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HP385 User Manual

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# Main Menu



The first time the system is configured it is necessary to enable and configure all devices you require. To configure a particular device select the ***Devices*** option from the main menu followed by the appropriate device.

This will launch an application to configure the device. You will be presented with a set of tab dialogs as shown above.

To configure a channel, select a group of channels by clicking on the appropriate channel tab. From the list provided select a channel and double-click. Alternatively you can select a channel and then click on the ***Configure Channel*** button. This will launch a channel configuration dialog which enables you to configure individual channels.

# Channel Configuration (Analogs)



## Enable Channel

The Enable Channel check box must be checked to enable, and allow this channel to be configured and ultimately included with all other configured channels in the overall system.

## Tag

The Tag field is an 12 character alphanumeric field that can contain channel information or wiring schedule references.

## Description

The Description field is a 32 character alphanumeric field in which a description of the channel can be detailed.

## Units

A 4 character field available to describe the units of the output.

## Scaling

NB. Scaling is only available to Analog channels that are not Output channels.

Some transducers give a number of pulses, or a frequency output proportional to their full scale range. To enable the Scaling utility check the Scaling Check box. The Slope and Offset values can be entered directly into the text boxes. The formula applied is:

y = mx + c where: m is SLOPE

 x is the measured value.

 c is the OFFSET

### Auto Scaling

Click On the Auto Scale button if you want the scale and offset values calculated automatically. A dialog box will be displayed. Enter the values in the text boxes. The low measured value, and the high measured value, the output range of the transducer. When the fields have been completed, and assuming the System is enabled click on the Apply button. Under the heading Current Values the actual measured value will be shown, as well as the Engineering Value.

Click on OK to accept the scaling, or Cancel to abort the Auto Scaling feature.

NB. Scaling will not be applied to the channel, even if the system is enabled, until the system is next enabled or the Datascan Device is reconfigured

## Significant Change

To enable the Significant Change feature check the Sig Change check box. This facility allows filtering of data on channels on which significant change is of interest. Such changes can cause an event, which can be logged.

The figure entered in the Value text box, is the rate of change that if the output level exceeds per scan, either increasing or decreasing will cause the significant change event trigger. The scan rate is determined in the Advanced Device configuration

If a logger is configured each time the significant change trigger operates information on the channels defined in the logger will be recorded . A significant change event only lasts one scan, unless the next reading also changes greater than the Significant change value

When monitoring channels, if the Significant Change is triggered, then the fact will be annotated alongside the other channel information in the Channel Monitor. The significant change events are in addition to those caused by an Event.

## Event Checking

Event checking is used, if required to trigger a logger to record information on a number of channels during an event. Check the Event Checking check box if this channel is to trigger an event.

### High Limit

A value, in engineering units, entered in this text box will define the level that, if exceeded, will cause an event trigger.

### Low Limit

A value entered in this text box will define the level that if the channel result falls below will cause an event trigger.

## Alarm Checking

Alarm checking is available on all channels throughout the system. Low Alarm and High Alarm levels can be configured independent of each other. If the channel output exceeds the High Alarm limit then an alarm will be triggered as it will if the output goes below the Low Alarm limit.

When monitoring channels, if the high or low alarm is triggered, then the fact will be annotated alongside the other channel information in the Channel Monitor. To configure the Alarm Checking section of the device complete the options as follows for either or both the High Alarm and Low Alarm checking.

### Enable Alarm Checking

Check either the Low Alarm Checking or High Alarm Checking or both check boxes to enable the facility.

### Drive Common Alarm

A common alarm is a single digital output which will switch on when any channel with the Drive Common Alarm enabled goes into an alarm state. Check this box if a link to the Common Alarm is required.

### Alarm Limit

Specifies the value which will trigger this alarm. for Low Alarm Checking it will be any value <= the Alarm Limit and for High Alarm Checking it will be any value >= the Alarm Limit.

### Warning and Limit (Analogue channel only)

If required, a warning can be displayed when a channel reaches a limit close to the alarm limit. For low alarm checking, the limit must be less than the alarm limit. For high alarm checking, the warning limit must be less than the alarm limit

### Hysteresis

Hysteresis can prevent 'noisy' channels from reporting multiple alarms when the average reading is close to the alarm threshold. Check the box if this feature if needed. Enter the value of the dead band in the corresponding value field.

### Priority

Enter or edit the number in the text box to allocate the priority of this alarm. Alarm priority ranges are from 0 to 255.

### Alarm Delay

Enter the time, in seconds, between the channel value entering the alarm state and the system flagging an alarm.

### Alarm Message

An Alarm Message can be defined to be displayed on the Status line of the Main Window when a channel goes into an alarm state. Enter the message, up to 32 characters, that is to appear in the event of an alarm.

### Alarm on Error Checking

Checking this section will enable the device to generate alarms when a channel goes into error.

## Device Specific Button

When the Device Specific Button is pressed in the case of the HP3852A device the following dialog is presented.



### Extension Slot

 This field specifies the number of the slot to which the extension board is connected. If were not using an extension board for this channel then this field will be 0.

### Slot

 This field specifies the slot in which the device were measuring from is located.

N.B. When both the Extension Slot and Slot have been specified the Accessory at that location will be displayed. In the case above it was a 44705A.

### Element Number

 This field specifies the channel number we’re measuring within the device identified by the Extension Slot and Slot fields.

### Channel Type

 This drop down list allows you to specify the type of channel to be measured. The list displayed depends on the Accesory being accessed.

E.G. In the case above where we have a 44705A we get types :

 DC voltage

 AC voltage

 DC current

 AC current

 4-wire resistor

 2-wire resistor

 Thermocouple J

 etc.

Other cards will have different types.

### ChannelRange

 The range list depends on the Channel type selected.

### Additional Fields

 If a Frequency is chosen then an extra field will be displayed for selecting isolated non-isolated.

 If a Digital Input is chosen then an extra field will be displayed to select Measuring Time.

 If a thermocouple is chosen then an extra field will be displayed to choose an External CJC.

### Voltmeter - Extension Slot / Slot

 This option specifies where the Voltmeter that will be used for the measurement of this channel is located. Again an Extension Slot and a slot must be specified.

# Channel Configuration (Digitals)



## Enable Channel

The Enable Channel check box must be checked to enable, and allow this channel to be configured and ultimately included with all other configured channels in the overall system.

## Tag

The Tag field is an 12 character alphanumeric field that can contain channel information or wiring schedule references.

## Description

The Description field is a 32 character alphanumeric field in which a description of the channel can be detailed.

## LowState Description

A 32 character field in which to enter a description of the low state of the channel.

## HighState Description

A 32 character field in which to enter a description of the high state of the channel.

## Event Checking

Event checking is used, if required to trigger a logger to record information on an event. If this facility is required click on the drop down list box and select OFF, HIGHSTATE, or LOWSTATE as appropriate

## Alarm Checking

### AlarmState

Alarm checking is available on all channels throughout the system. To configure alarm checking on this channel click on the drop down box and select OFF, HIGHSTATE, or LOWSTATE as appropriate. If the channel's output state changes to an AlarmState an alarm will be triggered on the channel. When monitoring channels, if the alarm is triggered, the fact will be annotated alongside the other channel information in the Channel Monitor .

### Alarm Priority

Enter the priority of the alarm triggered by this channel. Alarm priority ranges are from 0 to 255.

### Common Alarm

Channels can be configured to trigger a Common Alarm. A common alarm is a single digital output which will switch on when any channel with the Drive Common Alarm enabled goes into an alarm state.

### Alarm Delay

Enter the time, in seconds, between the channel value entering the alarm state and the system flagging an alarm.

### Alarm Message

An Alarm Message can be defined to be displayed on the Status line of the Main Window when a channel goes into an alarm state.

### Alarm on Error Checking

Checking this section will enable the device to generate alarms when a channel goes into error.

## Device Specific Button

When the Device Specific Button is pressed then in the case of the HP3852A device the following dialog is presented.



### Extension Slot

 This field specifies the number of the slot to which the extension board is connected. If were not using an extension board for this channel then this field will be 0.

### Slot

 This field specifies the slot in which the Accessory we’re measuring is located.

N.B. When both the Extension Slot and Slot have been specified the Accessory at that location will be displayed. In the case above it was a 44705A.

### Element Number

 This field specifies the channel we’re measuring within the within the Accessory Card.

### Channel Type

 This drop down list allows you to specify the type of channel to be measured. The list displayed depends on the Accesory being accessed.

E.G. In the case above where we have a 44705A we get types :

 DC voltage

 AC voltage

 DC current

 AC current

 4-wire resistor

 2-wire resistor

 Thermocouple J

 etc.

Other cards will have different types.

### ChannelRange

 The range list depends on the Channel type selected.

### Additional Fields

 If a Frequency is chosen then an extra field will be displayed for selecting isolated non-isolated.

 If a Digital Input is chosen then an extra field will be displayed to select Measuring Time.

 If a thermocouple is chosen then an extra field will be displayed to choose an External CJC.

### Voltmeter - Extension Slot / Slot

 This option specifies where the Voltmeter that will be used for the measurement of this channel is located. Again an Extension Slot and a slot must be specified.

# Advanced Device Configuration



## AutoEnable Device

To ensure that the device is enabled on the system check the Enable Device box.

## Scan Rate

To set the rate at which the device will scan, edit the text boxes associated with the Scan Rate field.

## Save Outputs

To enable this utility check the Save Outputs flag. All values in output channels are saved to disk when the system is disabled. The next time the system is restarted the values which were previously in output channels will be restored to the appropriate channel number.

**By Tag**

Channel values can be saved and restored to channels using the channel tag instead of the channel number. In this way, channels can be rearranged within the modules and as long as the channel tags remain the same, the correct channel values will be restored to the appropriate channel number.

## Device Specific Button

If the Device Specific Button is visible, then click on it to configure features that are specific to this device. In the case of the HP3852A the following dialog will appear.



The above dialog allows the user to configure connect to any HP3852A on the GPIB network provided the GPIB Address (between 0-30) is known. It also allows the user specify a timeout for the GPIB card.

There are two list boxes. The one on the left shows the configuration of the slots as configured by the user. The user can change the device type at a Slot by first selecting it from the list and clicking on the ‘Set Device...’ button. On doing this the user is presented with the following dialog:



Select the appropriate plug-in accessory and choose OK to update the configuration or Cancel to leave it unchanged.

 To set the NPLC for any voltmeters which may be configured simply select the required voltmeter from the ‘Configured Network’ list box and click on the ‘Set NPLC’ option. This operation will invoke the following dialog



Select the appropriate integration time and click on the ‘OK’ button to complete or ‘Cancel’ to cancel the operation.

The list box on the right hand side of the ‘Advanced’ Dialog allows the user to interrogate the device located at the GPIB address specified. By Clicking the ‘Read Network’ button the device will be interrogated to see what accessories are present. Once this is done the user can copy this configuration to the ‘Configured Network’ list by clicking the ‘<<‘ button.