BA688CF
Panel mounting
Fieldbus Display
Issue: 7

CONTENTS

**The BA688CF is CE marked to show compliance with the
European EMC Directive 2004/108/EC**

1. DESCRIPTION

The BA688CF Fieldbus Display is a panel mounting instrument that can display up to eight fieldbus process variables, together with their units of measurement and tag information. The instruments are bus powered so no additional power supply is required.

Two versions are available, one for Profibus PA and the other for Fieldbus Foundation systems. The Foundation Fieldbus version may be ordered, or configured on-site, with alternative function blocks allowing use with most Fieldbus Foundation hosts.

Order Code	Communication Protocol	Function Blocks
BA688CF-P	Profibus PA	Eight Analogue Outputs (8 x AO)
BA688CF-F	Fieldbus Foundation	Revision 1 One Multiple Analogue Output (1 x MAO)
	or	Revision 2 Two Input Selectors (2 x IS)

The required Device Description files, which may be downloaded from the Fieldbus Foundation or BEKA web sites, depend upon which BA688CF-F revision is selected.

The instrument's communications protocol is shown on the instrument information label, which is located on the top outer surface of the enclosure.

Nine selectable standard display formats enable one, two, three or four process variables, some with bargraphs to be displayed on one screen. Alternatively, custom display formats including text and simple graphics may be generated and saved in permanent memory.

The six front panel push buttons that control the instrument display may also be used for returning operator acknowledgements, thus enabling the Fieldbus Display to function as a simple operator interface. If larger industrial push buttons are required for entering these acknowledgements, up to six external switches may be connected to the BA688CF. These switch inputs may also be used for returning the status of plant contacts.

The Fieldbus Display can be supplied with six optional alarm outputs that may be linked to any of the displayed fieldbus variables.

Housed in a robust 72 x 144 panel mounting DIN enclosure, the BA688CF Fieldbus Display has an IP66 front panel and is supplied with a gasket to seal the joint between the instrument and the panel.

1.1 Documentation

This instruction manual describes system design, conditioning and installation of the BA688CF fieldbus display. For detailed programming information please refer to the following guides that can be downloaded from the BEKA website www.beka.co.uk

Foundation Fieldbus Display – Fieldbus Interface Guide

Profibus Display – Fieldbus Interface Guide

Fieldbus Display – Programming Guide

1.2 Version 2.0 firmware

This manual describes the enhanced features of BA688CF fieldbus displays employing version 2.0 firmware that was released in December 2005. Namely:

Standard screens increased from 4 to 9

Multiple bargraph limits added

Input scaling added

Fieldbus Foundation version now has choice of fieldbus function blocks:

Revision 1 1 x MAO (multiple analogue output)

Revision 2 2 x IS (Input selector)

Selection can be made on-site.

The instrument's firmware version can be established using the 'Unit Info' function in the main configuration menu – see section 5.3.9 of this manual.

BA688CF displays employing version 2.0 firmware are backwards compatible with all earlier versions of the instrument.

2. OPERATION

Fig 1 shows a simplified block diagram of the BA688CF Fieldbus Display. When the optional alarms and external switches are not used, the instrument only requires a two-wire connection to the fieldbus.

How much of the BA688CF configuration can be performed via the fieldbus depends upon the instrument version and the system host. Parameters that can not be configured via the fieldbus can be set via the six front panel push buttons. Menus enable the required standard display format to be selected and the units of measurement, plus tag information for each displayed fieldbus variable to be entered. Each fieldbus variable may be individually offset and scaled, and when a standard screen including a bargraph is selected, the limits of each bargraph can be set. Alarm function and setpoints can also be configured.

Fieldbus configuration files for the BA688CF may be downloaded from the appropriate Fieldbus Foundation or Profibus web sites, or from the BEKA associates web site at ww.beka.co.uk.

Irrespective of the number of fieldbus variables assigned to the BA688CF, the instrument always has provision for displaying eight variables. Unassigned inputs are displayed as zero with a bad data warning i.e. light digits on a dark background. When a custom display format, which requires programming is used, the number of fieldbus variables displayed may be defined.

If enabled, operating the *P* and *Up* push buttons simultaneously activates the Quick Access Menu, allowing the user to adjust the display contrast without providing access to any of the other configuration parameters. Additional security may be provided by an optional access code.
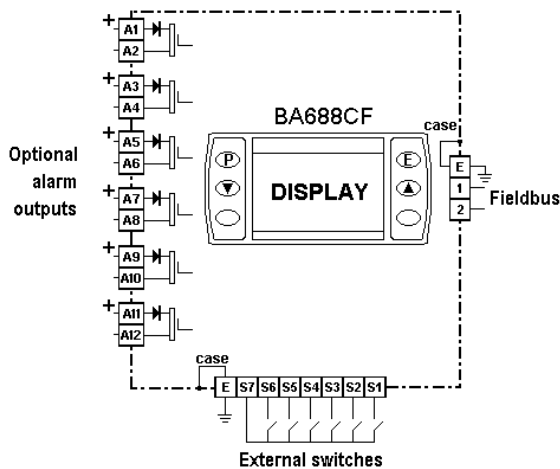

Fig 1 Simplified block diagram of BA688CF

2.1 Controls

The user can scroll through the display screens by operating the *Up* or *Down* push-buttons. The number of screens available depends upon how the BA688CF display has been configured. If one fieldbus variable per screen has been configured, eight screens will be present; if four fieldbus variables per screen have been configured, only two screens will be available.

3. SYSTEM DESIGN

The BA688CF may be connected to any fieldbus segment as shown in Fig 2 providing it can provide the additional 25mA required to operate the Fieldbus Display.
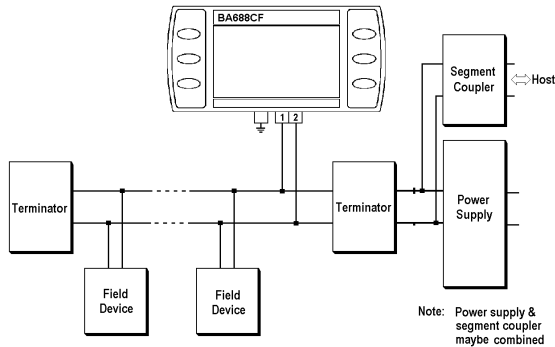

Fig 2   Fieldbus system

3.1   External switches

For applications requiring operator inputs to be made by large industrial push buttons, terminals S1 to S7 allow up to six external switches to be connected to the Fieldbus Display. When external switches are connected the front panel push buttons may be operated in parallel or disabled – see section 5.3.7

Terminals S1 to S7 are not electrically isolated from the fieldbus terminals, therefore external switches and wiring must be isolated from earth and all other electrical circuits.

For reliable operation it is recommended that the cable connecting the Fieldbus Display to external switches is less than 5m long.

3.2   Alarm outputs

Each alarm output is a galvanically isolated single pole solid state switch output as shown in Fig 3.
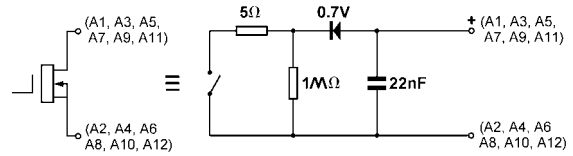

Fig 3 Equivalent circuit of each switch output

The outputs are polarised and current will only flow in one direction.   Odd numbered terminals should be connected to the positive side of the supply.

$$\text{Ron} = 5\Omega + 0.7V$$
$$\text{Roff} = \text{greater than } 1M\Omega$$

Note: Because of the series protection diode, some test meters may not detect a closed alarm output

WARNING
These Alarm Outputs should not be used for critical safety applications such as an emergency shut down system.

When the BA688CF is disconnected from the fieldbus, or the fieldbus is de-energised all the alarm outputs will open irrespective of how they have been configured.
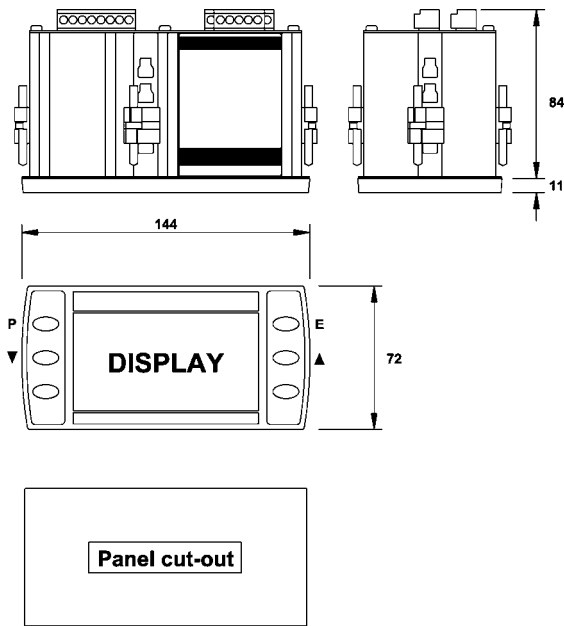
4. INSTALLATION

4.1 Location

The BA688CF is housed in a robust aluminium enclosure with a toughened glass window mounted in a Noryl bezel. The front of the instrument provides IP66 protection and a gasket seals the joint between the instrument enclosure and the panel. The instrument may be installed in any panel providing the environmental limits shown in the specification are not exceeded.

Fig 4 shows the overall dimensions of the BA688CF and the panel cut-out. To achieve an IP66 seal between the instrument enclosure and the panel, the smaller cut-out must be used and the instrument secured with four panel mounting clips.

The BA688CF liquid crystal display has maximum contrast when viewed from directly ahead and slightly below the centre line of the instrument.

Cut-out Dimensions

DIN 43 700
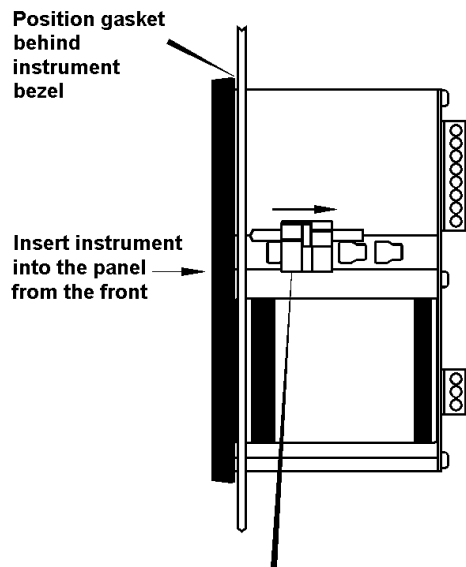138.0 +1.0/-0.0 x 68.0 +0.7/-0.0

To achieve an IP65 seal between instrument enclosure and panel
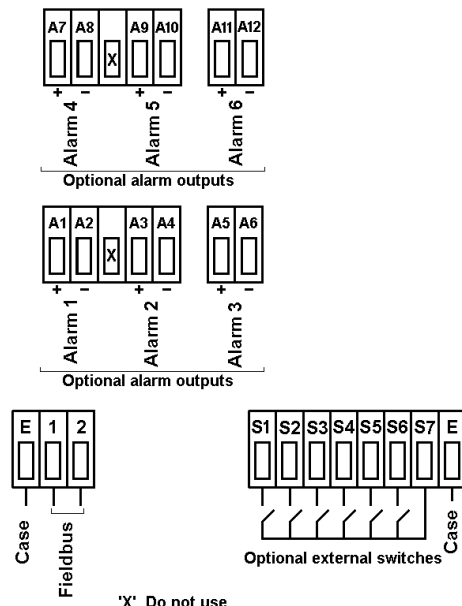136.0 +0.5/-0.0 x 66.2 +0.5/0.0

Fig 4 BA688CF dimensions

4.2 Installation Procedure

a. Insert the BA688CF into the instrument panel cut-out from the front of the panel.

b. Fix panel mounting clips to opposite sides of the instrument and tighten until the instrument is secure. Four clips are required to achieve an IP66 seal between the instrument enclosure and the panel.

c. Connect the panel wiring to the rear terminal block(s) as shown in Fig 5. To simplify installation, the terminals are removable so that panel wiring can be completed before the instrument is installed.

Fig 5 Installation and terminal connections

4.3 EMC
The BA688CF complies with the requirements of the European EMC Directive 2004/108/EEC. For specified immunity all wiring should be in screened twisted pairs.

To prevent circulating currents, cable screens should only be earthed at one point.

5. DISPLAY & ALARM CONFIGURATION

In addition to loading the BA688CF fieldbus configuration files onto the system host and defining up to eight fieldbus variables that are to be displayed, the instrument display and alarms, if fitted, have to be configured. How much of this configuration can be done via the fieldbus depends upon the instrument version and the system host. Parameters that can not be configured via the fieldbus, may be set via the six front panel push buttons

All the display and alarm configuration functions are contained in an easy to use menu that is shown in Fig 6. Where necessary the sub-menus contain on-screen prompts to guide the user through each adjustment.

When navigating through the configuration menu, the push button(s) should be held until the required screen is displayed.

5.1 Default configuration

Unless otherwise requested at the time of ordering, BA688CF Fieldbus Displays will be supplied configured as follows:

Keys	Both
Display brightness	100%
Display contrast	50%
Quick access menu	On
Quick access menu code	0000
Configuration menu	
access code.	0000
Screen	Single variable
Number Format	Auto
All alarms	Disabled
Alarm activation	Good data only
Alarm outputs	N/C
Bargraph	
Low	0
High	100
Input scaling	
Zero offset	0
Gain factor	1

Fieldbus Foundation version

Revision	Revision 2
	(2 x IS function blocks)

5.2 Accessing the display configuration menu

Throughout this manual push buttons are shown in italics e.g. *P* or *Up* push button, and legends displayed by the instrument are shown within inverted commas e.g. 'Enter Access Code'.

Operating the *P* and *E* push buttons simultaneously accesses the display configuration menu. If the BA688CF is not protected by an access code the main menu will be displayed. If an access code other than the default code 0000 has already been entered, the BA688CF will request that the access code be entered.

Using the *Up* or *Down* button set the first digit of the code which will be flashing. Pressing *P* will transfer control to the next digit, which should be adjusted in the same way. When all four digits have been set, pressing the *E* button will enter the access code. If the code is correct the main menu will be displayed, if the code is incorrect 'Invalid Code' will be displayed.

When entering an access code, timeout will occur and the instrument will automatically return to the operating mode ten seconds after a push button was last operated. In all other menus, timeout occurs after sixty seconds.

The structure of the display configuration menu is shown in Fig 6. Navigation is achieved by highlighting the required function using the *Up* and *Down* buttons and then operating the *P* button to display the selected function sub-menu, from which a further selection or adjustment may be made. Operating the *E* button moves the display back up one level.

A flashing highlight indicates that an option or alphanumeric character may be selected using the *Up* and *Down* buttons and entered using the *E* button. If only one entry or adjustment can be made in a sub-menu, the display will automatically move up one menu level when the adjustment is entered. If more than one adjustment can be made in a sub-menu, the highlight may be moved to the second variable using the *Up* or *Down* button after the first setting has been entered. Operating the *P* button allows the second variable to be adjusted.

When multiple numeric or alpha characters are adjusted e.g. an alarm setpoint or a tag legend, the adjustment is made one digit at a time using the *Up* and *Down* buttons. After the first flashing digit has been set as required, the flashing highlight can be moved to the next digit by operating the *P* button. When all digits have been set, operating the *E* button will enter the setting.

Following completion of the instrument configuration, the *E* button should be operated to step the display back to the main menu. One more operation of the *E* button will then return the BA688CF to the operating mode.

5.**3 Configurable functions**

This section provides an explanation of each configurable function and should be read in conjunction with Fig 6.

5.3.1 Screens (Display format)

The BA688CF can display up to eight fieldbus variables. These are identified as IN_1 to IN_8. The fieldbus variable that each one represents is determined by the BA688CF configuration at the fieldbus system host – see the appropriate *Fieldbus Interface Guide.*

This sub-menu allows one of nine standard display formats or a custom format to be selected. The standard formats contain one, two, three or four fieldbus variables some with bargraphs as shown below.
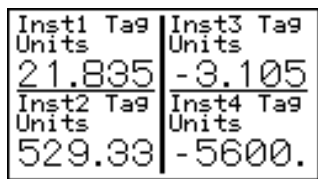
Custom formats, which are identified as 'Text Display' in this menu, require programming which is explained in the *Fieldbus Display Programming Guide.*
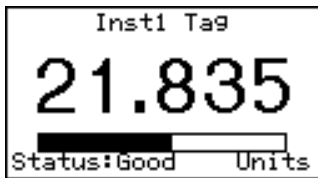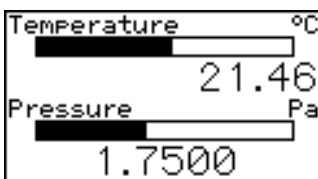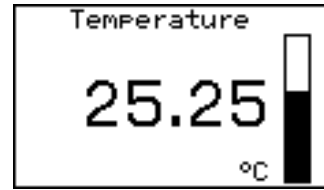

One variable
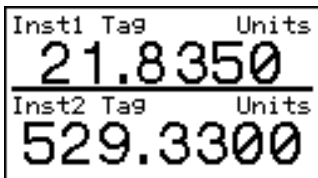
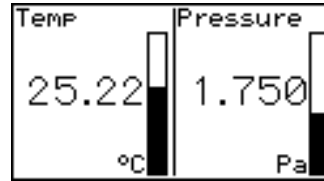**Two variables**

Four variables
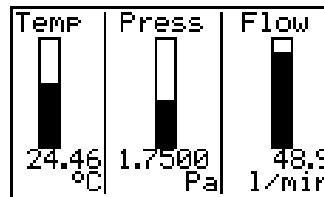

One variable + horizontal bargraph

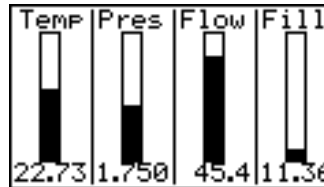**Two variables + horizontal bargraphs**

One variable + vertical bargraph

Two variables + vertical bargraphs

Three variables + vertical bargraphs

Four variables + vertical bargraphs

5.3.2 Input Settings

Only included in Profibus PA and Fieldbus Foundation Revision 1 instruments. Omitted from Fieldbus Foundation Revision 2 instruments because these parameter can be easily configured in the Display Transducer Block.

The Input Setting function is divided into two groups of sub-functions. The first, 'BarLimits Src' is included to maintain backwards compatible with earlier firmware issues in which fieldbus variables IN_7 and IN_8 were used to define all the bargraph limits. This reduced the number of fieldbus variables that could be displayed with bargraphs from eight to six.

Version 2.0 firmware includes the improved 'Per Input' option that enables the lower and upper limits of a bargraph for each of the eight fieldbus variables to be defined via the front panel push buttons. It is recommended that 'Per Input' option be used for new installations.

In addition to defining individual limits for up to eight bargraphs, the second group of sub-functions enables the decimal point position for each display to be defined.

Each of the eight fieldbus inputs may also be offset and scaled before being displayed which allows variables to be displayed in alternative units of measurement.

$$Display = (Gain \times Fieldbus\ variable) + Offset$$

The sub-functions for each input are:

'Offset' Adds a positive or negative offset to the fieldbus variable before it is displayed.

'Gain' Multiplies the fieldbus variable by a factor before it is displayed.

'Bar Lo' Defines the bargraph lower limit *

'Bar Hi' Defines the bargraph higher limit *

'Format' Defines the position of the displayed decimal point.*
Six options are available:

Auto: Max resolution with selected display format.
4 DP 4 digits on right of decimal point
3 DP 3 digits on right of decimal point
2 DP 2 digits on right of decimal point
1 DP 1 digit on right of decimal point
0 DP No decimal point

* These functions are not included when 'Text Display' is selected in the Screens menu – see 5.3.1.

The total number of display digits available depends upon the display screen selected – see 5.3.1

Standard Screen	Description	Digits
1	1 variable	5, 7, 11 or 17*
2	2 variables	7
3	4 variables	5
4	1 variable + H bar	5, 7, 11 or 17*
5	2 variables + H bars	7
6	1 variable + V bar	6
7	2 variables +V bars	4
8	3 variables + V bars	6
9	4 variables + V bars	4

* Font automatically resizes in auto mode

If a negative number is likely to be displayed, a digit must be allocated for the negative sign. If the display overanges all the digits will display '?'.

For all options leading zeros are automatically suppressed.

5.**3.3 Tags**
Only included in Profibus PA and Fieldbus Foundation Revision 1 instruments. Omitted from Fieldbus Foundation Revision 2 instruments because tags can be easily defined in the Display Transducer Block.

Each of the eight fieldbus variables may be displayed with an individual tag that can contain up to sixteen alphanumeric characters. This menu allows these tags to be entered. After selecting the required variable, the tag legend is entered character by character using the *Up* and *Down* push-buttons. Numbers, upper & lower case letters and symbols are available.

5.3.4 Units
Only included in Profibus PA and Fieldbus Foundation Revision 1 instruments. Omitted from Fieldbus Foundation Revision 2 instruments because units of measurement can be easily defined in the Display Transducer Block.

Each of the eight fieldbus variables may be displayed with units of measurement that can contain up to eight alphanumeric characters. This menu allows these units of measurement to be entered. After selecting the required variable, the unit of measurement is entered character by character using the *Up* and *Down* push-buttons. Numbers, upper & lower case letters and symbols are available.

5.3.5 Alarms
Alarm menus are only included when the BA688CF is fitted with optional alarm outputs.

Each of the six alarms may be linked to any one of the eight fieldbus variables displayed by the BA688CF. Each alarm output can be conditioned to function as a high or a low alarm, or as a combined high and low alarm. The output can be conditioned as normally open 'N/O' or normally closed 'N/C' in the non-alarm condition. Irrespective of settings, all alarm outputs will be open when the instrument is not powered from the fieldbus.

When an alarm is activated, the associated fieldbus variable display flashes, i.e. alternates between dark figures on a light background and light figures on a dark background.

There are eight alarm-conditioning sub-menus.

5.3.5.1 Alarm summary
Shows to which fieldbus variable each alarm is linked and how each alarm has been conditioned. i.e. high, low, or high & low alarm with a normally open or closed output. No adjustments can be made in this sub-menu.

5.3.5.2 Alarm activation

Fieldbus variables that have not been validated are displayed with dark characters on a light background, and some screen formats also contain a status indication. This sub-menu allows the alarm outputs to be conditioned so that they only operate with validated fieldbus data, or to operate irrespective of data validity.

5.3.5.3 Alarm output

There is a separate sub-menu for each of the six alarm outputs; these link the alarm to one of the displayed fieldbus variables and define the alarm function and the setpoints.

To link the alarm to a displayed variable, position the cursor over the 'IN_n' field, press *P* and using the *Up* or *Down* button select the required input source. Enter the selection by pressing the *E* button.

Each alarm output can be N/O or N/C in the non-alarm condition. To change the setting, position the highlight over the 'N/C' or 'N/O' field, press *P* and use the *Up* or *Down* button to toggle the setting. Enter the selection by pressing the *E* button.

Each alarm output has three functions that can be independently enabled to condition the output as a low or high alarm, or as a combined low and high alarm, either with or without hysteresis.

The required functions can be individually enabled by positioning the highlight over the Enb/Dis (Enabled/Disabled) column, pressing *P* and toggling the function to the required state, then entering the selection by pressing the *E* button.

Alarm setpoints are entered digit by digit. Place the highlight over the setpoint to be adjusted and press *P;* the flashing digit to be adjusted may then be selected by again pressing *P*. When all the digits have been adjusted, operating the *E* button enters the value and moves the menu up one level.

The function of all alarms may be reviewed from the alarm summary menu - see 5.3.5.1.

5.3.6 Display
5.3.6.1 Settings

The backlight brilliance and display contrast are adjustable from this sub-menu.

5.3.6.2 Quick Access

This sub-menu enables the Quick Access Menu which is described in sections 2.1 & 5.4   When enabled, an operator can adjust the display contrast and backlight brilliance without having access to any other conditioning menus.

5.3.6.3 Access Code

Defines a four digit alphanumeric code that must be entered to gain access to the Quick Access Menu.   Alpha characters are case sensitive. Default code 0000 allows direct access without a code.

5.3.7 Keys

The function of the front panel push buttons may be transferred to the six optional external push buttons, with or without disabling the BA688CF front panel push buttons. The table below shows the function of the BA688CF front panel and the external push buttons for each of the four options that may be selected in the Keys sub-menu.

Selected option from Keys sub-menu	Push buttons	Function of push buttons			
		Screen scrolling	*P+E* access to configuration menu	*P+Up* access to quick access menu	Return Key_Status to host
Internal	BA688CF	Yes	Yes	Yes	Yes *
	External	No	No	No	No
External	BA688CF	No	Yes	No	No
	External	Yes	Yes	Yes	Yes *
Both	BA688CF	Yes	Yes	Yes	Yes *
	External	Yes	Yes	Yes	Yes *
Internal + Port	BA688CF	Yes	Yes	Yes	No
	External	No	No	No	Yes *

* Apart from when 'Internal+Port' is selected, the Key_Status does not function when the instrument is in the configuration menu.

The fourth option, 'Internal + Port' allows the front panel push buttons to be used for controlling the BA688CF Fieldbus Display and the optional external push buttons to independently enter operator acknowledgements or controls.   This option also allows the status of plant mechanical switches to be returned to the host.

For applications where the instrument is only displaying 1, 2, 3 or 4 variables on a single screen, it is recommended that external buttons are selected but not fitted.   This will disable the instrument front panel buttons, but still provide access to the configuration menu, which may be protected by a security code.

5.3.8 Code

Defines the four digit alphanumeric code that must be entered to gain access to the instrument configuration menus. Alpha characters are case sensitive. Default code 0000 allows direct access without a code.

5.3.9 Unit Info

Displays the instrument model number and the firmware version.

5.3.10 Defaults
This function enables the display and interface board factory defaults to be restored. For the Fieldbus Foundation version, the function blocks (Revision 1 or 2) should be selected to suit the system host.

5.3.10.1 Display Defaults
This function restores the display defaults defined in section 5.1.

CAUTION
Existing settings can not be recovered after this function has been used.

5.3.10.2 Interface Board Defaults
This function restores the Fieldbus Interface Board factory defaults.

CAUTION
Do not use this function when the BA688CF is connected to an operational fieldbus, as communication may be terminated.

5.3.10.3 FF Revisions 1 and 2
Not included in the Profibus version

Unless specified at the time of ordering, BA688CF-F Fieldbus Foundation Displays will be supplied as Revision 2 instruments. i.e. two input selector function blocks (2 x IS).

The BA688CF-F can be converted to a Revision 1 instrument using the Default menu. i.e one multiple analogue output function block   (1 x MAO).

The BA688CF-F revision should be chosen so that the fieldbus function blocks selected are supported by the system host.
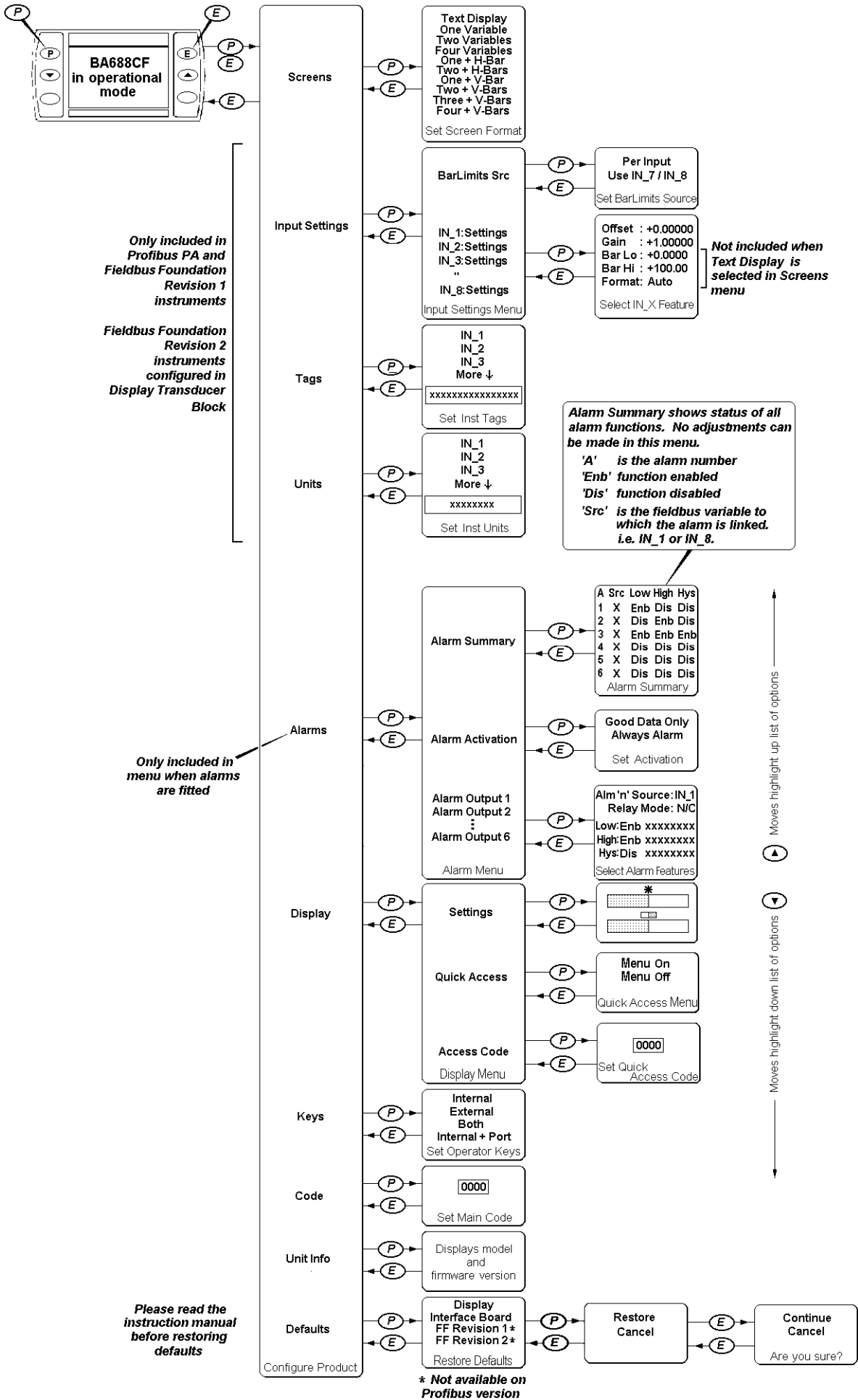
To change the BA688CF-F revision, highlight the required revision in the 'Restore Defaults' menu and follow the screen prompts until 'Defaults Loaded Now power cycle the unit' is displayed. To complete the installation remove the BA688CF-F power supply for a few seconds, when power is restored the instrument will have been converted to the new revision.

5.4 Quick Access Menu
The Quick Access Menu allows an operator to adjust the backlight brilliance and the display contrast without having access to the other configuration parameters.

The quick access menu is accessed by operating the *P* and *Up* push buttons simultaneously.   If the Quick Access Menu is not protected by an access code the contrast and brilliance controls will be displayed immediately.   If an access code other than the default code 0000 has already been entered, the BA688CF will request that the access code be entered.

The backlight brilliance is adjusted using the *Up* and *Down* push buttons. Operating the *P* push button will transfer control to the display contrast adjustment.   When both are set as required, operating the *E* button will store both settings and return the instrument to the operating mode.

BA688CF in operational mode

Screens
- Text Display
- One Variable
- Two Variables
- Four Variables
- One + H-Bar
- Two + H-Bars
- One + V-Bar
- Two + V-Bars
- Three + V-Bars
- Four + V-Bars

Set Screen Format

Only included in Profibus PA and Fieldbus Foundation Revision 1 instruments

Fieldbus Foundation Revision 2 instruments configured in Display Transducer Block

Input Settings

BarLimits Src

Per Input
Use IN_7 / IN_8

Set BarLimits Source

IN_1:Settings
IN_2:Settings
IN_3:Settings
"
IN_8:Settings

Input Settings Menu

Offset : +0.00000
Gain : +1.00000
Bar Lo : +0.0000
Bar Hi : +100.00
Format: Auto

Select IN_X Feature

Not included when Text Display is selected in Screens menu

Tags
- IN_1
- IN_2
- IN_3
- More ↓

xxxxxxxxxxxxxx

Set Inst Tags

Units
- IN_1
- IN_2
- IN_3
- More ↓

xxxxxxxx

Set Inst Units

Alarm Summary shows status of all alarm functions. No adjustments can be made in this menu.
- *'A' is the alarm number*
- *'Enb' function enabled*
- *'Dis' function disabled*
- *'Src' is the fieldbus variable to which the alarm is linked. i.e. IN_1 or IN_8.*

Alarms

Alarm Summary

A	Src	Low	High	Hys
1	X	Enb	Dis	Dis
2	X	Dis	Enb	Dis
3	X	Enb	Enb	Enb
4	X	Dis	Dis	Dis
5	X	Dis	Dis	Dis
6	X	Dis	Dis	Dis

Alarm Summary

Only included in menu when alarms are fitted

Alarm Activation

Good Data Only
Always Alarm

Set Activation

Alarm Output 1
Alarm Output 2
⋮
Alarm Output 6

Alarm Menu

Alm 'n' Source: IN_1
Relay Mode: N/C

Low:Enb xxxxxxxx
High:Enb xxxxxxxx
Hys:Dis xxxxxxxx

Select Alarm Features

Display

Settings

*

Quick Access

Menu On
Menu Off

Quick Access Menu

Access Code

Display Menu

0000

Set Quick Access Code

Keys
- Internal
- External
- Both
- Internal + Port

Set Operator Keys

Code

0000

Set Main Code

Unit Info

Displays model and firmware version

Please read the instruction manual before restoring defaults

Defaults

Display
Interface Board
FF Revision 1 *
FF Revision 2 *

Restore Defaults

Restore
Cancel

Continue
Cancel

Are you sure?

Configure Product

* *Not available on Profibus version*

▲ Moves highlight up list of options

▼ Moves highlight down list of options

Fig 6   Structure of Configuration Menu

6. PROGRAMMING

The BA688CF only requires programming if the standard display formats are not suitable and a custom display format has to be designed. *The Fieldbus Display Programming Guide*, which may be downloaded from the BEKA web site at www.beka.co.uk, explains how to construct custom screens and contains examples.

7. MAINTENANCE

7.1 Fault finding during commissioning

If a BA688CF fails to function during commissioning the following procedure should be followed:

Symptom	Cause	Check:
No Display	Fieldbus not powered	9 to 32V between terminals 1 & 2.
No variables	Fieldbus not configured	Instrument configuration at host.
	BA688CF does not have corect protocol.	That BA688CF protocol is same as fieldbus. i.e. Fieldbus Foundation or Profibus PA.
Wrong variable displayed	Wrong screen selected	Other screens by operating *Up* or *Down* button
Display shows '?????'	Display overrange	Number format see section 5.3.2
No backlight	Brilliance turned down	Setting in display menu
Low or excessive contrast	Incorrect contrast setting	Setting in display menu
Displayed variable is inverted i.e. light digits on dark background	Variable has 'bad' status	Configuration and instrument supplying variable
Displayed variable is flashing	Associated alarm has been activated	Setpoints
Bargraph on standard display format is shown dotted	Displayed fieldbus variable is outside bargraph limits or data is 'bad'	Bargraph limits see section 5.3.2

7.2 Fault finding after commissioning

ENSURE PLANT SAFETY BEFORE STARTING MAINTENANCE

If a BA688CF fails after it has been functioning correctly, the table shown in section 7.1 may help to identify the cause of the failure.

If this procedure does not reveal the cause of the fault, it is recommended that the instrument is replaced.

7.3 Servicing

We recommend that faulty BA688CF Fieldbus Displays are returned to BEKA associates or to our local agent for repair.

7.4 Routine maintenance

The mechanical and electrical condition of the instrument should be regularly checked. Initially annual inspections are recommended, although the inspection frequency should be adjusted to suit the environmental conditions.

7.5 Guarantee

Instruments which fail within the guarantee period should be returned to BEKA associates or our local agent. It is helpful if a brief description of the fault symptoms is provided.

7.6 Customer comments

BEKA associates is always pleased to receive comments from customers about our products and services. All communications are acknowledged and whenever possible, suggestions are implemented.

8. ACCESSORIES

8.1 Tag number
The BA688CF can be supplied with a thermally printed tag number on the rear panel. This tag number is not visible from the front of the instrument after installation.

8.2 Fieldbus Display - Programming Guide
Explains how to create custom screens for all BEKA fieldbus displays.   It is not necessary to consult this guide if one of the nine standard display screens is being used.
The guide may be requested from the BEKA sales office or downloaded from the BEKA web site at www.beka.co.uk

8.3 Fieldbus Interface Guides
There are two Fieldbus Interface Guides, one for BEKA Profibus products and one for BEKA Fieldbus Foundation products.   The appropriate guide should be consulted prior to commissioning all BEKA fieldbus products.
Both guides may be requested from the BEKA sales office or downloaded from the BEKA web site at www.beka.co.uk

9. INDEX