PRODUCT HIGHLIGHTS

- **HART Communication Foundation Protocol Implementation**

- **Interfaces up to 16 HART enabled field devices per card**

- **Secure Asset Management**

- **Remote Calibration of Transmitters and Valves**

- **Partial Valve Stroke Test Support**

- **Error Recognition**

PRODUCT OVERVIEW

The 3018 HART Communications Card implements the HART Universal Commands. It implements all aspects of the protocol and data exchange, including message translating and formatting, message checking, and responding to HART devices with proper acknowledgments, and error or success codes.
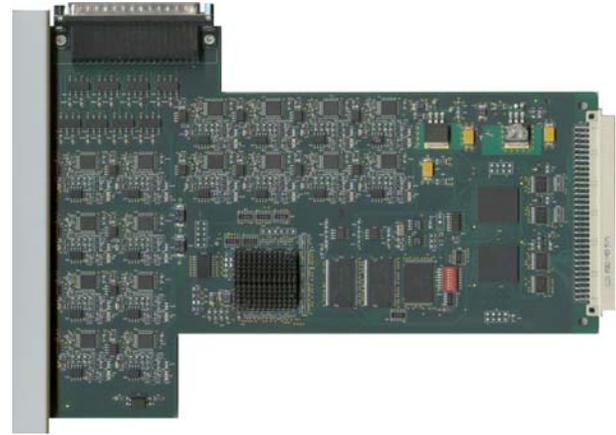
Used in conjunction with Cornerstone™ or FieldVue™ software, the RTP Software Multiplexer translates the Hart Protocol to RTP's proprietary Protocol in order communicate to and from the Hart enabled device. Because the data is transferred using RTP's proprietary Protocol, the communications are compliant to IEC 61508 and EN 61131-2:2007 standards.

Applications: The 3018 HART Communications card is used in applications to reduce maintenance trips, process interruptions and provide higher diagnostic coverage and integrity. It can interface point-to-point with up to 16 HART enabled devices and is designed to complement traditional 4 to 20 mA analog signaling using two way communications for process measurement and control devices

Applications include asset management systems, remote calibration of transmitters and valves, and valve partial stroke testing in SIL rated applications.

Benefits: Hart protocol commands are accessible for process variables, range information and device status. In asset management applications, improved process efficiency, reduced maintenance requirements, and enhanced overall productivity can be accomplished when used in conjunction with the 3115 or 3126 Analog Input Card. You'll instantly know the status of your transmitters and valves from any location without having to endure hazardous areas or inclement weather.

In SIL applications where proof testing of valves is required as part of the SIF, the 3018 Hart Communication Card is used with the 3121 Analog Output Card to provide a low cost method that does not interfere with the process operation or require a shut down. Diagnostics monitor the signal sent to the valve and valve position. Travel time and range is easily monitored. Determinations can be made if a valve is stuck or if an emergency shutdown valve can be operated if required. Increased production and profitability is accomplished as the proof test interval is extended.

Error recognition means you will know when your field devices are likely to fail. You receive constant feedback about the health of every control valve so you can replace the device before it malfunctions, and you won't waste money by changing it too often. Plus instant error recognition eliminates human error and false readings.

RTP is the Best Technology for Your Investment, Here's why:

The 3000 TAS is a multi-processor architecture that delivers exceptional Performance and Comprehensive Diagnostics. The results speak for themselves: A Reaction Time of 12 msec, true 1 msec SOE (Analog and Digital), an MTBF of greater than 50000 years, an MTTFS of greater than 60000 years, and a PFDavg of $5x10^{-5}$. *Compare these numbers to any other system.*

Built-in Proof Test Diagnostics means it will never be necessary to shut down at the proof test interval. Unlimited online downloads of logic and configuration changes do not require a periodic shut down like other systems. *Compare this functionality to any other system.*

NetSuite Software: One-time price includes unlimited use of Logic Development, Alarm Manager, Data Archive and Historian, and HMI without hardware or software keys. *Compare this functionality and price to all other systems.*

Finally, a Safety Instrumented System (SIS) should always take the process it protects to a safe state when it is required to do so, and it should never interfere with the operation of the process at any time. *The 3000 TAS does this better than any other system.*

Application:

As shown in the diagram below, an asset management application consists of a PC with user-supplied Cornerstone™ or FieldVue™ software installed as an interface to the RTP Software Multiplexer. Hart protocol commands are thus provided for process variables, range information, device status as part of the control strategy. The 16 Channel Hart Card is wired in parallel to the 32-Channel, 4-20ma, Analog Input card for monitoring and calibration of the Rosemont pressure transducer. Cost is reduced as this approach provides the flexibility to use Hart communications only on the input channels needed.

Also shown below is the configuration of the 16 Channel Hart card wired in parallel to the 16-Channel, 4-20ma, Analog Output card to monitor, diagnose and operate the Fisher valve which uses the Digital Output card in this option. This illustrates Hart being used to do PST (partial stroke testing) of a valve as part of proof testing. The RTP NetArrays Development Software provides the Partial Stroke Test object that implements this capability. Increased production and profitability is accomplished as the proof test interval is extended.
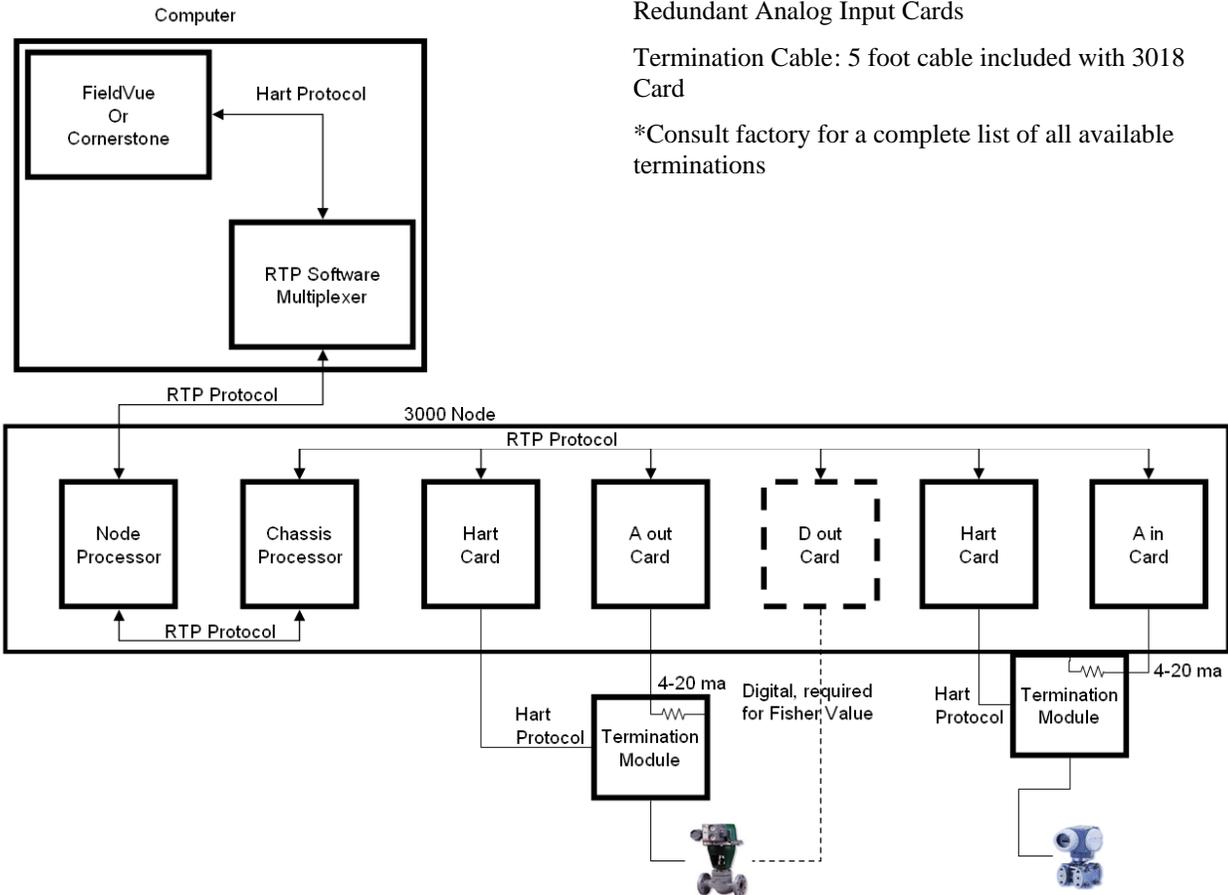
SPECIFICATIONS

Number of Channels:
  16 point-to-point current devices

Input/Output Isolation:
  500V AC/DC field to RTP bus

Power Requirements
  +5 VDC @ 1.4 A

Environmental*

Operating Temperature Range   –20ºC to +60ºC

Storage Temperature Range   –25ºC to +85ºC

Relative Humidity Range 10% to 95%,
              Non-condensing

*Complies with IEC 61131-2

Termination Modules*

3099/20-100 Single Termination Module
3099/42-100 Single Termination Module with Single Analog Input Card
3099/42-000 Single Termination Module with Redundant Analog Input Cards

Termination Cable: 5 foot cable included with 3018 Card

*Consult factory for a complete list of all available terminations