

GagePorts

World's largest family of gage interfaces

With the **GagePort** family of interface modules, you can collect data from virtually any type of digital, RS232, or analog measurement device using any host computer or data collector. In manufacturing, tracking your production process and rapidly identifying and solving quality problems are critical to maintaining your company's competitive edge. This requires capturing and analyzing a variety of data and processes – from dimensional measuring equipment, weighing scales, temperature and pressure sensors, torque wrenches and fastening systems. SPC workstations, shop floor data collectors, quality analysis software and other quality management systems give you an automated way to transfer data directly from machines and processes to host systems for error-free, real-time quality control. But you also need a universal way to convert the electronic output of any measurement gage or device into the standard RS232/ASCII format your host system needs – whether that's a dedicated data collector, a PC, a minicomputer or a mainframe. You need the GagePort family of interface modules.

Small, easy-to-install and economical

GagePorts are small, easy-to-install protocol converters that provide you with standardized data output from virtually any type of digital, RS232 or analog measurement system. This includes micrometers, calipers, comparators, scales, balances, counters, column gages, LVDT probes, indicators, surface analyzers, hardness testers, torque and angle transducers and more.

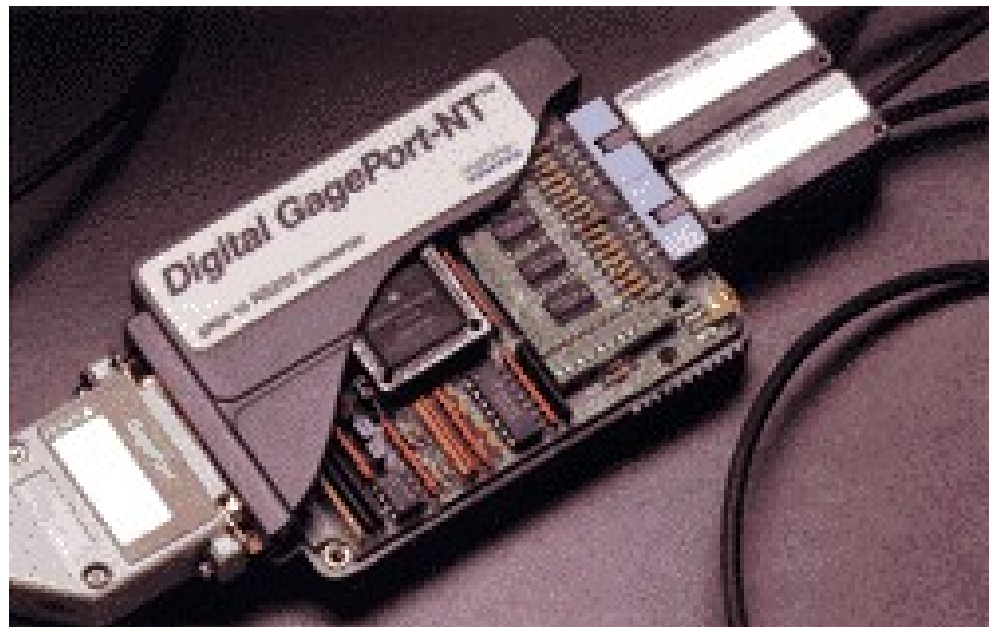
Configure the most basic system using one GagePort interface module, an RS232 cable between the module and the host system, and the appropriate cable between the measuring device and the GagePort. Or, use GagePort Multiplexers to interface any mix of up to 32 gages on a single RS232 input. GagePort not only provides interconnectivity, but also enhances the gage's capabilities with the dynamic functions of Min, Max and TIR. And modules are available to support virtually any type of gage your facility uses.

A complete family of GagePorts

Digital GagePort-NT

With the power and intelligence of the universal GagePort-NT – in 2 or 4-port versions – you can interface digital gages from all manufacturers including all brands of micrometers, calipers, indicators, and other digital instruments to any host computer or data collector.

For flexibility in data collection, the GagePort-NT operates in two modes. In dynamic mode, it gathers three types of measurements over time: minimum (Min) readings, maximum (Max) readings and Total Indicator Runout (TIR = Min – Max). In static mode, the operator takes single readings using either a foot switch or the DATA



SEND button on the gage. A built-in address and sequential counter label the readings for easy identification.

most gages determining their type and model and configuring the GagePort-NT with the appropriate communications protocol.

For RS232 applications, the GagePort-NT supports scales, balances, counters, coordinate measuring machines and any other type of gage with RS232 serial output. Special RS232 features include automatic parsing of the data stream into numeric fields, variable baud rates, search and request strings as well as reading multiple fields in a single string. Using CimWorks GageTalker FlashCables, the Digital GagePort-NT also has the built-in ability to automatically identify

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CimWorks
GageTalker

Combo GagePort-NT

With the Combo GagePort-NT and the proper cables, it is possible to simultaneously connect digital, RS232, analog, torque, strain, and gap and flushness gages all to the same GagePort. Beyond providing all the features listed above for the Digital GagePort-NT, the Combo GagePort-NT also interfaces analog gages such as column gages, pressure gages and temperature transducers to your computer. The Combo GagePort-NT accepts high-level analog voltage input (1.25V and greater) as well as gages and systems with voltages less than 1.25V. It handles either bipolar or unipolar input, providing output in either engineering or A/D units depending on the software.

The Combo GagePort-NT also supports torque and rotary angle transducers. The angle circuitry features two-phase counting for quadrature encoders to enable CW/CCW detection. It is compatible with strain gages, torque wrenches, rotary torque transducers, gap and flushness gages and all other gages that use Wheatstone Bridge technology. The algorithms provided include Peak, Valley and Breakaway Point, eliminating the need for a bridge box, thereby removing the single biggest source of drift in gap and flushness readings and improving long-term measurement stability. The Combo GagePort-NT also accepts input from linear potentiometers. It can be operated in several different modes to suit your specific data collection requirements:

- Force Read takes a reading when the Enter key or foot switch is pressed.
- Peak Read automatically enters the highest reading from the gages as defined by +/- thresholds and time filter.
- Valley Read automatically enters the lowest reading as defined by +/- thresholds and time filter.
- Dwell automatically takes a reading once the gage is stable, eliminating the foot switch and improving repeatability.

The Combo GagePort-NT features zero or two-point mastering, automatic storage and recall of conversion factors, an LED indicator and switch jack on the front panel and, using FlashCables, 12 bit A/D conversion.

LVDT GagePort-NT

This GagePort interfaces from two to eight LVDT full-bridge or half-bridge probes directly to your computer or data collector. Its 15-bit converter provides ample range and resolution for very fine measurements. It provides direct connections for two probes, or you can link the LVDT Expansion Unit to the interface module and connect up to eight probes to your host. Like other GagePort-NT versions, the LVDT GagePort offers both static and dynamic operating modes.

GagePort MultiPlexer:

When you need to collect and analyze data from a variety of different digital, analog or RS232 gages, the GagePort MultiPlexer transforms your host computer into an all-purpose, multi-gage data collector. Using MultiPlexers, you can interface as many as 32 gages to a single RS232 line. The GagePort's unique protocol is capable of separating and labeling individual characteristics, allowing simultaneous capture of readings from multiple gages. GagePorts automatically buffer readings, cleanly resolving simultaneously transmitted readings.

GagePort PCBayTM:

Use GagePorts together with the GagePort PCBay to convert standard PCs into data collection stations. The PCBAY fits into a standard 3.5" disk drive slot, turning a disk bay into a gage input port. By building the power and flexibility of GagePort interfaces directly into your PC, you can eliminate external cables and power connection for gage interfacing. Simply plug any GagePort or GagePort MultiPlexer into the PCBay. It powers the installed GagePorts from the PC power supply, eliminating the AC adapter. And with its own serial card, it frees up the PC's standard serial port for other uses.

FlashCableTM:

The CimWorks GageTalker FlashCable is a unique Plug-and-Play solution for interfacing any gage to any computer or data collection device. It automatically identifies the gage and configures the system so readings can be taken immediately, without reconfiguring the system every time you change a gage. The FlashCable's built-in programmable memory stores communication parameters for specific digital and RS232 gages as well as critical gage control information such as gage ID/Serial number and next calibration date (so you or SPC software can alert operators when gages need calibration.)

SPECIFICATIONS

Digital GagePort-NT

Description

- Auto read Digital FlashCables
- Two LED status indicators
- Resolution set by gage
- All configuration and downloadable drivers stored in EEROM

Connectors

- Two switch jacks
- Model GP-2102NT has *two* 10-pin connectors for gage input
- Model GP-2104NT has *four* 10-pin connectors for gage input
- One DB25P pin connector for RS232 output to a printer or computer

Combo GagePort-NT

Description

General

- 2 and 4 port versions
- Two LED status indicators
- All configuration and downloadable drivers stored in EEROM

Digital Gaging

- Digital FlashCables
- Resolution set by gage

Analog Gaging

- Analog FlashCables (GF-AxxxxV and GF-03xx series cables)
- Range(s): 24 Voltage ranges between 0-5mV to 0-20 V or +/-5mV to +/-20V DC
- Resolution 12-bit (4096 counts)

Torque Gaging

- Torque FlashCable (GF-0800-x series cable)
- Sensitivity: 2mV/V
- Resolution: 12-bit (4096 counts)
- Sample rate: Variable to 4kHz

Strain Gaging

- Analog FlashCable (GF-AxxxxV series cable)
- Range(s): 24 Voltage ranges between 0-5mv to 0-20V or +/-5mV to +/-20V DC
- Resolution: 12-bit (4096 counts)
- Sample rate: Variable to 4kHz

Gap & Flushness Gaging

- Gap & Flushness FlashCable (CA-860-2)
- Resolution: 12-bit (4096 counts)
- Sample rate: Variable to 4kHz

Connectors

- Two foot switch jacks
- Model GP-3102NT has two 10-pin connectors for gage input
- Model GP-3104NT has four 10-pin connectors for gage input
- One DB25P pin connector for RS232 output to a printer or computer

LVDT GagePort-NT

Description

- Resolution: 15-bit
- Sampling rate: 500 Hz to 4KHz based on number of probes
- Sampled frequency:
 - Full bridge: 5.15 KHz \pm 1%
 - Halfbridge: 13.0 KHz \pm 1%
- Total harmonic distortion: <1%
- Peak Excitation voltage: \pm 5V
- Input sensitivity: Jumper block configurable
Spans all standard LVDT output ranges

Connectors

- Two 5-Pin DIN 240° connectors for gage input (threaded sleeve lock)
- One foot switch jack
- One DB25P pin connector for RS232 output to a computer
- One 14-pin DIN connector for LVDT

Expansion unit

SYSTEM SPECIFICATIONS

Dimensions

Height: 0.84 in (21.4 mm)
Width: 3.18 in (80.8 mm)
Depth: 4.53 in (115.1 mm)

Weight

0.29 pounds (0.13 kg)

Temperature

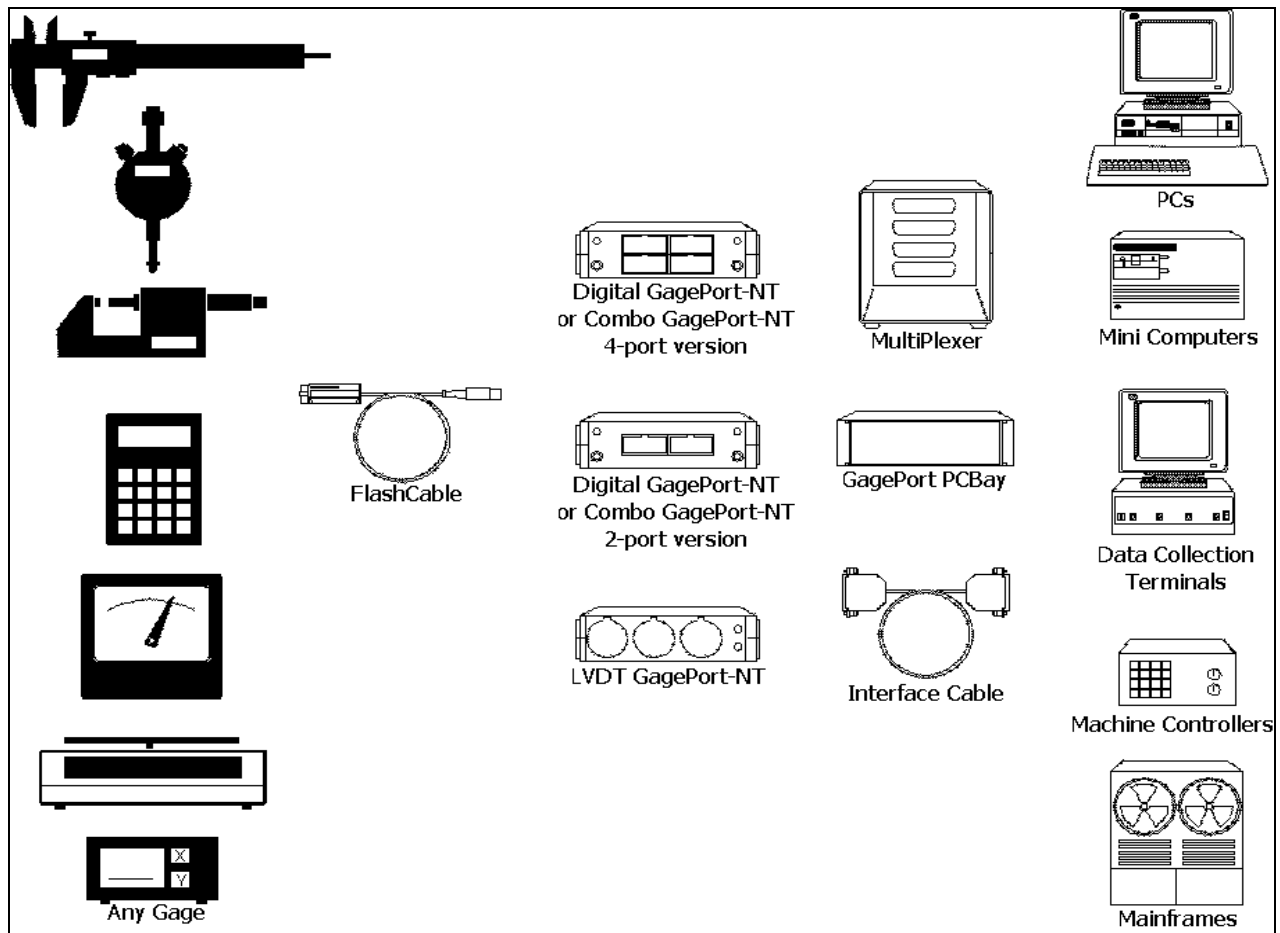
Operating: 32°F to 104°F (0°C to 40°C)
Storage: -22°F to 140°F (-30°C to 60°C)

Power Source

External 7-15 V DC at 50-150 ma based on model

Communications

- Serial ASCII RS232 bi-directional at 1200, 9600, and 19200 bps
- Compatible with any computer with RS232 serial port.
- All PC to GagePort communication functions are switch selectable.



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