

Low Power Consumption, Outstanding Robustness

STARDOM FCN-RTU

Low Power Autonomous Controller



In response to emerging countries' growing demand for energy in recent years, oil and gas wells are being drilled even in harsh environments or locations without an adequate power supply and communications infrastructure. Controllers in such areas must be exceptionally robust and run on low power.

To fulfill these needs and upgrade Yokogawa's solutions for the oil and gas upstream market overseas, Yokogawa has released a Field Control Node-Remote Terminal Unit (FCN-RTU) low-power autonomous controller for the STARDOM network-based control system.



FEATURES

- Reducing power consumption

By employing low-power devices and CPU embedded analog and digital I/Os and communication interfaces, which are required for control, operation, and monitoring of oil & gas wellheads, the FCN-RTU can run on just 2.9 W even when the embedded I/Os and communication interfaces are in operation. The power consumption is 75% less than that of Yokogawa's existing products.

Inactivating communication ports which are not in use reduces power consumption further.
- Expanding operating environment

Devices which can operate over a wide range of temperature were selected for this controller, and their design and operation in harsh conditions were verified. As a result, the FCN-RTU has been proven to operate at temperatures as extreme as $-40\text{ }^{\circ}\text{C}$ to $+70\text{ }^{\circ}\text{C}$ ($-40\text{ }^{\circ}\text{F}$ to $+158\text{ }^{\circ}\text{F}$).

To cope with the problem of substantial rise in temperature at high altitudes due to the lower air density, the internal heat generation was decreased to allow the controller to operate at altitudes up to 3,000 m (9,842 ft).
- Expanding the input voltage range

The power supply voltage range was expanded to 10 V to 30 V. Combined with the feature of low power consumption, the controller can operate even with unstable and limited power such as solar power, even in areas where no adequate power infrastructure are available.

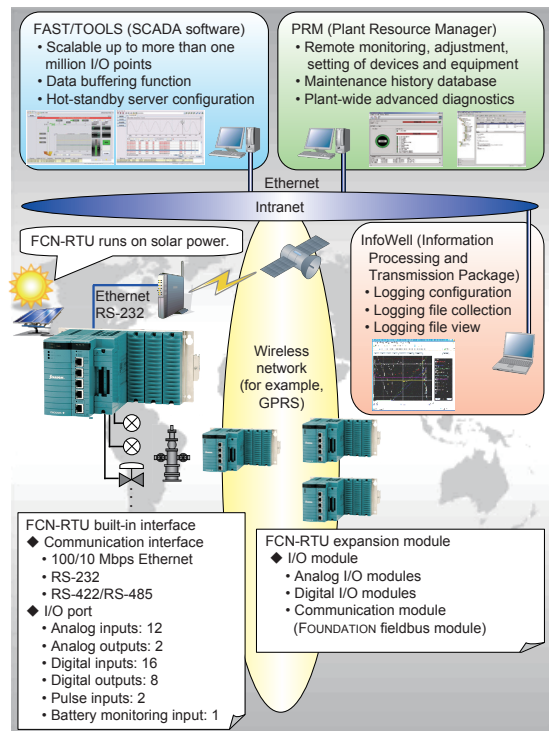
- Improving communication quality

In addition to the Ethernet port, the FCN-RTU is equipped with four serial ports allowing to build a reliable network with the main line and backup lines. Thus stable data transmitting and receiving to and from the Supervisory Control And Data Acquisition (SCADA) system is provided. Complying with the Distributed Network Protocol (DNP3), the FCN-RTU can send only changed data among buffered data, thus reducing communication costs and improving communication quality.
- Inheritance of core technologies

The controller inherits the core technologies of the STARDOM controller: intelligence, reliability, flexibility and easy engineering.

APPLICATIONS

By combining the FCN-RTU and products shown in the figure below, the FCN-RTU contributes to reduce the Total Cost of Ownership (TCO) including equipment management costs in addition to the expansion of installation areas and responding to harsh environments.



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