New Class of Distributed Signal Processing Products

Process Industries Are Looking For Better Instrumentation

To:

- Increase Process Efficiency
- Improve Quality of End Product
- Maximize Plant Safety
- Minimize Environmental Contamination
- Reduce Costs
  - (Product, Maintenance, Purchasing & Training)

VISION Series 4300

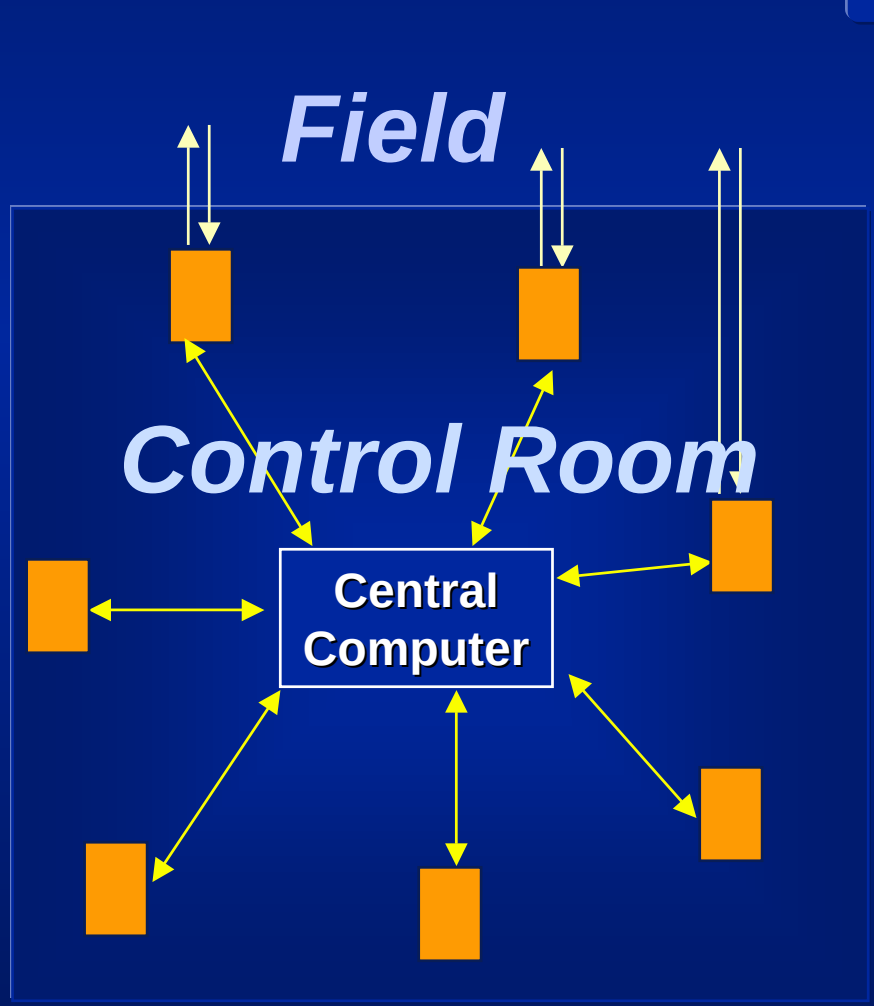
Using Today's Technology, Inside and Out

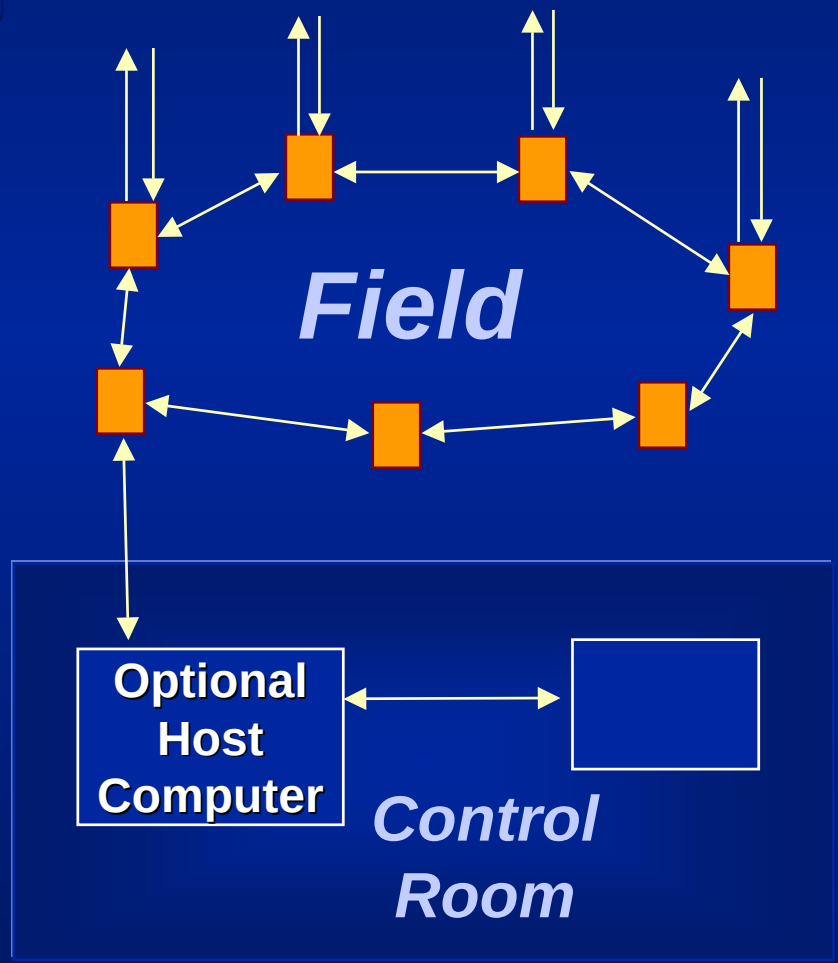
VISION, Brings Intelligence Right to the Process

The Old Way:
Centralized Intelligence

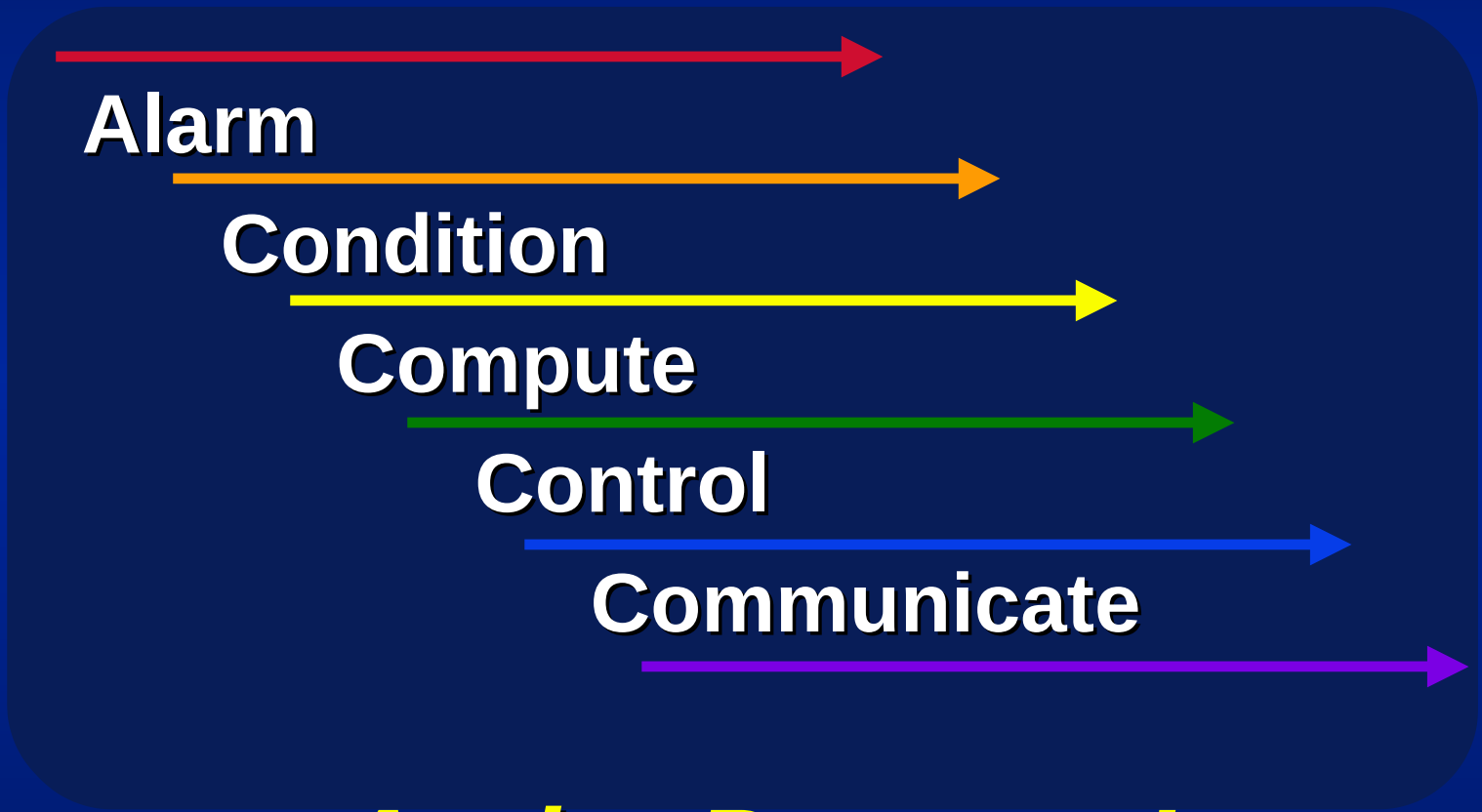
vs.

The New Way:
Distributed Intelligence





VISION Series 4300 Can...



At the Process!

VISION Series 4300

Combines the Best Features of Three Separate Product Classes

- Signal Conditioning
- I/O Signal Processing
- Programmable I/O

Signal Conditioning

- Transmitters
- Alarms
- Function Modules

Signal Conditioning

Benefits

+ Wide Variety of Signals Accommodated
+ Highly Modular - Variety of Single Function Modules
+ Stand-Alone - Performs Self-Contained Function
+ Field Hardened
  - Operates in Wide Ambient Temperature Range
  - Rugged for Industrial Environments
  - Enclosure Options for Harsh Atmosphere

Drawbacks

- 4-20 mA Communication
- Extensive Interconnection Wiring Required
- Time Consuming to Trouble Shoot
- Cannot Communicate Directly with Host System

I/O Signal Processing

- Digital Signal Conditioning for Host Devices such as PCs, PLCs and DCSs

I/O Signal Processing

Benefits

+ Digital Communication
+ Distributed Architecture
+ Communicates Directly with Host Devices
+ Simplified Wiring to Host System
+ Small, Inexpensive Compared to PLC or DCS

Drawbacks

- Limited Input-to-Output Function
- Limited Intelligence
- Requires Host Control - No Stand Alone Function

Programmable I/O Devices

- Programmable Controllers
- Remote Terminal Units (RTUs)

Programmable I/O Devices

Benefits

+ Digital Communication
+ Communicates Via Direct-Wired or Telemetered Media
+ Extensive Intelligence and Configurability
+ Stand Alone Input-to-Output Function
+ Operates Independent of Host Computer

Drawbacks

– Difficult to Configure/Program
– Difficult to Maintain
– Large and Monolithic
– Operates Only in Controlled Environment

Features

Universal Modules

- 4300-LAI Analog Inputs
  - Selectable between -110 to 110mV or 0 to 1000 Ohm
- 4300-HAI Analog Inputs
  - Selectable between -11 to 11V or -55 to 55 mA
- 4300-HAO Analog Outputs
  - Selectable between -11 to +11V or 0 to 55 mA
- 4300-DI Digital Inputs
  - Selectable between 5 to 240 V, AC or DC
- 4300-DO Digital Outputs
  - Selectable between 250VAC or 30VDC to 2 Amps
- 4300-HIM (Host Interface Module)

Features

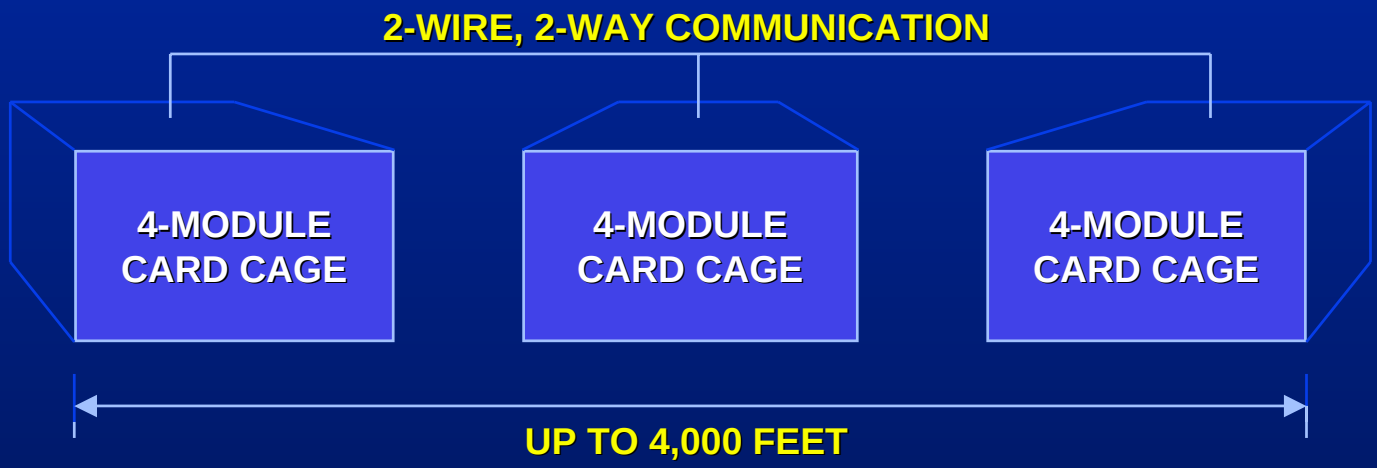
Field Hardened

- Designed for Installation Directly in the Process Environment
- Operates in Ambient Temperatures Ranging from -40 to +85°C
- Variety of Enclosure Options for Environmental Protection

Features

2-Wire Digital Communication

- Up to 15 Modules Distributed along just Two Wires
- Full Redundancy Using only Six Wires
- Data Shared along Peer-to-Peer Network up to 4000



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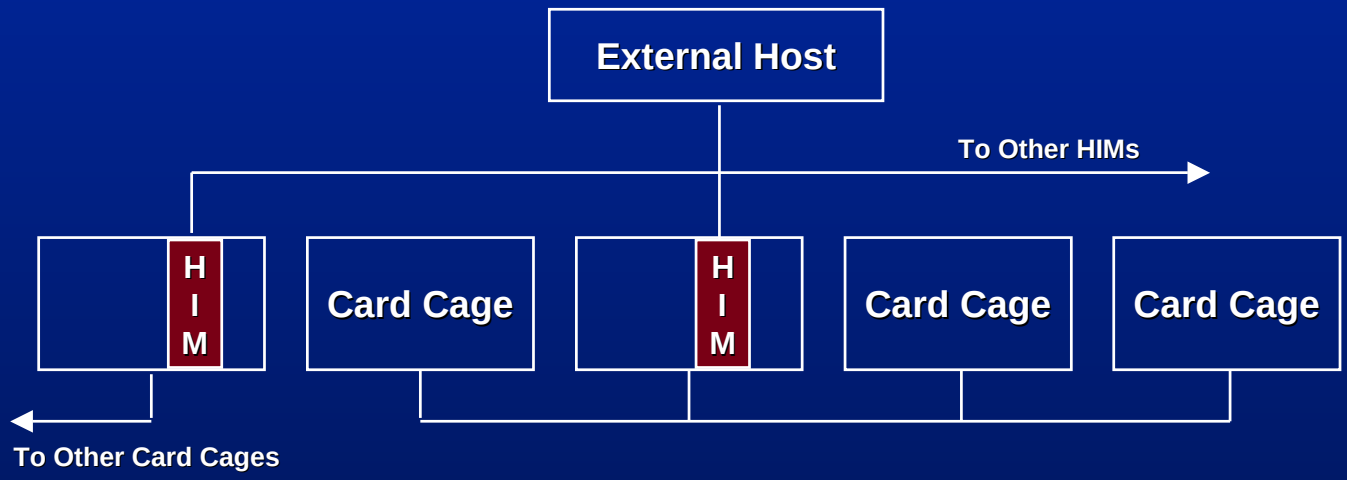
Features

Host Communication

- Communicate with Host Device via Protocol of Choice (e.g., MODBUS)
- Communicate with Host Using Direct Wired or Telemetered Media
- Expanding Protocol Library for Widespread Compatibility



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Features

Distributed Intelligence

- **Each Model is capable of Function Block Processing**
- **Analog Modules (HAI and HAO) Support functions such as:** High and Low Limit Trips, Peak Picking, Scaling of Engineering Units, Averaging, other arithmetic functions
- **Digital Modules (DI and DO) Support Functions such as:** Trip, Totalizing, Pulse Duration, Logic State

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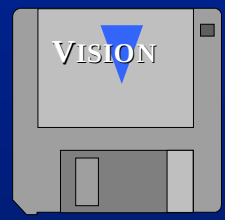
Features

Distributed Intelligence

- **Higher Level Functions are Supported using the 4300-HIM Module:**
  - Polynomial Equations
  - Arithmetic Mean
  - Standard Deviation
  - Interpolation
  - Flow, Mass Flow, Volumetric
  - Rate of Change
  - Time Stamping
  - Exception Reporting
  - Data Storage
  - Configuration Archiving



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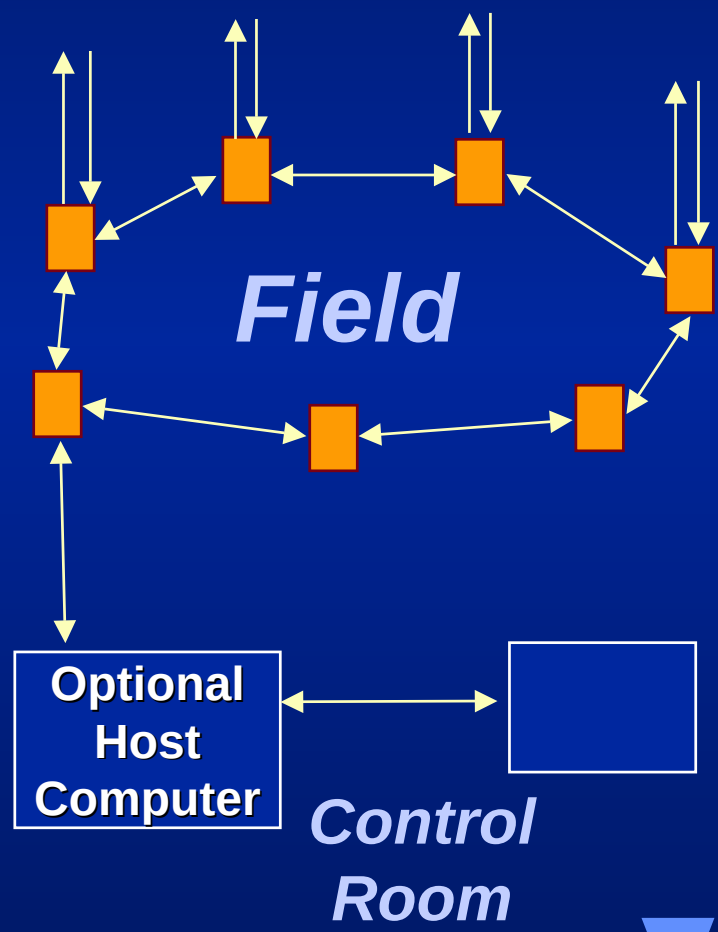
Series 4300 Modules Can:

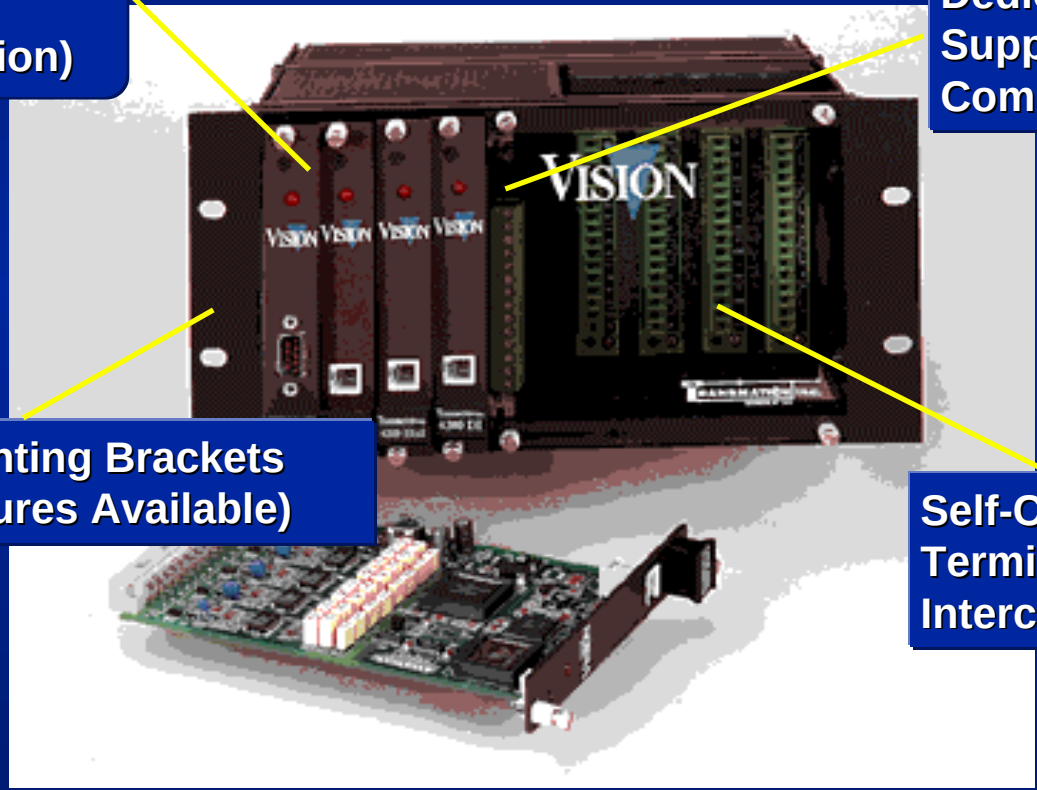
- Process Analog and Discrete Input Signals
- Perform Computation and Logic Operations
- Generate Analog and Discrete Output Signals
- Communicate With Each Other
- Communicate to a Host



Model 4300-4CC and Modules

4 Modules Per
10”Card Rack
(Any Combination)

Dedicated Power
Supply and
Communication Slot



Removable Mounting Brackets
(NEMA 4 Enclosures Available)

Self-Contained
Terminations and
Interconnections

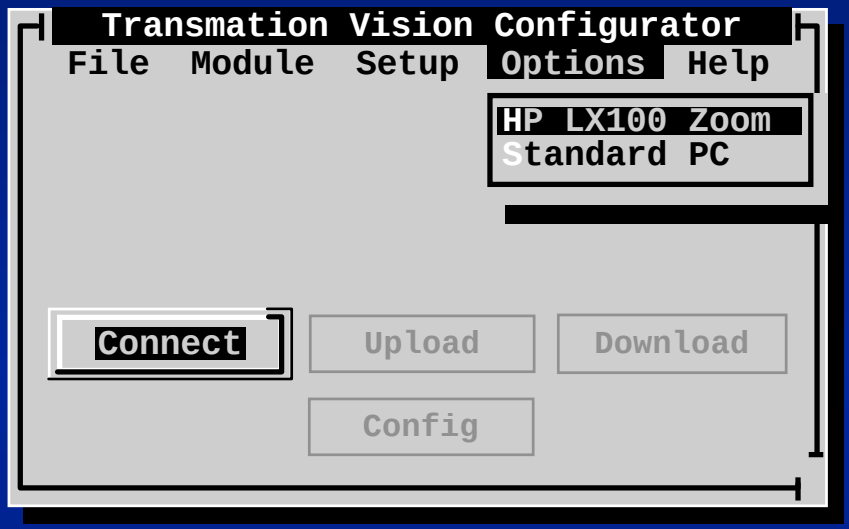
Features

Simple Configuration & Maintenance

- No switches, jumpers, or pots to tweak for Configuration
- Fool-Proof Replacement of Modules
  - Modules start up in safe state
  - Configuration Downloaded Automatically upon Replacement
- Self-Diagnostics
  - Module LED indicates Board Malfunction, Improper Configuration, or Loss of Communication

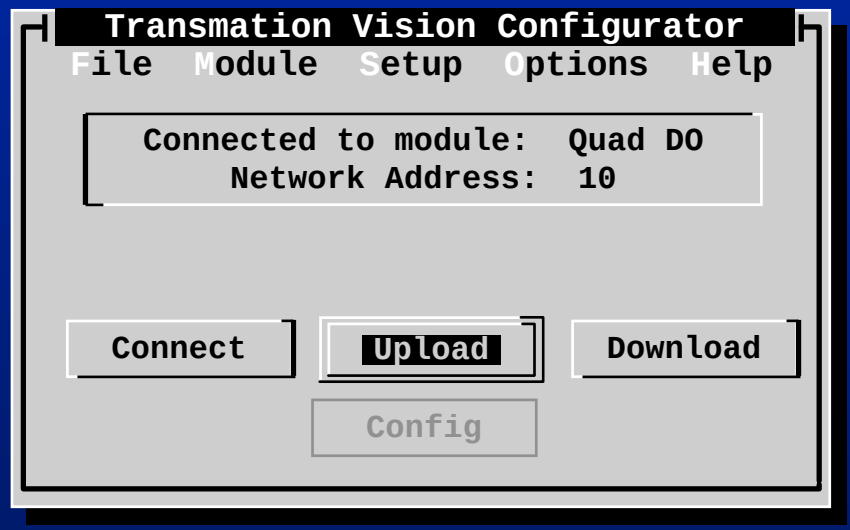
Features

VISION Configurator



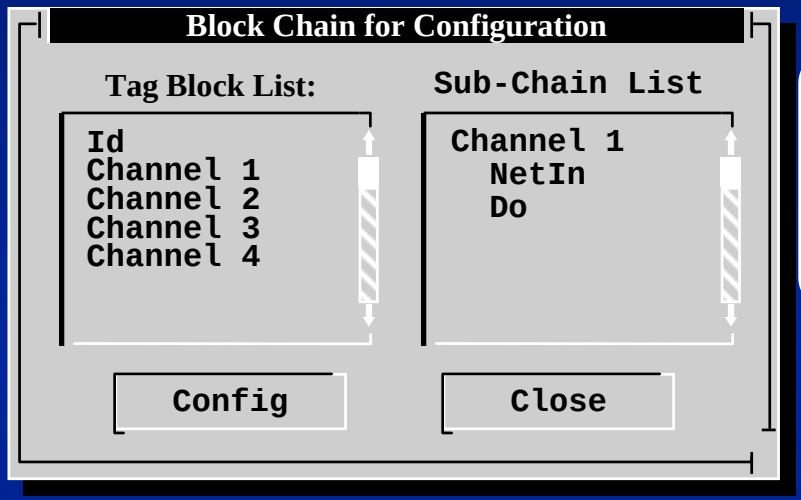
- Vision Configurator can be used with any DOS based computer.
- Windows Version Available

Modules connected to the Configurator via Serial Cable.



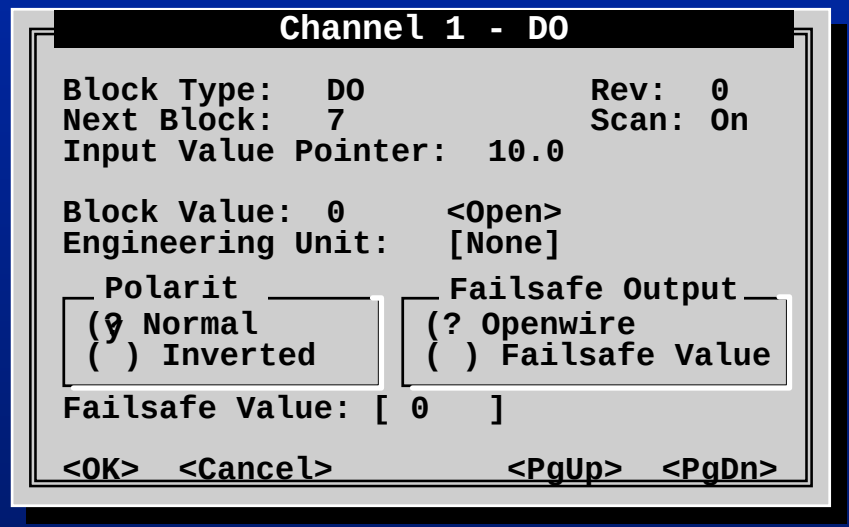
Features

VISION Configurator



Upload any module's database for configuration changes

- **Quickly and easily change processing parameters**



VISION Series 4300

- 6 Universal Modules
- 2-Wire Digital Communication
- Distributed Intelligence
- Peer-to-Peer Field Network
- Variety of Protocols to Host Devices
- Field Hardened
- Direct Wired or Telemetered Communication
- Simple Configuration & Maintenance

Feature Summary:

Summary of VISION Benefits

- ***Versatility***
- ***Compatibility***
- ***Low Cost of Ownership***
- ***After-the-Sale Support***

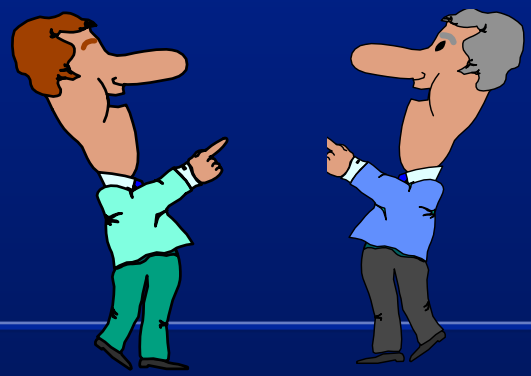
Versatility

- User-Configurable I/O Functions
- Just 4 I/O Module Types for All Basic Functions
- Computing Power for Tailored Applications
- Stand-Alone Network
- PC Interface
- Incremental Modularity for Easier Application and Expansion

Benefits

Compatibility

- Wide-Range Input & Output Limits for Selecting to Match Existing Signal Ranges
- -40 to 85°C Operating Temperature Range for the Most Severe Ambients
- 4000ft Network Length, and Multi-Dropping Networks Via 4300-HIM Modules, for Any Plant
- Protocol Conversion by 4300-HIM (e.g. MODBUS) for Communication with In-Place Hosts



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Benefits

Low Cost of Ownership

- Initial Cost is Competitive with Yesterday's Process I/O Instrumentation
- Module Universality Means Broad Applicability, Simplified Spares, Reduced Inventory
- Easy Installation, Less Wiring, & Simpler Maintenance Require Less Labor and Materials

Benefits

After-the-Sale Support

TM Solutions has nearly 15 years of combined experience with process instrumentation, data acquisition and systems engineering.

- Factory or On-Site Training
- Assistance with Installation, Upgrades and Troubleshooting
- Worldwide Service
- Custom Maintenance and Repair Agreements

VISION

VISION Series 4300

- **Providing all of these benefits --**

+ Wide Variety of Signals Accommodated
+ Highly Modular
+ Simple Configuration
+ Field Hardened
+ Digital Communication
+ Distributed Intelligence
+ Variety of Protocols
+ Direct Wired or Telemetered
+ Stand-Alone Input-to-Output

Plus:

Universality

2-Wire Communication