSM signal.



rayleighconnect™ will communicate with anything that has RS485Modbus or a pulse output as long as we can obtain the Modbus addresses we can communicate with it. The data is then sent to the cloud where it can be viewed, monitored and recorded from anywhere in the world via rayleighconnect.net software.





Making the most of your data

Monitoring and metering gives you the crucial information about how your building is performing. This can give vital information for improvements that can be made to reduce energy usage and your carbon emissions. For example an effective metering and monitoring system is the best way for tenants, property managers and owners to get involved in energy-efficiency measures.

In a single-operator or occupied building the introduction of a **rayleighconnect**™ metering and monitoring system can bring immediate energy savings of around 10% and can also help reduce energy costs.

The main thing driving businesses and corporations to metering and monitoring is Part L of the Building Regulations. The government has set its standards higher than ever before for energy management in both domestic and commercial buildings. Because of this the process of designing a building and making sure it complies with the Part L will become harder to achieve. Part L means that 90% of the estimated annual energy consumption should be put into categories (heating, lighting etc.)

To give you an idea, energy meters must be installed in commercial buildings that are non-dwelling ensuring that at least 90% of the energy use is

calculated by its category. For example lighting, heating etc. In buildings with a greater used floor area of 1000m. The metering system should ideally have automatic reading and data collection.

Rayleigh Instruments Limited has developed the answer for this called **rayleighconnect**™. This system will obtain the information by communicating with the meter either through its Pulse output or Modbus RS485 communication. **rayleighconnect**™ has software-based solutions and gateways that push data from the various metering devices to a single accessible platform. This enables you to then analyse exactly where the energy consumption is being used most. **rayleighconnect**™ provides the necessary data to help determine where to focus and develop energy saving initiatives.

The monitoring and metering of energy usage has become an increasingly important part of building management, with estate managers and facilities managers seeing building management systems play an essential role in how they operate their buildings. **rayleighconnect**™ software automatically monitors and collects data from trends in energy and equipment use, identifies faults and sends alerts when necessary. It will also provide root-cause analysis and prioritise opportunities for improvement. **rayleighconnect**™ data analytics software takes the additional step of interpreting the data showing not just where but why inefficiencies occur.

***“the crucial information
about how your
building is performing”***



The combination of the correct data and expert engineering insight can help buildings and services.

Better understand how their buildings are performing.

Maximise the return on building management and metering investments.

Reduce outsourced vendor management and costs.

The objective of **rayleighconnect™** is to help building managers reduce carbon emissions and make energy savings with its remote monitoring, metering and software solutions. 2016 is focused on energy measurement and monitoring; as a way of identifying and validating success, it is imperative to have the correct tools.

This is why Rayleigh Instruments Ltd has developed **rayleighconnect™** the most advanced energy intelligent technology. **rayleighconnect™**

monitoring is now used in commercial buildings, universities, hospitals, schools, temporary site services, generators and control panels all over the world for their metering and software systems that monitor, record and report energy use in order to protect industries from cost, high energy usage and maximise efficiencies.

rayleighconnect™ helps companies and staff to respond quickly to potential problems by sending alerts directly to them by SMS Text or Email. **rayleighconnect™** can have a real impact on energy consumption, operational efficiency and savings in buildings.

The right solution will help companies; landlords and facilities managers achieve lower energy use and lower their carbon footprint ■

GPRS (GSM)

EC10 / EC15



- 18mm Wide Din Rail Mounting
- RS-485 to GPRS (GSM)
- EC10 supports 1 device
EC15 supports up to 8 devices
- Mini SIM slot
- Comes complete with 5V DC power pack
- List Price : EC10 - £140.00
List Price : EC15 - £180.00
- **SIM subscription required**

GPRS (GSM)

EC30 / EC35



- 3 Module Din Rail Mounting
- RS-485 to GPRS
- 2 digital inputs
- EC35 only - 2 analogue inputs (0-10 VDC)
- 2 outputs relays (NO/COM/NC)
- EC30 supports up to 16 devices
EC35 supports up to 128 devices
- 1-Wire bus
(for temperature probes and I/O expanders)
- Mini SIM Slot
- Optional GPS
- Comes complete with 5V DC power pack
- List Price : EC30 - £202.29
List Price : EC35 - £363.74
- **SIM subscription required**

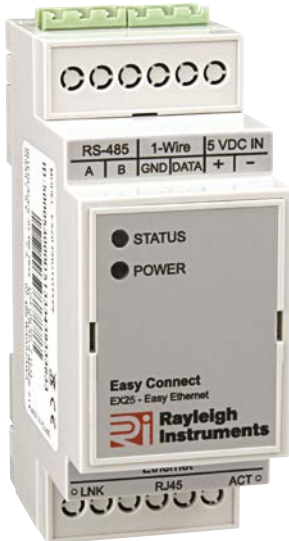
ETHERNET



EX20

- 2 Module Din Rail Mounting
- RS-485 to Ethernet
- Supports up to 16 modbus devices
- 1-Wire bus
(for temperature probes and I/O expanders)
- 10/100 Ethernet
- Comes with 1 module 5V power pack
- 8 MB flash memory built in
- List Price : £252.99*
- *SIM subscription **NOT** required with this model*

ETHERNET



EX25

- 2 Module Din Rail Mounting
- RS-485 to Ethernet
- Supports up to 128 modbus devices
- 1-Wire bus
(for temperature probes and I/O expanders)
- 10/100 Ethernet
- Comes with 1 module 5V power pack
- 64 MB flash memory built in
- List Price : £337.95*
- *SIM subscription **NOT** required with this model*

* Prices correct at time of print. Please check current prices at time of order.

RADIO

EXR-M2K / EXR-S2K



- Radio Transmission
- 2 Kilometre range
- 18mm Wide Din Rail Mounting
- Wireless Modbus / RS485
- EXR-M2K - Master / EXR-S2K - Slave
- Up to 128 slaves per master
- Comes complete with 5V DC power pack
- List Price : EXR-M2K - £99.46
List Price : EXR-S2K - £93.50
- *SIM subscription **NOT** required with this model*

RADIO

EXR-M10K / EXR-S10K



- Radio Transmission
- 10 Kilometre range
- 18mm Wide Din Rail Mounting
- Wireless Modbus / RS485
- EXR-M10K - Master / EXR-S10K - Slave
- Up to 128 slaves per master
- Comes complete with 5V DC power pack
- List Price : EXR-M10K - £tba
List Price : EXR-S10K - £tba
- *SIM subscription **NOT** required with this model*

Data Pricing

1. Web Hosting £24.00*/Year



Minimum Hosting Term - 24 Months

A Web Hosting account is required to view the data from your rayleighconnect gateways - multiple devices can be added to a single web account.

2. Device Bundle

Devices	Device Subscription	Cost*
1	12 months	£20.00
2 - 4	12 months	£40.00
5 - 16	12 months	£60.00
17 - 32	12 months	£80.00
33 - 64	12 months	£160.00
65 - 96	12 months	£240.00
97 - 128	12 months	£288.00
129 - 256	12 months	£576.00
257 - 512	12 months	£1024.00

Minimum Device Subscription - 24 Months

3. SIM Tariffs

Other SIM subscription packages available - call for details.

UK Open Roaming SIM - Uses any available Network				
Note - ONLY required on GPRS (GSM) gateways				
Data/Month	SIM Included	Devices Monitored	Period	Cost
1Mb	Yes	1 (EC10 Only)	12 months	£6.12
5Mb	Yes	3	12 months	£17.00
10Mb	Yes	6	12 months	£21.80
20Mb	Yes	12	12 months	£33.00
50Mb	Yes	30	12 months	£43.80
100Mb	Yes	62	12 months	£74.60

Minimum SIM and Data Subscription - 24 Months

* Prices correct at time of print. Please check current prices at time of order. Discounts may be available - call for details.

Note: All prices shown are for our base package. Software upgrades are available. Standard device subscriptions and SIM packages include basic monitoring functions. In the case of a multifunction meter these are kWh, kVa, Amps, Power Factor and Voltage. Advanced features can be added but additional costs may apply. Advanced features include: Data Export Module, Tariffs, Tariff and Billing Reports, Map Module and Location Setting, Weather Information, Advanced Actions (virtual outputs), Pie Charts, Interconnect, Virtual Sensors ext limit (10 and 20 per device).

ETHERNET - Pricing Example		
Hosting and Device Bundle over 12 Months		
This example is based on the EX20 monitoring 12 meters		
First choose your Gateway (1 off purchase)	1x EX20	£252.99 1 OFF
1. Now add your Web Hosting	12 Months	£24.00 ANNUAL
2. Now choose your Device Bundle	5-16 devices	£60.00 ANNUAL
Total List Price - First Year		£336.99
Total List Price - Annually after First Year		£84.00

GPRS (GSM) - Pricing Example		
Hosting, SIM Tariff and Device Bundle over 12 Months		
This example is based on the EC30 monitoring 12 meters		
First choose your Gateway (1 off purchase)	1x EC30	£202.29 1 OFF
1. Now add your Web Hosting	12 Months	£24.00 ANNUAL
2. Now choose your Device Bundle	5-16 devices	£60.00 ANNUAL
3. Now add your SIM Tariff **	1x 20Mb/Month SIM Card	£32.00 ANNUAL
Total List Price - First Year		£318.29
Total List Price - Annually after First Year		£116.00

** SIM Tariffs calculated on each meter requiring 1.6Mb of data/month

**ONLY EC10, EC15,
EC30 and EC35
gateways require
SIM cards**



rayleighconnect™

Automated Billing

rayleighconnect™ allows Landlords and building owners to automatically generate bills for all their tenants utilities. This could result in additional income for the Landlords which might not have been considered.

The rayleighconnect™ billing templates can be tailor made to suit any Landlord requirements. The templates enable you to easily insert header and footer content. The rayleighconnect™ billing platform also provides useful information on the bill, such as the day the tenant consumed the most and least amounts of energy as well as how the tenant compares with the previous month ■

"rayleighconnect are our prime offer each and every time we require a remote management and monitoring system. This is due to the flexibility, reliability and the exceptional customer service offered by each and every one of the rayleighconnect team!"

**Dale Turnbull-Managing Director-
Knight Electrical Switchgear Ltd**





rayleighconnect™

Landlords, Commercial and Residential

rayleighconnect™ is the ideal companion for landlords both on a commercial scale to residential lettings. It gives the landlord remote access to what is going on in their buildings by monitoring all the energy behaviour. If the meters are pulse or RS485 **rayleighconnect™** can send the landlords meter readings as well as alerts i.e. water, gas or electricity wastage. If the meters are MID approved **rayleighconnect™** can be used for automated billing purposes. This gives the landlord the ability to accurately bill tenants for their individual usages.

- Monitor energy behaviour
- Prevents energy wastage
- Remotely read meters
- Create remote bills

*Book your FREE site survey
Call Today on: 01245 428556
or email us at:-
rayleighconnect@rayleigh.co.uk*

rayleighconnect™

Generators



rayleighconnect™ is the perfect partner to communicate remotely with your generator. The system can talk to your existing control panel regardless of manufacturer as long as it has RS232-RS485 Modbus, meaning you can control and monitor your generator from anywhere in the world. It will monitor and send alerts remotely.

- Auto Start/Stop
- Check fuel levels
- Turn system on/off
- Monitor engine speed
- Check engine oil temperature
- Engine load current
- Engine oil pressure
- Fuel temperature
- Engine coolant temperature
- Throttle position
- Boost pressure
- Manifold temperature
- Battery voltage



rayleighconnect™

Renewables

Did you know rayleighconnect™ can talk directly to your inverters. rayleighconnect™ is verified with all Sunspec Alliance Members which means that all brands of inverter function with rayleighconnect™. It will also talk directly with the generation export and import meters if they have a pulse or RS485 protocol.

"Know within seconds if your inverter goes down"

We can set up individual alerts so that you can get an email or SMS text message immediately if the solar inverter has any issue including a decrease in efficiency.

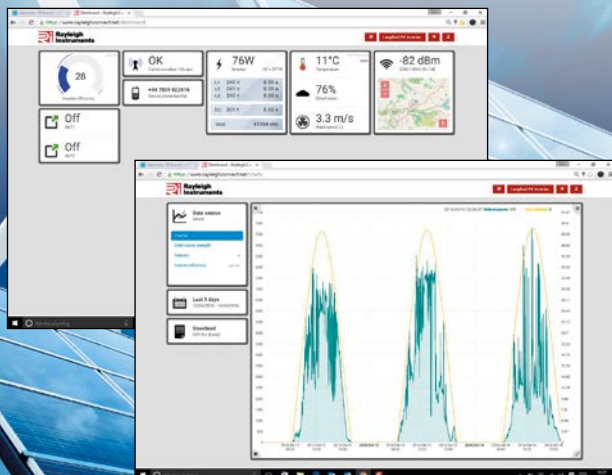
rayleighconnect™ will also communicate with the controllers of:

• Wind Turbines • Hydro • CHP • Biomass • Heat-pumps

As long as the controller has RS232-RS485 Modbus and we can obtain the address we can communicate.

Get your meter readings remotely live, whenever you need them.

With rayleighconnect™ you can get your meter readings remotely; this is invaluable to clients that have multiple installations i.e. housing associations, landlords or large businesses and Solar/Wind farms. You can read them anytime even if you're not at the site ■





Temporary site services

rayleighconnect™ units have built in output relays which are ideal for the temporary distribution market. We are able, for example, to trip breakers when contractor staff exceed agreed load limits by utilising the output relays.

We are also able to use GPS (an optional extra) to track temporary distribution boards or gen sets within a designated geo fence. This again utilises output relays meaning designated personnel are sent details by SMS text or email when the gen-set/temporary board is moved without permission.

These features when used efficiently can enable users to save money on replacing lost or stolen equipment.

- **GPS track equipment**
- **Monitor energy usage in portable cabins**
- **Protect against exceeding load limits**
- **Get immediate alerts if portable cabins are opened outside of hours**
- **Monitor water for leaks or misuse remotely.**

Book your FREE site demonstration
Call Today on: 01245 428556
or email us at:-
rayleighconnect@rayleigh.co.uk





Industrial/Commercial

With **rayleighconnect™** you can combine multiple sites to bring all your data together on-line. This gives you ultimate control over your factory and warehouses wherever you are in the world.

Whether looking to reduce your energy consumption and protect your factory against damage **rayleighconnect™** gives you the tools necessary to remotely manage - from performance to access you have control.



In a busy working environment critical events can be missed or delayed. With **rayleighconnect™** you can set alarms for when thresholds are met and have instant emails or SMS text messages sent to designated personnel.

Continued investment into **rayleighconnect™** means innovative new ways to use the system are continually evolving. Wherever meters are used to display readings **rayleighconnect™** can be used to analyse and store the data ■



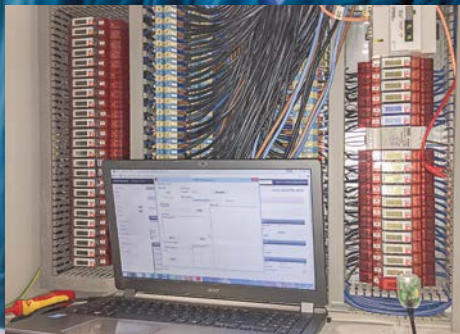
Schools and Universities

With the public sector continuously promoting and advertising the importance of reducing energy usage and making the planets resources more sustainable; Schools and Universities are playing a big part in monitoring and controlling their energy usage. **rayleighconnect™** has been installed within the educational sectors for monitoring as well as educational purposes.

The system has made a big impact on energy awareness with both staff and students and continues to be installed as more and more schools and Universities see the importance of reducing energy usage and monitoring their running costs.

"Both the affordability and personable customer service by rayleighconnect help make their product so valuable. The team is committed to providing tailor-made solutions that make the whole transaction feel less contractual and more cooperative."

**Chris Jones, Sustainability Manager
(Energy) @ Bristol University**

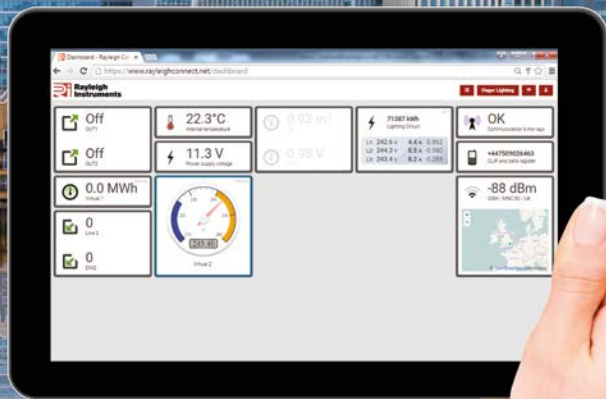


**Student
Accommodation
room meters in
Bristol University
being
commissioned for
monitoring.**



Building Management Systems

rayleighconnect™ monitors remotely your whole buildings energy usages and holds the data in the cloud so you can access the information anytime. Even historic data is kept so you can make comparisons on your energy for gas, electricity and water. Remote alerts can be set up to warn of discrepancies on the running of the building.



- Monitors electricity usage**
- Monitors gas usage**
- Monitors water usage**
- Collects data in the cloud**
- Shows graphs & charts to illustrate where energy is being used.**
- Keeps historical data**
- Can generate automated billing**



Single Phase Multi-Tariff Energy Meter



- Measures 4 TARIFFS' kWh/time.
- And Kvarh, KW, Kvar, KVA, PF, Hz, dmd, V, A, etc.
- Bi-directional measurement IMP & EXP
- Two pulse outputs
- RS485 Modbus/Mbus
- Din rail mounting 35mm
- 100A direct connection
- Better than Class 1 / B accuracy

RI-36-100-C

The RI-36-100-C is a MID Approved energy-meter designed for measuring and display of multiple parameters of single-phase energy consumption for use in residential and industrial applications.

The unit has a blue back-light LCD screen for perfect reading and provides a communication port for remote reading and monitoring.

Bi-directional energy measurement makes the unit a great choice for solar PV energy metering.

MID Certified Energy Meters

Just being MID compliant is not enough - for billing applications, all kWh/multifunction instruments **MUST** have MID Certification



The use of MID-certified electricity meters has been made mandatory on "private" electrical networks if there is active energy billing based on consumption.

Typical examples of use include: office buildings, camping sites, holiday rentals, student accommodation, shopping centres, marinas, exhibition halls, recharging systems for electric vehicles.

We manufacture and stock an extensive range of MID Certified energy meters - Call our Sales Team for details on 01245 428500



Mini Split Core Current Transformers

Designed for installations into existing plants where the fitting of standard current transformers would be impracticable

Did you know we do Miniature Split Core Current Transformer Sensors?

A range of miniature split core current transformers that offers a cost effective and efficient method by which the current can be measured without the need to break the conductor or for installation into existing plants where removal of busbar/cable lugs prevent installation of standard current transformers.



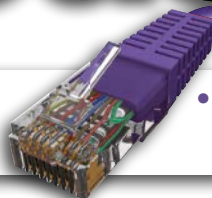
- Large clear displays
- Panel Mount or DIN Rail mounting models available
- Easy to programme
- Multifunction displays
- Standard installation or easywire® models available.

Multifunction Meters

Single Phase and Three Phase energy meters available for DIN rail and panel mounting

easywire®

Save Time, Save Money



• Proven • Safe • Reliable

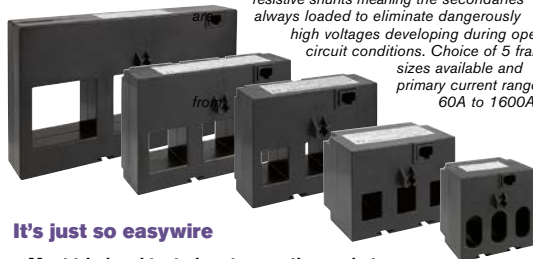
The original and market leading
plug & play metering system

Panel mounting or
DIN rail mounting
meters available



**" Labour savings of
around 90% are achieved
when compared to
traditional wiring methods "**

Easywire current transformers incorporate
resistive shunts meaning the secondaries
always loaded to eliminate dangerously
high voltages developing during open
circuit conditions. Choice of 5 frame
sizes available and
primary current ranges
60A to 1600A.

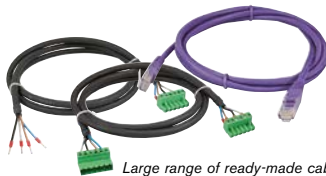


It's just so easywire

- Most tried and tested system on the market
- Proven design - tens of thousands successfully in service
- Increased safety - internal circuitry limits high voltage build up if current is disconnected under load
 - Widest range of current transformers
 - Widest range of meters



Our MRJ4M-SL DIN
rail mounted meter
boasts dual input
(double CT
connection)



Large range of ready-made cables
and accessories available.

Why Buy from Rayleigh Instruments?

- 50 Years successful trading (Est. 1964)
 - Full after sales support
- BSi Certified to ISO9001 since 1991
 - Extensive range in stock



**Rayleigh
Instruments**

• Quality Products • Great Prices

www.rayleigh.co.uk

For more information or to request a
brochure call our sales team now on

01245 428500



Measure monitor control

Your first choice supplier of control,
instrumentation and relay products

Solar PV Consumer Boxes

Protection Current Transformers

Timing Relays

Ammeters

Three Phase Current Transformers

Shaft Encoders

Analogue Instrumentation

Dimmers

Data Interfaces

Selector Switches

Multifunction Meters

easywire

Temperature Transmitters

DC Current

Panel Mounting Meters

Solar Generation Meters

Home Energy Monitors

Safety Switches

Split Core Current Transformers

Pressure Sensors

Frequency Meters

rayleighconnect

Latching Relays

Summation Current Transformers

Solar PV Monitors

Staircase Switches

Billing Meters

Safety Relays

Pulse Acquisition Modules

High Accuracy Current Transformers

Single Phase Current Transformers



Solar Inverters

Core Balanced Current Transformers

Hours Run Counters

MID Certified Energy Meters

DIN Rail Mounting Meters

Time Switch Clocks

Voltmeters

Pressure Transmitters

Digital Instrumentation

Twilight Switches

Synchronising Relays



Electrical Transducers

Why Buy from Rayleigh Instruments?

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- Extensive range in stock

MID Certified/Ofgem Energy Meters

Temperature Sensors



**Rayleigh
Instruments**

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