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Dialer Specification - Verbatim[®] Gateway Modular Series VPLC

Description and Phone Number Dialing:

The autodialer shall be a solid state component capable of dialing up to 16 phone numbers, each up to 60 digits in length. Phone numbers and Standard pulse dialing or Touch Tone[®] DTMF dialing are user programmable via the system's keyboard or Touch Tone phone. Further, the autodialer shall be capable of connecting, via a single serial interface cable, to a variety of Programmable Logic Controllers (PLCs), Distributed Control Systems (DCSs) and SCADA systems. Serial interfacing methods shall incorporate commonly used standard industrial network protocols such as Modicon, Inc. Modbus TCP, Modbus RTU, Allen-Bradley EtherNet/IP, DH-485 network and others.

1. Solid State Voice Message Recording and Playback:

The unit shall have two different categories of speech message capability, all implemented with permanent non-volatile solid state circuitry with no mechanical tape mechanisms. The unit shall allow for message recording from a remote telephone as well as from the front panel.

A. User Field Recorded Messages:

The user may record and re-record his own voice messages, for each input channel and for the Station ID.

- a. There shall be no limit on the length of any particular message within the overall available message recording time, which shall be 409 seconds for 36 total channel units and 651 seconds for 57 total or more channel units.
- b. The unit shall allow selective recording of both Normal and Alarm advisory messages for each input channel.
- c. The unit shall provide for automatic setting of the optimum speech memory usage rate for the total set of messages recorded, in order to achieve optimum recording sound quality.
- d. Circuit board switches or jumper straps shall not be acceptable means of manipulating message length or recording rates.

B. Permanent Resident Non-Recorded Messages:

Permanent built-in messages shall be included to support user programming operations, to provide supplemental warning messages such as advising that the alarms have been disabled, and to allow the unit

to be fully functional even when the installer has not recorded any messages of his own.

2. Local and Remote Programming Capabilities:

The user may optionally elect to alter the following parameters from their standard normal default values via keyboard entry or remotely from any Touch Tone phone.

- A. Alarm Call Grouping: On alarm, system shall selectively call the correct phone numbers according to the current alarm(s).
- B. Alarm response delay: 0.1–9999.9 seconds.
- C. Delay between alarm call-outs: 0.1–99.9 minutes.
- D. Alarm reset time: 0.1–99 hours or "NO RESET."
- E. Incoming ring response (answer) delay: 1–20 rings.
- F. Number of message repetitions: 1–20 repetitions.
- G. Input alarm criteria: Each channel shall be independently configured for Normally Closed, Normally Open, No Alarm, or Disabled.
- H. Autocall Test: When enabled, the unit shall place a single round of test calls, both at the time this function is enabled and also at regular subsequent intervals until this function is disabled at the keyboard.
- I. Run Time Meter: Selected physical channel inputs shall accumulate and report the number of hours that its input contacts have been closed.
- J. Remote system microphone activation.
- K. Remote and local arming and disarming of system.
- L. Pulse Totalizer Function: Selected physical input channels shall be capable of counting pulses of up to 100Hz. at 50% duty cycle.

3. Nonvolatile Program Memory Retention:

User-entered programming and voice messages shall be kept intact even during power failures or when all power is removed for up to 10 years.

4. Acknowledgement:

Acknowledgement of an alarm phone call is to be accomplished by pressing a Touch Tone "9" as the alarm call is being received, and / or by returning a phone call to the unit after having received an alarm call.

5. Remote (PLC) Channel Monitoring Function:

The unit shall continuously scan all properly configured remote channels. The unit shall monitor remote channels which physically reside in other industrial equipment interfaced to the Verbatim Gateway via the serial interface. The unit shall be capable of interfacing to at least two PLC networks simultaneously. The unit shall be capable of monitoring any PLC data register regardless of register type, whether digital, analog, input, output or status point. Alarm criteria shall be settable according to data register type. For digital remote channels, alarm criteria shall be settable for normally '0' or normally '1'. For analog remote channels, both a high setpoint and a low setpoint alarm criteria shall be settable. Violation of alarm criteria at any remote channel shall cause the unit to go into alarm state and begin dial-outs. All remote channel alarm criteria shall be settable either at the front panel of the unit or over the telephone using touch-tone commands. The unit shall be capable of writing data to any PLC data register to which writing data is a legal operation. The unit shall monitor any

failure of the active serial communications channels. Upon failure of any communications channel the unit shall enter the alarm state and begin dial-outs. The unit shall be capable of transferring data between one remote channel on one serial communications network and another remote channel on a second serial communications network. The unit shall also be capable of transferring data between remote channels on a serial communications network and physical channels within the unit. The unit shall be optionally upgradable to incorporate provision for 32, 64 or 96 total remote channels.

6. Input Monitoring Function:

The unit shall continuously monitor the presence of AC power and the status of four contact closure inputs. Unit shall optionally be field upgradeable to incorporate a total of 8, 16, 24 or 32 dry contact inputs. AC power failure, or violation of the alarm criteria at any input, shall cause the unit to go into alarm state and begin dial-outs. Unit shall, upon a single program entry, automatically accept all input states as the normal non-alarm state, eliminating possible confusion about Normally Open versus Normally Closed inputs. Further, as a diagnostic aid, unit shall have the capability of directly announcing the state of any given input as currently "Open Circuit" or "Closed Circuit," without disturbing any message programming. Each input channel shall also be independently programmable, without need to manipulate circuit board switches or jumpers, as Normally Open or Normally Closed, or for No Alarm (Status Only), or for Pulse Totalizing, or for Run Time Metering.

7. Run Time Meter Inputs:

Any dry contact input can be programmed to accumulate and report the number of hours their respective input circuits have been closed. Any such channels will never cause an alarm, but on inquiry will recite the channel's message according to the status of the input and then report the closed circuit time to the tenth of an hour. The input will accumulate and report in tenths of hours up to a total accumulated running time of 99,999.9 hours. The initial value of the Run Time Meter shall be programmable in order to agree with existing electromechanical Run Time Meters. Up to a total of eight Run Time Meters may be programmed.

8. Pulse Totalizer Inputs:

Any dry contact input can be programmed to accumulate the number of pulses (momentary contact closures) occurring at the input. The maximum input pulse rate must not exceed 100 pulses per second, and if the rate is over 50 pulses per second, the pulses must have a 50% duty cycle. The user shall be able to program an initial starting value and a scale factor for each pulse totalizer input. The pulse totalizer input shall cause an alarm call upon reaching a user defined alarm setpoint.

9. Alarm Message:

Upon initiating an alarm phone call, the system is to "speak" to only those channels that are currently in "alarm status."

10. Communications Protocols:

The unit shall interface to standard networks commonly used in industrial installations. The unit shall be capable of network communications using the Modbus TCP, Modbus RTU protocol, the Allen-Bradley EtherNet/IP, the Allen-Bradley DF-1 protocol, and the Allen-Bradley DH-485 protocol.. Additional communications protocols shall be supplied from the factory upon request.

11. Diagnostics:
The unit shall include user commands to execute diagnostics of the PLC network to determine the health of the network. The unit shall inform the user of the length of scan time for the set of all configured remote channels. The unit shall provide a complete verbal report of all programmable functions and their programmed values on command from any remote Touch Tone phone.
12. Speakerphone:
The unit shall be capable of dialing any phone number on command and function as a speakerphone.
13. Inquiry Message and Function:
Inquiry phone calls can be made directly to the unit at any time from any telephone, locally or long distance, for a complete status report of all variables being monitored, including power status.
14. Power Battery Backup:
Normal power shall be 105–135 VAC, 15 watts nominal. The product is to contain its own gel cell rechargeable battery which is automatically kept charged when AC power is present. The system shall operate on battery power for a minimum of 13 continuous hours in the event of AC power failure. A shorter backup time shall not be acceptable. The built-in charger shall be precision voltage controlled, not a "trickle charger," in order to minimize recharge time and maximize battery life available.
15. Phone Line:
The autodialer is to use a standard rotary pulse or Touch Tone "dial-up" phone line (direct leased line not to be required) and is to be F.C.C. approved. Connection to the telephone is through a four-pin modular jack (RJ-11).
16. Local Data Logging:
The system shall include a parallel printer interface for local data logging. The local printer will automatically print out, with date and time stamp, each activity that occurs including alarms, acknowledgements, programming entries and inquiry calls. For the purpose of easy program review the user shall be able to printout, on demand, all user entered programming.
17. Public Address Broadcast:
The standard dialer shall provide a mini phone jack for optional connection to a local public address system. If connected to the PA system the dialer shall broadcast all alarm messages over the PA system and the telephone simultaneously.
18. Integral Surge Protection:
All power, phone line, dry contact and analog signal inputs shall be protected at the circuit board to IEEE Standard 587, category B (6,000 volts open circuit/3,000 amps closed circuit). Gas tubes followed by solid state protectors shall be integral to the circuit board for each such line. Protectors mounted

external to the main circuit board shall not be an acceptable substitute. The installer shall provide a good electrical ground connection point near the unit to maximize the effectiveness of the surge protection.

19. Technical / Customer Support:

All users shall be provided and / or shall have access to the following support resources.

- A. Each autodialer shall be shipped with a CD_ROM which details all features of the product and provides an in-depth step-by-step video programming guide. A superficial marketing overview will not be acceptable.
- B. Free Live Chat support on RACO's website staffed with trained technicians shall be available during manufacturer's normal working day.
- C. Free comprehensive web based support center with over 550 FAQs shall be available for customers to retrieve copies of all available technical information directly into his own computer. The support center shall have an optimized user interface for smartphones at <http://www.racomobilesupport.com>, allowing users to quickly navigate to the desired support topics. This service shall be available on a 24 hour basis.
- D. A toll free 800 number shall be available during manufacturer's normal working day to permit users to talk directly with technical service personnel and resolve problems not solved by the RACO web-based Support Center.

20. Warranty:

The autodialer shall be covered by a five (5) year warranty covering parts and labor performed at the factory.

21. Modular Upgrades:

The system shall include expansion connectors to accommodate field upgrades for additional dry contact inputs, remote supervisory control outputs and analog inputs

22. Additional Features: Sealed Switches, LED Indicators, Alarm Disable Warning, Talk Through:

All keyboard and front panel switches shall be sealed to prevent contamination. Front panel LED's shall indicate: Normal Operation, Program Mode, Phone Call in Progress, Status for each channel, AC Power Present, AC Power Failure, and Low, Discharging or Recharging Battery. On any Inquiry telephone call or On-site status check, the voice shall provide specific warning if no dial-out phone numbers are entered, or if the unit is in the "alarm disable" mode, or if AC power is off or has been off since last reset. A built-in microphone shall allow anyone at a remote phone to listen to local sounds and have a two-way conversation with personnel at the autodialer.

23. Special Order Items:

The following options shall be available on specific order:

- A. 4, 12, 20 or 28 extra contact channels (8,16, 24 or 32 respectively, total)
- B. 1,4, 8 or 16 analog channels
- C. Remote supervisory control (4 or 8 outputs)
- D. Cellular telephone communications
- E. Radio communications interface
- F. NEMA 4X (sealed) enclosure
- G. Thermostatically controlled heater

Specifications subject to change without notice.

Literature code 140