

Integrated RTU and 4G Cellular Modem for Remote Applications

Solution Note

Honeywell's RTU2020 is a versatile solution for today's remote applications. This powerful controller can be paired with our Cloud Link 4G Cellular Modem to help industrial operators better utilize key distributed production assets.

Across the global industrial sector, it is more important than ever to meet key operational, regulatory and safety objectives. In the oil & gas and water & wastewater industries, for example, there is a need for a flexible, secure platform to remotely monitor and control a wide range of crucial assets.

In recent years, microprocessor-controlled remote terminal units (RTUs) have evolved to help operating companies effectively deal with large distributed operations. Tightly integrated with supervisory control and data acquisition (SCADA) systems, modern RTUs provide new insights into the production potential of distributed assets through efficient remote monitoring, diagnostic and asset management capabilities.

Honeywell has a proven answer to today's remote applications. Our RTU2020 is a modular and scalable controller designed to meet the most rigorous remote automation and control requirements. Tightly integrated with our Cloud Link 4G Cellular Modem, it provides reliable wireless communication, high availability and on-demand access to remote data, as well as improved ease of use and maintenance, and a lower total cost of ownership.



FEATURES & BENEFITS

- Tightly integrated RTU and 4G modem
- Suitable for remote applications
- Exceptionally low power consumption
- Remote data transfer via wireless communication
- Cloud Link acts as a transparent modem
- Utilizes standard communication protocols to SCADA systems
- Robust diagnostic capabilities
- High availability
- Hazardous area certified
- Versatile data logging
- Easy to use and maintain
- Low total cost of ownership
- Single vendor solution for system components

Solution

Honeywell delivers a best-in-class solution with remote monitoring, diagnostics and asset management capabilities; inherent data logging; history backfill; remote management; and support for standard communication protocols for SCADA and other RTU systems. By utilizing the latest cellular communication technology, our RTU2020 optimizes monitoring of remote sites. This next generation RTU combines the I/O controller, cellular modem and data logger in one device to enhance distributed telemetric system monitoring and simplify the installation process.



Fig.1: Honeywell RTU2020 process controller.

By combining the RTU2020 process controller with Experion® PKS and its radically simplified SCADA configuration, end users can meet the most challenging remote automation requirements.

The RTU2020 features:

- Low power consumption
- Native controller redundancy
- HART-enabled onboard I/O and expansion I/O modules
- Onboard wireless I/O solution
- Built-in HART I/O and ISA100 field instrument integration
- Industry standard protocols of Modbus and DNP3
- Data logging to on-board memory or optionally on local SD card
- Hazardous area certified to FM/CSA Class I Division 2, IECEx Zone 2 and ATEX Zone 2

The Honeywell Cloud Link 4G Modem is a 4G/LTE cellular device intended to process serial data originating from any source, including a Honeywell electronic volume corrector or data logger. Designed for low-power applications and outdoor operation, it is a full-featured, easy to configure and troubleshoot wireless cellular modem. The unit is fully field-programmable and simple to use through its Bluetooth Low Energy or serial interfaces and associated set of programming software.

The Cloud Link 4G Modem requires less power to operate than any other cellular modem and is suitable for battery-powered applications. In addition, the modem is CSA, Class I Div 2 approved, making it ideal for applications where safety is a concern.

The Cloud Link modem is configured with the help of Honeywell's MasterLink software, and the RTU2020 is configured using our RTU Configuration Builder. They interface through the Modbus protocol where Cloud Link acts as a transparent modem. This solution provides remote data transfer using wireless communication. The modem's 4G data speed falls back to 3G or 2G as per network availability.

Applications

The advent of advanced cellular communications technology has enabled new potential for remote monitoring solutions. By carrying monitoring and control communications over cellular, engineers can build a remote management platform that is easy and economical to deploy, minimizes site visits for configuration and maintenance, and can reliably deliver key data in real time.

With Honeywell's RTU2020 and Cloud Link cellular modem working as part of a tightly integrated system, users can optimize tasks ranging from wellhead and pipeline monitoring, and terminal automation, to water and wastewater pumping stations.



Fig. 2: At facilities such as water and wastewater pumping stations, there is a need for remote monitoring and robust diagnostic capabilities.

In these and other applications, Honeywell's single-vendor solution provides:

- Synchronization of events between RTU2020 and Experion, including system events (maintenance/failure, etc.), security events (shown in Experion Event log), API audit trail, and other data log events set for maintenance activity
- Trends from data log for analysis
- Intelligent algorithm to backfill history from RTU2020 to Experion without impacting the network load (integrated with dynamic scanning so intelligent algorithms can be implemented to balance real-time scanning against backfill traffic)
- DNP3 dead band tuning to match available network bandwidth (identifies value changes to determine consumption of network bandwidth)
- Flexible method of sending backfill data to historians or other locations
- Supports reading of 64-bit double-precision data stored in RTU
- Remote management of RTU from Experion SCADA
- Maintenance display of RTU

Honeywell's Integrated Solution

Through use of open protocols, RTU2020 is designed to work with any SCADA system. When combined with Experion, it is the perfect solution. Supporting up to 5,000 RTUs per server and further server-based expansion through the patented Distributed System Architecture (DSA™), Experion is a highly scalable system with the highest level of reliability, safety and security.

Experion provides radically simplified SCADA configuration and a superior operator and controller experience through a template-based Equipment concept. Experion can be configured and operated by 'equipment' like a gas wellhead or a pumping station rather than merely points. When you match an Experion Equipment template with an RTU2020 replicated RTU, the cost of configuring the full solution is simplified ever further. Experion and RTU2020 have been designed to meet remote automation requirements in oil and gas, water and wastewater, and other industries.

For More Information

Learn more about the RTU2020 Process Controller at our website www.honeywellprocess.com or contact your Honeywell account manager.

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