



CONTROLS & DRIVES LTD

The Industrial Automation Specialists



Technical Tip

GOT2000 Alarms

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Technical Tip

Intro

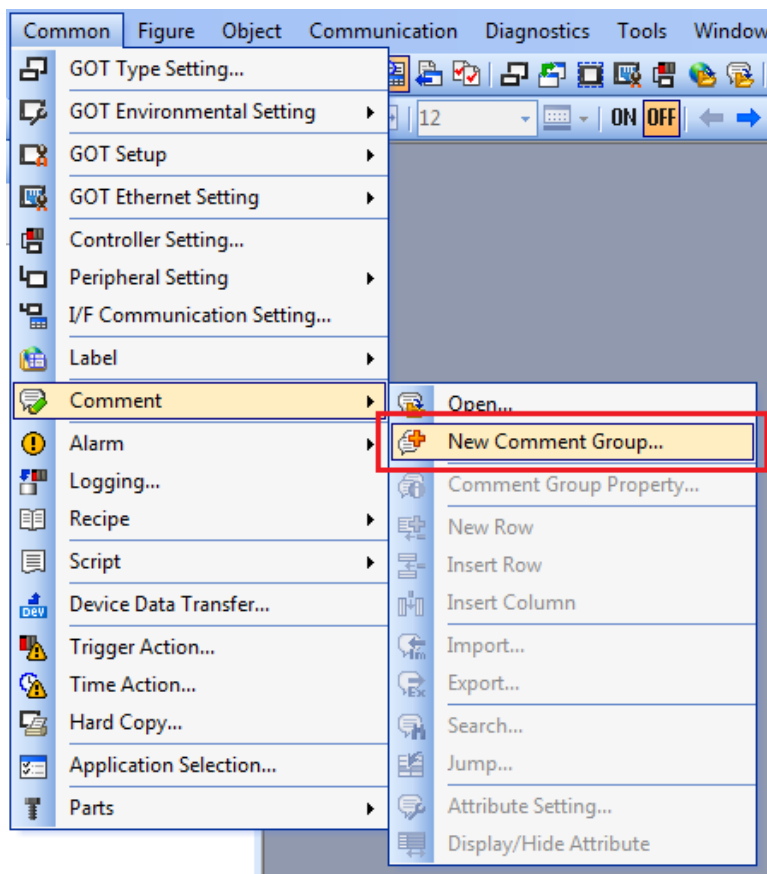
This technical tip shows you how to set up alarms in for a GS/GOT2000 in GT Designer 3. It will also advise you how to call up window screens for extra alarm detail.

Equipment used:
GT2104-RTBD
FX3U-16MR/ES

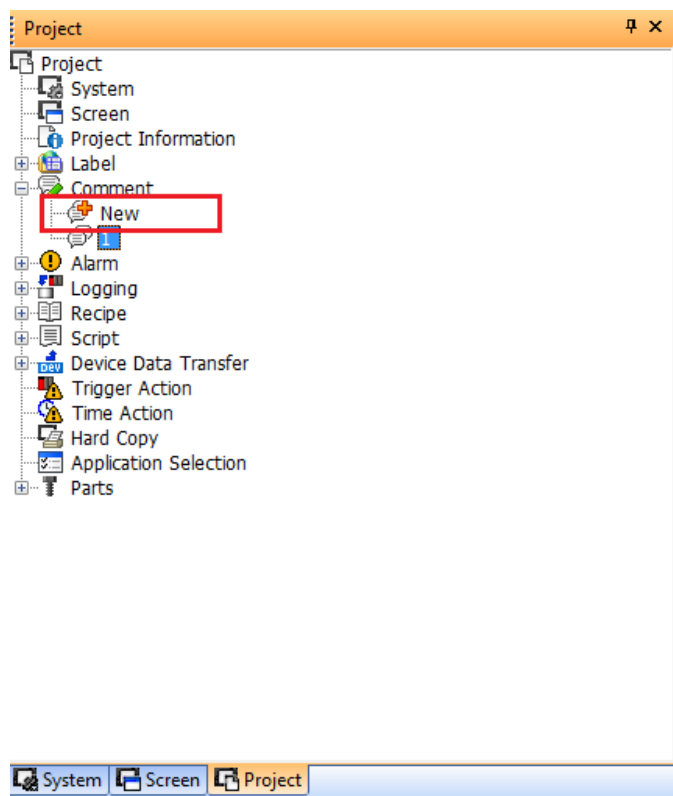
This technical tip will already assume you have your GOT2000 HMI and PLC already connected, turned on and communicating together. It also assumes you have your GT Designer 3 project started with your chosen GOT2000 HMI.

Step 1 – Setting up comments for alarms list

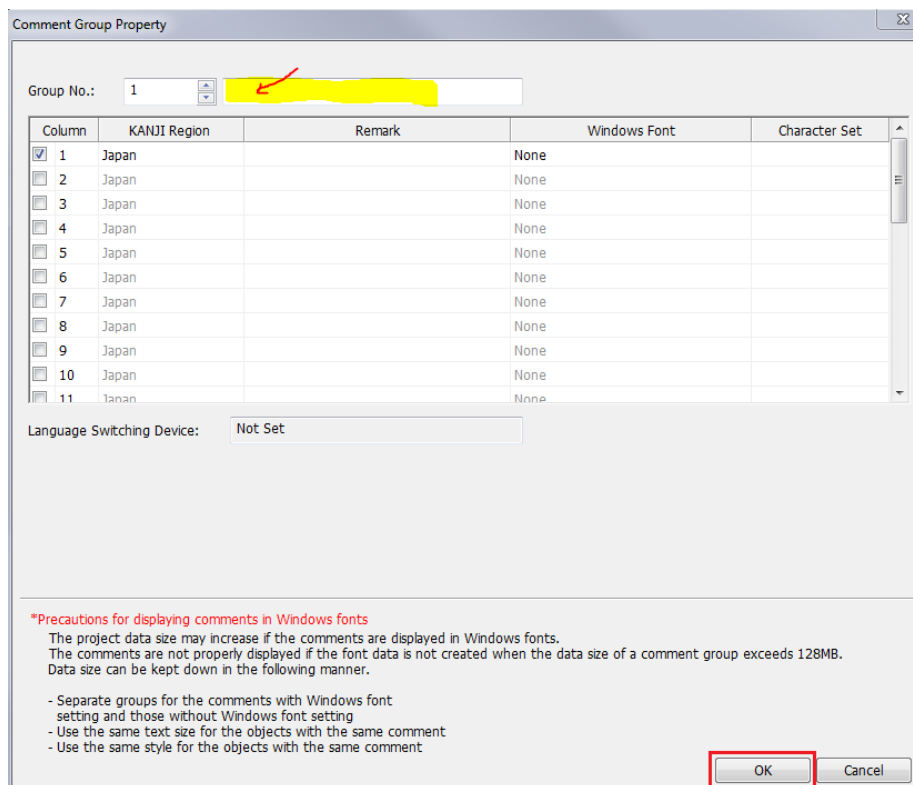
Click on, Common > Comment > New Comment Group



Another way you can create a new comment group is shown here via the project tree.

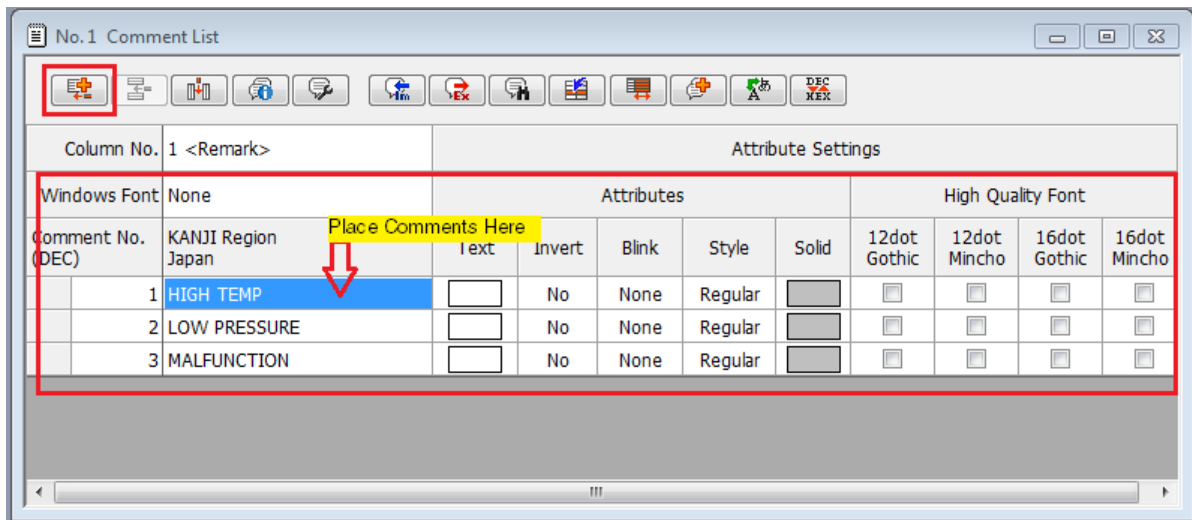


The next screen will appear which is the 'Comment group property'. A comment group name maybe desired, otherwise click OK.



The Next window, 'Comment List' will appear, and this is where your comments are listed. These comments will be used as and when each alarm is triggered. Click on this button  to add the number of comments you want use, you can add more to this list if you require more alarms as your project gets larger at a later stage, in this example I have created 3 comments.

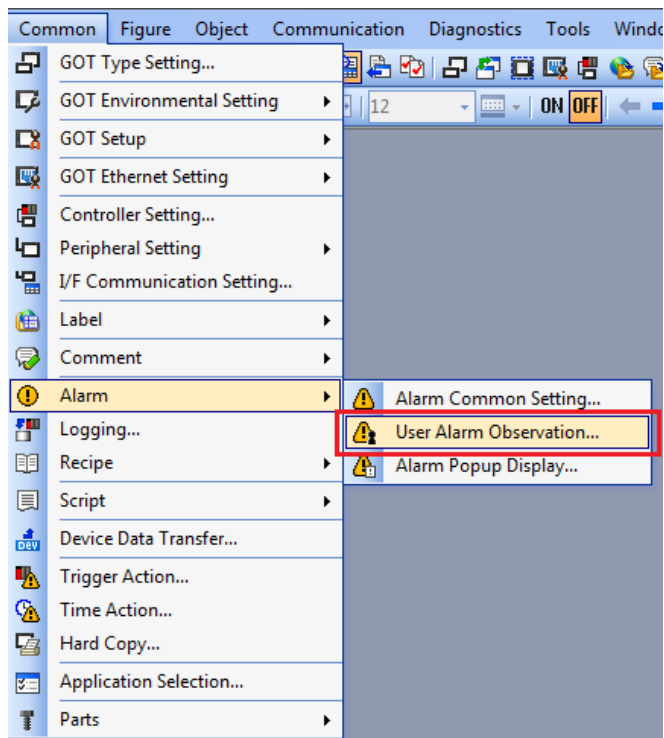
This window will also allow you change to attribute settings such as colour and style of text of each comment. In this example I have left as default settings but you can freely experiment the attribute settings as desired.



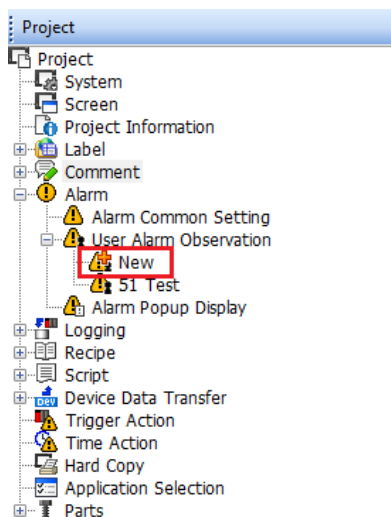
Once you have added your comments you can Click on 'X' to exit this window.

Step Two – Creating User Alarm Observation.

Click on, Common > Alarm > User Alarm Observation



Here is another way to access the same window using the Project tree.



This next window is where you can setup all of your alarms and what devices trigger the alarms;

Basic TAB:

User Alarm Observation

Basic Device File Save External Output

Alarm ID: 51 Alarm Name: Test

Basic

Collection Mode: ☒ Historical ☐ Cumulative ☐ Only current alarm

☐ Popup Display

Buffering

Stored Number: 10 (number of items) --> 1 KB of the operation memory (RAM) will be used.

Action When Buffer is Full: Delete old data

☒ Full Notification Signal Device: M51

Notification Number: Remaining 0 (number of items)

☒ Buffering Data Clear Trigger Device: M52

☒ Buffering Data Clear Completion Signal Device: M52

OK Cancel

Main areas to consider: Give your Alarms Group an ID and Name and Collection Mode.

The main settings here are where you can set the collection mode for the 'Alarms table', which will be discussed later.

Collection Modes:

- Historical: Alarms will occur in order and previous alarms will also stay.
- Cumulative: Alarms will occur in table in order but previous of same type will not stay.
- Only Current Alarm : Only one alarm is displayed and others are overwritten.

Popup Display can be used if you require alarm popup.

Buffering options:

- Stored Number: Amount of alarms stored in buffer memory (max 1000)
- Action when buffer is full: Delete old data, means oldest is deleted when buffer is full
- Full notification Device: Flag to show buffer is full – a lamp can be used here.
- Buffering data clear Trigger device: A Device Switch can be set to clear buffer as and when required.
- Buffering data clear Completion Signal Device: A Device Lamp can be used to indicate when buffer is cleared.

Device TAB:

User Alarm Observation

Basic Device File Save External Output

Watch Cycle: 20 (x100ms) Device Type: Bit

Alarm Points: 3 Device Setting: Continuous

Comment

Basic Alarm Comment

Comment Group No.: 1 Comment No.: ☒ Continuous ☐ Random

Preview Column No.: 1

Alarm Hierarchy Setting... Additional Setting... Copy... **Im** **Ex**

	Device	Alarm Range	Basic Alarm	Comment No.	Reset
1	M700	ON	1	HIGH TEMP	NO 0
2	M701	ON	2	LOW PRESSURE	NO 0
3	M702	ON	3	MALFUNCTION	NO 0

OK Cancel

Main Areas to Consider:

- 'Alarm points': Number of alarm points
- 'Comment Group No': Assigned comment Group.
- 'Device Column': Devices to trigger alarms in this example I have used 'M' coils.
- 'Comment No': Assigned Comment to alarm Device.

Other Options:

- 'Watch cycle': Default 20x100ms, speed of alarm occurrences. (Min is 5x100ms)
- 'Device Type': Default is Bit (easiest to set up)
- 'Device Setting': Default Continuous

'Alarm Hierarchy' will be discussed later

'Additional setting' will not be discussed in this technical tip.

File Save TAB:

These settings are used if you require your alarms to be saved on display while PLC and HMI are turned off during the night.

These settings will not be discussed further.

The screenshot shows the 'User Alarm Observation' dialog box with the 'File Save' tab selected. The dialog has four tabs: 'Basic', 'Device', 'File Save', and 'External Output'. The 'File Save' tab contains the following settings:

- ☐ Save alarm log files
- Save Destination:**
 - Drive Name: D:Built-in SRAM
 - Folder Name: Package1
 - File Name: AAM00051 .G2A
- Store Trigger:**
 - Trigger Type: Sampling
 - 1 (Min)
- ☐ Writing Notification Device:
- ☐ Writing Error Notification Device:
- ☐ Automatically backup at the time of saving
- File Convert:**
 - Alarm common setting is required for additional file output. (Alarm Common Setting... button)
 - Conversion Format: ☒ Unicode Text ☐ CSV
 - ☐ Add date information to the file name
 - ☐ Specify the date format of file output
 - Destination: ☒ Same as log file ☐ Change
 - Drive Name: D:Built-in SRAM
 - Folder Name: Package1
 - File Name: AAM00051 .TXT

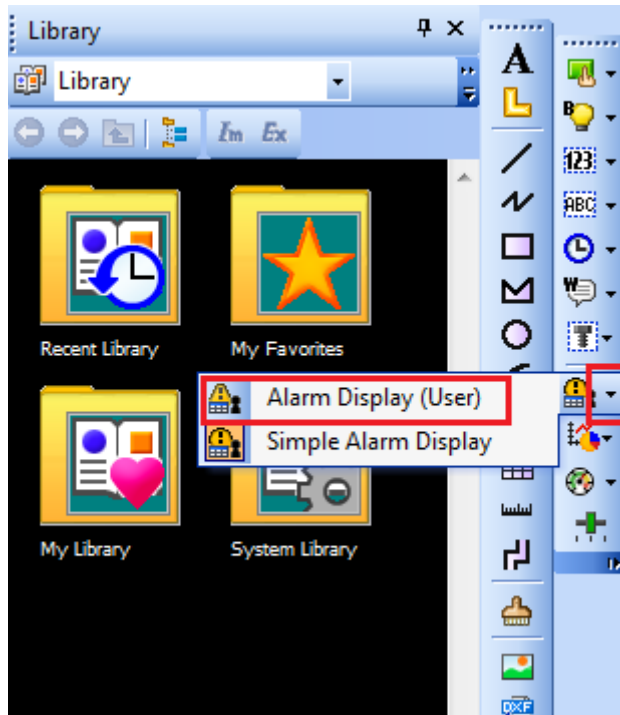
The 'OK' button is highlighted with a red rectangle.

External Output TAB will not be discussed.

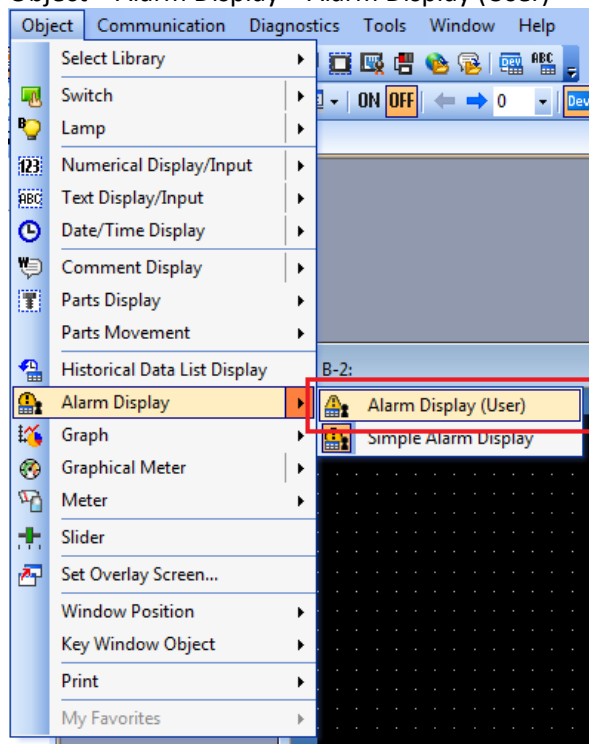
Now all 'User Alarm Observation' settings are complete, **CLICK OK** on this window.

Step 3 – Creating Alarms Screen

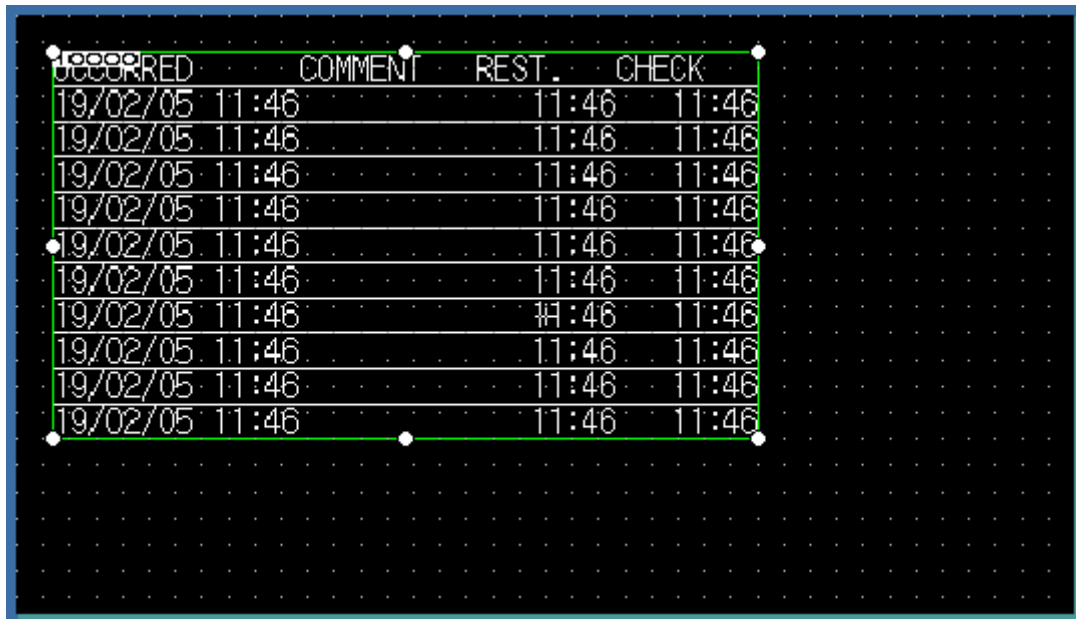
Click on the following:
Alarm Display (User)



Another way to access this:
Object > Alarm Display > Alarm Display (User)



Then Click on the screen on the using the Cross Cursor.



OCCURRED	COMMENT	REST.	CHECK
19/02/05 11:46		11:46	11:46
19/02/05 11:46		11:46	11:46
19/02/05 11:46		11:46	11:46
19/02/05 11:46		11:46	11:46
19/02/05 11:46		11:46	11:46
19/02/05 11:46		11:46	11:46
19/02/05 11:46		11:46	11:46
19/02/05 11:46		11:46	11:46
19/02/05 11:46		11:46	11:46
19/02/05 11:46		11:46	11:46

An alarms table is created with default settings.

If you double click on table, the 'Alarm User' Settings window will appear.

Alarm Setting TAB:

Alarm Display (User)

Basic Settings | Advanced Settings | Extended Settings

Alarm Setting | Display | Text | Style | Trigger | External Output

Display Alarm: ☒ User Alarm ☐ Device

Alarm ID:

Number of Display Rows:

Display Start Row: ☒ Fixed ☐ Device

Display Target: ☒ All Alarm ☐ Generating Alarm

Display Type: Speed:

Initial Display Hierarchy:

Touch Mode:

☐ Detail No. Offset:

☐ Comment No. Offset:

Name:

Main Area to consider is 'Alarm ID' and 'Number of Display Rows' default value is 10 this can be between 1 and 27, this will determine how many rows to show in your alarms table.

I have left all other settings default on this tab and will not be discussed further in this technical tip.

Display TAB

Here you can customise the table with different column types.
I have kept these to default settings in this example.

Alarm Display (User)

Basic Settings | **Advanced Settings**

Alarm Setting | **Display** | Text | Style | Extended | Trigger | External Output

Title
Specification: Direct

Contents:

Display	Attribute	Digits	Title	Date/Time Format
☒	Occurred	14	OCCURRED	19/02/05 11:59
☒	Comment	10	COMMENT	
☐	Status			
☒	Restored	8	REST.	11:59
☒	Checked	8	CHECK	11:59
☐	Frequency			
☐	Cum. Time			

Display Order: ← →

Occurred | Comment | Restored | Checked

Name:

OK Cancel

Text TAB

To customise your text type in table

I have kept Default settings

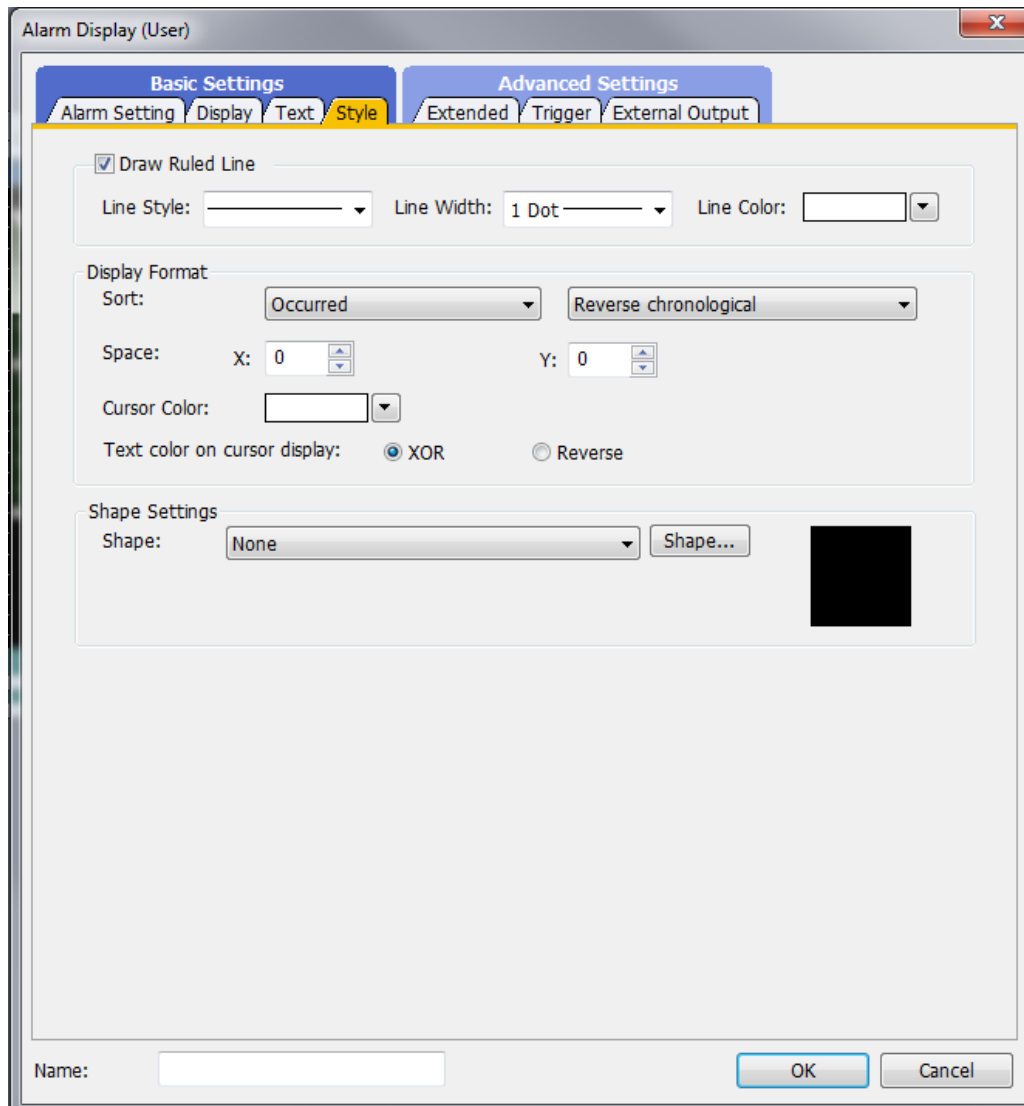
The screenshot shows the 'Alarm Display (User)' window with the 'Text' tab selected under 'Basic Settings'. The 'Advanced Settings' section is also visible. The 'Text' tab contains the following settings:

- Font: 16dot Standard
- Text Size: X 1, x Y 1
- ☐ Display the comments in Windows fonts: [i](#)
- Title Format
 - Text Color: [Color Picker]
 - Style: **B** **S** **R**
 - KANJI Region: Japan
- Table Format
 - Target: Fixed
 - Style: **B** **S** **R**
 - Fixed: [Dropdown]

At the bottom, there is a 'Name:' field and 'OK' and 'Cancel' buttons.

Style TAB

Customise the table further with these extra settings
Default settings are used again.



Advance settings will NOT be discussed in this technical tip.

click 'OK' once all settings are complete, these settings can be altered at a later stage.

ALARMS SCREEN COMPLETE



Win screen – Not Discussed

Alarm Detail – Will be discussed in next step

M700 to M702 – Alarm triggers (Not necessary if you have PLC controlling alarms)

Store Trigger – Not Discussed

Buffer Full – Lamp to indicate Buffer Full Flag (optional)

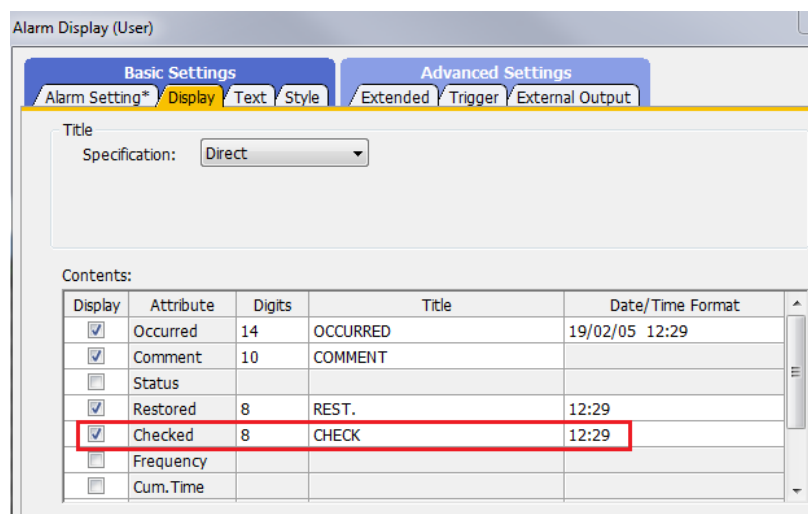
Buffer Data Clear – Lamp and Switch to Clear Buffer (optional)

Data Clear Complete – Not Discussed

Check and Check all

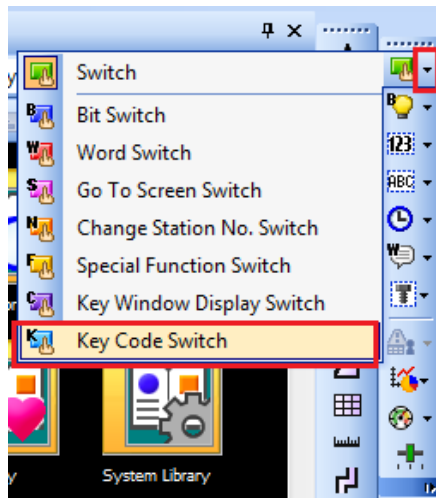
These two buttons are key code switches that will check alarms, this is optional if required. No time will appear on the check column if this function is not used.

If you do not require it remove the column by unticking the 'checked' box in Alarm Display (User) Display Tab.

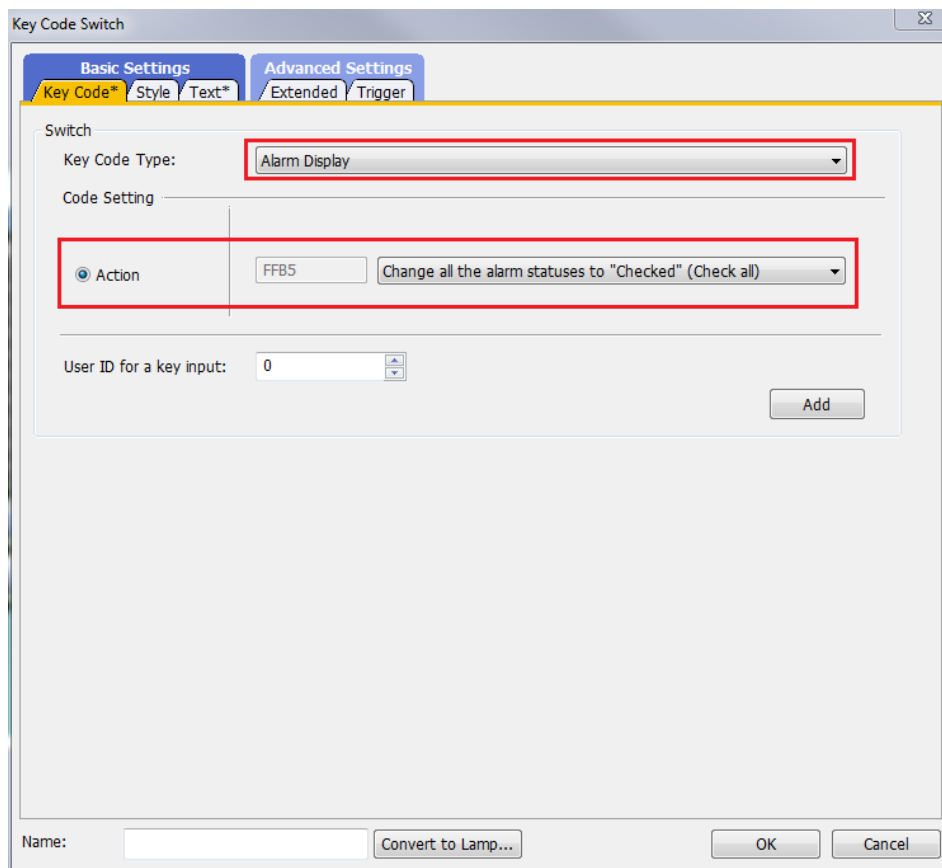


Check All and Check Key Code Switches:
Key Code Switches:

Create a key code switch on the screen using this button



Key Code Switch for 'Check' and 'Check all' buttons:

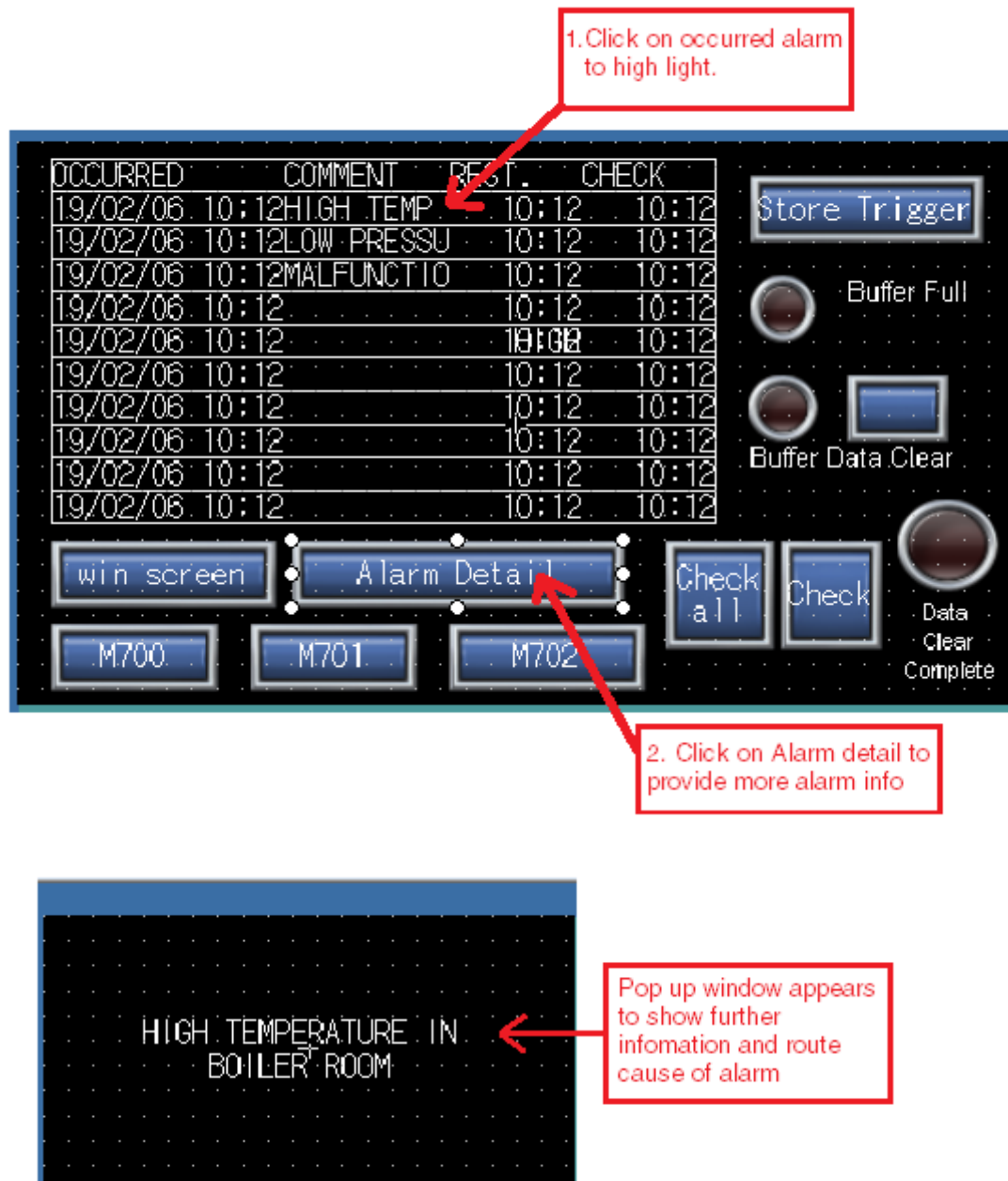


Key Code Type: Alarm Display
Action for 'Check All' is 'Change all the alarm statuses to 'Checked' (check all)
Action for 'Check' is 'Change the selected alarm status to 'Checked' (Check)

Step 4 – Alarm Detail

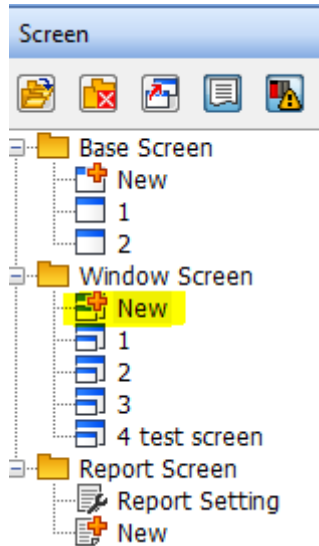
Assuming that all of your alarms are now working correctly, you can now expand your alarms to provide some more detailed information.

For example your HMI can perform like this:



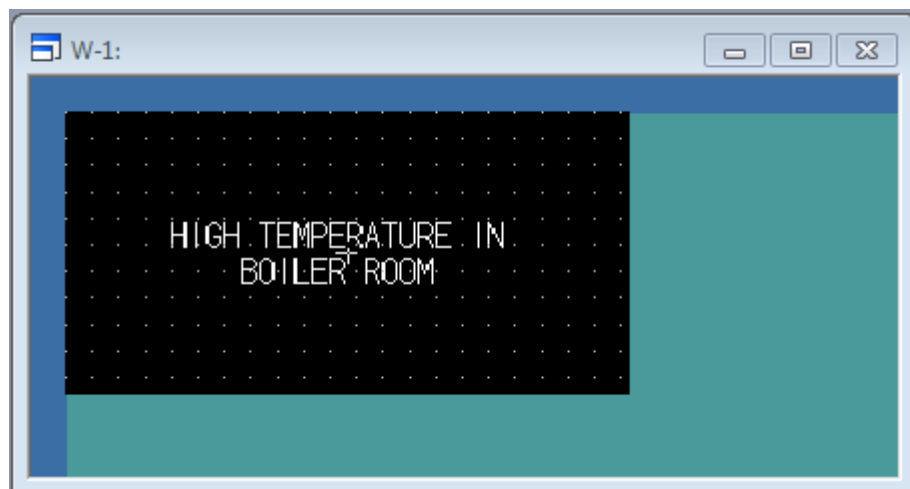
To do this, first create your window screens that will display the alarm detail.

On the left hand side, click on Screen Tab and click on New under the window screen heading.



And then create your window screen as you wish, using static text, colours, pictures etc...

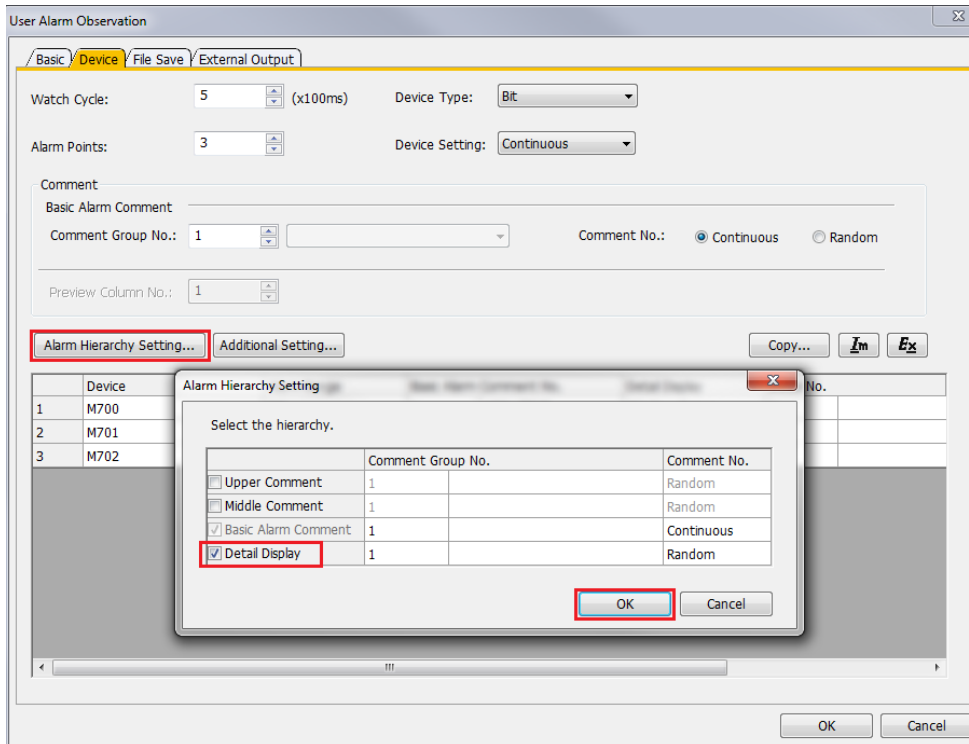
For example:



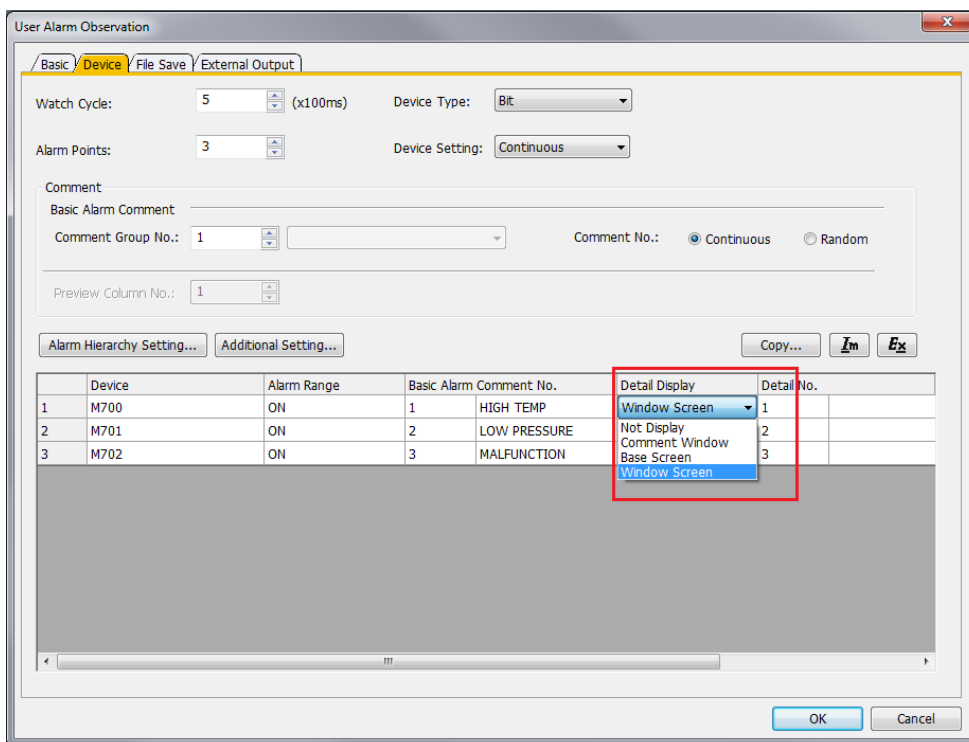
Once this is done you will need to open up the User Alarm Observation Settings, and go to Device TAB

Device Tab:

Click on 'Alarm Hierarchy Setting', and tick 'Detail Display', then click 'OK'

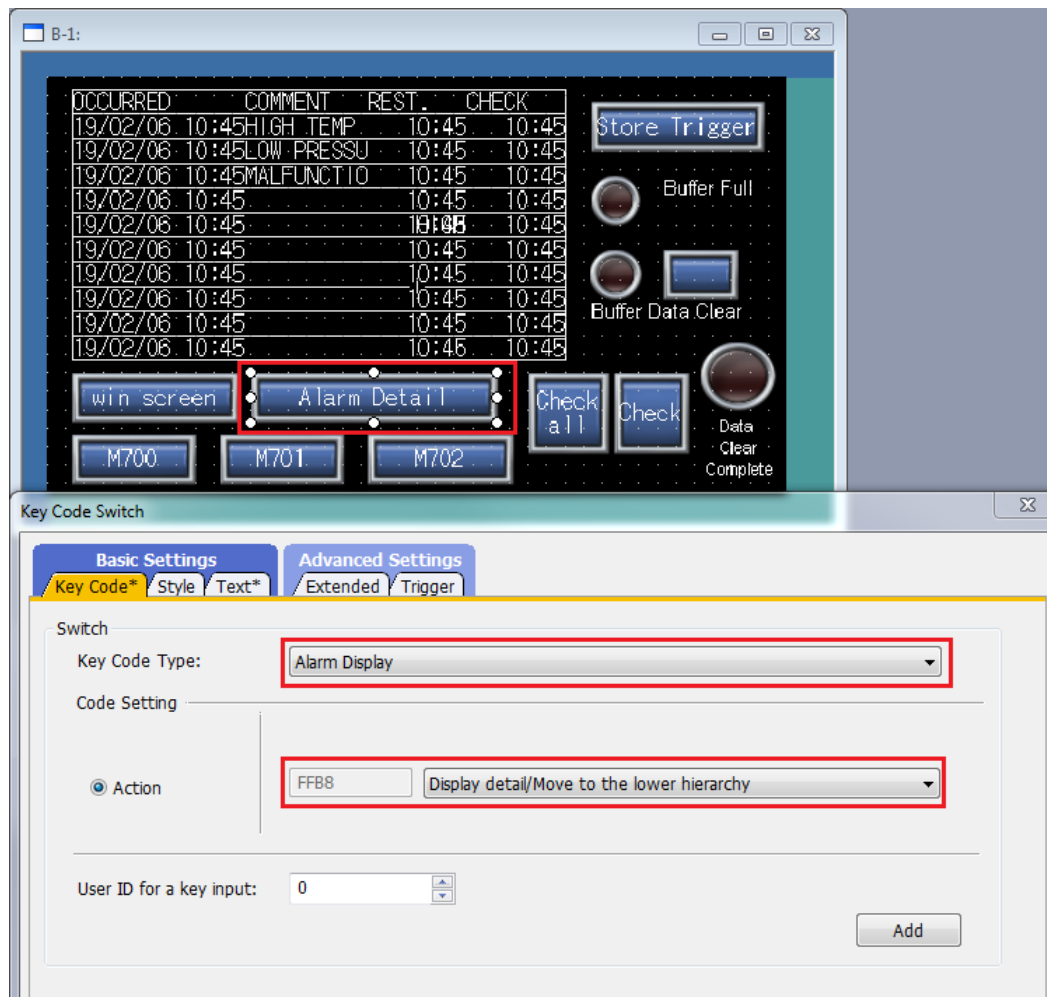


Next Click on Detail Display drop down arrow and select Window Screen, the detail number Represents which window screen number the detail display refers to.



Click OK, once this is done. You will need to repeat this process for each alarm if desired.

Last of all create key code switch button that will call up the window screen or alarm detail as per below...



1. Create Key code Switch on Screen
2. Key code type – Alarm Display
3. Action – Display detail/Move to the lower hierarchy.

Click OK once completed.

Your Alarms Technical Tip is now Completed.