

Bridging HART and IIoT

HART-to-Ethernet gateway streamlines bringing process data from the field to the Industrial Internet of Things.

EVERYONE knows field data in HART devices and the Industrial Internet of Things (IIoT) make a great couple, but how can their friends bring these two crazy kids together? They've sometimes linked up over the years, but they usually face so many data translation, networking, protocol and programming hurdles that they can't achieve more than a long-distance relationship. Until now, with Moore Industries International Inc. giving them the fast, simple avenue they need to make beautiful music together—namely optimizing end users process applications.

This bridge is provided by Moore's newly launched HES HART to Ethernet Gateway System that converts signals from up to 64 wired HART devices to Modbus/TCP and HART-IP Ethernet-based protocols. HES allows HART transmitters and smart valves to interface directly with Modbus/TCP-based monitoring and control systems over Ethernet with field data viewable in any web browser via HES' built-in web server. HES communicates with HART devices in point-to-point and digital multidrop networks and supports both Normal and Burst Mode communications.

"We had to make sure our customers could take their process data to next-level systems for analytical, IIoT and big data applications. HART data usually goes to DCSs, but not higher without added conversions and programming," says Scott Saunders, Moore president and CEO. "The HES gives users the ability to take all the data and diagnostics they've invested in, and immediately get it straight to the Ethernet and IIoT."

HES is available in single-channel or four-channel configurations. Single-channel supports up to 16 HART devices in digital multidrop mode, or can support just one device in a standard point-to-point 4-20 mA loop configuration. Four-channel can support up to 64 total HART devices for high-density installations. HES supports communication with HART 5, 6 and 7 field devices, including Coriolis, magnetic, vortex, ultrasonic and multivariable mass flowmeters, as well as pressure, pH, level and temperature transmitters, and smart valve positioners. It also has sufficient memory to handle thousands of process variable and diagnostic data points from connected smart HART devices.

"We're taking installed field devices and their process data, and making it available to higher-level systems because HES supports open, industrial Ethernet protocols like HART-IP and Modbus/TCP, along with basic HTTP for web browser support," says Saunders. "We're communicating with up to 64 HART devices, supporting HART 5, 6 and 7, the latest revision, to gather thousands of process and diagnostic variables, and map them to open protocols, so they're easily accessible at higher levels."



THE KEY TO IIOT'S HART

HES HART to Ethernet Gateway System converts signals from up to 64 wired HART devices to Ethernet, Modbus/TCP and HART-IP.

All HART data from connected field devices is viewable in read-only mode with any web browser via the HES' built-in web server or a Modbus/TCP-compliant host. The HES also supports HART-IP, allowing any of the connected HART device variables, HES variables or diagnostics to be monitored. Support for these open industrial protocols enables interfacing with any process control or asset management system while taking advantage of any IIoT initiatives that facilitate propagation of process data to higher-level corporate or analytical systems.

"The HES' built-in web server means web pages are embedded, and users just need a web browser to view any process data from any of their up to 64 HART devices on our pre-built screens in a table format," added Saunders. "Of course, 64 devices times 240 possible variables means a web browser can give users effortless access to more than 15,000 pieces of data."

Finally, the HES is simple to configure over Ethernet using PACTware or other FDT-compliant host with supplied HES DTM. Easy to use menus provide full configuration of the HES including HART channel communications, Modbus communication and mapping settings, and network security parameters. It also has a solderless jumper that's set at configuration, which enables it to serve in a read-only mode, to prevent reconfiguration or manipulation from unauthorized personnel or malware with malicious intent. In the future, Saunders adds that HES may support additional open industrial Ethernet protocols like EtherNet/IP and Profinet. Some bridges do lead to happily ever after. ☺

For more information, visit www.miinet.com/hes.