

The Verbatim[®] Gateway

Interactive PLC
Monitoring and
Control via
Touch Tone Phones

ALLEN · BRADLEY
**PYRAMID
SOLUTIONS
PROGRAM**
REFERENCED PRODUCT

**ModConnect**



RACO's Verbatim Gateway keeps you

in touch, and in control,

no matter where you are.

T

he Verbatim® Gateway from RACO, the remote monitoring and alarm specialists, allows you to use TouchTone telephones anywhere as interactive, multi-functional operator interfaces. It's a unique breakthrough that provides convenient, inexpensive bidirectional communication with your PLC network via dial-up phone lines. So you can call in and check the status of any channel. Modify alarm criteria and monitoring points. Alter process variables and setpoints. So you can be called and receive clear voice-message reports of alarm situations, with messages directed sequentially to as many as 16 phone numbers.

In a single, compact, ruggedly built system, the Verbatim Gateway delivers these important functions and more. And it does so without requiring the use of PLC outputs or modification of PLC control programs.

In short, whether tracking or controlling intricate manufacturing processes or a host of water/wastewater treatment operations, the Verbatim Gateway begins a new era by making remote communication with your PLC network easier and more affordable than ever.



Extended functionality and versatility — at minimal cost.

Continuous real-time communication between the Verbatim Gateway and the PLC network is performed via a serial link using the protocols supported by specific PLC models. Any PLC's I/O points and data table locations can be manually altered. In addition, the system provides automatic monitoring of as many as 96 points — points reflecting any combination of discrete, analog, timer, counter, or other PLC data objects.

Further, the Verbatim Gateway uses only a single cable connection, to deliver its extensive functionality. You avoid the burdensome costs of complex wiring, additional PLC outputs and relays. You add monitoring points at costs that are about 40% less than those associated with traditional PLC-to-input configurations. As a result, you're able to fully utilize the potential of your PLCs — easily and inexpensively.

Simultaneous monitoring of multiple PLCs on multiple networks — even on networks with dissimilar protocols.

The Verbatim Gateway is designed for use with popular network protocols — including the Modicon Modbus Plus™, Modbus® RTU and the Allen Bradley DH485. Operating at selectable communication speeds up to 1 Mbaud, it's even capable of simultaneously monitoring PLCs on networks using different protocols. And all protocol-specific error-detection techniques and retransmission methods are fully maintained. You can also use the Verbatim Gateway as a bridge between incompatible networks, so that data can be exchanged between them.

The Verbatim Gateway allows easy read and write access to PLC data tables via any telephone.

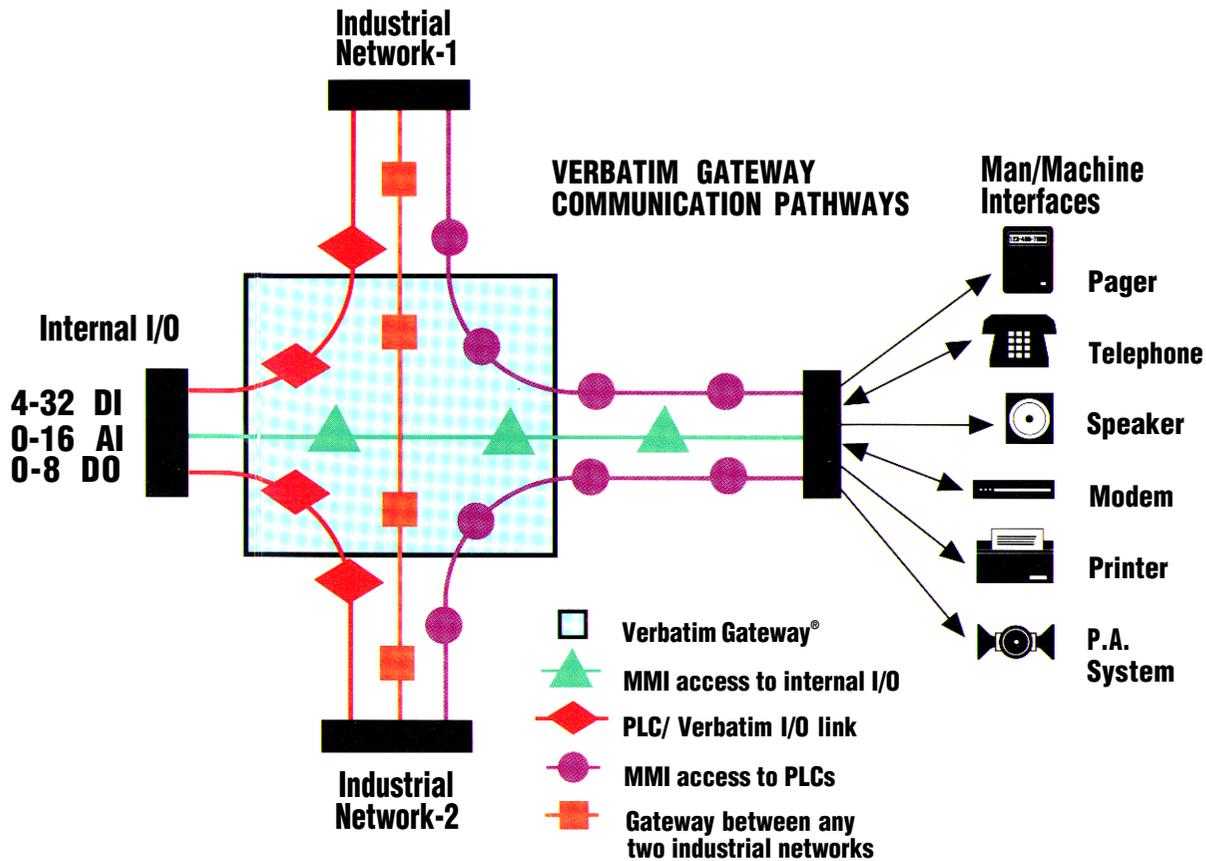
Fast access from any TouchTone phone using brief 4-digit codes, easy programming guided by clear voice prompts.

Accessing any of the 96 points which are automatically controlled by the Verbatim Gateway requires only a brief 4-digit sequence. Users can quickly perform functions that range from ordinary status-checking and message recording/review/revision to reading/writing of data registers at any network address and selection of global commands applying to all channels. Responses are always in voice format; data register numeric codes, for example, are converted to spoken voice messages. If a programming sequence is not recognized by the Verbatim Gateway or if an invalid parameter is entered, the system responds with the appropriate voice message.

The clear voice guidance simplifies entry of dial-out phone numbers, recording of alarm messages and setting of trip delays. The system's preprogrammed operating parameters streamline set-up, yet they may be easily altered to meet specific needs.

The Verbatim Gateway makes certain no alarm condition goes unheeded or unacknowledged.

When an alarm condition occurs, the Verbatim Gateway automatically dials up to 16 field-programmable phone numbers — numbers having as many as 60 digits each. The system then reports the station identification and the specific alarm condition.



Acknowledgment of an alarm phone call is effected by the simple touch of a button on the called phone during the alarm notification or by calling the reporting unit after the call has been received.

Complete status reports — always at your fingertips.

Wherever there's a telephone, there's instant access to status reports on all conditions monitored via the Verbatim Gateway. Similarly, the touch of a telephone key lets you review and alter programming, change alarm criteria, monitoring points, process variables, and set-points. Further, the system's built-in microphone permits listening to on-site sounds, and a built-in speaker-phone allows convenient communication with on-site personnel.

Unlimited flexibility in stored messages — each delivered with maximum clarity.

Free of the restrictions imposed by built-in vocabularies, the Verbatim Gateway can store in memory anything that can be spoken — from names and numbers to technical terms and detailed instructions.

The system's advanced digitized voice technology accurately replicates the original speaker. So there's less opportunity for misunderstanding or error. And messages can easily be changed or entered via the front panel or remotely from any TouchTone telephone.

Designed and built for reliable operation in the harshest industrial environments.

The Verbatim Gateway's heavy-duty metal enclosure, carefully selected and proven solid-state components, and sealed membrane keyboard are an assurance of problem-free performance year after year.

In the event of a power failure, a rechargeable gel-cell battery maintains full and continuous operation for up to thirteen hours. Further, because a precision regulated charger is used instead of a traditional "trickle" charger, battery charging time is minimized and battery life significantly extended.

The Verbatim Gateway also employs non-volatile memory, so no reprogramming is needed following power outages. Alarm messages and user-entered programming are

retained for years—even in the total absence of power to the system.

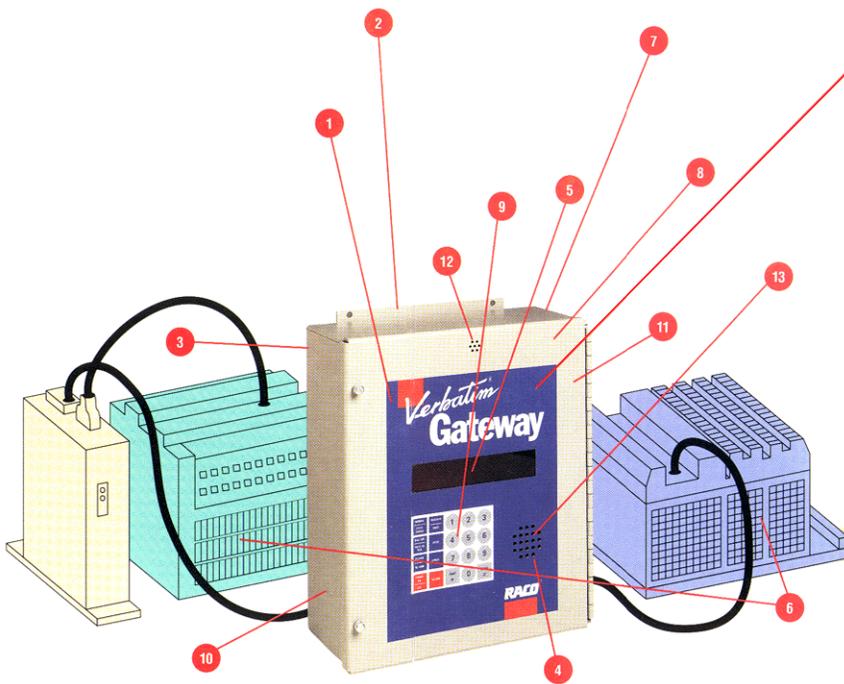
Continuous self-diagnostics, automatic alarming in the event of a PLC communication problem.

The Verbatim Gateway is self-testing and provides complete diagnostic information. Should it detect a communication failure, the unit automatically initiates an alarm. In addition to generating voice-message calls, alarm situations are also indicated by the system's LED display panel.

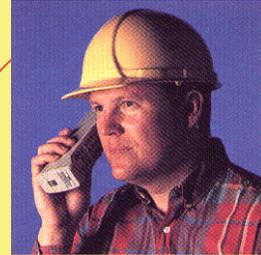
With start-up and operation made quick and easy through default settings and voice prompts, the Verbatim Gateway places comprehensive PLC monitoring and control capabilities as close as the nearest TouchTone telephone. Based on the Verbatim Automatic Dialing Remote Monitoring System—field proven by thousands operating worldwide — it's the "single-package" solution for keeping your fingers on the pulse of your PLC-controlled processes, for accessing and altering those processes from anywhere in the world.



Both parallel and serial printer ports are provided for local data logging.



- 1 Digitally recorded user messages—over 10 minutes of recording time.
- 2 Expansion slots for plug-in modules.
- 3 Extensive surge protection.
- 4 Verbally reported status checking.
- 5 Visual display of inputs status.
- 6 Simultaneous monitoring of multiple networks.
- 7 Network monitoring supported by a robust set of diagnostics, status and alarm capabilities.



The Verbatim Gateway delivers clear voice messages via telephone, cellular telephone, radio, pagers and PA systems.

- 8 Network gateway for transfer of data between PLCs or other devices using incompatible protocols.
- 9 Easy voice-prompted programming via the front panel or telephone.
- 10 13-hour battery backup.
- 11 User-recorded alarm and normal messages for each monitored point.
- 12 Built-in microphone allows listening to local sounds from remote locations.
- 13 Built-in speakerphone permits operator to place phone calls, communicate with remote callers.

Programmable Features

Alarm Call Grouping

Alarm calls to up to 16 phone number groups

Alarm Criteria

Alarm on Open Circuit
Alarm on Closed Circuit
Status only
High/Low set point
Run Time Meter
Totalizer

Alarm Reset

ON/OFF

Alarm Reset Time

0.1 to 99.9 hours

Alarm System Enable/Disable

Local and Remote
Enable or Disable

Alarm Trip Delay

0.1 to 999.9 seconds

Autocall Test

ON/OFF

Autocall Time Interval

0.1 to 99.9 hours

Call Back/Call Forward

Separate unique phone number

Dialing Format

TouchTone or Rotary
Pulse

Number of Message Repetitions

1 to 20 repetitions

Phone Numbers

16 phone numbers up to 60 digits each

Read/Write Data Registers

Any discrete or integer data register

Ring Delay

1 to 20 rings

Security Code

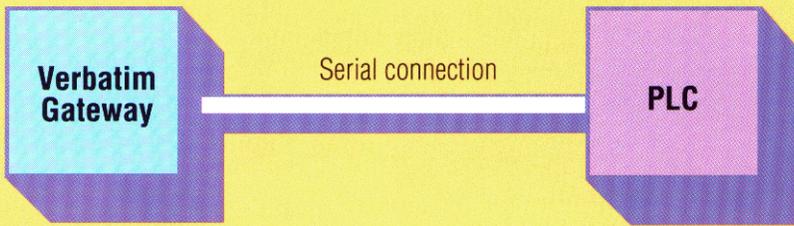
6 digits

Station ID & Message Recording Time

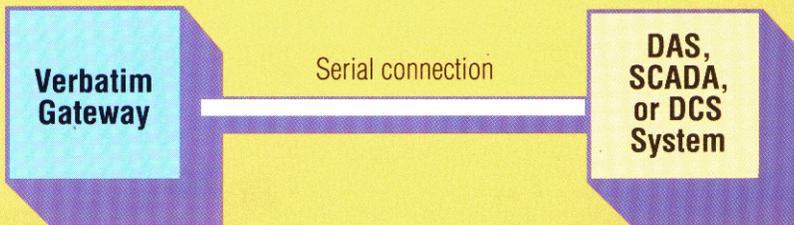
User variable

Time Between Alarm Calls

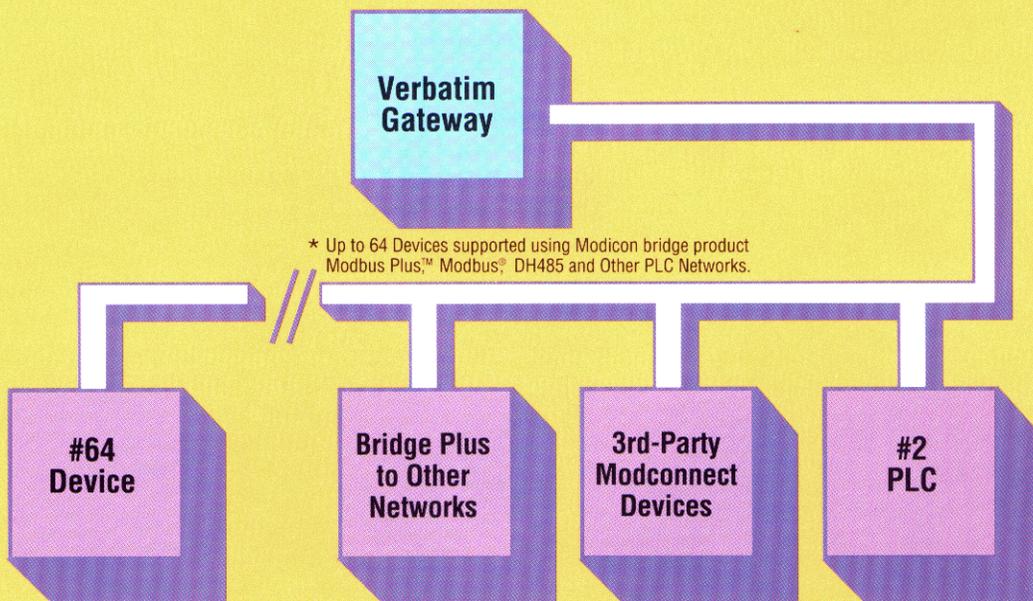
0.1 to 99.9 minutes



Monitoring a single PLC



Monitoring a system with compatible device interface



* Up to 64 Devices supported using Modicon bridge product Modbus Plus,™ Modbus,® DH485 and Other PLC Networks.

Up to 64 Devices per Network

Monitoring a PLC network

Standard Specifications

PLC COMMUNICATIONS

- **Fully Compatible:** Requires no modifications to existing network configuration, PLC wiring or programs.
- **Remote Data Table Access:** Monitor or alter any data table location on demand via front panel or telephone.
- **System Security:** Access protected by security codes.
- **Alarm Monitoring:** Continuously monitors 32,64 or 96 PLC addresses.
- **Gateway Function:** Provides for exchange of data between PLC devices on incompatible networks.
- **I/O Export:** Able to continuously transfer internal I/O and alarm data to remote PLCs.
- **Supported Protocols:** Modbus Plus, Modbus RTU, Allen-Bradley DFI, and Allen-Bradley DH485 (programming port). Contact factory for others.
- **Latency:** Depends on configuration and other Network traffic. Typical range. 01-10 seconds.

ELECTRICAL

- **Power requirement:** 105-135 VAC, 50/60 Hz, 15 watts maximum or 8-14 VDC at 500 mA maximum.
- **Battery charging:** Precision voltage controlled, including automatic rapid recharge after drain.
- **Battery backup:** 13 hours.
- **Current draw:** Standby 300 mA Operational 460 mA
- **PLC I/O point sensing:** Two RS232/RS485 ports.
- **Internal input sensing:** Four unpowered contact inputs standard. Open contacts see 5 volts DC; closed contacts see 10 mA DC.
- Standard Centronics parallel printer port.

PHYSICAL

- **Surge protection:** Integral gas tube and solid-state protectors on all phone, power, and signal lines.
- Accommodates field-installed upgrades.
- Rugged metal indoor enclosure.
- **Weight:** 8 lbs. (3.6 kg).
- **Dimensions:** 11⁷/₈" H x 9³/₄" W x 5"D.
- **Mounting centers:** 11³/₈" vertical x 6" horizontal.

ENVIRONMENTAL

- **Temperature range:** 20 to 130°F.
- **Humidity:** 0 to 95%, noncondensing.

TELEPHONE

- Rotary pulse or tone dialing, keyboard selectable.
- Dials up to 16 different numbers, each up to 60 digits long.
- Allows programming of multiple PBX delays in 1-second increments.
- FCC Registered Part 68, "Ringer Equivalence": 0.3A.
- Alarm Acknowledgment is by TouchTone key or by calling back.
- Built-in speaker phone allows two-way conversation.
- Compatible with most cellular telephone systems.

SPEECH MESSAGES

- Users record their own messages. Also, includes resident vocabulary for programming guidance and for default "alarm/normal" speech if no user messages are recorded.

WARRANTY

- Five year parts and labor warranty. See our separate warranty card for details.

INTERNAL I/O OPTIONS

- **Analog.** Custom scaled in the units of measurement required for your job. Analog alarms on a high and a low alarm setpoint. Upgradeable to 1, 4, 8, or 16 analog channels.
- **Remote Supervisory Control.** The operator can turn equipment on or off via any telephone. Upgradeable to 4 or 8 outputs.
- **Channels.** Upgradeable to 8, 16, 24, or 32 contact channels.

FACTORY OPTIONS

- **Enclosure.** System available in NEMA 4X enclosure, which is corrosion proof and sealed against 12 feet of water.
- **Environmental.** Thermostatically controlled heater available, suggested for operation below 20°F or where condensation may occur.
- **Local Alarm Relay Output.** Relay activates during unacknowledged alarm conditions.



RACO MANUFACTURING AND ENGINEERING CO.

1400-62nd Street, Emeryville, CA 94608
(510) 658-6713, 1-800-722-6999
Fax: (510) 658-3153