1. DESCRIPTION

The BA307SE and BA327SE are rugged certified Ex ec and Ex tc digital indicators housed in stainless steel panel mounting enclosures. They are loop powered by the 4/20mA input current which they can display in almost any engineering units.

The two models are electrically similar, but have different size displays.

Model	Display
BA307SE	4 digits 15mm high
BA327SE	5 digits 12.7mm high and bargraph.

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

Typical certification information label

Special conditions for safe use

The IECEx, ATEX and UKEX certificate numbers have an 'X' suffix indicating that the following special conditions for safe use apply:

a) For all installations, the indicator must be powered from a limited energy circuit.

b) For Ex ec installations, the indicator must be installed within an Ex e or Ex pzc panel enclosure.

c) For Ex tc installations, the indicator must be installed within an Ex tc panel enclosure.

d) For Ex pzc installations the supply circuit shall be rated for a prospective short circuit current of not more than 10kA, and the vents located on the back of the indicator must not be obstructed.

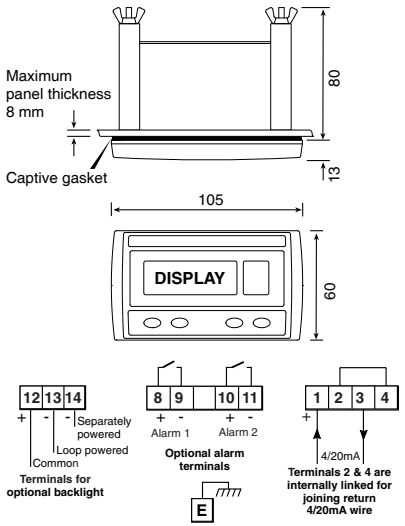
ETL and cETL Authorisation to Mark allows installation of the indicators in the USA and Canada. Installations must comply with BEKA Control Drawing CI300-86 and local Codes of Practice.

Please refer to the ETL Authorisation to mark and the full instruction manual for detailed certification information.

2. INSTALLATION

Both models have IP66 front of panel protection but they should be shielded from direct sunlight and severe weather conditions. The rear of each indicator has IP20 protection.

Panel cut-out 90 +0.5 / -0.0 x 43.5 +0.5 / -0.0

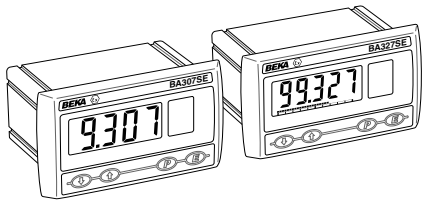


Connect M4 earth stud to panel enclosure in which indicator is mounted

Fig 1 cutout dimensions & terminals

Abbreviated instructions for

BA307SE & BA327SE rugged Ex ec & Ex tc panel mounting loop powered indicators



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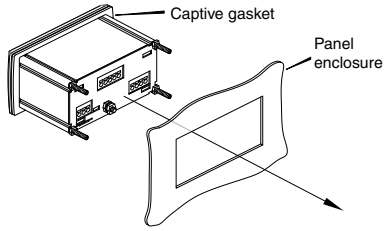


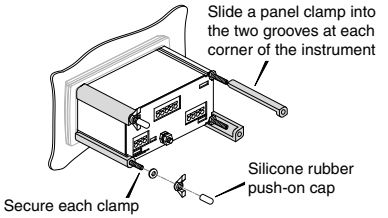


Fig 2 Installation procedure

EMC

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

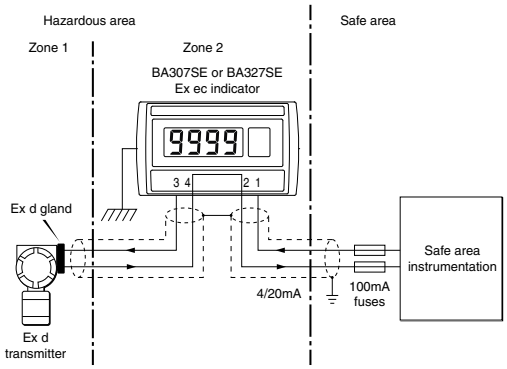


Fig 3 Typical transmitter loop

Scale card

The indicator'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.

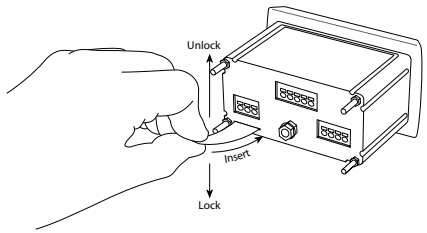


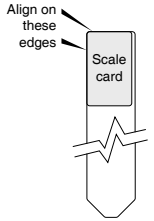
Fig 4 Inserting flexible strip carrying scale card into slot at the rear of indicator.

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

New indicators are supplied with a printed scale card showing the requested units of measurement, if this information is not supplied when the indicator 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 protruding end of the flexible strip by gently pushing it upwards and pulling it out of the enclosure. 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.



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

Fig 5 Fitting scale card to flexible strip

3. OPERATION

The indicators are controlled via four front panel push buttons. In the display mode i.e. when the indicator is displaying a process variable, these push buttons have the following functions:

P	While this button is pushed the indicator will display the input current in mA, or as a percentage of the instrument span depending upon how the indicator has been conditioned. When the button is released the normal display in engineering units will return. The function of this push button is modified when optional alarms are fitted to the indicator.
▼	While this button is pushed the indicator will display the numerical value and analogue bargraph* the indicator has been calibrated to display with 4mA input. When released the normal display in engineering units will return.
▲	While this button is pushed the indicator will display the numerical value and analogue bargraph* the indicator has been calibrated to display with 20mA input. When released the normal display in engineering units will return.
E	No function in the display mode unless the tare function is being used.
P + ▼	Indicator displays firmware number followed by version.
P + ▲	When optional alarms are fitted provides direct access to the alarm setpoints if the 'ACSP' access setpoints in display mode function has been enabled.
P + E	Provides access to the configuration menu via optional security code.

* Only the BA327SE has a bargraph

4. CONFIGURATION

Indicators are 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 and for a description of the linearisers and the dual alarms. Note alarm output terminals are an option.

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

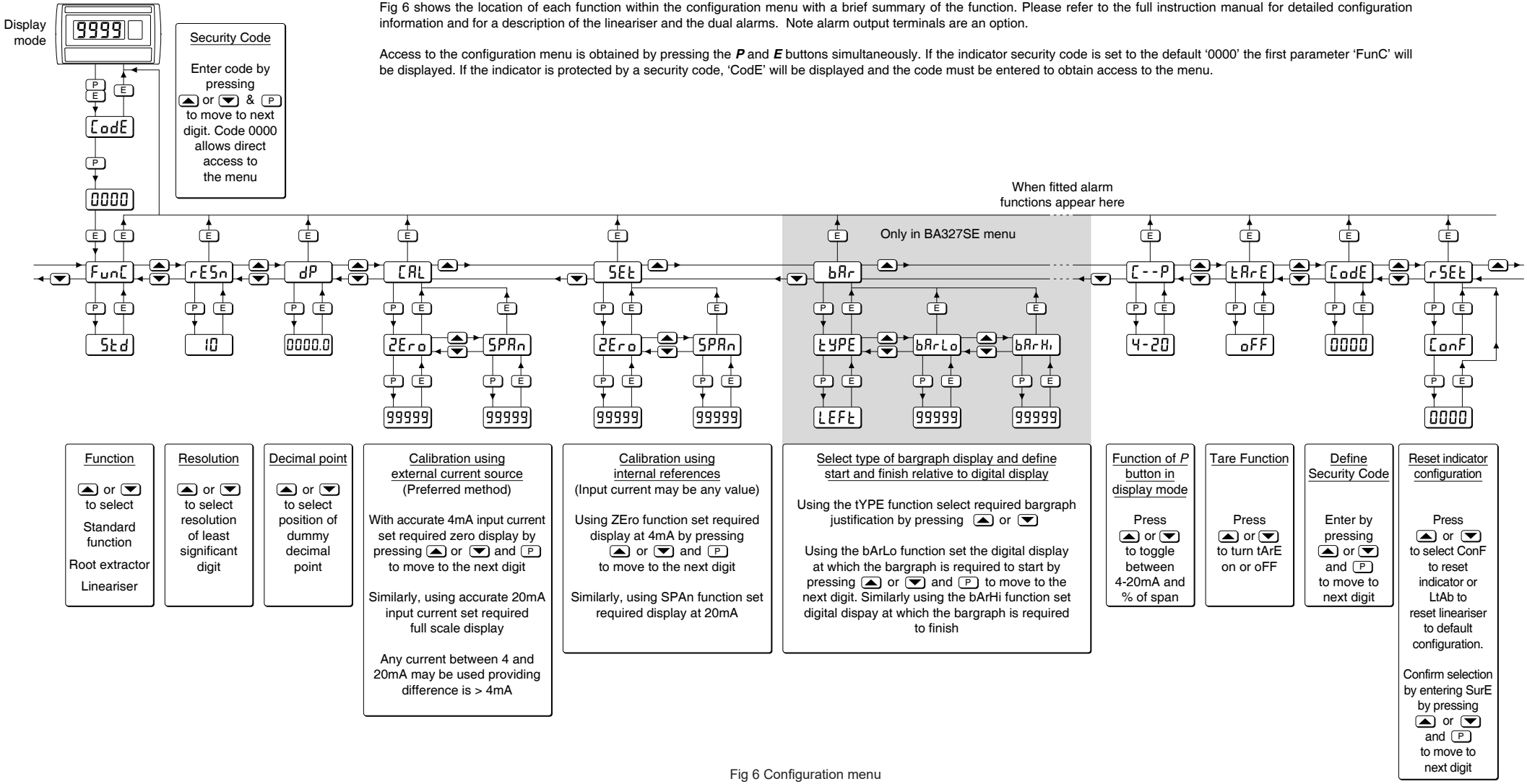


Fig 6 Configuration menu

Manuals, certificates and data-sheets can be downloaded from http://www.beka.co.uk/lpi9/

The BA307SE and BA327SE are CE marked to show compliance with the *European Explosive Atmospheres Directive 2014/34/EU* **and the** *European EMC Directive 2014/30/EU.*

They are also UKCA marked to show compliance with UK statutory requirements Equipment and Protective Systems Intended for Use in *Potentially Explosive Atmospheres Regulations UKSI 2016:1107 (as amended)* **and with the** *Electromagnetic Compatibility Regulations UKSI 2016:1091 (as amended).*