Success Story

Honeywell

OneWireless Installation at Sinopec Zhenhai Refinery

Benefits

Sinopec's Zhenhai refinery is one of the biggest ethylene projects in China with 23,000k t/a oil refining capability and 1,000k t/a ethylene producing capability. The project was put into trial production in February 2010.

The refinery implemented Honeywell's OneWireless™ solutions to measure temperature along its 7.6 kilometer pipeline and gained several benefits including:

- Real-time temperature measurement
- Efficient wireless network management
- Time and cost savings
- Ability to easily add new wireless measurement points in the future

Challenge

Sinopec's Zhenhai ethylene refinery's 7.6 kilometer pipeline was put into operation in February 2010. The operation temperature environment is around -100 degrees Celsius. The low temperature tank farm is one of the associated facilities, supporting material feeding for the ethylene downstream facilities, and supply/demand buffer among the equipment, such as ethylene low temperature tank farm, propylene low temperature tank farm, refrigeration system and product transport system.

The measurement points are located at every kilometer along the pipeline. With a wired approach, the customer would need to lay a large amount of cable, cable tray and conduit, and power supply installation would be very difficult. So the customer selected Honeywell's OneWireless solution, which does not need any cable, wire, junction box or cabinet, and offers quick and efficient installation.

Solution

Honeywell's OneWireless solution was applied to measure the temperature of the 7.6 kilometer pipeline between the deck and low temperature ethylene tank farm. The pipeline is made of 304 carbon steel and will be operating under the temperature environment of -150 to -100 degrees with 325 mm diameter and 4.5 mm wall thickness. By measuring the real-time temperature data, the operator can ensure smooth operation of the pipeline and avoid incidents. The temperature data is integrated into the low temperature tank farm control system, supporting real-time monitoring.

Honeywell provided three multinodes, five wireless temperature transmitters and one wireless platform for this project. Five wireless transmitters were mounted along the pipeline (five meters above ground). Three multinodes were mounted on the roof of the tank farm control room, one kilometer from the control room and 700 meters from the deck, communicating with each other to form the self-organizing and self-heating mesh wireless backbone network. The multinode located on the roof of control room acted as a gateway and wired into the tank farm control system through standard Modbus RS485 communication protocol to support data integration.

The OneWireless platform was installed in the tank farm control room, supporting online wireless network status monitoring and diagnostics, wireless transmitter configuration and calibration, and wireless network security.

The five wireless temperature transmitters communicate wirelessly to measure the real-time data of the ethylene pipeline supporting up to one-second update speed. Multinodes and wireless transmitters were easily mounted on the brackets and poles at the site. The connection is the same as the traditional approach, and the RTD can be connected to the wireless transmitter directly.

More Information
For more information on OneWireless, visit www.honeywell.com/ps/wireless or contact your Honeywell account manager.

Automation & Control Solutions
Process Solutions
Honeywell
1860 W. Rose Garden Lane.
Phoenix, AZ, 85027
Tel: 800-822-7673
www.honeywell.com/ps

SS-10-33-ENG
December 2010

Honeywell