## 1. DESCRIPTION

The BA627E is a general purpose, loop powered Set Point Station that enables the current flowing in a 4/20mA loop to be adjusted from within a process area using the instrument's front panel push buttons. The BA627E incorporates a 5 digit display that may be calibrated to show the 4/20mA output current in any linear engineering units. A 31 segment bargraph displays the current output. The Set Point Station output current may also be controlled by an external three wire quadrature encoder.

An optional factory fitted backlight, which may be loop or separately powered is available.

This abbreviated instruction sheet is intended to assist with installation and commissioning, a comprehensive instruction manual describing system design and calibration may be downloaded from the BEKA website www.beka.co.uk/manuals.html or may be requested from the BEKA sales office.

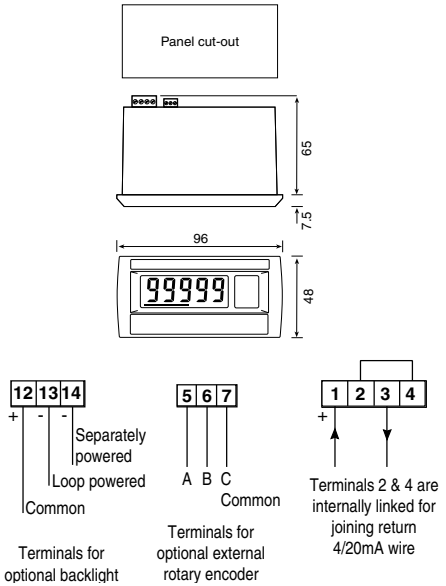
## 2. INSTALLATION

The BA627E Set Point Station has IP66 front of panel protection but it should be shielded from continuous direct sunlight and severe weather conditions. The rear of the instrument has IP20 protection.

**Cut-out dimensions**
**Recommended for all installations.**

Mandatory to achieve an IP66 seal between the BA627E Set Point Station and the instrument panel

90 +0.5/-0.0 x 43.5 +0.5/-0.0mm




Support panel wiring to prevent vibration damage

Fig 1 Cut out dimensions and terminals

The BA627E is CE marked to show compliance with the European EMC Directive 2004/108/EC.

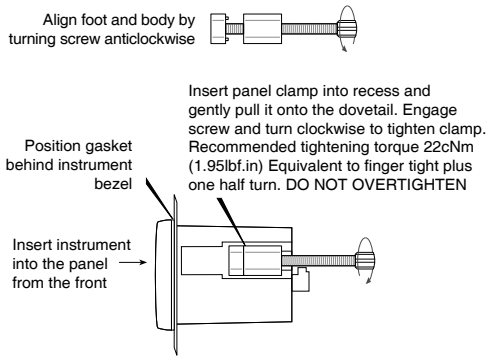


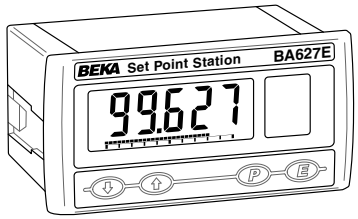

Fig 2 Installation procedure

**EMC**

For specified immunity all wiring should be in screened twisted pairs, with the screens earthed at one point.

**Abbreviated Instructions for**

**BA627E general purpose panel mounting Set Point Station**




Issue 3
16th September 2015

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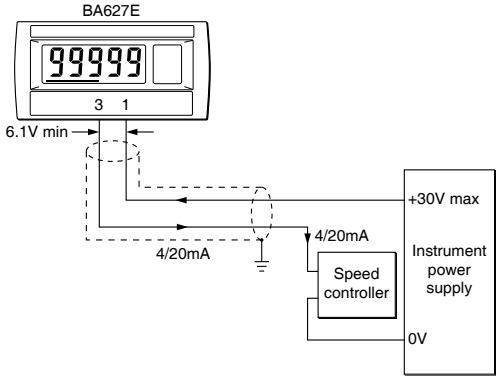



Fig 3 Typical remote set point application

**Scale card**

The Set Point Station's units of measurement are shown on a printed scale card visible through a window at the right hand side of the display. The scale card is mounted on a flexible strip that is inserted into a slot at the rear of the instrument as shown below.

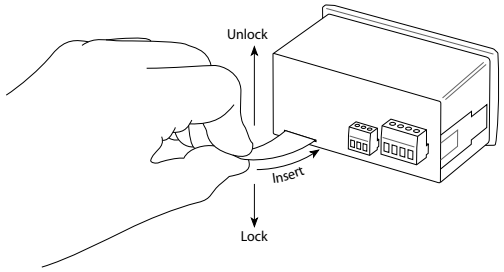



Fig 4 Inserting scale card into slot at the rear of BA627E

Thus the scale card can easily be changed without removing the Set Point Station from the panel or opening the instrument enclosure.

New Set Point Stations are supplied with a printed scale card showing the requested units of measurement, if this information is not supplied when the instrument is ordered a blank card will be fitted.

A pack of self-adhesive scale cards printed with common units of measurement is available as an accessory from BEKA associates. Custom printed scale cards can also be supplied.

To change a scale card, unclip the end of the flexible strip that is accessible from the rear of the instrument by gently pushing it upwards and pulling it out of the enclosure as shown in Fig 4.

Peel the existing scale card from the flexible strip and replace it with a new printed card, which should be aligned as shown below. Do not fit a new scale card on top of an existing card.

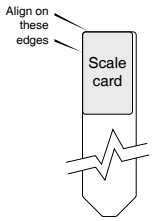



Fig 5 Fitting scalecard to flexible strip

Align the self-adhesive printed scale card onto the flexible strip and insert the strip into the instrument as shown.

## 3. OPERATION

The BA627E Set Point Station is controlled and configured via four front panel push buttons located below the display. In the operating mode i.e. when the Set Point Station is controlling the loop current and the display is showing the output in engineering units, these push buttons have the following functions:

***E**** + ▼ Output current slowly decreases. After five seconds the rate of change accelerates so that large changes may be made quickly. Push ***E*** button first followed by ▼ button to decrease output current.

***E**** + ▲ Output current slowly increases. After five seconds the rate of change accelerates so that large changes may be made quickly. . Push ***E*** button first followed by ▲ button to increase output current.

***** Optional

***E*** Pushing this button for 5 seconds enables the Set Point Station output to be entered digit by digit in engineering units using the ▲ or ▼ push button to adjust the flashing digit and the ***P*** button to move control to the next digit. When set as required pressing the ***E*** button will enter the new set point value and the output current will change.

***P*** While this button is pushed the BA427E Set Point Station will display one of three alternatives depending upon how the instrument has been configured:

**Output current in mA**

**Output as a % of span**

**Access to pre-set outputs**
The display will flash. While continuing to press the ***P*** button, operating the ▼ or ▲ button will show the identification of the pre-set closest to the present Set Point Station output, followed by the pre-set value. Operating the ▼ or ▲ button will scroll through the five pre-sets and an 'Abort' position.
Releasing both buttons will leave the selected pre-set value or 'Abort' legend flashing for ten seconds, during which time operating the ***E*** button will update the Set Point Station output to the displayed pre-set value. If the ***E*** button is not operated during this period, the Set Point Station output will not be changed and the original engineering display will be shown.

▼ While this button is pushed the Set Point Station will display the numerical value the Set Point Station has been calibrated to display with a 4mA output. When released the normal display in engineering units will return.

▲ While this button is pushed the Set Point Station will display the numerical value the Set Point Station has been calibrated to display with a 20mA input. When released the normal display in engineering units will return.

***P*** + ▼ Firmware number followed by version.

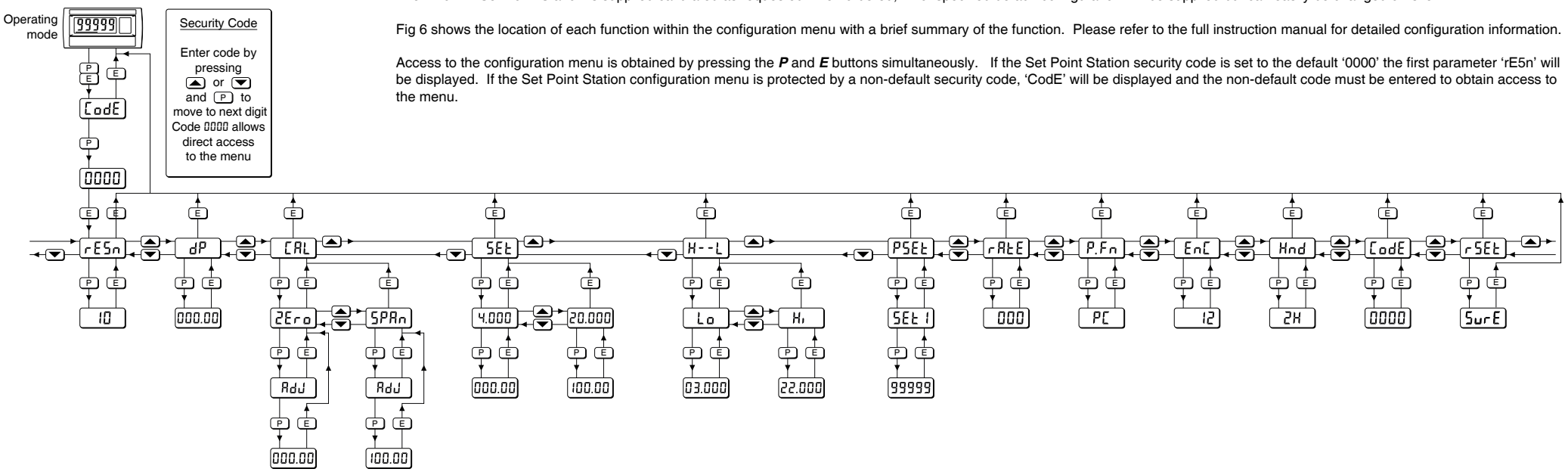
***P*** + ***E*** Access to configuration menu via optional security code.

## 4. CONFIGURATION

The BA627E Set Point Station is supplied calibrated as requested when ordered, if not specified default configuration will be supplied but can easily be changed on-site.

Fig 6 shows the location of each function within the configuration menu with a brief summary of the function. Please refer to the full instruction manual for detailed configuration information.

Access to the configuration menu is obtained by pressing the ***P*** and ***E*** buttons simultaneously. If the Set Point Station security code is set to the default '0000' the first parameter 'rE5n' will be displayed. If the Set Point Station configuration menu is protected by a non-default security code, 'CodE' will be displayed and the non-default code must be entered to obtain access to the menu.




**Resolution**

▲ or ▼ to select 1, 10 or 100 least significant digit adjustment resolution

**Decimal point**

▲ or ▼ to select position of dummy decimal point

**Calibration of set point station display using external current meter**

Using AdJ in the 2Ero function set the required output current by pressing ▲ or ▼ Press P and enter the corresponding display by pressing ▲ or ▼ and P to move to the next digit

Similarly adjust SPAn functions

Any output currents may be used providing difference is greater than 4mA

**Calibration of set point station display using internal reference**

Using the 4.000 function set required display at 4mA output by pressing ▲ or ▼ and P to move to the next digit

Similarly, using 20.000 function set required display at 20mA output

**High and Low current output limits**

Using Lo function set required minimum output current by pressing ▲ or ▼ and P to move to the next digit

Similarly, using Hi function set required maximum output current

**Alternative methods of calibrating the set point station display**

**Pre-set outputs**

▲ or ▼ to select required pre-set SEt 1 to SEt5 Pressing ▲ or ▼ and P to move to next digit enter required pre-set value in engineering units

Only appears in menu when PSEt is selected in P.Fn function

**Maximum output rate of change**

▲ or ▼ to set required maximum rate of output change for full scale travel between 1 and 100 seconds by pressing ▲ or ▼ and P to move to next digit

0 disables function

**Function of P button in operating mode**

▲ or ▼ to scroll between 4-20mA, % of span and pre-sets 4-20 PC PSEt

**Encoder**

Set No. of pulses per rev. of external encoder adjustable between 6 & 48 press ▲ or ▼ and P to move to next digit

**One or two handed operation**

▲ or ▼ to scroll between 2H

Prevents adjustment of output current unless E is pressed 1H

Output current adjustable without pressing E

**Define Security Code**

Enter by pressing ▲ or ▼ and P to move to next digit

**Reset set point station to default configuration**

Confirm selection by entering SurE by pressing ▲ or ▼ and P to move to next digit

Manuals and data sheets can be downloaded from http://www.beka.co.uk/ba627e

Fig 6 Configuration menu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