MOORE INDUSTRIES WORLDWIDE

Demand Moore Reliability

Industrial Remote I/O
Solutions Line Card

Ambient
-40°C (-40°F)

Ambient
+85°C (+185°F)

INDUSTRIAL REMOTE I/O

FOR TOUGH ENVIRONMENTS

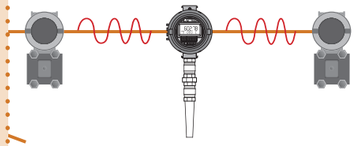
www.miinet.com

MOORE INDUSTRIES WORLDWIDE

Industrial Remote I/O Solutions Line Card

HCS
HART® Concentrator System
(HART-to-MODBUS Converter)
Division 2, Zone 2 Areas

Smart HART® Devices

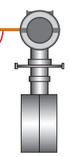


MODBUS RTU
RS-232
RS-485

TCM
Temperature Concentrator Module™

BULLET®
*Wireless*HART®
Adapter

BULLET®
*Wireless*HART®
Adapter



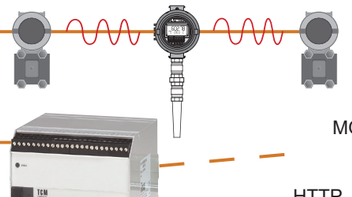
*Wireless*HART®
Gateway

HMC
HART-to-MODBUS Converter

MODBUS RTU

TCM
Temperature Concentrator Module™
Division 1, Zone 0/1 Areas

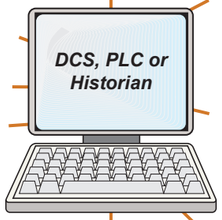
Smart HART® Devices



HES
HART® to Ethernet Gateway System
(HART-to-MODBUS/TCP and HART-to HART-IP Converter)

TCM
Temperature Concentrator Module™

MODBUS/TCP
HART-IP
OPC
HTTP- HES Web Server



DCS, PLC or Historian

MODBUS RTU
MODBUS/TCP
OPC

Inputs
Outputs

Industrial Wireless Radios (Ethernet/Serial)
Division 2, Zone 2 Areas

Industrial Wireless Radios (Ethernet/Serial)
Division 2, Zone 2 Areas

NCS
NET Concentrator System®

MODBUS RTU
MODBUS/TCP
OPC
HTTP- NCS Web Server

NCS
NET Concentrator System®

Peer-to-Peer

HART®

NCS and mNCS
NET Concentrator System®

Division 2, Zone 2 Areas

NCS
NET Concentrator System®
(MODBUS RTU Slave + Peer-to-Peer)

MODBUS Slaves

TCM
Temperature Concentrator Module™
(16 Channels)

Division 1, Zone 0/1 Areas

MODBUS RTU
MODBUS/TCP
OPC
HTTP- NCS Web Server

CPMS
Cathodic Protection Monitoring System

Cathodic Protection System Rectifier

Anode

Pipeline/Structure

Industrial Remote I/O Solutions Line Card

Typical Industrial Remote I/O Solutions

Q. Want to add a dozen I/O to your process but are faced with a large bill to install wiring because you are out of spare wires?

A. Remove one transmitter from a twisted pair. That twisted pair becomes your communications cable for remote I/O. Buy enough remote I/O to cover the dozen new points plus the one transmitter that freed up the twisted pair.

Q. Has your old DCS run out of analog, discrete or temperature input cards?

A. New points can be added through the MODBUS port. Use remote I/O to digitize analog, discrete and temperature inputs. This can minimize costly T/C extension wire and other field wiring.

Q. Do you need to add DCS control points but are not yet comfortable implementing control through remote I/O?

A. Remove data acquisition points from the field wiring to free up twisted pairs for the new control points. Hard wire your control points. Bring the data acquisition points back into the DCS through the MODBUS port using remote I/O.

Q. Don't have any twisted pair that you can afford to free up?

A. Our remote I/O physical layer options are endless. We have remote I/O running over twisted pair, Ethernet LANs, fiber optic cable, spread spectrum radios, leased phone lines, cellular modems, microwave systems and satellite systems.

Q. Do you have all the same needs to add more process variables but you don't want to deal with digital protocols like MODBUS?

A. Use remote I/O in a Peer-to-Peer mode. We digitize all your analog and discrete points so we can move them over the above physical layers, but then we return the signals back to their original analog and discrete forms. You get all the benefits of eliminating wiring costs, and you don't need to know anything about digital protocols.

Q. Data acquisition points destined for the plant historian usually are sent there by the DCS. Is your DCS now overburdened and you need more processing power?

A. Off load this transportation burden from your DCS. Use remote I/O to digitize your data acquisition points and send them directly to the plant historian using MODBUS, MODBUS/TCP or OPC. Alternatively many of our remote I/O products have built in data loggers that can be viewed and exported to Excel over your LAN.

Q. Want to use *Wireless*HART to gather up remote points, but *Wireless*HART just does not have the "reach"?

A. Locate the *Wireless*HART gateway close enough to the transmitters/adapters so that all the variables are in the gateway. Then move the variables from the gateway to the final destination using spread spectrum radios and MODBUS protocol. This approach adds miles to your "reach".

Q. Do you have process variables that reside in MODBUS RTU devices that you would like to have access to but your legacy control system can't communicate via MODBUS RTU?

A. Use our remote I/O products that have built in MODBUS RTU master capability to poll your MODBUS RTU devices and either give you 4-20mA signals, discrete outputs or send that data over OPC or MODBUS/TCP.

Q. Are your remote signals concentrated in a hazardous area that require you to run a lot of costly wire to marshaling cabinets located in safe areas?

A. We have affordable remote I/O products designed for hazardous areas that carry intrinsically safe and non-incendive approvals in Class I Div 1 (zone 0/1) and Class I Div 2 (Zone 2) areas that substantially reduce your cabling costs.

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