

EVENT COUNTING (V3 OR LATER)

V3 firmware now provides special Event Counting options that provide the ability to:

- Display and/or edit Counter values.
- Generate Review Log and/or Report when count exceeds and/or drops below the Trigger value/s.
- Control Auxiliaries when count exceeds and/or drops below the Trigger value/s.

Installation Notes:

- 1) Mini Expander Modules must be used if Event Counting is utilized.
Mini Expander Module Zone Inputs 1 to 7 are the only Inputs that can be used for Event Counting.
i.e. Mxx : Z01 to Mxx : Z07. Note that Counting is not supported by Zone 8.
- 2) Count Inputs do not utilize End-Of-Line Resistors. The Counter will increment by 1 whenever an Open to Short transition occurs on the Input.

1. Program the Input/s used for Counting. [MENU 7, 0]

These Inputs must be connected to Mini Expander Module/s.

- 1.1 Program the Zone Input/s that the Count contact/s are connected to. i.e. Mxx : Z01 to Mxx : Z07
These will be used for monitoring "Trigger Count 1". (Will generate alarm state when count exceeds "Trigger Count 1" programmed in "Counters")
Select the Input to be programmed/edited and program a name and other options as described in "Alarm Processing". For Counting Inputs, all Input Options normally left set to No.
- 1.2 IF Two Trigger points need to be monitored, check the programming of the corresponding System Input/s.
i.e. Mxx : S02 (Zone 1 Extra) to Mxx : S08 (Zone 7 Extra)
These will be used for monitoring "Trigger Count 2". (Will generate alarm state when count exceeds "Trigger Count 2" programmed in "Counters")
Select the Input to be programmed/edited and check the Input options as described in "Alarm Processing".
System Input names are Pre-defined. For Counting Inputs, all Input Options normally left set to No.

2. Program the Mini Expander/s (8 Zone) [MENU 7, 2, 6]

The Mini Expander Modules provide the special features for Counters.

- Programmable Zone de-bounce for input devices that require faster processing. e.g. Count contacts.
 - Special Input processing options.
 - On-board non-volatile memory assigned to storing counter value/s.
- 2.1 Adjust the Mini Expander "Poll Time" and "LAN Priority" IF this is considered necessary. LAN Priority programming is accessed by pressing the <ON> key when the "Poll Time" is displayed.
 - 2.2 Check that the Zone Type is set to the appropriate option for each Zone used for Counting.
 - Select "Counter" for Count Inputs. This modifies input operation for:
 - Two state monitoring (Open to Short transition for counting)
 - Zone / System Input Alarms when Trigger Counts exceeded.

- 2.3 Set the Zone De-bounce to an appropriate period for each Zone used.
A range of De-bounce settings from 5 milliSeconds to 1250 milliSeconds (1.25 Seconds) can be selected.
-De-bounce settings for Count contacts will vary. The de-bounce time must be:
- Short enough to detect every valid contact closure.
(i.e. shorter than the minimum period the contact remains closed).
 - Short enough to detect every separate occurrence
(i.e. shorter than the minimum time expected between contact closures)
 - As long as possible (within the above limitations) to ignore contact bounce and voltage spikes, etc.
- e.g. If contact closures are 250mS long and the minimum time between separate occurrences is 400mS, a Zone De-bounce of 200mS would provide reliable counting while still offering immunity to voltage spikes and contact bounce.
A setting of 300mS would cause count pulses to be missed, and a setting of 400mS or higher would sometimes cause two or more pulses to be counted as one.

3. Program the Counters. [MENU 7, 5, 8]

A Counter will need to be programmed for each Zone Input used for Counting.

- Select a new Counter and program a name. e.g. Water Usage (kL).
- Define the Mini Expander Zone Input used for this Counter. e.g. Mxx : Zxx.
- Select the "Counter Type".
-Select the "2 Trigger Points" type.
- Program "Trigger Count 1" IF a Zone Input is required to indicate the count has exceeded a specified value.
(The Mini Expander Zone Input will go into alarm when this trigger point is exceeded)
e.g. Average monthly Water Usage exceeded.
- Program "Trigger Count 2". IF indication of the counter exceeding a second Trigger Point is required.
(The Mini Expander System Input that corresponds with the Zone will go into alarm when this trigger point is exceeded)
e.g. Peak monthly Water Usage exceeded.
- Program the Counter Options. [. . 4 D]
-4 Digit display. Set to Yes if you only require a 4 Digit Count display. (0000 to 9999) Normally 8 digits.
-Display Counter. Set to Yes if the Counter is allowed to be displayed via "Read Count" in the Information Menu. [MENU, 1, 4]

4. Initialize the LAN

Following any programming changes to Mini Expanders, the LAN must be re-initialized.
If all modules are connected and operational, perform the **Secure LAN [MENU 7, 8, 1]** or **Initialize LAN [MENU 7, 8, 2]** functions. ("Secure LAN" Initializes the LAN and sets the Encryption)

5. Program the Process Group/s. [MENU 2, 4, 3]

You may need to program new Process Groups or edit existing Process Groups to define how the Zone Inputs and/or System Inputs used to monitor the 1st and 2nd Counter Trigger points are to be processed.

- Select the Process Group to be programmed/edited and program a name. e.g. Film Monitor
- Program the required "Input Type" options. [T A E X U P L S]
-Set the "A" (Alarm) option to Yes.

- 5.3 Program the required “Communications Reporting” options. [I T A R E X U S]
Typically the **I**solate, **A**larm and **R**estore options are set to Yes for Counter Zones.
- 5.4 IF reporting via Contact ID, you may program the Contact ID Event Code to be sent for Inputs with this Process Group assigned. If left at “000” a default Contact ID message will be sent.
See the Tables section for Contact ID Event Code details.
- 5.5 Program the Area Auxiliaries to activate. [T 1 2 3 4 I]
This will be required IF any Auxiliaries are to be activated by Counter Inputs.
-Set Alarm 2 Auxiliary to Yes IF you require the Auxiliary to be On while the Input is in Alarm and automatically turn Off when the Input Seals. e.g. To activate a Diary Message on the LCD Terminal/s.
-Set any other Alarm Auxiliary to Yes IF you require the Auxiliary to turn On when the Input goes into Alarm and turn Off by another mechanism. e.g. Area Off, etc.
- 5.6 IF the Counter alarms are to generate an LCD message that must be acknowledged, program the LCD Terminal message Types to generate. Typically Type 1 set to Yes.
IF these alarms are to be annunciated via other means (e.g. Diary messages), you may set all message types to No.

6. Program the Area/s for Counter monitoring. [MENU 7, 1]

Although not mandatory, it is recommended that a separate Area is programmed for Counter monitoring. This ensures that:

- a) There will be no conflict of Area Auxiliary requirements with other types of alarm functions.
- b) The Area can be turned On and Off according to when Counter monitoring is required without affecting other alarm monitoring requirements.

- 6.1 Select an Area to program/edit and program a name. e.g. Water Monitoring. (If Area is dedicated to this purpose)
- 6.2 Program the Area Auxiliaries to activate.
-Alarm 2 Auxiliary. IF an Auxiliary is required to activate only while the Input/s are in the alarm state, then automatically turn Off when the Input/s are sealed.
-Alarm 1, 3 or 4 Auxiliary. IF an Auxiliary is required to activate in the normal manner.
- 6.3 Assign the Input/s (Counter Zone Inputs and/or System Inputs) to the Area using the appropriate Process Group for each Input assigned.

7. Check/Program Menu Groups. [MENU 2, 4, 1]

Before any User Types can View and/or adjust the Count value, access to the appropriate Menu Option/s must be enabled in their Menu Group.

- 7.1 Program/Edit the “Menu Options” in the relevant Menu Groups. [R A I T t . S C]
-Set the “R” option (**R**eview/Information Menu) to Yes if Viewing Counters is allowed.
-Set the “C” option (**C**ontrol Menu) to Yes if Adjusting Counters is allowed.
- 7.2 Program/Edit the “Sub Menu Options” in the relevant Menu Groups. [U T L G Z R A .]
-Set the “A” option (**A**ddjust Counters) to Yes if Adjusting Counters is allowed.

8. Program Counter Reset options [MENU, 7, 5, 4]

It may be necessary to provide a function for Automatic or Manual Reset of one or more Counters. Calculated Auxiliary Functions can be programmed for this purpose.

This can be performed in a number of different ways. *(See table below)*

Depending on the method to be used, other functions will need to be programmed to produce the Auxiliary On/Off operation that will in turn be used in the Calculated Auxiliary to Reset the Counter.

- 4.1 Select a new Calculated Auxiliary to program.
- 4.2 Select the Calculated Auxiliary Action.
 - Event Count=0 +ON. The Specified Counter will be reset to 0 when the 1st Auxiliary turns On.
 - Event Count=0 -OFF. The Specified Counter will be reset to 0 when the 1st Auxiliary turns Off.
- 4.3 Define the "1st Auxiliary".
- 4.4 Define the "Counter" to Reset. Only a single Counter can be defined. A separate Calculated Auxiliary will need to be programmed for each Counter that requires a reset function.

The table below defines the additional function that will need to be programmed to produce the Auxiliary operation required.

Note that more than one method of activating the Auxiliary may be used.

e.g. A Diary may be programmed to turn the Auxiliary On for 1 minute at 00 : 01 AM on the 1st Day of every month to clear the Counter ready for the new month. The same Auxiliary may also be turned On for several seconds by a User with a Keyswitch or Home Auxiliary at any other time that they decide the Counter needs to be Reset.

Method of Control	Programming Required
User via PIN code.	Program a Home Auxiliary [MENU, 7, 5, 5] , plus Auxiliary Timer [MENU, 5, 5]
Automatic based on Time of Day / Day of Week.	Program a TimeZone [MENU, 5, 2] and select "Auxiliary On/Off Sec" Control function.
Automatic based on Day of Month / Day of Year.	Program a Diary [MENU, 5, 4] with the "Diary Auxiliary" assigned, plus Auxiliary Timer [MENU, 5, 5]
By a Keyswitch, Pushbutton, Input, etc.	Program a Function Zone [MENU, 7, 5, 3] utilizing the Auxiliary Control options, plus Auxiliary Timer [MENU, 5, 5].
Remotely via Touch tone telephone. (V3 or later)	Program Answer Call Comms Task [MENU, 7, 3, 1] and DTMF Control [MENU, 7, 3, 3] utilizing the Auxiliary Control options.
Remotely via P.C.	Program PCDirect or ACCEPT Comms Task [MENU, 7, 3, 1] , plus Auxiliary Timer [MENU, 5, 5].