HART to Ethernet Gateways Bridge the Gap Between HART Devices and IIoT

The introduction of industrial Ethernet networks in process manufacturing plants and automation facilities has meant that data exchange in a facility and across global corporate networks is becoming commonplace. This free flow of information has introduced new possibilities for using the copious amounts of data in existing field devices in an IIoT (Industrial Internet of Things) context or Smart Factory (Industry 4.0) setting. The flow of process and diagnostic data from smart HART digital field instruments can now be shared with mid and higher level control, asset management, and data information systems without having to upgrade expensive process control interface equipment.

Plant of the Future

The typical process control model that involves decision making at the local or centralized level by PLCs (Programmable Logic Controller) or BPCS (Basic Process Control System) is quickly changing. These systems were never intended to deal with the amount of data they would have access to in the near future. There are newer ERP, MES and asset management systems that collect some of this data now, but the more critical challenge facilities face is manpower. Because streamlining of costs and overhead has left many manufacturing facilities with just enough personnel to keep the plant running, facilities no longer have the personnel and resources required to analyze data. Companies offer leasing or annual agreements that involve collecting, storing, and analyzing all sorts of process data used in a larger predictive analytics strategy that can forewarn operators of impending problems to come and be used to optimize the process itself. This type of cloud automation looks to gather as much data as possible to reduce operating costs and future capital expenditures for future plant builds. So the challenge remains: how do existing and new manufacturing facilities find a cost effective way to get critical plant floor data up to higher level information systems? The answer is to take advantage of the digital HART data already installed but either didn't know was there or couldn't afford the equipment upgrades to gain access to it.


Moore Industries HES HART to Ethernet Gateway System, single channel and four channel models.

HART Interface Options

There are several ways to interface with HART smart field devices in order to acquire the digital process and diagnostic information. They vary from HART enabled 4-20mA input cards, HART multiplexer (Mux) systems, slide-in PLC gateway cards, custom coded software interfaces for asset management and MES/ERP systems, and standalone gateways that typically convert the HART data to some other proprietary or open industry format. Standalone gateways provide the most economical pathway to extracting HART data from field devices.

The Moore Industries HES HART to Ethernet Gateway System, a standalone HART gateway, makes the HART data in field devices readily available to higher level systems over Ethernet using MODBUS/TCP, HART-IP or HTTP. The HES is available in two models, single channel and four channel, that allow several HART devices to be multidropped for maximum data concentration. ❦

For more information, please contact:
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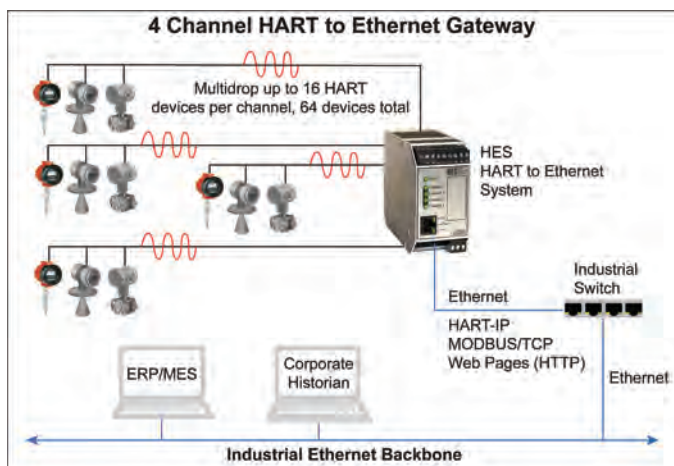
HART to Ethernet Gateways offer a quick and economical way of sharing critical HART data with higher level systems.

HART Protocol

In many cases, HART instruments were installed simply because they could be configured and diagnosed easily with a HART handheld communicator (HHC). However, the HART digital signal often contains additional process variables that may include instrument status, diagnostic data, alarms, calibration values and alert messages. A simple and cost-effective solution for gathering HART information is to use a HART interface device. These HART interface devices make acquiring HART data a fairly simple proposition. This HART data can then be made available to the control system, asset manager or plant Ethernet backbone where it can then be shared with higher level systems or corporate WANs (Wide Area Network).