Eurotherm®

by Schneider Electric

Eurotherm PAC
Alarm Suppression

User Guide

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1 OVERVIEW

This 'User Guide' describes the 'Alarm Suppression' feature implemented on LIN based products and software and is designed to be read in conjunction with the related documents listed in section 1.1.

1.1 PRE-REQUISITES (USER KNOWLEDGE ASSUMPTIONS)

The reader of this document is assumed to have a good working knowledge of LIN blocks and LIN system functionality. This document is not intended as a starting point to understanding LIN in general and more specifically, LIN based alarms. This 'User Guide' should be read after or in conjunction with the documents shown below.

Note: The term Visual Supervisor is used to describe the Eycon™ 10/20 Visual Supervisor.

1.1.1 Related Documents

LIN Blocks Reference Manual	HA082375U003
Application & Control Modules Manual	HA084012U003
User Screen Editor User Guide	HA260749U005
Visual Supervisor Handbook	HA029280
Visual Supervisor Tutorial	HA029587
T2550 Handbook	HA028898
LINtools Engineering Studio User Guide	HA263001U055
Operations Viewer & Server Help file	RM030483
Ops Viewer, Shell Applications Internals Manual	HA028882
Ops Viewer INTouch 10.0 Workflow Guide	HA030063

1.2 WHAT IS ALARM SUPPRESSION?

Alarm Suppression is the ability to suppress an active alarm condition for a specified time duration which can be configured with a granularity of one second, between 0-90 days. This is achieved under strategy control via Structured Text (ST), Cold Start Parameter File (CPF) or an 'operator' HMI e.g. Operations Server, Visual Supervisor and LINtools. An alarm can be placed into suppression or removed from suppression, achieved by configuring the time duration of the alarm suppression sub field attribute, '**.Suppress**'. Specifying a time of zero removes suppression, and a time between 0-90days sets suppression. For indefinite suppression, the alarm fixed sub field attribute, '.**Indefinite**', should be set to 1. Excluding the 'Combined' and 'Software' alarms, which can never be suppressed, Alarm Suppression can operate on all alarms independently or the whole function block. Unsuppression of all 'local' LIN blocks in an instrument's database can be achieved via the database 'Header Block'.

Note: Alarm Suppression implemented by any method applies to Alarms set with a priority between 1-15.

1.2.1 Example Applications

1. Glass Furnace - Alarms Suppressed in 'Burners' during furnace reversal sequence
2. Pharmaceutical Processes - Alarms suppressed during sterilisation cycle, unsuppressed during Process Cycle
3. Metals Processing Furnace - Alarms suppressed during 'RAMP', unsuppressed during 'DWELL/SOAK'
4. General - Alarm Suppressed for known faulty sensor, unsuppressed when sensor replaced/repaired.

1.3 COMPATIBILITY

Post Alarm Suppression firmware or software, the 'Loaded File Properties' dialog located on the 'File' menu within LINtools has a 'checkbox' to enable Alarm Suppression. For DBFs created pre Alarm Suppression availability the 'checkbox' is not shown, and by default is guaranteed FALSE. This applies to all DBFs created prior to the firmware version as shown in the 'Supported Products' list in section 1.3.2 and by default, includes all other LIN products not shown in the list, e.g. T800 etc. When the checkbox is FALSE, SRAM is not allocated for the alarm suppression timers and the alarm suppression feature is not available, refer to section 1.5 for SRAM considerations. The 'checkbox' defaults to FALSE for DBF files created post Alarm Suppression availability, but the configuration tools allow it to be set TRUE if alarm suppression is subsequently required, refer to section 3.2. To open the dialog box, from the LINtools menu select the 'Loaded File Properties' item in the 'File' menu.

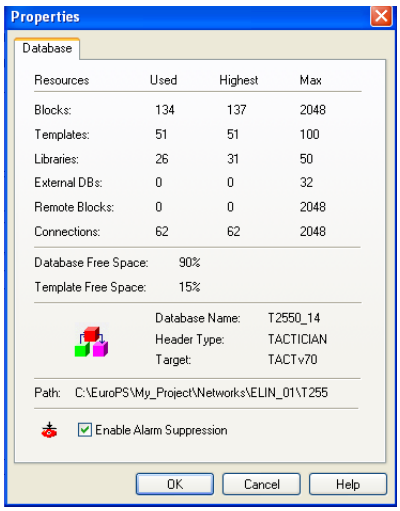


Figure 1.3 Loaded File Properties Dialog Box

1.3.1 Backwards Compatibility and Inter-node operation

For products that do not support alarm suppression but are 'caching' blocks with suppressed alarms from other products that support alarm suppression, suppressed alarms are considered as 'not in alarm'.

1.3.2 Supported Products

Alarm Suppression is supported by the following products and software. Upgrading a database to support this function is detailed in Section 3.8

T2550	Version 7.0 onwards
Eycon™ 10/20 Visual Supervisor	Version 5.0 onwards
Operations Server\NTSE	Version 4.9 onwards (with inTouch® 10 Shell Application)
LINtools (Tactician)	Version 4.9 onwards
User Screen Editor	Version 2.5 onwards
T940X, T800 and T640	Not Supported

1.4 DOES MY EXISTING DATABASE SUPPORT ALARM SUPPRESSION?

Referring to section 1.3, open the DBF using the appropriate version of LINtools and establish if an 'Alarm Suppression Enabled' checkbox is available under the 'Database' tab. If it is shown, this indicates that the DBF is already suitable for use with alarm suppression by simply 'ticking' the 'Alarm Suppression Enabled' checkbox.

If the 'Alarm Suppression Enabled' checkbox and associated wording is not shown, the DBF does not support alarm suppression and by referring to section 3.8, requires upgrading.

1.5 SRAM CONSIDERATIONS

If Alarm Suppression is enabled in the LIN database 'Loaded File Properties' dialog box (refer to section 1.3) then every block in the database consumes additional database SRAM as follows:

Extra DB SRAM consumed per block = 2 + (N x 4) bytes

- where 'N' is the total number of Process alarms in the block (excludes the 'Software' and 'Combined' Alarms).

The above formula is for a typical configuration where fields within blocks have been defined with relevant engineering units. Engineering units for fields within blocks left in their default state will consume additional memory on enabling Alarm Suppression.

Note: If Alarm Suppression is subsequently applied to 'Large' databases implemented without Alarm Suppression enabled, they may fail to load due to SRAM considerations.

1.5.1 Visual Supervisor

As described in the 'Visual Supervisor Handbook', HA029280 (Chapter 4) the Visual Supervisor has four different ratios of function block memory configured via the 'COMPATABILITY' menu. By enabling Alarm Suppression there is an impact on the continuous database memory (function block memory). By applying the formula shown above, an example is shown as follows:

Compatibility mode set to 'Default' = 255kB memory size of available database resource for function blocks.

Assume a database size of 512 blocks with an average of 10 Process alarms per block.

With Alarm Suppression enabled the impact on memory is: 512 x (2 + (10 x 4)) = 21.5kB.

Resulting in a total of 233.5kB (255kB - 21.5kB) memory size of available database resource for function blocks.

Compatibility Modes and memory size allocation of database resource for function blocks:

'Default'	database memory size 255kB
'Large SFC'	database memory size 181kB
'Large DB'	database memory size 319kB
'Legacy'	database memory size 145kB

1.5.2 T2550

The T2550 has a database memory size of 210kB available for LIN Function Blocks resource. The above rule as shown for the Visual Supervisor, is also used for calculating the impact on available memory.

1.6 GW MODBUS EDITOR

The GW Modbus editor does not support the 'Alarm Suppression' feature.

1.7 RECIPES

Alarm Suppression support for The Intouch® 'RECIPE' function is discussed in section 5.7. The 'RECIPE' function for the Visual Supervisor does not support Alarm Suppression.

1.8 T2550 REDUNDANT PROCESSORS SUPPORT

Alarm Suppression is supported in T2550 Simplex and Duplex processor modes.

2 ALARM SUPPRESSION CONCEPTS

This Chapter discusses the concepts that the user is required to understand before implementing applications requiring Alarm Suppression functionality. These concepts should be fully understood before commencing on development of function block databases, SFCs/Ladder Diagrams and user interaction strategies.

2.1 SUPPORTED ALARMS

Alarm suppression cannot be applied to system alarms. Within LIN function blocks, there are only two true 'system alarms' - the 'Software' and 'Combined' alarms which are the first & last alarms in every function block type. All other alarms are considered to be 'Process Alarms', e.g. 'Absolute High Alarm'

Note: Alarms referred to in this 'User Guide' are considered as 'Process Alarms' unless otherwise stated.

Alarm suppression can be applied to all individual alarms independently and also to a block as a whole. In this case all alarms in the block are suppressed together with a single time duration and applies to 'local' blocks only. Although effected as a single operation, it actually causes all alarms to be set individually, i.e. it has exactly the same effect as setting the same suppression duration time to each of the individual alarms contained within the block.

2.2 APPLYING ALARM SUPPRESSION

Alarm Suppression is configured by implementing Structured Text (ST) within a Sequential Flow Chart (SFC), the Cold Start Parameter File (CPF) or user interface, e.g. Visual Supervisor, Operations Server or LINtools. An alarm can be placed into suppression or removed from suppression, achieved by configuring the time duration of the alarm suppression sub field attribute, '**.Suppress**'. Specifying a time of zero removes suppression, and a time between 0-90days sets suppression. For indefinite suppression, the alarm fixed sub field attribute, '.**Indefinite**', should be set to 1. All 'standard' user interfaces allow entry of a time duration which must be a positive value.

2.2.1 Addressing and Syntax

The alarm suppression attribute is addressed by the sub field attribute '**.Suppress**' for each individual alarm name or alarms in the whole block, and conforms to the ST syntax as follows:

Block.Alarms.AlmName.Suppress

Block.Alarms.Suppress

For example:

PID1.Alarms.HighAbs.Suppress=0 - unsuppress the 'PID1 Absolute High Alarm'

PID1.Alarms.Suppress=T#1d.12.2h - sets 36hrs suppression for 'PID1' All Process Alarms with priority 1-15

PID1.Alarms.HighAbs.Suppress.Indefinite=1 - sets indefinite suppression for the 'PID1 Absolute High Alarm'

The same syntax is used in all cases where access to alarm suppression is required as follows:

1. Writing non-zero places the alarm into suppression for the specified duration in seconds. 'T#' format for specifying times can be used.
2. Writing zero removes the alarm from suppression.
3. Writing 1 to the .Indefinite sub field places the alarm into indefinite suppression.
4. Reading the value zero indicates the alarm is not currently in suppression (individual alarms only).
5. Reading positive non-zero values indicates the remaining time duration of suppression in seconds (individual alarms only).
6. Reading the value 1 from the .Indefinite sub field indicates the alarm is indefinitely suppressed (individual alarms only).

2.2.2 Invalid Entries

The 'time duration until suppression is automatically removed' is specified in whole seconds and is limited to 90 days. Attempting to write a value greater than this, is clipped to 90 days. All negative numbers are ignored. If multiple 'writes' are made to the suppression attribute, the last value written is used.

2.3 ALARM ACTION ON SUPPRESSION

When an alarm is suppressed the associated 'In_Alarm' bit is seen as 'FALSE' by 'strategy clients' listed as follows:

1. Local and cached function blocks wired within the Function Block Diagram (FBD).
2. As read by Structured Text (ST).
3. As viewed via block inspect using, e.g. Visual Supervisor FBM, Operations Server point page, LINtools monitor, terminal configurator, etc.
4. Collection blocks such as 'ALC' and 'GROUP'.

2.4 ALARM ACKNOWLEDGEMENT

With reference to figure 2.4 below it can be seen that alarms belong to blocks and the block's processing methods continue to evaluate alarms regardless whether or not the alarm is suppressed. Therefore if the alarm is active the 'Internal In_Alarm' bit is set 'TRUE', even if the alarm is also suppressed. The alarm suppression is applied after this, which subsequently derives the 'strategy client' view of 'In-Alarm' which also feeds the 'Alarm Acknowledgement Processing' method.

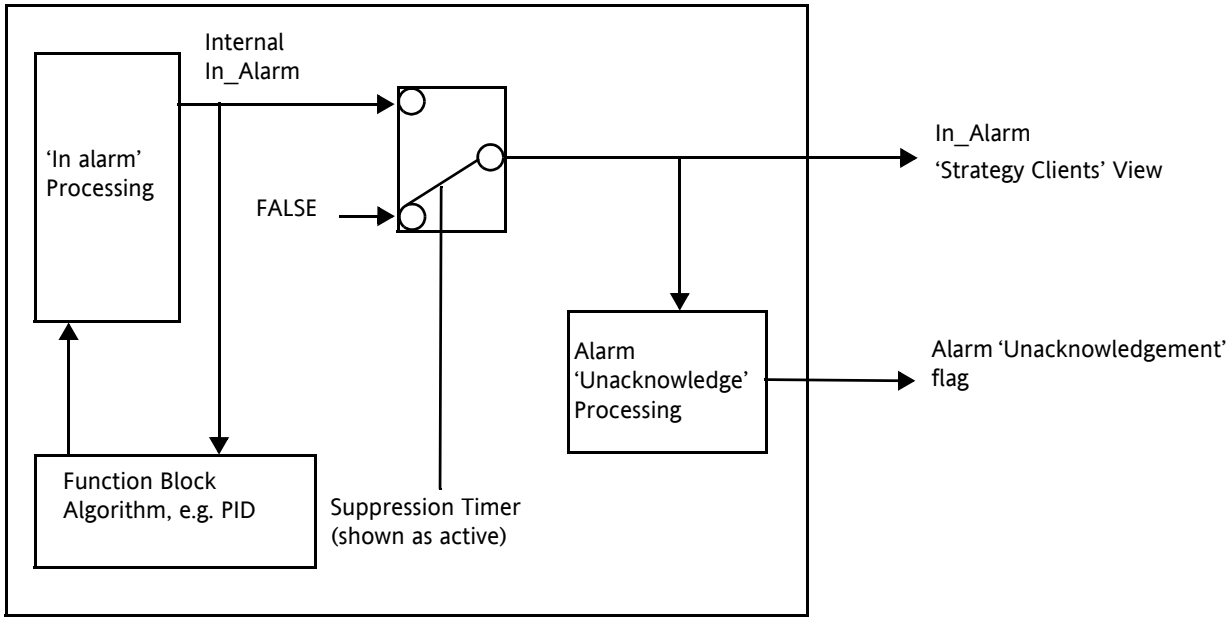


Figure 2.4 Function Block Alarm Processing Method

Each alarm can be set with a priority level between 1-15 which is described in the 'LIN Blocks Reference Manual', HA082375U003. For alarm priority settings and user 'acknowledgement', the following applies.

2.4.1 Alarms with 'priority' setting of 5 or lower

1. These alarms do not require user 'acknowledgement'.

2.4.2 Alarms with 'priority' setting of 6 or higher

1. These alarms require user 'acknowledgement'.
2. If an alarm enters and leaves an alarm condition while suppressed, alarm 'acknowledgement' is not required.
3. If an alarm enters an alarm condition while suppressed, if suppression is subsequently removed, alarm 'acknowledgement' state is immediately applied, and requires alarm 'acknowledgement'.
4. If an alarm is already active and in an 'unacknowledged' condition and 'Alarm Suppression' is applied, the alarm condition is 'cleared' but alarm 'acknowledgment' is still required.

2.5 FUNCTION BLOCK WIRING DIAGRAM (FBD)

FBD wiring access is not provided to the Alarm Suppression attributes. Using LINtools and the FBD configurator is discussed in section 3

Within the FBD the 'In_Alarm' attribute of an alarm is referenced as the source of a 'wire' using an identifier string of the form:

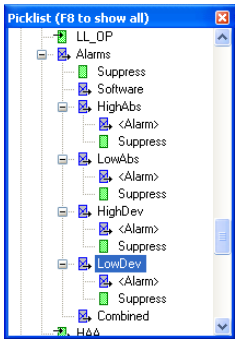
Block.Alarms.AlmName

2.6 STRUCTURED TEXT (ST)

When assigning a value, the 'T#' form of specifying times can be used, however a simple or derived numeric argument specifying seconds can also be used. When reading the value, it is always numeric in seconds.

The implementation of ST to perform 'Actions' is described in the 'LINtools Engineering Studio User Guide', HA0263001 U055 but noting the following three sub-sections specifically relating to ST and the Alarm Suppression attribute.

2.6.1 LINtools Variable Pick-list



For configuring an 'action' within an SFC or Ladder diagram a pop-up Picklist or Palette Variable list is presented for use in the LINtools ST or Ladder diagram editor, both offering the alarm suppression attributes. The required 'Suppress' attribute must be selected first before placing it in the appropriate editor.

To check if alarm suppression is supported in the version of LINtools being used check if the 'Suppress' fields are shown in the Palette Variables or picklist. If they are not shown, this indicates that either Alarm Suppression has not been enabled in the 'Loaded File Properties' dialog box or the version of LINtools being used does not support Alarm Suppression and an upgrade is required, refer to section 3.2 or section 3.1 respectively.

2.6.2 Written Statements

ST can be written without the aid of a 'Picklist' where alarm suppression can be implemented using ST in the context of SFCs, 'user screen' actions and the 'Cold Start Parameter File'. ST applies alarm suppression using the syntax as shown in section 2.2.1 and for 'conditional' statements are applied as follows:

if(Block.Alarms.AlmName.Suppress > 0) THEN ..... conditional ST

Writing invalid or out-of-range values are treated as noted in section 2.2.2

2.6.3 Structured Text (ST) Versions and Errors

If ST is included in the configuration of a database (e.g. SFC), there are three possible conditions in which ST 'errors' could occur and LINtools indicates appropriate warnings as follows:

1. Usage of the '.Suppress' sub field attribute in ST and a SW version of LINtools that does not support alarm suppression results in 'Save' errors as shown in figure 2.6.3 below. For compatibility details refer to section 1.3.2.
2. The target instrument's version of firmware is pre Alarm Suppression, refer to section 1.3.2 for details
3. Alarm suppression is not enabled for the database being worked on, refer to section 3.2 for details.

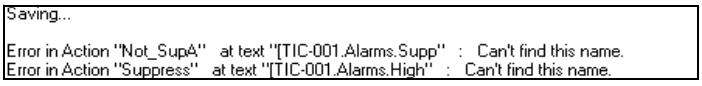


Figure 2.6.3 Typical ST 'Save' Error Message

2.7 HOT START

A 'Hot Start' condition supports 'Alarm Suppression' as all suppression times are held in non-volatile memory. On hot starting, If the suppression time duration is found to have passed during the period of 'downtime', the suppression is removed immediately, otherwise 'suppressed alarms' remain suppressed for the time duration specified before the 'downtime'. An example of this is given below:

Alarm suppression duration of 24hrs is applied to an alarm at noon. Later that day the instrument is without power for a few hours and reboots performing a 'Hot Start'. As expected the alarm will un-suppress at noon the following day.

2.8 COLD START PARAMETER FILE (CPF)

The cold start parameter file as used by the T2550 and Visual Supervisor can be created or edited to control alarm suppression attributes as appropriate. The 'T2550 Handbook', HA028898 describes the use of this file. It uses ST-style assignments to set alarms into suppression, e.g. Block.Alarms.AlmName.Suppress:=40;

The example below shows a typical cold start parameter file where the last statement suppresses the 'Absolute High Alarm' of the block tagged 'TIC-001' for a duration of 40 seconds when a 'cold start' is performed.

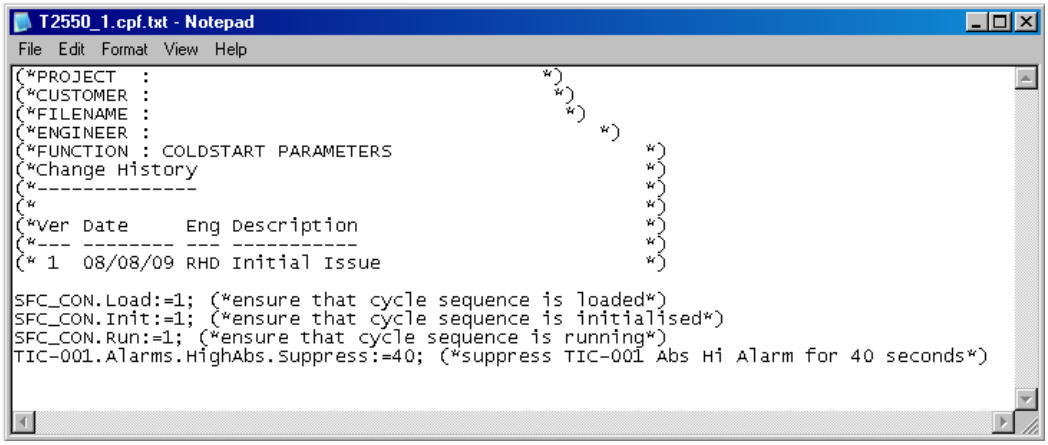


Figure 2.8 Example of CPF including Alarm Suppression statement

If a cold start parameter file is not utilised and a 'cold start' is performed, the alarms default to unsuppressed on a 'DBF' load, as alarm suppression data in the 'DBF' file is saved as 'unsuppressed'.

2.9 REAL TIME CLOCK(RTC)

The alarm remembers its end time as an absolute date & time of day in 'system time' (nominally universal time). When altering the RTC there are two conditions to consider as follows:

1. If the RTC is altered whilst an alarm is suppressed, the end time of alarm suppression is not altered, i.e. the total time the alarm remains suppressed differs from that originally specified by an amount equal to the adjustment made to the RTC.
2. If the RTC is altered on one or several nodes, the system typically takes one or two minutes for this to propagate through and alarm suppression times become reported correctly.

Note: The RTC must be set correctly to the local time zone for alarm suppression to function as expected.

2.9.1 Time Zones

In the case of a multi-node application distributed across different time zones, consideration must be given to the RTC and alarm suppression times. A typical application is shown below:

Note: Special consideration must be given to multi-node databases across differing time zones.

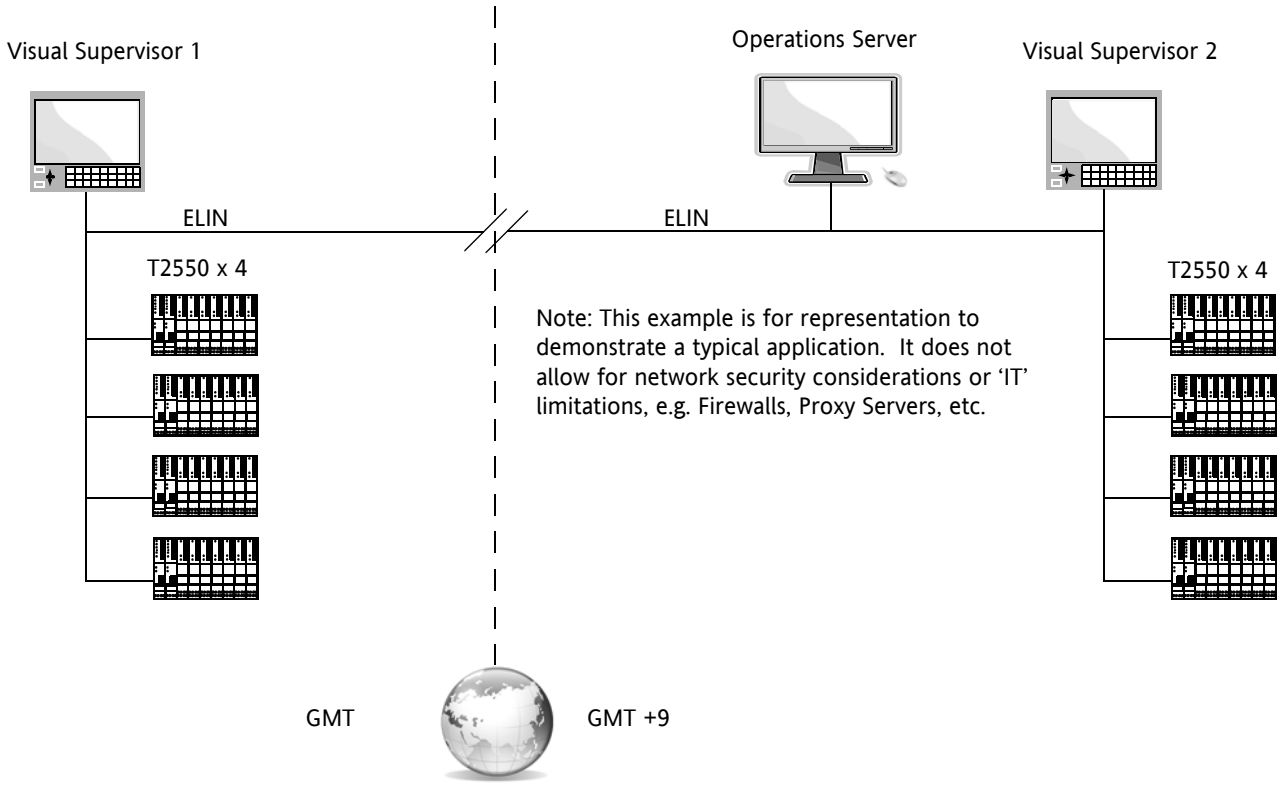


Figure 2.8.1 Example of Multi-node application distributed across two time zones

As an example considering the above application and all RTCs set correctly, a T2550 located in the GMT time zone has an alarm due to be un-suppressed at noon. The following will be observed:

Visual Supervisor 1 will see the alarm un-suppression time set for noon.

Visual Supervisor 2 will see the alarm un-suppression time set for 9pm.

Operations Server will see the alarm un-suppression time set for 9pm.

2.9.2 LINOPC clients and Time Zones

In most applications the LINOPC server and associated client(e.g. Operations Server) is located and run in the same workstation and consequently therefore in the same time zone. In the highly unlikely situation where it is required to locate and run the LINOPC server in a different time zone to that of the client, consideration must be given to the alarm suppression expiry time. It is LINOPC that is the entity that derives the expiry time and not the client. Therefore, when viewing alarm suppression expiry times from a client located in a different time zone to the LINOPC server, the alarm suppression times are not shown as expected. However duration times are always correct, e.g. if a suppressed alarm has 4hrs remaining until unsuppression, it has 4hrs remaining regardless of time zones.

Note: It is not recommended to configure an application in this manner.

2.9.3 Daylight Saving (DST)

When viewing alarm suppression via a local display, DST is applied if applicable. E.g. setting a 24 hour alarm suppression at noon on day 1, and the clocks go forward 1 hour in the early hours of day 2 and the suppression time is viewed, the reported expiry time is 13:00hrs. (Which is 24 hours after noon on day 1).

2.10 LIN COMMUNICATIONS

Caching of 'alarm suppressed blocks' is only supported with ELIN. If the LIN connection is routed via bridges to ALIN or OLIN, the alarm suppression protocol is not supported.

For example a network in the format of ELIN <--> T225X bridge <--> ALIN <--> T225X bridge <--> ELIN). For this case alarm suppression does not work via cached blocks, as cached blocks simply see suppressed alarms as 'not in alarm.'

2.11 HEADER BLOCK - SAVING CURRENT DATABASE

The database header block contains a facility to save the current database, normally located in the 'Options' menu. It should be noted that when using this facility the current Alarm Suppression timers are not saved.

3 LINTOOLS APPLICATIONS

This chapter describes the implementation of Alarm Suppression using the LINtools configurator. It assumes that the user is familiar with LINtools menus and LIN database configuration as described in the 'LINtools Engineering Studio User Guide', HA263001 U055. Section 2 of this user guide provides reference information associated with Alarm Suppression concepts.

3.1 ABOUT LINTOOLS

Ensure that the version of LINtools being used supports Alarm Suppression. This is achieved by selecting the 'About LINtools...' item in the LINtools 'Help' menu and with reference to section 1.3.2. Figure 3.1 below shows the 'About LINtools' dialog box stating at least this Version of LINtools being used.

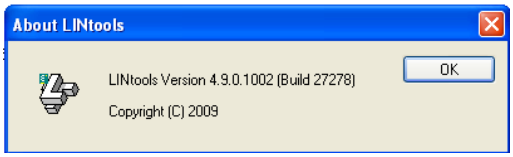


Figure 3.1 About LINtools

3.2 ENABLING ALARM SUPPRESSION

After initial creation of a new database file (DBF) using a method that is familiar to the user, Alarm Suppression must be enabled. To enable Alarm Suppression functionality, select the 'Loaded File Properties' item from the LINtools 'File' menu to open the database properties dialog box as shown in figure 3.2 below. 'Tick' the 'Enable Alarm Suppression' box by clicking within it and note the Icon that appears to denote Alarm Suppression has been enabled for that database. This icon is shown in the bottom right hand corner of the LINtools window unless on-line connection mode or on-line configuration mode(T2550 only) is being used.

Note: Enabling Alarm Suppression impacts on database size as discussed in section 1.5

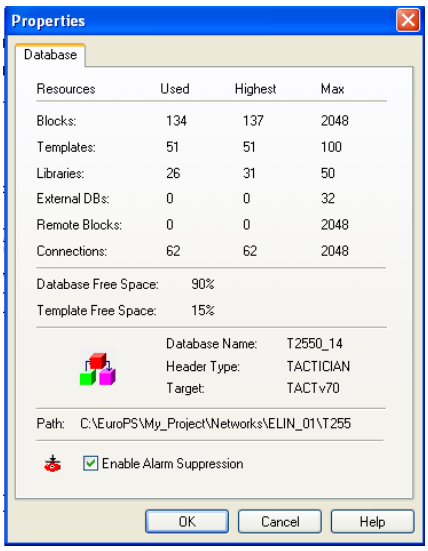
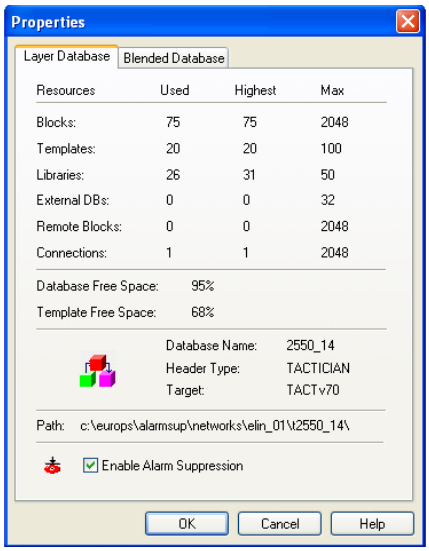


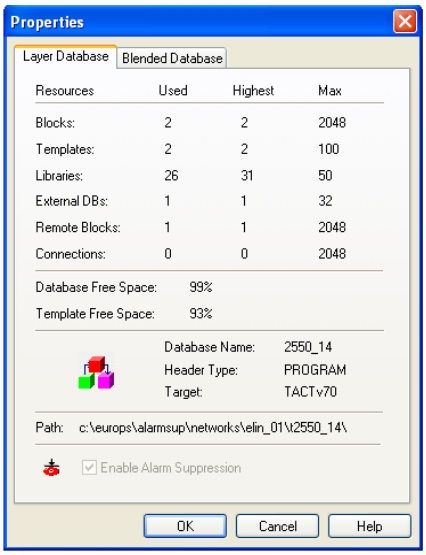
Figure 3.2 'Loaded File Properties' Dialog Box

3.2.1 Layered and Blended Databases

For 'Layered' and 'Blended' databases, enabling Alarm Suppression from the 'Loaded File Properties' dialog box as shown in figure 3.2.1 below can only be performed when the 'base' layer is the current database loaded into the LINtools FBD configurator. When other associated layers are loaded into the LINtools FBD configurator it is not possible to enable or disable Alarm Suppression as the 'tick box' is 'greyed out' as shown in figure 3.2.1 below and is always the case when viewing the 'Blended Database' tab.



Base Layer Database Properties



Associated Layer Database Properties

Figure 3.2.1 Alarm Suppression 'Enable' examples

3.3 'ACTION' FUNCTION BLOCKS

ACTION' blocks are prohibited from supporting Alarm Suppression in the context of Structured Text (ST) written within them, however alarm suppression can be applied to 'ACTION' block alarms via, for example' an SFC, i.e. An 'ACTION' block can have its alarms suppressed but cannot suppress them itself.

3.4 FUNCTION BLOCK DIAGRAM

It is not possible to 'wire' to or from the 'Alarm Suppression duration' attributes as already discussed in section 2. Individual alarms are wired as required using the methods that the user should have prior knowledge of and noting the user knowledge assumptions discussed in section 1.1. However two 'Function Blocks' have enhanced functionality to cater for Alarm Suppression. These being the database 'Header Block' and 'IDENTITY block' supporting unsuppression of all alarms in the local database and diagnostic information respectively. Further details can be found in the 'LIN Blocks Reference Manual', 'HA082375 U003'. The 'DREC_CHANNEL' block has limited Alarm Suppression functionality. An overview of each block is described as follows:

3.4.1 DREC_CHANNEL Function Block

The function block 'DREC_CHANNEL' found in the LINtools NTSE Palette does NOT support Alarm Suppression on all of its alarms. The only two alarms supporting Alarm Suppression for this block are 'UserAlm1' and 'UserAlm2'.

3.4.2 Unsuppression of all Alarms in Local Database (Header Block)

Referring to figure 3.3.1 below, it is possible to wire to the 'UnSupAll' bit within the 'Options' field as shown in the 'Picklist'. When set TRUE it unsuppresses all alarms in that instrument's local database, regardless of whether they have been set to indefinite or with a time duration. The 'UnSupAll' bit auto-resets to FALSE, i.e. the 'UnSupAll' bit reacts only to a rising edge. If held TRUE Alarm Suppression continues to function as normal until the next rising edge. Wiring out from the 'UnSupAll' bit serves no purpose.

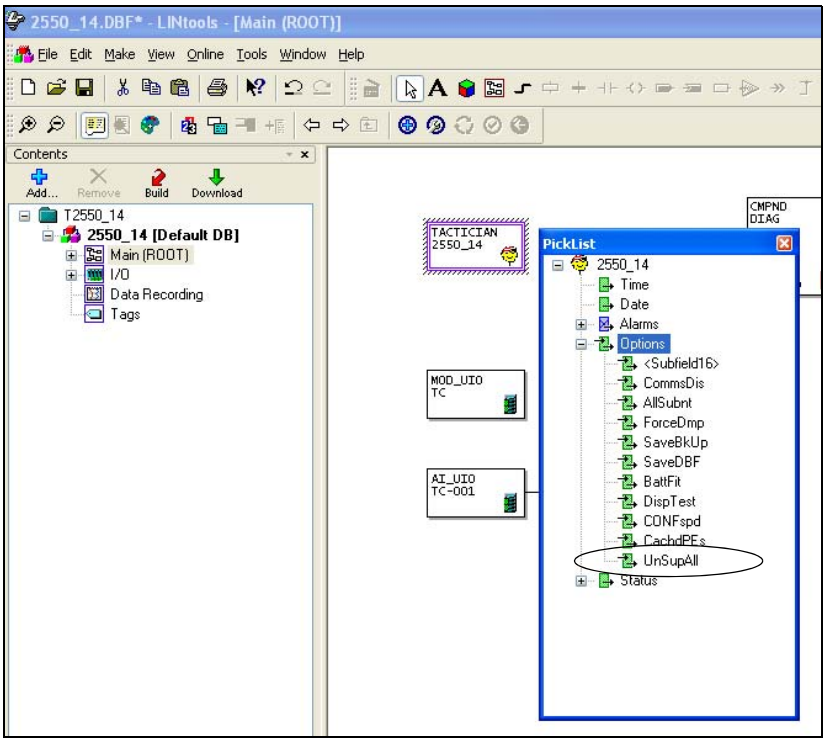


Figure 3.3.1 Header Block Options Filed 'Unsuppress All' bit

3.4.3 Identity Block

The 'Identity' block has been enhanced to include a new 'AlarmSup' bit in the 'SupComms' and 'ActComms' fields indicating the current status of Alarm Suppression in that instrument's database as shown in figure 3.3.2 below.

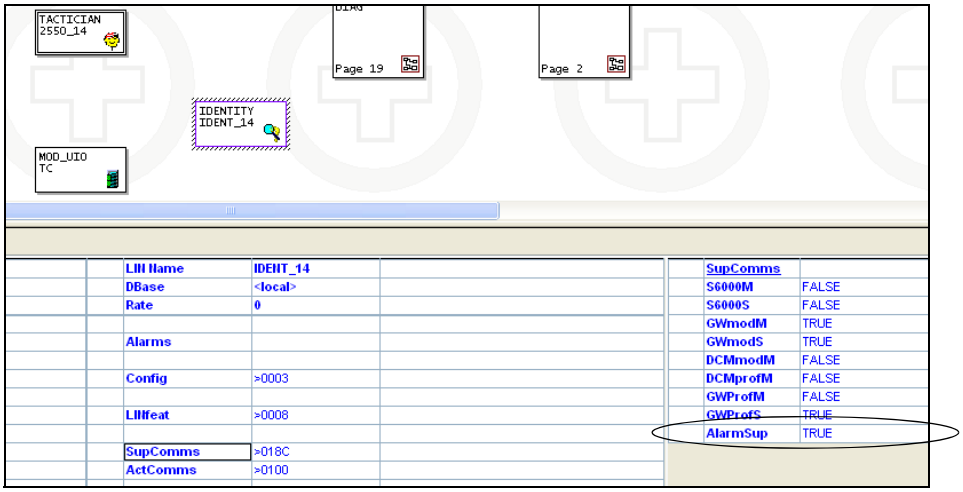
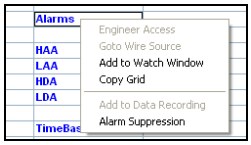


Figure 3.3.2 'AlarmSup' bit

3.5 ON-LINE CONNECTION

When using the online connection or on-line configuration mode(T2550 only) within LINtools, a facility for managing Alarm Suppression of each block is available to the user as shown in figure 3.4 below. Alarms can be suppressed regardless of whether they are active or inactive. Setting indefinite Alarm Suppression from this facility is prohibited.

To access the on-line Alarm Suppression facility, select the required block by single or double clicking within it, locate the 'Alarms' field and place the mouse cursor within it and then 'right click'. From the drop down menu shown, select the 'Alarm Suppression' item.



Using the example as shown in figure 3.4 below, the Absolute High Alarm(HighAbs) and High Deviation Alarm(HighDev) have been suppressed for the time period shown in the 'Suppression Period' pane. This was achieved by selecting both alarms by 'ticking' the associated boxes, setting the Alarm 'Suppression Period' and finally clicking on the 'Suppress' button. The icon denoting alarms in suppression is shown adjacent to each current suppressed alarm and also the 'Alarms' field. Both alarms are in an 'Unacknowledged' state (section 2.4 provides further information). The Low Deviation Alarm(LowDev) is suppressed indefinitely, achieved via an SFC and denoted by '--/--/-- --:--:--'.

> Note: Alarm Suppression only applies to Alarms set with a priority between 1-15.

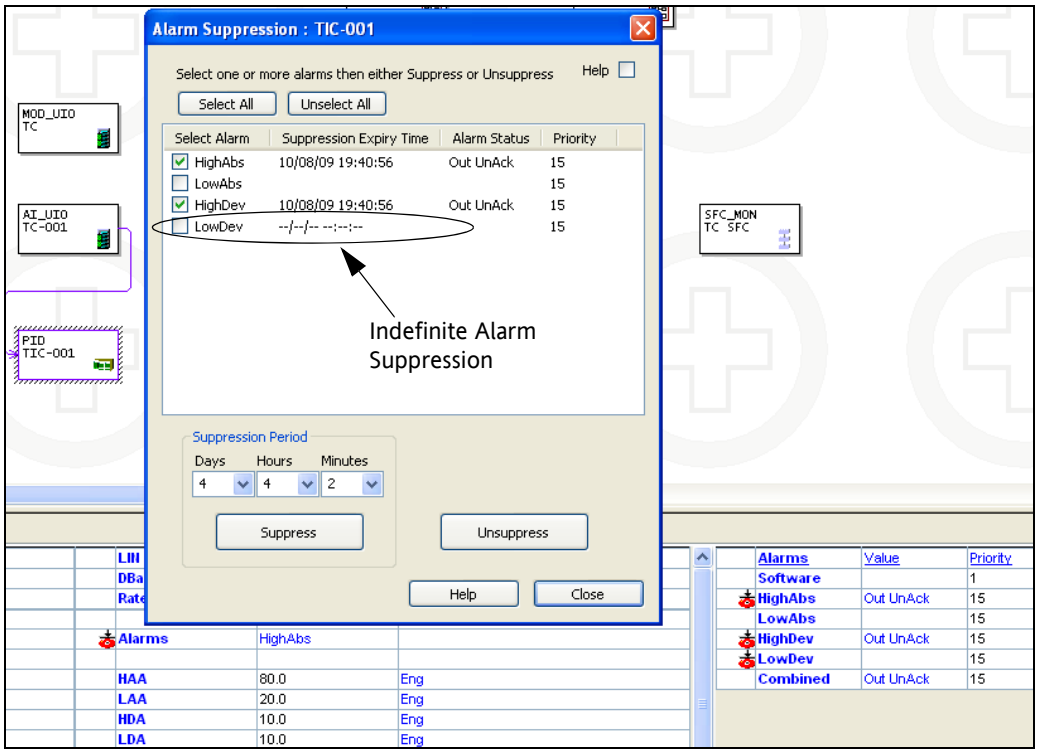


Figure 3.4 On-line Alarm Suppression facility

To unsuppress alarms, simply select the required alarms by 'ticking' the associated boxes and click on the 'Unsuppress' button. By ticking the 'Help' box, a help dialogue pane opens to give further details.

3.6 SEQUENTIAL FLOW CHART (SFC)

This is the primary implementation method for applying Alarm Suppression configurations and strategies. This section only covers the additional functions supported within SFCs to apply Alarm Suppression. For further information on SFC implementation refer to the 'LINtools Engineering Studio User Guide', 'HA263001 U055'. The user should have prior knowledge of SFCs noting the user knowledge assumptions discussed in section 1.1.

The example below is based on two function blocks and an SFC(TC_Break) implementing a strategy so that when the process is operating normally, all alarms in the PID block tagged 'TIC-001' are unsuppressed, and when the process is being steam cleaned PID(TIC-001) alarms are suppressed as follows:

Low Deviation Alarm - 6hours

Absolute Low Alarm - 36hours and 12 minutes

With reference to section 2.6 and noting the Picklists showing the Alarm Suppress attributes, the Structured Text (ST) for each of the two SFC 'Actions', 'Not_SupA' and 'Suppress' are shown in figures 3.5a and 3.5b respectively as below:

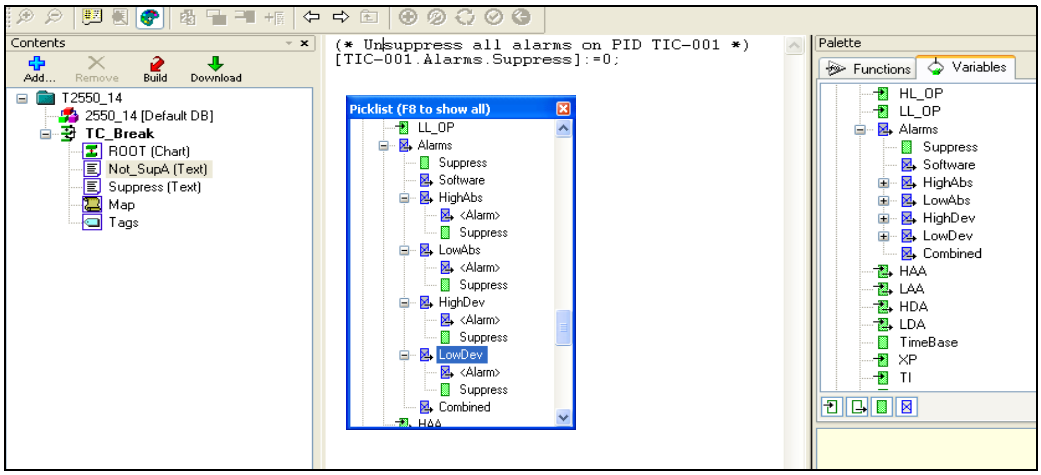


Figure 3.5a ST for unsuppressing all alarms in 'TIC-001'

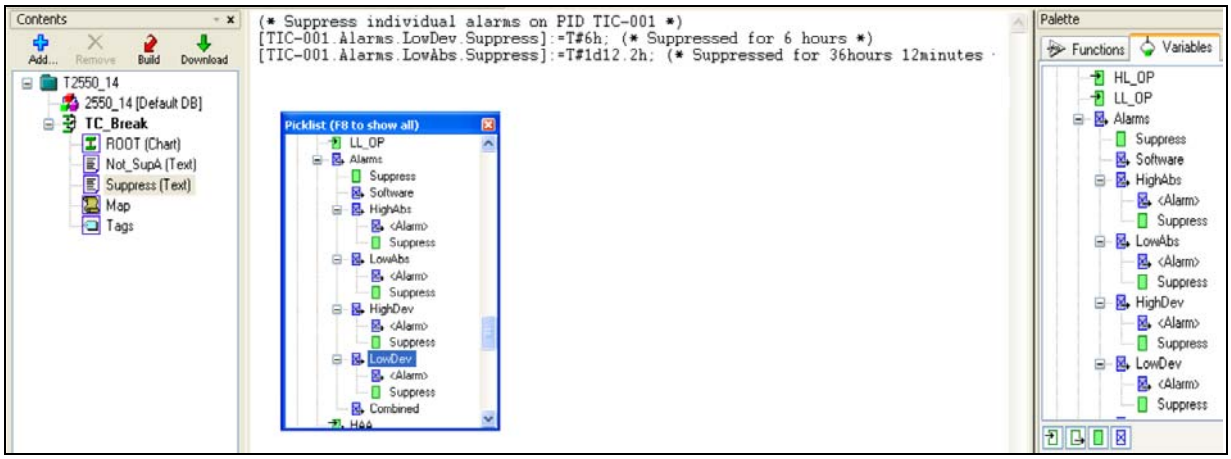


Figure 3.5b ST for suppressing individual alarms within 'TIC-001'

3.7 LADDER DIAGRAM

The same Picklist attributes (also see section 2.6) are available for developing a Ladder diagram in the same manner as for creating an SFC. Using the example as discussed in section 3.6 and noting the Palette Picklists showing the Alarm Suppress attributes, the Ladder diagram for each of the conditions, 'L_Unsup' and 'L_Suppr' are shown in figure 3.6a and 3.6b respectively as follows:

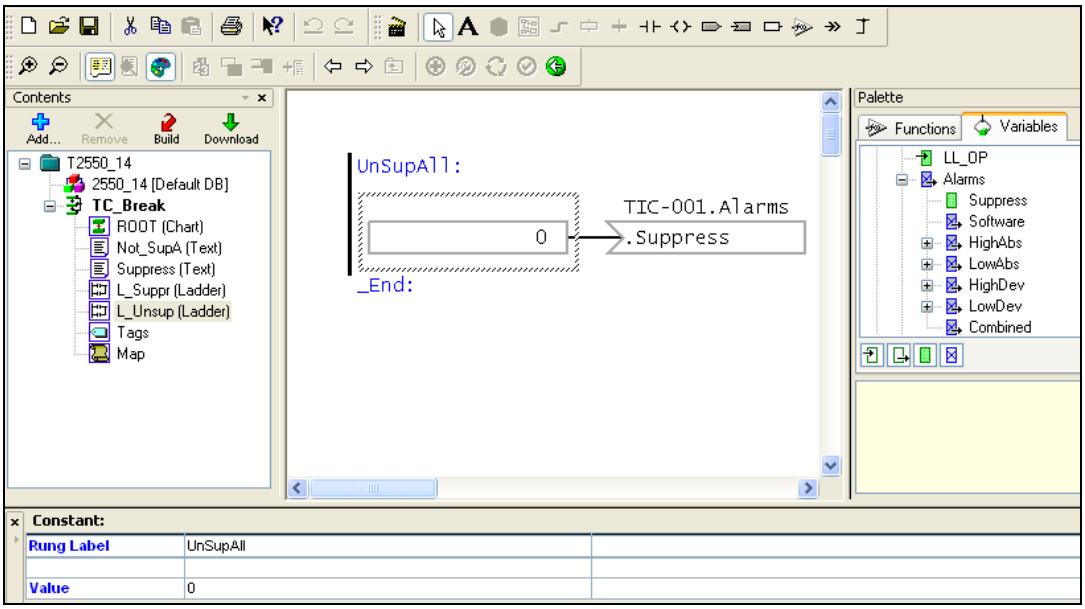


Figure 3.6a Ladder Diagram for unsuppressing all alarms in 'TIC-001'

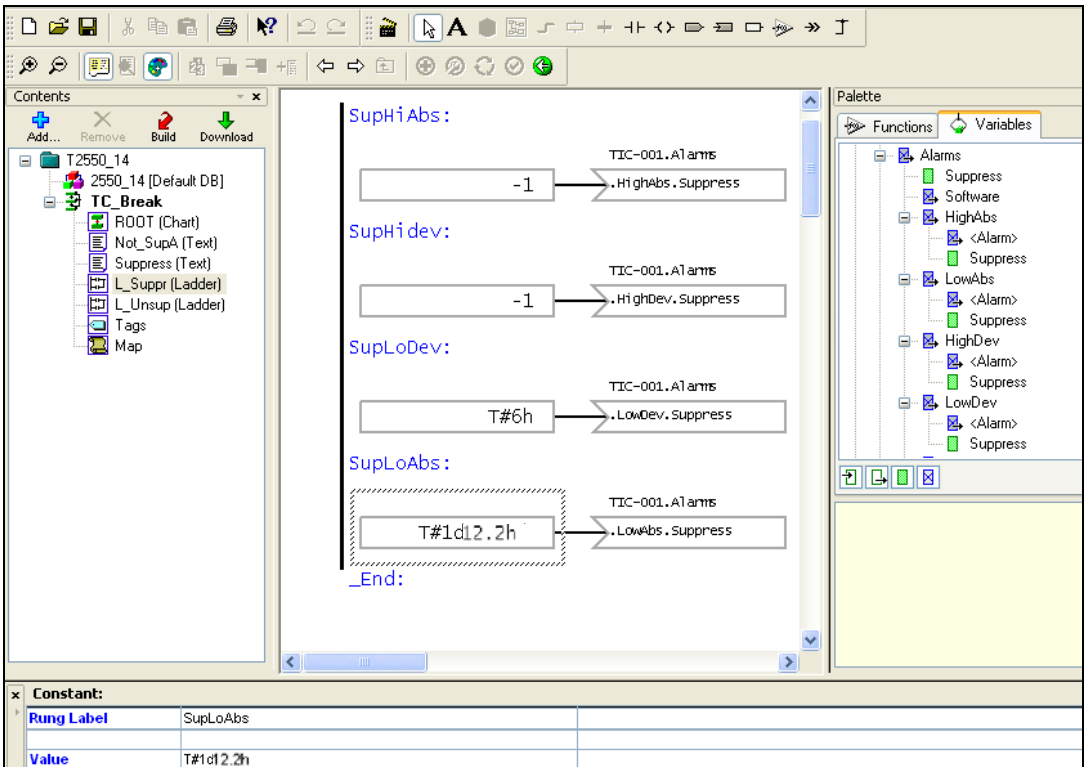


Figure 3.6b Ladder Diagram for suppressing individual alarms within 'TIC-001'

3.8 UPGRADING AN EXISTING DATABASE

If a database was created for an instrument pre Alarm Suppression and it is now required to implement alarm suppression on that database, an upgrade procedure must be adhered to. This requires the existing database to be loaded into the relevant version of LINtools, the database header block deleted and replaced with the relevant version header block, save, close and re-open the database and finally enable the Alarm Suppression function in the 'Loaded File Properties dialog box'. This procedure for a T2550 is described in full as follows:

1. Ensure that a relevant version of LINtools supporting Alarm Suppression is installed, refer to section 1.3.2.

2. Locate the Instrument folder which contains the database(.DBF) to be upgraded. It is normally found in the C:\EuroPS\'Project name'\Networks\'Network name'\'Instrument name' folder. As an example, using an instrument name of 'T2550_14' and a database name of '2550_14.DBF' is shown in figure 3.8a below.

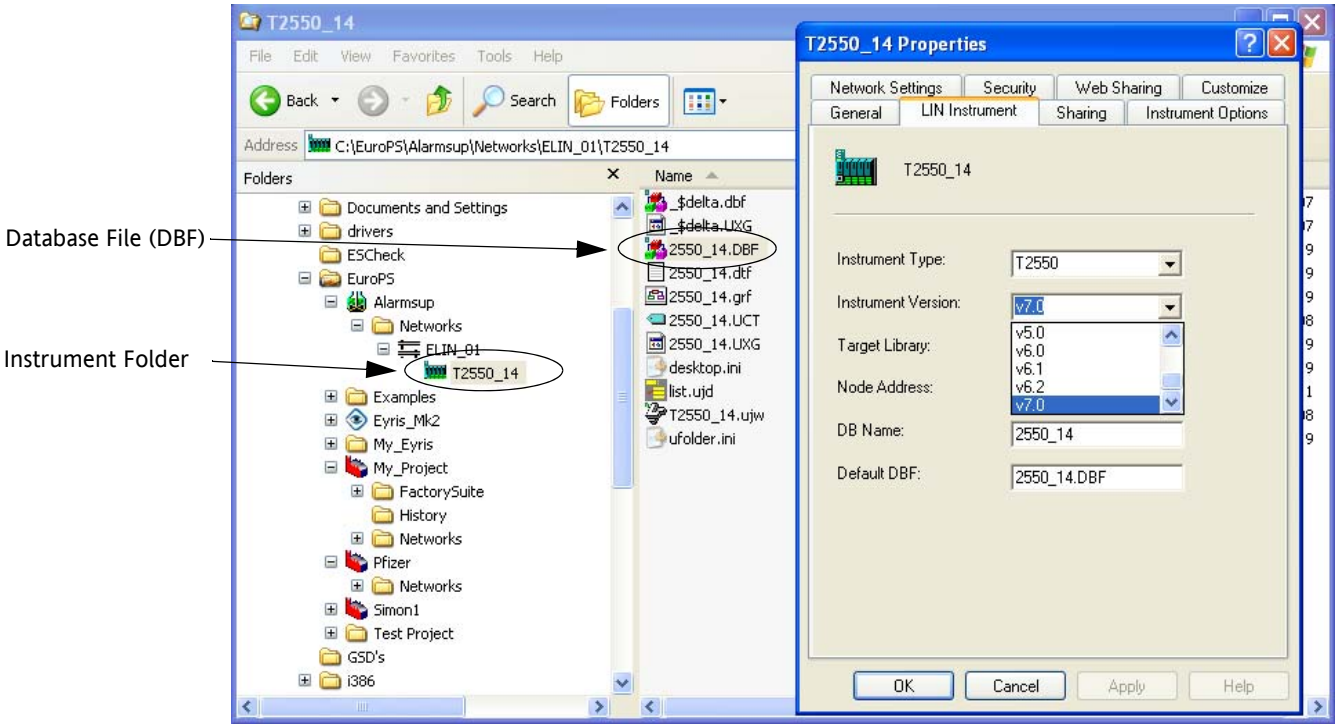


Figure 3.8a Instrument Folder and Properties dialog box

3. Referring to figure 3.8a above, right click on the Instrument folder and select the 'Properties' item which opens the LIN Instrument Properties dialog box. Select the 'LIN Instrument' tab and from the pick list in the 'Instrument Version' drop down box, select Version 7.0 or greater (V5.0 or greater for Visual Supervisor) and click 'OK',.

4. Open the appropriate '.DBF' file contained in the Instrument folder by double clicking it, which in turn opens LINtools. It is expected that the associated '.GRF' file is available which facilitates a graphical representation of the database. If not, select the 'Create FBD Layout' item from the LINtools 'View' menu.

5. Locate and then open the database Header Block by double clicking within it. The Header Block details are now shown at the bottom of the LINtools window. **Make a record of all connections, comments and parameter settings, e.g. TagName, LIN Name, BrownOut, ColdStrt, etc. Comments and Connections can be found in the relevant tabs.**

6. Ensure that the Header Block is still selected, denoted by a blue highlight fringed with diagonal lines, press the 'Delete' key to delete the header block.

7. Referring to figure 3.8b below, if not already shown, open the 'Palette' by selecting the 'Palette' item from the LINtools 'View' menu. Select the appropriate Instrument 'Type' from the drop down box, then from the 'Version' drop down box select version 7.0 or greater (V5.0 or greater for Visual Supervisor). From the Palette library, select and drag the appropriate Header Block and place where required. Once placed, a LINtools information box appears, reminding the user to save, close and re-open the database. Click 'OK' on the information box to close it. Using the information as recorded in Step 5, enter the 'TagName' and 'LIN Name' in the new 'Header Block'. Then 'save', 'close' and re-open the database.

Note: The target Instrument Firmware and Palette version must be matched as close as possible.

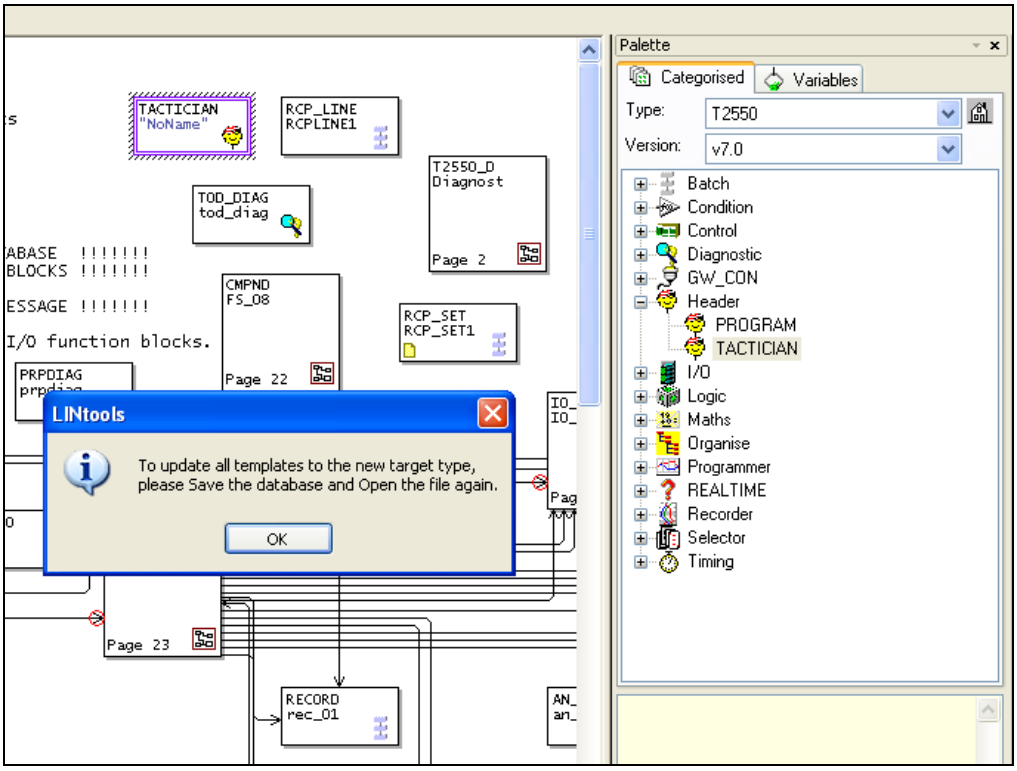


Figure 3.8b Palette, LINtools information box and Highlighted Header Block

8. Before fully reconstructing the Header Block, it is recommended to check that the correct version has been applied in the Header Block. Referring to figure 3.8c below, open the Palette and ensure that the Version number shown is 'v7.0' or greater (v5.0 or greater for Visual Supervisor). Open the Header Block by double clicking on it ensuring that Version 7/0 or greater (V5/0 or greater for Visual Supervisor) is shown in the field adjacent to the 'Alarms' field. Once satisfied that the correct version has been applied, the Header Block can now be fully reconstructed using the information as recorded in step 5.

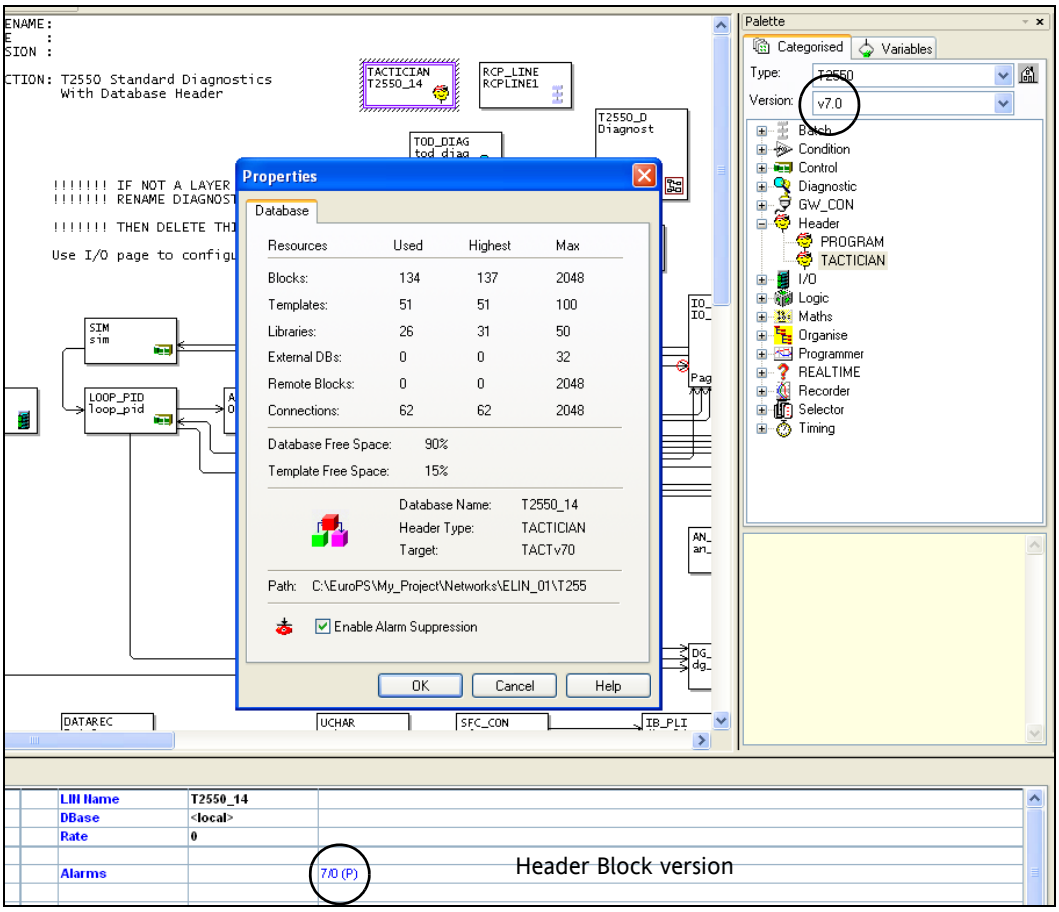


Figure 3.8c 'Loaded File Properties' Dialog box

9. Finally, to enable Alarm Suppression functionality, select the 'Loaded File Properties' item from the LINtools 'File' menu to open the database properties dialog box as shown in figure 3.8c above. 'Tick' the 'Enable Alarm Suppression' box by clicking within it and note the Icon that appears to denote Alarm Suppression has been enabled for that database. This icon is shown in the bottom right hand corner of the LINtools window unless on-line configuration mode is being used. For Layer databases also refer to section 3.2.1.

Note: Enabling Alarm Suppression impacts on database size as discussed in section 1.5

10. Ensuring that the target instrument is at the appropriate firmware version by referring to section 1.3.2, the database can now be built and downloaded using the 'Build' and 'Download' buttons located in the LINtools contents pane.

3.9 ERROR MESSAGES

When downloading files created in LINtools that support Alarm Suppression and the firmware version of the target instrument is pre Alarm Suppression (refer to section 1.3.2) typical error messages are given as shown in figure 3.9 below:

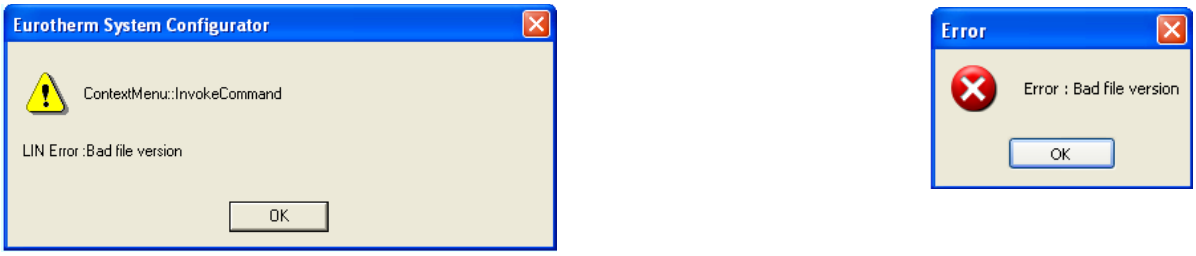


Figure 3.9 Download error messages

4 VISUAL SUPERVISOR

This chapter describes how the 'Alarm Suppression' function is implemented on the Visual Supervisor. It assumes that the user is familiar with the Visual Supervisor Pop-up menus and navigation as described in the 'Visual Supervisor Handbook', HA029280 and the 'Visual Supervisor Tutorial', HA029587. For alarm suppression implementation in the LIN database refer to section 2 and section 3 of this user guide.

Note: This chapter assumes that Alarm Suppression is enabled in the Visual Supervisor LIN database and the correct level of 'ACCESS' permission is used.

4.1 SUPPRESSED ALARMS PAGE

This page is accessed via the 'ALARMS' Pop-up menu, where the 'SUPPRESSED' button is available to view the current active and inactive suppressed alarms. Please see figure 4.1 below.

Note: If the 'ALARMS' button text is shown in white, this indicates that the user does not have the required level of access permission.

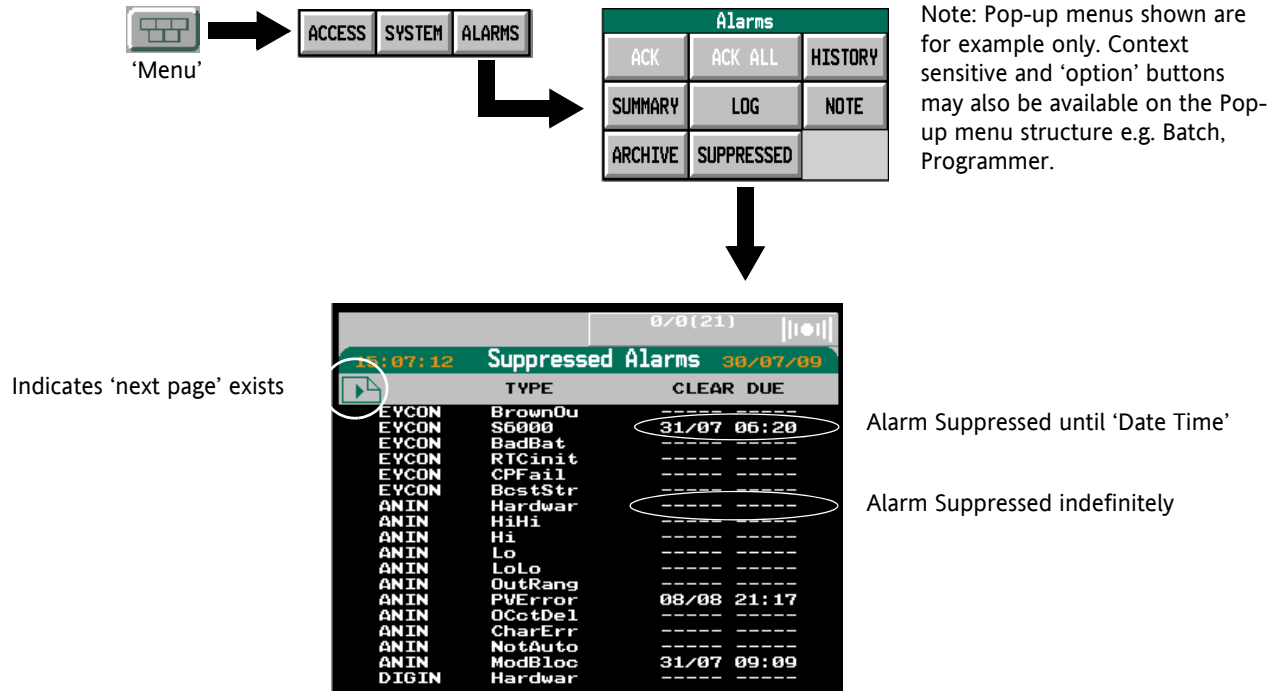


Figure 4.1 'Suppressed Alarms' page

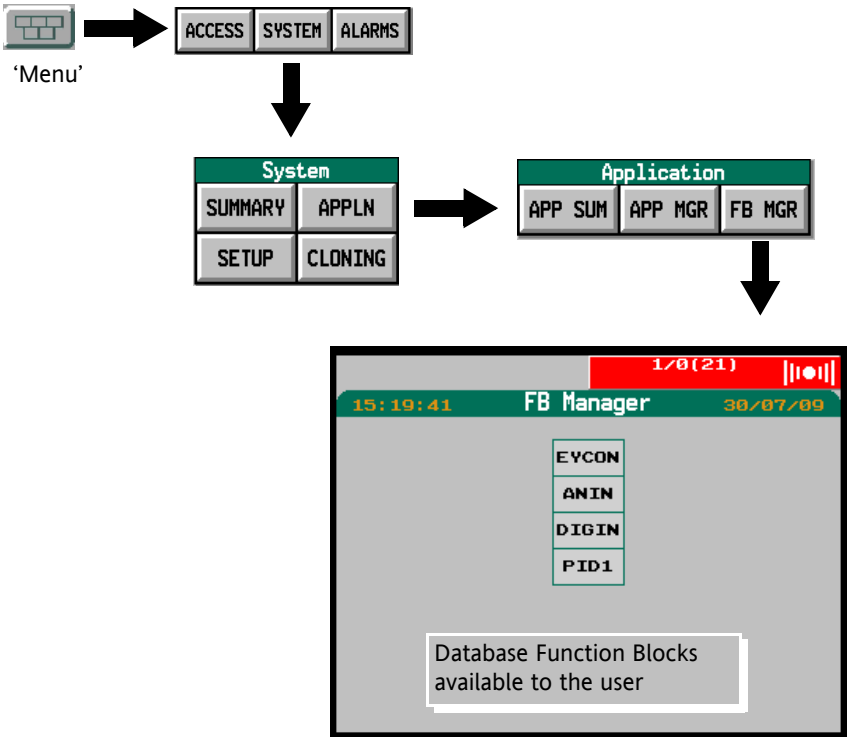
With reference to figure 4.1 the following applies to the 'Suppressed Alarms' page:

1. All suppressed alarms, ACTIVE OR INACTIVE are shown and includes both local and cached blocks in the Visual Supervisor database.
2. The time at which the Suppressed alarms clear are shown as local dates and times including DST if set.
3. For Indefinite suppressed alarms the dates and times are replaced with '----- -----'.
4. The standard AREA, GROUP and BLOCK filters are supported.
5. 'Suppressed Alarms' page supports multiple pages in the same way as 'Alarm Summary' and 'History' pages.
6. Automatic update every 2 seconds without requiring a page re-entry.
7. Does not support the optional 'Alarm Priority' column as supported by the 'Alarm Summary' and 'History' pages.

4.2 FUNCTION BLOCK MANAGER (FBM) INTERACTION

Alarm suppression time (duration time until alarm suppression removed) is accessed via the 'Alarms' Pop-up menu within each LIN block, available to the user in the 'Function Block Manager' page. The user with the correct access permissions is then able to interact with the alarm suppression times except if 'AUDITOR' feature is enabled. In this case the user can only view the alarm suppression times. For further information refer to section 4.3. The user must first navigate to the 'Function Block Manager' page to access the appropriate LIN block. This is accessed via the 'SYSTEM', 'APPLN' 'FB MGR' Pop-up menus as shown in figure 4.2a below.

Note: If the 'FB MGR' button is shown as white, this indicates that the user does not have the required level of access permission. This example assumes that 'AUDITOR' feature is not enabled.



Note: Pop-up menus shown are for example only. Context sensitive and 'option' buttons may also be available on the Pop-up menu structure e.g. Batch, Programmer.

Note: LIN blocks shown in this example are for representation to demonstrate purpose of method. Significantly more LIN blocks would be available in most applications.

Figure 4.2a Function Block Manager Page

Once the user has gained access to the 'Function Block Manager' page each LIN block in the Visual Supervisor database is available for user interaction. This is achieved by touching the screen on the required LIN block. By touching the screen on the 'Alarm' field, the Pop-up menu structure with suppression interaction is now granted to the user. Please see figure 4.2b below.

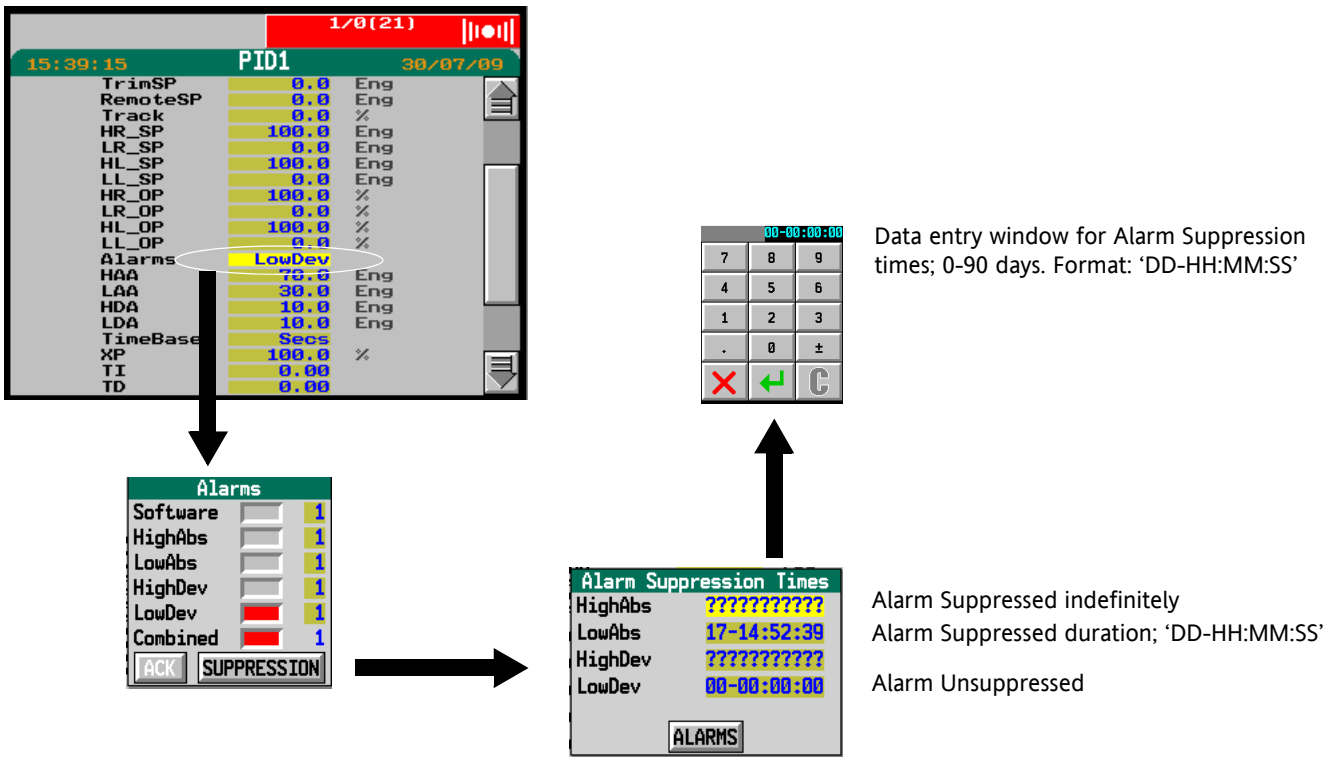


Figure 4.2b 'Alarm Suppression Times' window

With reference to figure 4.2b the following applies to the 'Alarm Suppression Times' window:

1. The suppression time remaining is shown in the format; 'DD-HH:MM:SS'.
2. For Indefinite suppressed alarms the suppression time is replaced with '??????????'.
3. Any suppression time between 0-90 days can be entered via the 'Data Entry' menu. Alarms suppressed indefinitely can also be overridden from here; format 'DD-HH:MM:SS'
4. A value of 00-00:00:00 denotes an unsuppressed alarm.
5. With 'AUDITOR' option enabled the 'Alarm Suppression Times' are 'read' only. Data entry is inhibited.

4.3 AUDITOR AND ALARM SUPPRESSION

Alarm Suppression Times' cannot be edited with the 'AUDITOR' option enabled. The Pop-up 'Alarm Suppression Times' window is 'read only' and does not allow user interaction, denoted by the Alarm fields not having shaded backgrounds. An example is shown in figure 4.3 where the 'AUDITOR' option has been enabled.

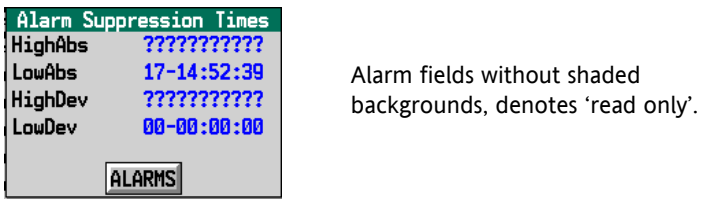


Figure 4.3 'Alarm Suppression Times' window with 'AUDITOR' enabled

All other functions of the 'AUDITOR' option operates in the manner as described in the 'Visual Supervisor Handbook', HA029280, e.g. Audit Trail, electronic signatures, etc.

4.4 ALARM PANE AND ALARM ACKNOWLEDGEMENT

The 'Alarm Pane' functions as described in the 'Visual Supervisor Handbook', HA029280, section 2, but noting the following points relating to suppressed alarms.

4.4.1 Alarm Pane and Suppressed Alarms Counter

If Alarm Suppression is enabled in the Visual Supervisor DBF (refer to section 3.2) it also displays a Suppressed Alarms counter in the 'Alarm pane' area as shown in the figure 4.4.1below.

Note: For the Eycon 10™ Visual Supervisor Chinese language variant the suppressed alarms counter is not available.

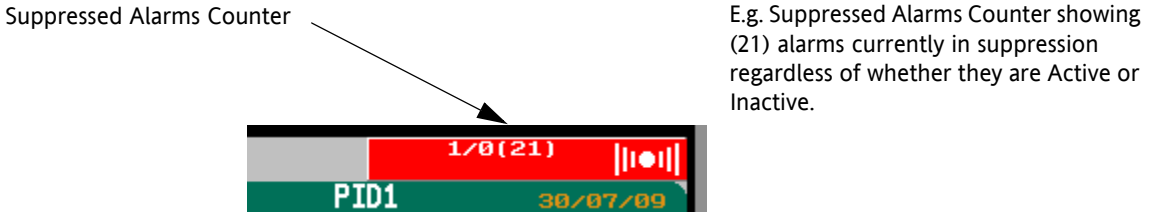


Figure 4.4.1 Suppressed Alarms Counter

4.4.2 Alarms with 'priority' setting of 5 or lower

1. These alarms do not require 'acknowledgement'.
2. When an alarm is active and suppressed the 'Alarm Pane' is not activated.
3. When an alarm is active and unsuppressed the 'Alarm Pane' is activated.
4. When an alarm is already active and 'Alarm Suppression' is applied, the 'Alarm Pane' is de-activated

4.4.3 Alarms with 'priority' setting of 6 or higher

1. These alarms require 'acknowledgement'.
2. If an alarm enters and leaves an alarm condition while suppressed, alarm 'acknowledgement' is not required and the 'Alarm Pane' is not activated.
3. If an alarm enters an alarm condition while suppressed, then suppression is subsequently removed, alarm 'acknowledgement' is required and the 'Alarm Pane' is activated.
4. If an alarm is already active and in an 'unacknowledged' condition and 'Alarm Suppression' is applied, the alarm condition is 'cleared', alarm 'acknowledgment' is still required and the 'Alarm Pane' remains activated albeit in a cleared alarm condition.

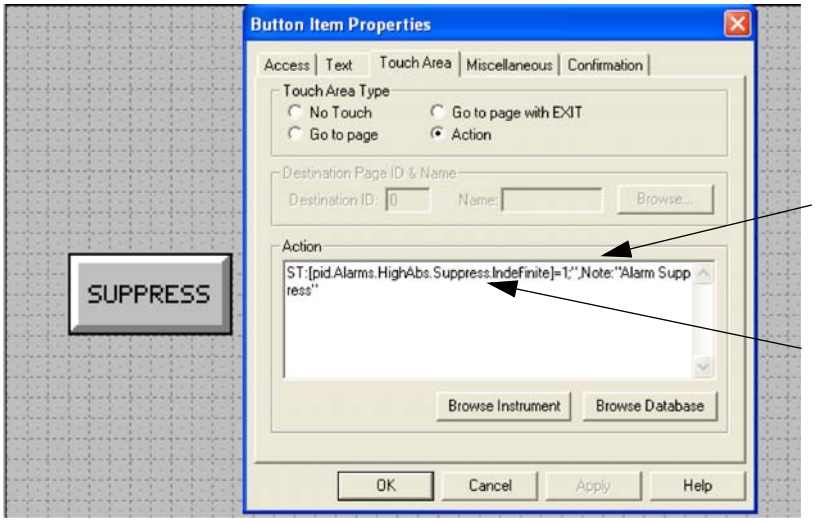
4.5 USER SCREENS AND ALARM SUPPRESSION

The 'User Screens' function as described in the 'User Screen Editor User Guide' HA260749 U005 but noting that the user has flexibility to control alarm suppression and un-suppression as appropriate. Any screen component (e.g. button) that contains an 'Action' dialogue and allows Structured Text (ST) to be 'written' can be used to implement Alarm Suppression by 'writing' ST. When using the 'User Screen Editor' the Alarm Suppression attribute can only be implemented on the 'left' side of an assignment expression. For further ST syntax details refer to section 2.6. The user can 'write' to any or all of the following:

1. Individual alarms
2. Alarms for the whole block
3. Visual Supervisor database local blocks via the DBF 'Header Block' detailed in section 3.4.2.(Unsuppress Only)

Note: Indefinite 'Alarm Suppression' can be set from a relevant user screen component using ST syntax.

Using the 'User Screen Editor' an example of allocating a 'button' titled 'SUPPRESS', to perform indefinite alarm suppression on the 'Absolute High Alarm' in the LIN block tagged 'pid' is shown in figure 4.5 below.



Optional 'Note' required for 'Event log'

ST:"[pid.Alarms.HighAbs.suppress.Indefinite]=1;"

Note: A value of '1' in the '.Indefinite' sub field denotes indefinite alarm suppression. Temporary alarm suppression can be applied between 0-90days using 'T#' format to [pid.Alarms.HighAbs.suppress].

Figure 4.5 User screen example

4.5.1 Auditor and User Screens

For applications where it is required to use 'Electronic Signatures' with the 'AUDITOR' option enabled, special consideration must be given to 'Event log' entries and 'Electronic' confirmation. With reference to example 4.5, the Note, "Alarm Suppress" depicted as optional, is now strongly recommended to facilitate the associated 'Electronic signature' to be correctly entered into the 'Event log'. 'Confirmation' levels must be configured as required, as shown in figure 4.5.1a below.

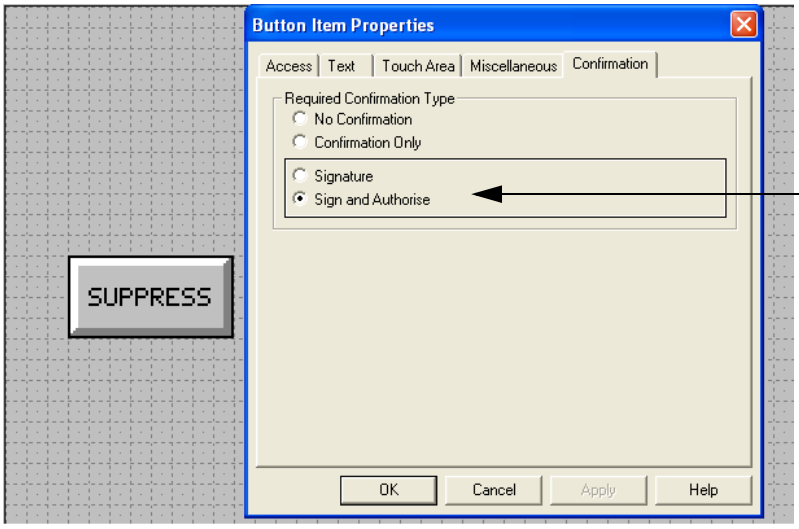


Figure 4.5.1a Configuration of Confirmation

Example 4.5.1a assumes that 'Auditor' variant has been selected in the 'Target panel' when configuring a 'New Page Set', as shown in Figure 4.5.1b below.

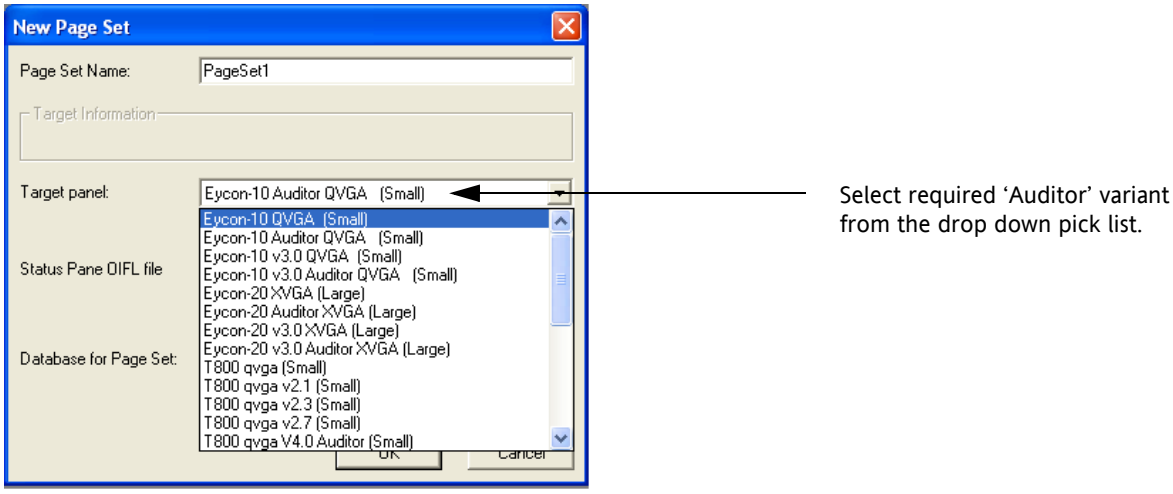


Figure 4.5.1b Selection of Auditor variant

4.6 RECIPES AND ALARM SUPPRESSION

When using the 'RECIPE' feature It is not possible to suppress alarms by using Recipes.

5 OPERATIONS VIEWER

This chapter describes how the 'Alarm Suppression' function is implemented on Operations Viewer and assumes Alarm Suppression has been implemented on the LIN Instrumentation, e.g. T2550. It also assumes that the user has been granted the correct access permissions and is familiar with the configuration methods and navigation as described in the 'Operations Viewer & Server Help file', RM030483, the 'Operations Viewer, Shell Applications Internals Manual', HA028882 and the 'Operations Viewer INTouch 10.0 Workflow Guide' HA030063. Refer to section 2 and section 3 of this user guide for alarm suppression implementation in the Instrument database.

5.1 SUPPRESSED ALARMS OVERVIEW PAGE

Referring to figure 5.1 below, this page is accessed by 'clicking' the mouse on the 'Alarm Suppression Icon'. This allows the user to view and interact with the current active and inactive suppressed alarms for all Servers connected to a common ELIN network.

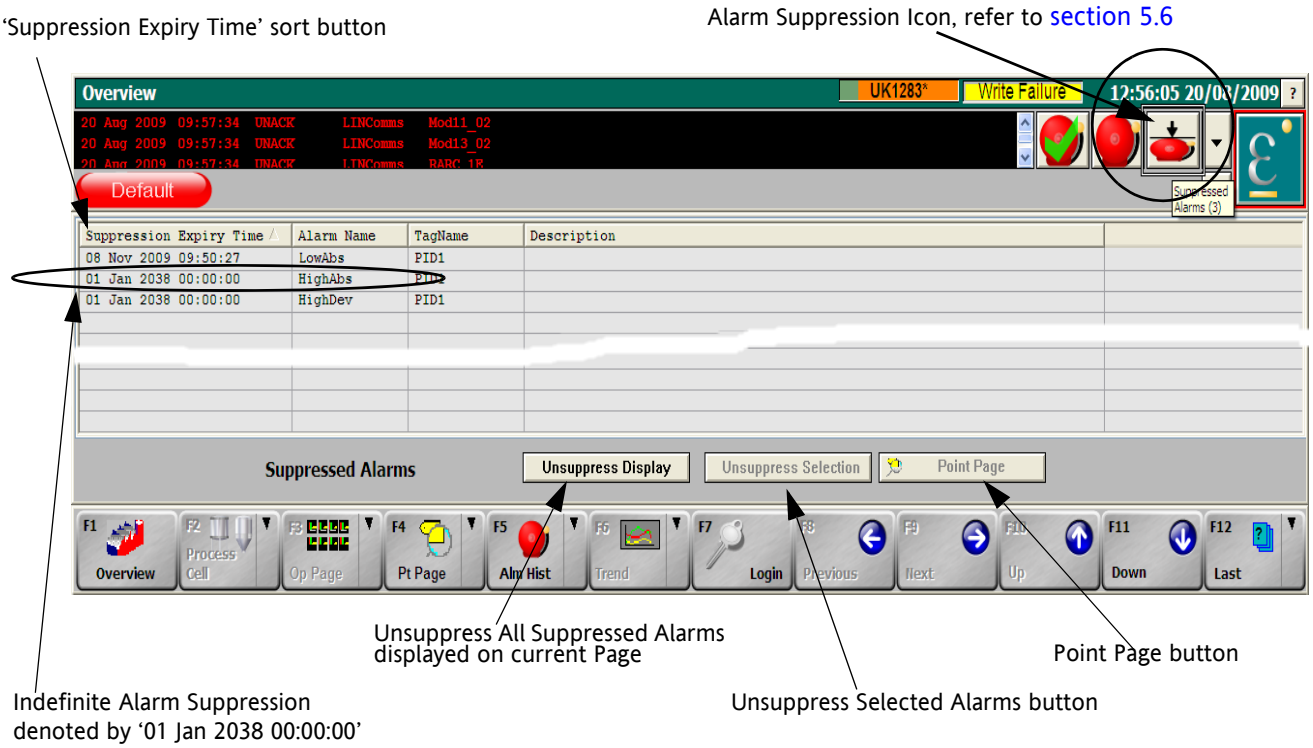


Figure 5.1 'Suppressed Alarms' Summary page

With reference to figure 5.1 the following applies to the 'Suppressed Alarms' Summary page:

1. All suppressed alarms, ACTIVE OR INACTIVE are shown.
2. The time at which the Suppressed alarms clear are shown as local dates and times including DST if set.
3. For Indefinite suppressed alarms the dates and times are denoted by '01 Jan 2038 00:00:00'.
4. The 'Suppression Expiry Time' can be sorted by clicking on the 'Suppression Expiry Time' button.
5. 'Suppressed Alarms' page supports multiple pages in the same way as 'Alarm Summary'.
6. 'Unsuppress Display' button unsuppresses all suppressed alarms displayed on the current page.
7. 'Unsuppress Selection' button unsuppresses all suppressed alarms selected on the current page.
8. 'Point Page' button, opens the Point Page as described in section 5.3.

Note: Indefinite suppressed alarms are denoted by '01 Jan 2038 00:00:00'

5.2 POINT PAGE

The 'Point Page' is accessed via several navigational routes, however direct access is also granted via the Alarm Suppression Summary page as shown in section 5.1. By simply 'clicking' the mouse on an appropriate suppressed alarm causes the alarm to be highlighted as shown in figure 5.2a. Once this has been achieved, then simply clicking the 'Point Page' button opens the associated 'Point Page'. From the Point Page a 'Suppression Expiry Time' facility is available to the user to set and manage Suppression Expiry Times as discussed in section 5.2.1.

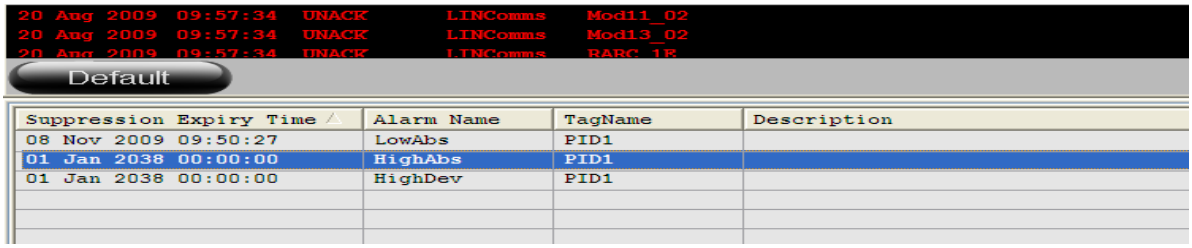


Figure 5.2a Suppressed Alarm Selection - 'PID1.Alarm.HighAbs'

From the 'LIN Data' tab the 'Suppression Expiry Time' for each individual alarm is available for user interaction as shown in figure 5.2b below.

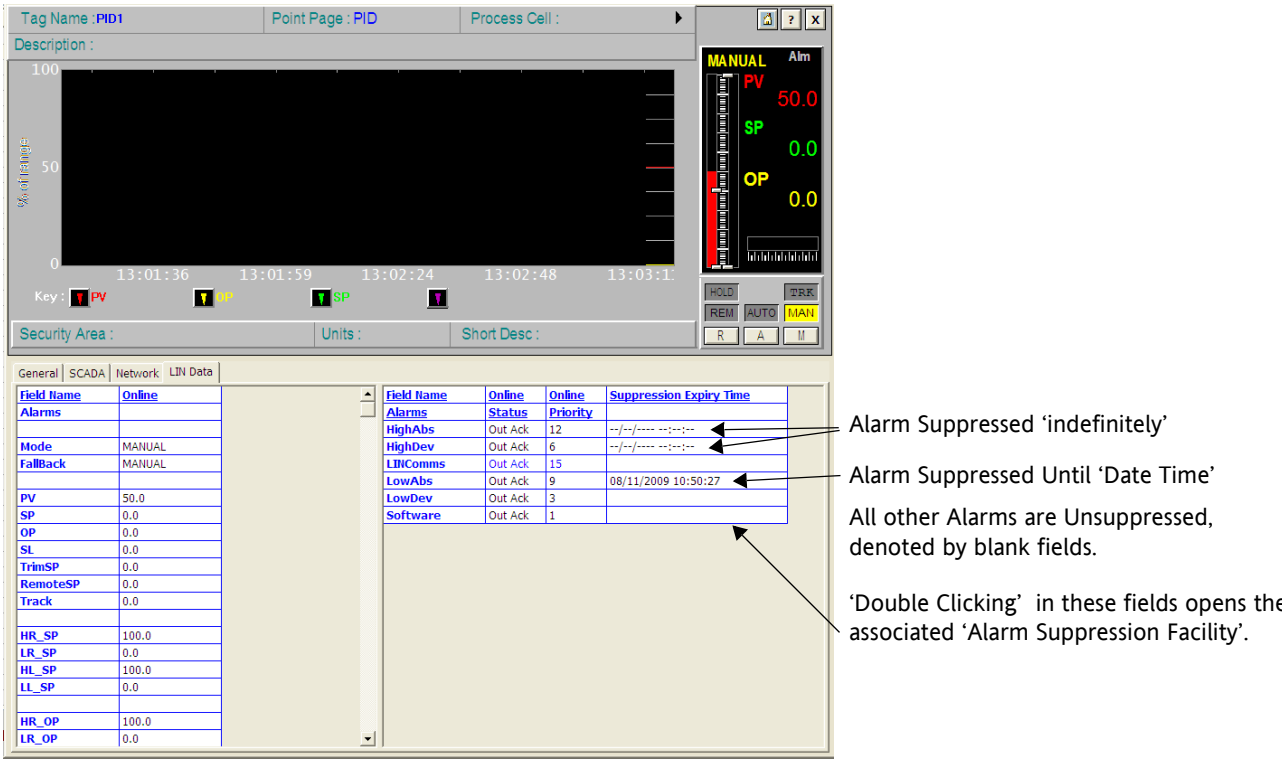


Figure 5.2b 'Point Page' showing 'Suppression Expiry Time' for individual alarms.

With reference to figure 5.2b the following applies to the 'Suppression Expiry Time' pod:

1. The 'Suppression Expiry Time is shown in the format; 'DD/MM/YYYY HH:MM:SS'.
2. For Indefinite suppressed alarms, the 'Suppression Expiry Time' is replaced with '--/--/---- --:--:--'.
3. A blank field denotes an unsuppressed alarm.
4. 'Double Clicking' the mouse in a 'Suppression Expiry Time' field opens the associated 'Alarm Suppression Facility' as discussed in section 5.2.1.

5.2.1 Point Page Alarm Suppression Facility

The Pop-up 'Alarm Suppression Facility' for tag 'PID1.Alarms.LowAbs.Suppress' is shown in figure 5.2.1 below. This facility allows individual alarms to be suppressed or unsuppressed as appropriate.

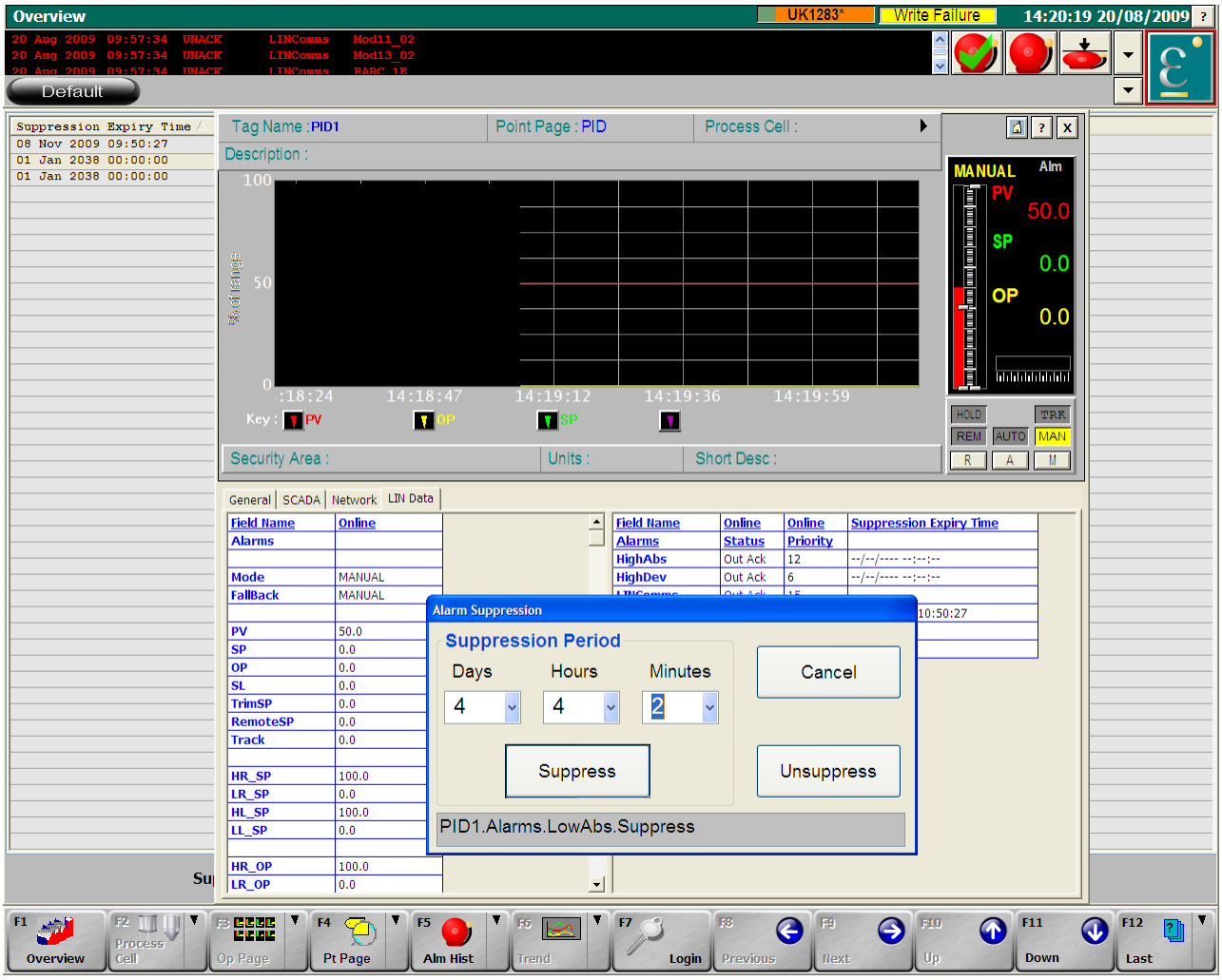


Figure 5.2.1 Pop-up Alarm Suppression Facility

1. 'Double Clicking' the mouse in a 'Suppression Expiry Time' field opens the associated 'Alarm Suppression Facility'
2. Any 'Suppression Period' between 0-90 days can be entered via the 'Suppression Period' pane. Indefinite suppression cannot be applied but can be overridden with a 'Suppression Period' or unsuppressed.
3. Once the required 'Suppression Period' has been entered, 'clicking' the 'Suppress' button applies it.
4. 'Clicking' the 'Unsuppress' button Unsuppresses the alarm. This also applies to alarms suppressed indefinitely.

5.2.2 Point Page Alarm Suppression Facility and Auditor

If the 21 CFR Pt11 Auditor function is enabled, on selecting either the 'Suppress' or Unsuppress' button, the 'Electronic Signing and Authorisation' Pop-up dialog box appears for completion before alarm suppression or unsuppression is applied.

5.3 HISTORY AND EVENT LOG

In addition to the 'normal' function of the History and Event log, it also timestamps and log Alarm Suppression events. Also included in the event log are suppressed alarms that have expired but are not in an Active alarm condition. When using the 'Point Page Alarm Suppression Facility' as described in section 5.2.1 for setting alarms into suppression and unsuppression, the event log also includes for these entries as shown in figure 5.3 below.

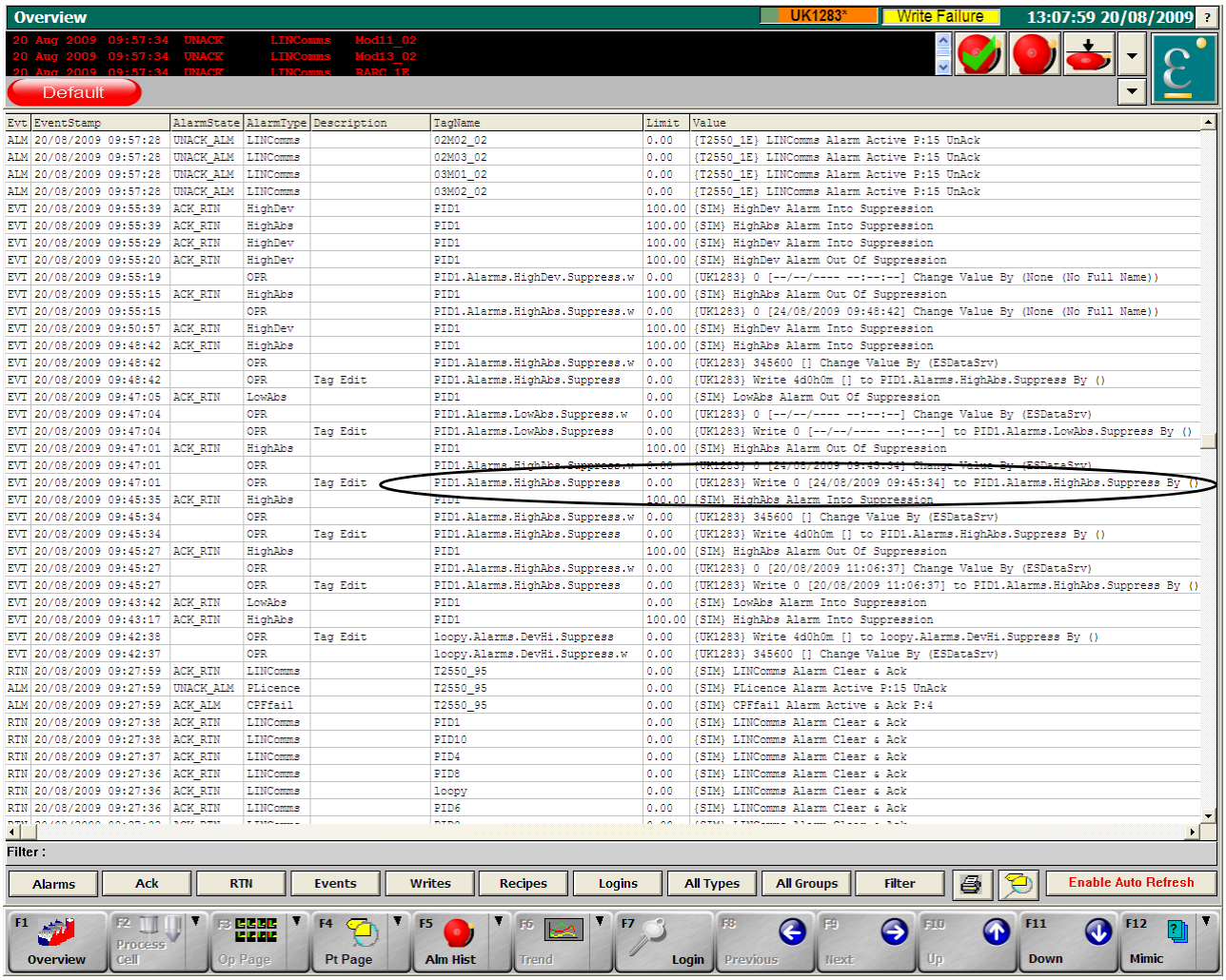


Figure 5.3 History and Event Log showing Alarm Suppression entries.

5.3.1 Enabling Suppressed Active Alarm Logging

It is possible to log all current Active Suppressed Alarms, i.e. Alarms that would be otherwise in an Alarm condition but have alarm suppression applied. To enable this function the following procedure should be used.

1. Open 'Project Organiser' with the 'Active Project' loaded. Select the 'Configurator' Icon as shown in figure 5.3.1a as shown below. This opens the 'Operations Server Configurator' dialog box.

Figure 5.

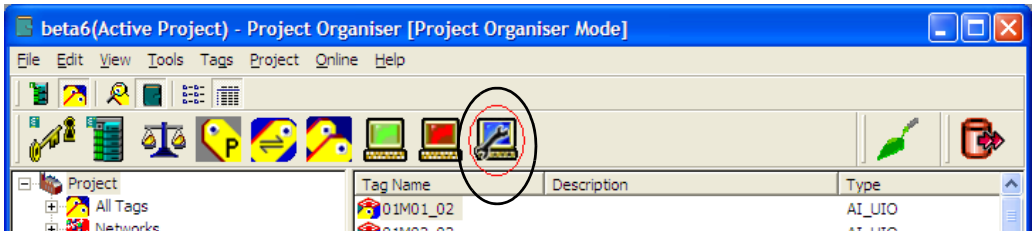


Figure 5.3.1a Project Organiser, Configurator Icon.

2. From the 'operations Server Configurator' dialog box, select the 'User Variables' button to open the 'User Variables' dialog box.

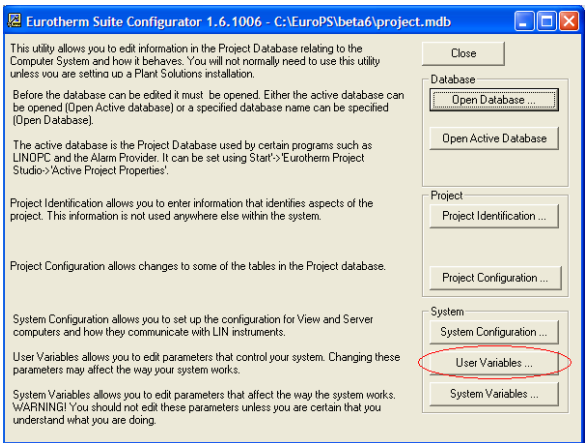


Figure 5.3.1b Operations Server Configurator Dialog Box

3. From the 'User Variables' dialog box select the 'LogSuppressedAlarms' parameter, and then select the 'Edit button.

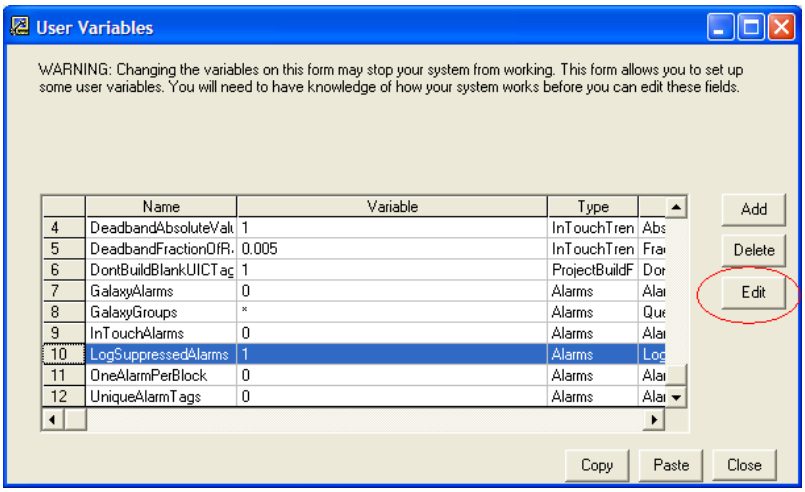


Figure 5.3.1c User Variables Dialog Box

5.3.1 Enabling Suppressed Active Alarm Logging (Cont.)

4. Set the 'Variable' to '1' from the drop down box and finally select the 'Update Record' button.

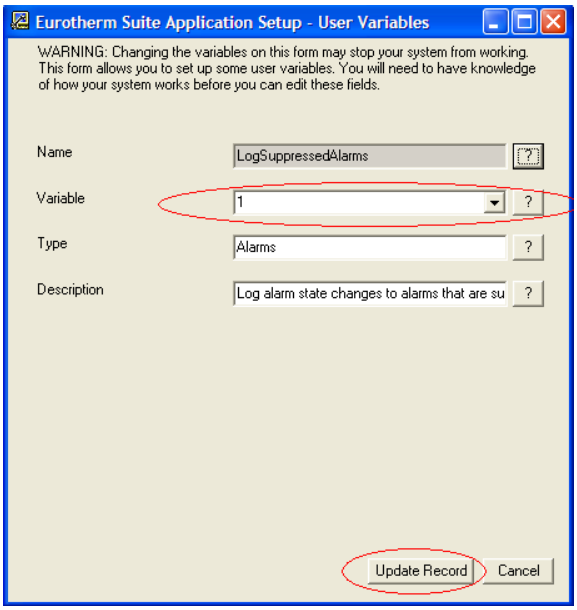


Figure 5.3.1d User Variable Setup Application

5. To disable this function set the 'Variable' to '0' from the drop down box and select the 'Update Record' button.

5.4 ALARM PANE AND ALARM ACKNOWLEDGMENT

The alarm beacon functions as described in the Manuals and Help files as described in section 5, but noting the following points relating specifically to suppressed alarms.

5.4.1 Alarms with 'priority' setting of 5 or lower

1. These alarms do not require 'acknowledgement'.
2. When an alarm is active and suppressed the 'Alarm Pane' is not active.
3. When an alarm is active and unsuppressed the 'Alarm Pane' is active.
4. When an alarm is already active and 'Alarm Suppression' is applied, the 'Alarm' is de-activated

5.4.2 Alarms with 'priority' setting of 6 or higher

1. These alarms require 'acknowledgement'.
2. If an alarm enters and leaves an alarm condition while suppressed, alarm 'acknowledgement' is not required and the 'Alarm Pane' is not active.
3. If an alarm enters an alarm condition while suppressed, then suppression is subsequently removed, alarm 'acknowledgement' is required and the 'Alarm Pane' is active.
4. If an alarm is already active and in an 'unacknowledged' condition and 'Alarm Suppression' is applied, the alarm condition is 'cleared', alarm 'acknowledgment' is still required and the 'Alarm Pane' remains active albeit in a cleared alarm condition.

5.5 MIMICS AND ALARM SUPPRESSION

'Mimics' configured on Operations Server can be used to control alarm suppression and unsuppression as appropriate. Any screen component (e.g. button) that contains an 'Action Script' dialogue can be used to control Alarm Suppression by 'writing' the appropriate script. The user can 'write' to any or all of the following:

1. Individual alarms
2. Alarms for the whole block
3. Unsuppress local blocks in an Instrument database via the DBF 'Header Block' detailed in section 3.4.2

To configure Alarm Suppression the script has been extended to support two new sub field attributes as follows:

1. '.Indefinite' - sets indefinite suppression and unsuppression and is used as shown in the following examples:

   PID1.Alarms.HighAbs.Indefinite=1 - sets indefinite suppression for the 'PID1 Absolute High Alarm'

   PID1.Alarms.HighAbs.Indefinite=0 - unsuppress the 'PID1 Absolute High Alarm'

   PID1.Alarms.Indefinite=1 - sets indefinite suppression for 'PID1' All Process Alarms with priority 1-15.

   PID1.Alarms.Indefinite=0 - unsuppress All Process Alarms for 'PID1'.

2. '.Suppress' - sets alarm suppression time period in seconds or can also be set to zero to unsuppress alarms and is used as shown in the following examples:

   PID1.Alarms.HighAbs.Suppress=60 - sets 60 seconds of suppression for the 'PID1 Absolute High Alarm'

   PID1.Alarms.HighAbs.Suppress=0 - unsuppress the 'PID1 Absolute High Alarm'

   PID1.Alarms.Suppress=60 - sets 60 seconds of suppression for 'PID1' All Process Alarms with priority 1-15

   PID1.Alarms.Suppress=0 - unsuppress All Process Alarms for 'PID1'.

> Note: Negative values cannot be used, e.g. -1.

Referring to figure 5.5 below, the Mimic Builder shows an example of allocating a 'button' titled 'Indefinite Suppress', to perform indefinite alarm suppression on the 'Absolute High Alarm' in the LIN block tagged 'PID1'.

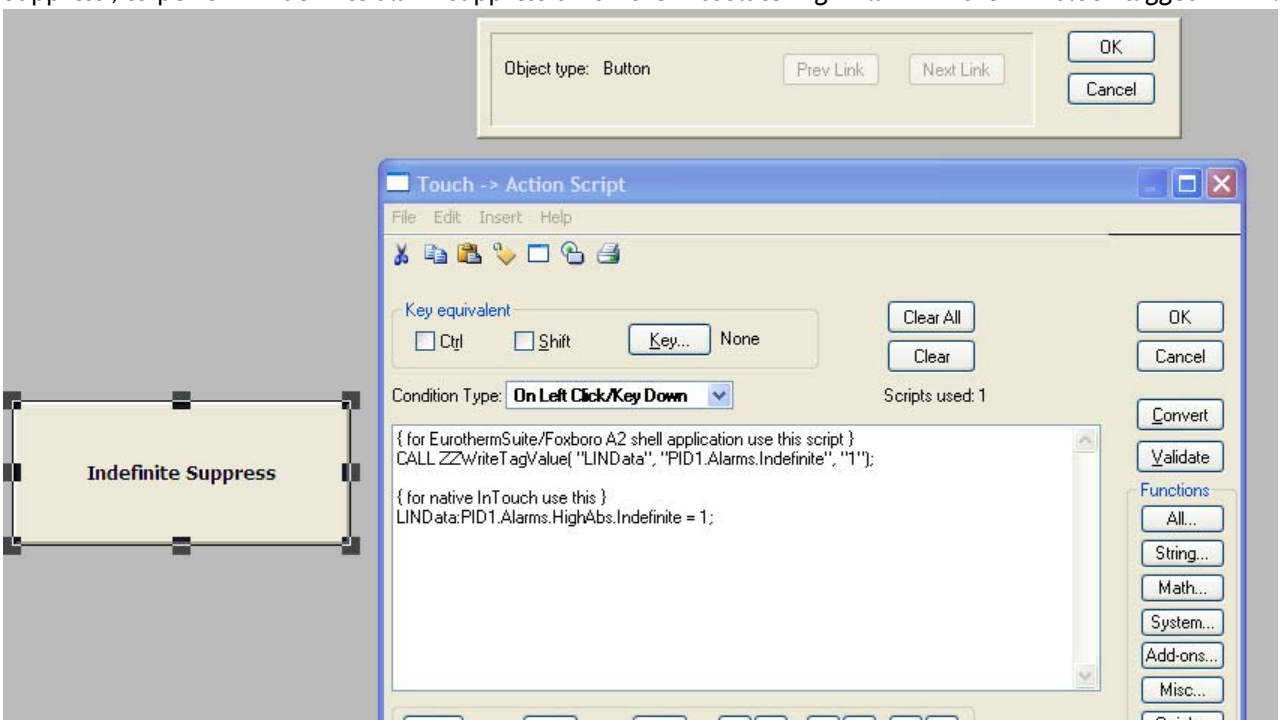


Figure 5.6 Action Script setting Indefinite Alarm Suppression

5.5.1 Security Access Levels

The sub field attributes '.Indefinite' and '.Suppress' appear in the 'Tag Profiler', where the appropriate security access levels can be applied.

5.6 ALARM SUPPRESSION ICON

Referring to figure 5.6 below the Alarm Suppression Icon serves two purposes as follows:

1. By 'clicking' the mouse on it, the Alarm Suppression Overview page opens as discussed in section 5.1. When the Icon is 'greyed out', this denotes that currently there are not any suppressed alarms.
2. By hovering the mouse pointer over the Icon, a 'tip' box opens, indicating the number of alarms currently in suppression for all 'Servers' connected on a common ELIN network. The example in figure 5.6 shows that there are currently '3 Suppressed Alarms' across the Server network.

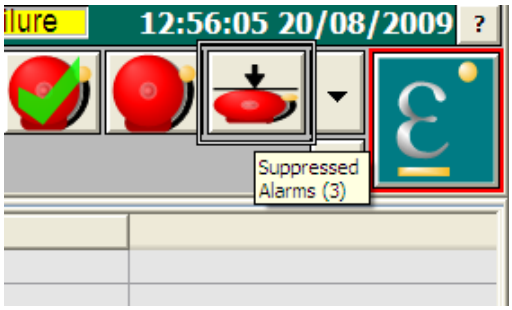


Figure 5.6 Alarm Suppression Icon

5.7 INTOUCH® RECIPES AND ALARM SUPPRESSION

The '.Indefinite' and '.Suppress' sub field attributes may be written to from Recipes in the same way as for 'script' as discussed in section 5.5.

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