

## **PC Programming for the Electronic Transmitter**

This program will allow you to set up the configuration for the transmitter, and then download it into the EEPROM on the transmitter.

To start the program, type `CB` and then press the ENTER key.

To select menu items, press the number of the item, then press the ENTER key.

The first display screen (the main menu screen) will allow you to acquire the database from:

- a. the Transmitter
- b. a PC disk file
- c. create a new one (automatically assigns default values)

You may create a new database, upload the database from the transmitter, or use the AA database on the demo diskette.

After acquiring the database, choose the Modify option in the main menu to make any additions, deletions, or changes. A screen will appear that will allow you to select the type of changes that you wish to make, either to a specific input (trip) circuit or to the overall operation of the transmitter. If you choose the circuit level option, a screen will appear that will allow you to select the trip circuit to be changed.

When you are finished with the database, the main menu will allow you to download the database to the transmitter, save the database to a PC disk file, or exit the program. **WARNING:** If you exit the program without first saving the database to disk, then no disk file will be written, and all modifications to the database will be lost.

## **Input (trip) Circuits Configuration**

The following items are programmable for each input trip circuit.

**ALARM CODE.** This is the code number that will be transmitted when the input enters an alarm state, i.e. the external dry contact goes open on a normally closed (N/C) input, or closed on a normally open (NO) input.

This value may be up to 6 digits long, and may range from 0 to 999999.

Leading zeros are ignored.

Embedded zeros will cause a “ten” digit to be transmitted if the “embedded zeros” option is enabled.

Embedded zeros will be interpreted as an erroneous code number, and no transmission will occur if the “embedded zeros” option is disabled

A code number of all zeros will be interpreted as a “transmit disable”, and no transmission will occur, however the zone alarm LED, the zone relay, and the common alarm relay will still respond to the input circuit.

A code number of all ones is permitted, but not recommended, since a receiving device may misinterpret the transmission as a single digit, i.e. 111 may appear as 3.

**ALARM ROUNDS.** This is the number of times that the alarm code number will be transmitted when the input circuit enters an alarm state.

Values may range from 0 to 255

**TROUBLE CODE.** This is the code that will be transmitted when the input circuit enters a trouble state, i.e. the external dry contact circuit goes open (broken).

Trouble codes have the same conditions as alarm codes (see above).

**TROUBLE ROUNDS.** This is the number of times that the trouble code number will be transmitted when the input circuit goes open (broken).

Trouble rounds have the same conditions as alarm rounds (see above).

**INPUT POLARITY (N/O N/C).** This option allows you to specify whether the external dry contact is normally open (NO) or normally closed (NC).

On a normally closed (NC) external dry contact, a missing or disconnected “end-of-line” resistor would not be detected until the contact opened (activated for an alarm condition), at which time both an “alarm” code and a “trouble” code would be transmitted.

Note that the Local Energy input is typically NO. It may be set to NC for other purposes.

**ALLOW ALL ONES IN CODES.** If this option is enabled, then “all ones” codes, i.e. 1, 11, 111, 1111, 11111, 111111, 1111111, and 11111111 will be allowed. A code number of all ones is permitted, but not recommended, since a receiving device may misinterpret the transmission as a single digit, i.e. 4 rounds of code number 111 may appear as 1 round of code number 3333.

If this option is disabled, then a code number of all ones will be ignored, and no transmission will occur.

**ALLOW EMBEDDED ZEROS IN CODES.** Embedded zeros are zeros that come after the first non-zero digit, and before the decimal point.

If this option is enabled, then embedded zeros will cause a “ten” digit to be transmitted. Leading zeros are always ignored. Example: Code number 00001040 would be transmitted as 1 10 4 10.

If this option is disabled, then embedded zeros will be interpreted as an erroneous code number, and no transmission will occur.

**ALLOW E.G.R. MODE FOR TROUBLE.** This option allows you to specify whether or not a trouble transmission will be allowed in the Emergency Ground Return (E.G.R.) mode for a trouble state on the input.

If the municipal loop is broken, i.e. it has been open for longer the “dead-time” setting (see **Transmitter Configuration**), and this option is enabled, then the trouble transmission will occur in E.G.R. mode.

If the municipal loop is broken, i.e. it has been open for longer the “dead-time” setting (see **Transmitter Configuration**), and this option is disabled, then the trouble transmission will be discarded and no transmission will occur.

**ALLOW BULLDOG MODE FOR ALARM.** The option allows you to specify whether or not “bulldog” mode will be allowed for an alarm state on the input.

A bulldog operation can occur only if both the municipal loop and the Emergency Ground Return circuit are unavailable.

If the municipal loop is broken, i.e. it has been open for longer the “dead-time” setting (see **Transmitter Configuration**), then the alarm transmission will be attempted in E.G.R. mode. If interference is detected in E.G.R. mode, then the transmitter will wait for the amount of time specified in “dead-time” (see **Transmitter Configuration**), and will again try to transmit, first on the municipal loop, then on the E.G.R. circuit. This sequence of attempts will continue until either the “maximum number of allowable tries” have been attempted, or the “bulldog-time” has expired.

If this option is enabled, then a “bulldog” operation will be performed, i.e. the code number will be transmitted first on the municipal loop, and then on the E.G.R. circuit, regardless of interference or circuit condition.

Note that if either the municipal loop or the E.G.R. circuit is configured as non-PNIS, then transmission will, of course, occur prior to any bulldog operation.

If this option is disabled, then the pending transmission will be discarded after the “maximum number of tries” have been attempted, and no transmission will occur.

#### ALLOW BULLDOG MODE FOR TROUBLE.

The option allows you to specify whether or not “bulldog” mode will be allowed for a trouble state on the input.

A bulldog operation can occur only if both the municipal loop and the Emergency Ground Return circuit are unavailable.

If the municipal loop is broken, i.e. it has been open for longer the “dead-time” setting (see **Transmitter Configuration**), then the trouble transmission will be attempted in E.G.R. mode ONLY if the “allow E.G.R. mode for trouble” option is enabled. If interference is detected in E.G.R. mode, or if the “allow E.G.R. mode for trouble” option is disabled, then the transmitter will wait for the amount of time specified in “dead-time” (see **Transmitter Configuration**), and will again try to transmit, first on the municipal loop, then on the E.G.R. circuit. This sequence of attempts will continue until either the “maximum number of allowable tries” have been attempted, or the “bulldog-time” has expired.

If this option is enabled, then a “bulldog” operation will be performed, i.e. the code number will be transmitted first on the municipal loop, and then on the E.G.R. circuit (if the “allow E.G.R. mode for trouble” option is enabled) regardless of interference or circuit condition.

Note that if the municipal loop is configured for non-PNIS or if the E.G.R. circuit is configured as non-PNIS (and the “allow E.G.R. mode for trouble” option is enabled), then transmission will, of course, occur prior to any bulldog operation.

If this option is disabled, then the pending transmission will be discarded after the “maximum number of tries” have been attempted, and no transmission will occur.

## **Transmitter Configuration**

The following items pertain to all input zone circuits.

**LOOP IS POSITIVE NON-INTERFERING SUCCESSIVE.** This option allows you to specify whether or not the transmitter will monitor the municipal loop for other transmitters.

If this option is enabled, then all transmissions on the municipal loop will be monitored for interference. If another transmitter is detected on the municipal loop, then all pending transmissions will be postponed until the municipal loop is available.

If a transmission is in progress when another transmitter is detected, then the municipal loop will be relinquished until the municipal loop is available, at which time all programmed rounds of the code number will be transmitted.

If this option is disabled, then the transmitter will not relinquish the municipal loop if another transmitter interferes.

**E.G.R. IS POSITIVE NON-INTERFERING SUCCESSIVE.** This option allows you to specify whether or not the transmitter will monitor the E.G.R. circuit for other transmitters.

If this option is enabled, then all transmissions on the E.G.R. circuit will be monitored for interference. If another transmitter is detected on the E.G.R. circuit, then all pending transmissions will be postponed until the E.G.R. circuit is available.

If a transmission is in progress when another transmitter is detected, then the E.G.R. circuit will be relinquished until the E.G.R. circuit (or municipal loop) is available, at which time all programmed rounds of the code number will be transmitted.

If this option is disabled, then the transmitter will not relinquish the E.G.R. circuit if another transmitter interferes.

LOOP IS MUNICIPAL / SUMMONING. This allows you to specify whether the telegraphic loop should be viewed as a “municipal” loop or a “summoning” loop.

If “municipal” is selected, then the telegraphic loop will remain open between digits and rounds. This enhances PNIS operation.

If “summoning” is selected, then the telegraphic loop will be closed between digits and rounds. This prevents the last blow (hit) of each digit and each round from being “stretched” through the inter-digit and inter-round time frames. This makes it easier to visually and audibly decode the transmission. This mode is best used when driving devices like air horns, flashing lights, etc., and when the transmitter is the only transmitter on the telegraphic loop.

E.G.R IS MUNICIPAL / SUMMONING. This allows you to specify whether the E.G.R. circuit should be viewed as a “municipal” circuit or a “summoning” circuit.

If “municipal” is selected, then the E.G.R. circuit will remain closed between digits and rounds. This enhances PNIS operation.

If “summoning” is selected, then the telegraphic loop will be open between digits and rounds. This prevents the last blow (hit) of each digit and each round from being “stretched” through the inter-digit and inter-round time frames.

TIMING. This option allows you to enter the transmitter’s basic timing element.

Timing may range from 0.125 second (1/8) to 4.0 seconds, in .0625 second (1/16) increments. Entries between 0.125 and 4.0 will be rounded to the nearest 1/16 second. For example 1.787 would be rounded to 1.8125 (1 and 13/16ths).second timing.

Timing is based on Standard Municipal Ratio.

LOOP LIVE TIME. This option allows you to specify the amount of time that the telegraphic loop must be continuously undisturbed before a transmission will begin. This will provide an “inter-transmit” delay after another transmitter has finished transmitting, and following the repair of a broken telegraphic loop.

This is NOT a fixed delay after an input circuit trip. If the telegraphic loop was continuously undisturbed for “live-time” before the input circuit was tripped, then transmission will begin immediately. Example: Assume that “live-time” = 7 seconds, and that another transmitter finished transmitting, and closed the telegraphic loop 2 seconds prior to an input circuit trip. Transmission will begin 5 seconds after the trip (if the telegraphic loop remains continuously undisturbed).

“Live-time” may range from 0 to 255 seconds (4.25 minutes).

LOOP DEAD TIME. This option allows you to specify the amount of time that the telegraphic loop must be continuously open before an E.G.R. transmission will be attempted.

This is NOT a fixed delay after an input circuit trip. If the telegraphic loop was continuously open for “dead-time” before the input circuit was tripped, then E.G.R. transmission will be attempted immediately. Example: Assume that “dead-time” = 15 seconds, and that telegraphic loop opened 4 seconds prior to an input circuit trip. An E.G.R. transmission will be attempted 11 seconds after the trip (if the telegraphic loop remains continuously open).

“Dead-time” may range from 0 to 255 seconds (4.25 minutes).

BULLDOG TIME-OUT. This option allows you to specify the amount of time that transmission attempts can be made before a “bulldog” operation is performed.

Time counting begins when the input circuit is tripped.

Note that the “maximum number of tries” may occur before the bulldog time-out.

“Bulldog-time” may range from 0 to 255 minutes (4.25 hours).

MAXIMUM ATTEMPTS TO TRANSMIT BEFORE BULLDOG. This option allows you to specify the “maximum number of tries” that a transmission will be attempted before a bulldog operation is performed.

“Maximum number of tries” may range from 0 to 255 minutes (4.25 hours).

Note that the “bulldog-time-out” may occur before the “maximum number of tries”.

## **Defaults**

The on-board EEPROM holds the operating configuration. It is loaded into the microprocessor's memory whenever the microprocessor is reset, including power-up. The configuration data is checked for integrity, and if it is found to be corrupted (e.g. a bad EEPROM chip, a damaged PC board, etc.) then the transmitter will use the factory defaults.

### Input Defaults

---

Circuit	Alarm Code	Trouble Code	Alarm Rounds	Trouble Rounds
1	81	91	4	5
2	82	92	4	5
3	83	93	4	5
4	84	94	4	5
5	85	95	4	5
6	86	96	4	5
7	87	97	4	5
8	88	98	4	5
9 (L.E.)	89	99	4	5

---

	ENABLE / DISABLE	NO/NC	All Ones allowed	Embedded zeros allowed
All	Enabled	NO	No	Yes

---

	Trouble if Suspended	Trouble on EGR	Alarm Bulldog	Trouble Bulldog
All	Yes	No	Yes	No

## Transmitter Defaults

---

Loop: Positive Non-Interfering Successive, Municipal

E.G.R.: Positive Non-Interfering Successive, Municipal

Timing: 1 / 4 ( 0.25 ) Second

Live Time: 7 Seconds

Dead Time: 7 Seconds

Bulldog Time: 30 Seconds

Maximum Number of Attempts: 3