Verbatim to Verbatim

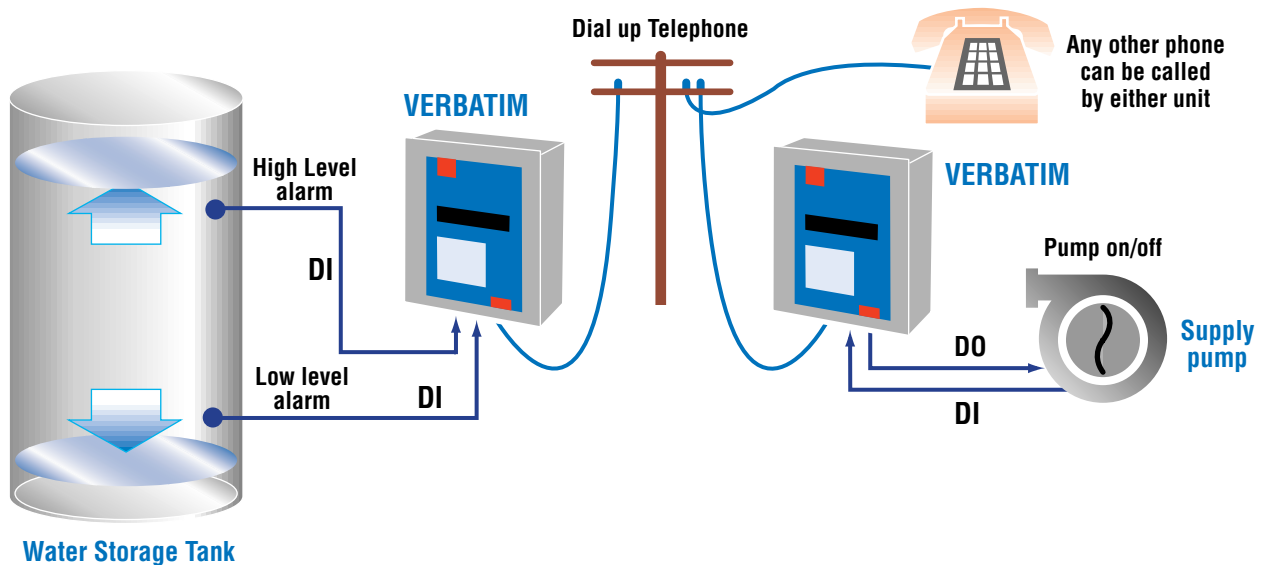# CLOSED-LOOP CONTROL SYSTEM FOR REMOTE FACILITIES

RACO Verbatim Systems can be used to form a low-cost closed loop control system for operation of remotely located electrical devices. Compared with alternative SCADA and DCS systems, the easy-to-use Verbatim system offers many important advantages from cost, installation, and maintenance standpoints.

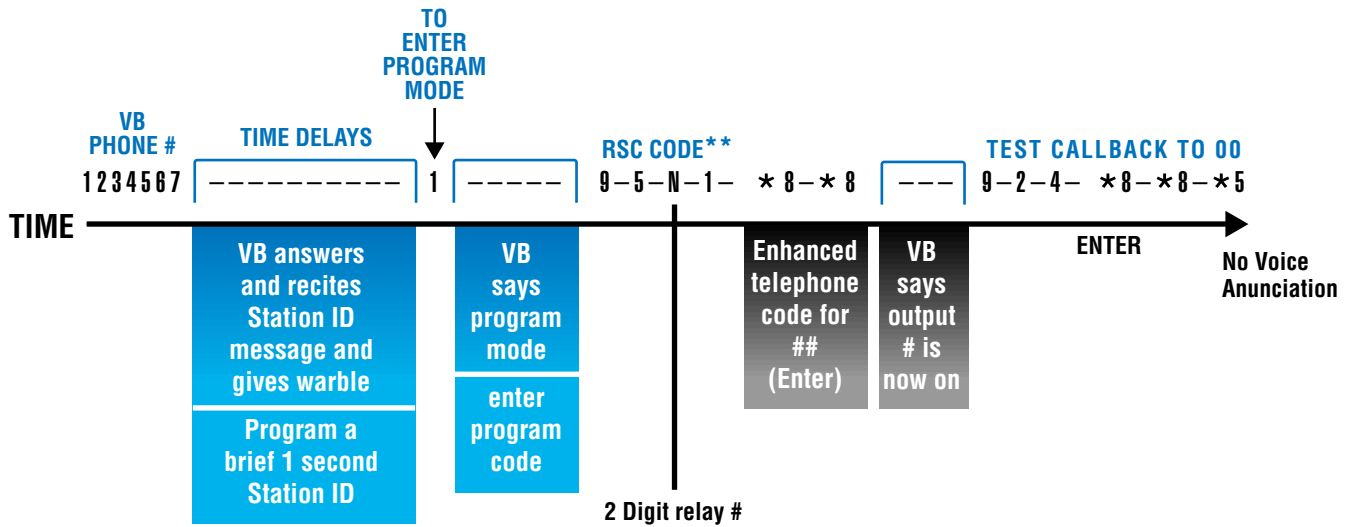The RACO control system utilizes two RACO Verbatim units operating over a standard dial-up landline or wireless telephone link. A dedicated phone line is not required. And because Verbatim Systems report by exception they do not require continuous polling. The systems only operate when a control function needs to be initiated.

A master Verbatim at a central control point communicates with a remote Verbatim unit located near the device to be operated. If an alarm is detected at the master location, such as low water level in a tank being moni-tored, the master Verbatim calls the remote Verbatim, which causes activation of a control output relay, which turns on a pump motor to fill the tank. When the tank level reaches maximum, another alarm would initiate an action to turn the pump off. After receipt of each control command, the remote Verbatim acknowledges that the instruction was received.

Dial up Telephone

Any other phone can be called by either unit

VERBATIM

VERBATIM

High Level alarm

DI

Low level alarm

DI

Pump on/off

DO

DI

Supply pump

Water Storage Tank

In a typical application, a Verbatim-to-Verbatim System monitors and controls the level of a water tank. When the tank is low, the master Verbatim unit calls the remote Verbatim unit, which turns the pump motor on to fill the tank. When the tank is full, the process is repeated to turn the pump motor off. Similarly, other electrically operated devices can be controlled.

Programming Timeline Diagram

TO ENTER PROGRAM MODE

VB PHONE #	TIME DELAYS	1	RSC CODE**	TEST CALLBACK TO 00
1234567	– – – – – – – – –		– – – – –	9 – 5 – N – 1 – *8 – *8	– – –	9 – 2 – 4 – *8 – *8 – *5

TIME →

- **VB answers and recites Station ID message and gives warble** / **Program a brief 1 second Station ID**
- **VB says program mode** / **enter program code**
- **2 Digit relay #**
- **Enhanced telephone code for ## (Enter)**
- **VB says output # is now on**
- **ENTER**
- **No Voice Anunciation**

***Delay must be put between each number…(–) minus signs are delays*

SENDING VB:
Use alarm call grouping to assign alarm channels to phone numbers, to turn RSC's on or off.
Could use Return to Normal Codes to prevent call backs.

RECEIVING VB:
Must have phone #00 set to the phone number of "sending VB", to acknowledge alarm call.

If the master Verbatim does not receive an acknowledgement from the remote Verbatim, the master begins an alarm calling sequence, calling a list of preprogrammed emergency phone numbers until it gets an answer. When answered and acknowledged, the master system reports the alarm location and trouble. Verbatim units can report alarms to a central computer or call any standard phone, cellular phone, numeric or voice pager, or voice mail system.

Supervisory personnel can call in at any time from any standard touch-tone phone to get a system status report, change alarm parameters, or execute a command. A hard copy of alarm data can be printed out using the system's data logging capabilities.

Each Verbatim unit can be equipped with up to 32 digital inputs and up to 16 analog inputs, together with 4 or 8 relay outputs. The units plug into standard phone jacks and operate with 115 VAC power. If standard phone lines are not available or have been disabled, RACO's Cellularm system is available to permit alarm reporting over the cellular network.

When conventional telephone lines are disabled or not available, RACO's Cellularm™ system provides autodialing over the cellular telephone network. A Cellularm system consists of a cellular phone transceiver pack-aged together with a Verbatim unit in a compact, weather resistant housing that is easy to transport and set up in the field.

The Verbatim is also available in a Secure Front Panel (SFP) configuration. An SFP unit is provided without front panel programming keypad and other controls and indicators. With this option, system programming can only be done over the phone by authorized personnel, providing security for unsupervised or remotely located SFP units. This restricts local access to the system, while reducing the purchase price. All other system functions are operational.

SINCE 1948

RACO®

REMOTE ALARMS AND CONTROLS

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