



BEKA BA307SE Rugged 4 20mA Loop Powered indicators Owner's Manual

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BEKA BA307SE Rugged 4 20mA Loop Powered indicators



Product Information

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 unit. The BA307SE model has a 4-digit display that is 15mm high, while the BA327SE model has a 5-digit display that is 12.7mm high and includes a bar graph.

These indicators have IP66 front-of-panel protection, making them resistant to dust and water ingress. The rear of each indicator has IP20 protection. They are designed for safe use in hazardous areas and comply with IECEx, ATEX, and UKEX certifications. The indicators can be installed in Ex e or Ex pzc panel enclosures for Ex ec installations, and in Ex tc panel enclosures for Ex tc installations. For Ex pzc installations, the supply circuit must 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, following BEKA Control Drawing CI300-86 and local Codes of Practice.

Product Usage Instructions

1. Ensure that the indicator is powered from a limited energy circuit for all installations.
2. For Ex ec installations, install the indicator within an Ex e or Ex pzc panel enclosure.
3. For Ex tc installations, install the indicator within an Ex tc panel enclosure.
4. For Ex pzc installations, make sure the supply circuit is rated for a prospective short circuit current of not more than 10kA, and ensure that the vents located on the back of the indicator are not obstructed.
5. For installations in the USA and Canada, comply with BEKA Control Drawing CI300-86 and local Codes of Practice.
6. Ensure that the indicators are shielded from direct sunlight and severe weather conditions to maintain their IP66 front-of-panel protection.
7. The rear of each indicator has IP20 protection.
8. Follow the panel cut-out dimensions of 90 +0.5 / -0.0 x 43.5 +0.5 / -0.0 with a maximum panel thickness of 8 mm.

- Please consult the full instruction manual or appropriate certificates for detailed certification information.

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 unit.

Model/Display

- 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.



- For all installations, the indicator must be powered from a limited energy circuit.
- For Ex ec installations, the indicator must be installed within an Ex e or Ex pzc panel enclosure.
- For Ex tc installations, the indicator must be installed within an Ex tc panel enclosure.
- 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 allow 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 appropriate certificate or the full instruction manual for detailed certification information.

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.

mounted panel cut-out $90 +0.5 / -0.0 \times 43.5 +0.5 / -0.0$

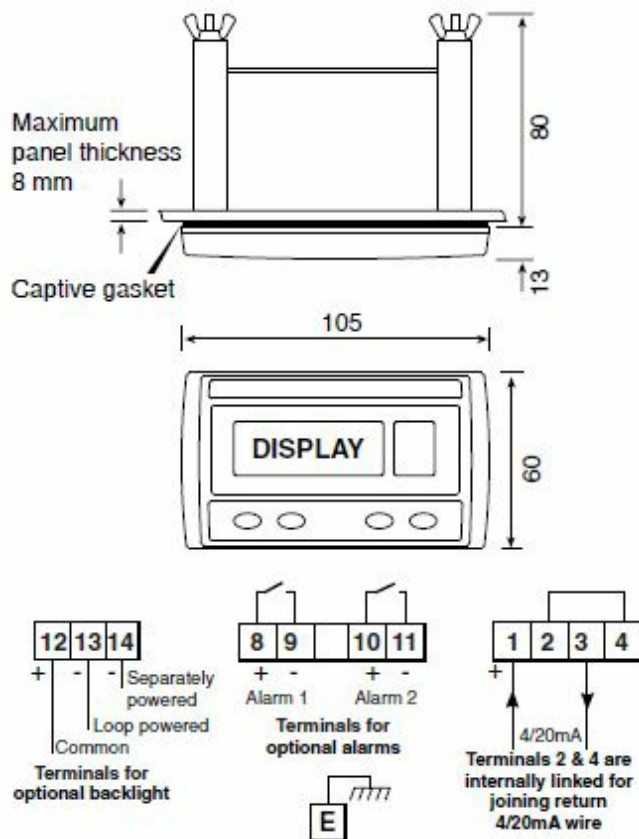
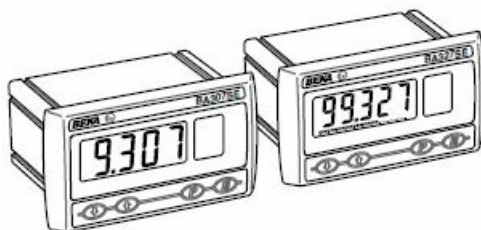


Fig 1 cutout dimensions & terminals

Abbreviated instructions for

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



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- BEKA Associates Ltd. Old Charlton Rd, Hitchin, Hertfordshire, SG5 2DA, UK Tel: +44(0)1462 438301 e-mail: sales@beka.co.uk
- web: www.beka.co.uk.

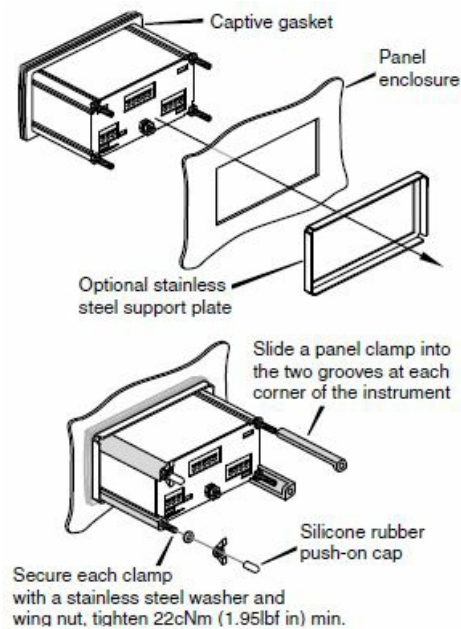


Fig 2 Installation procedure

EMC

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

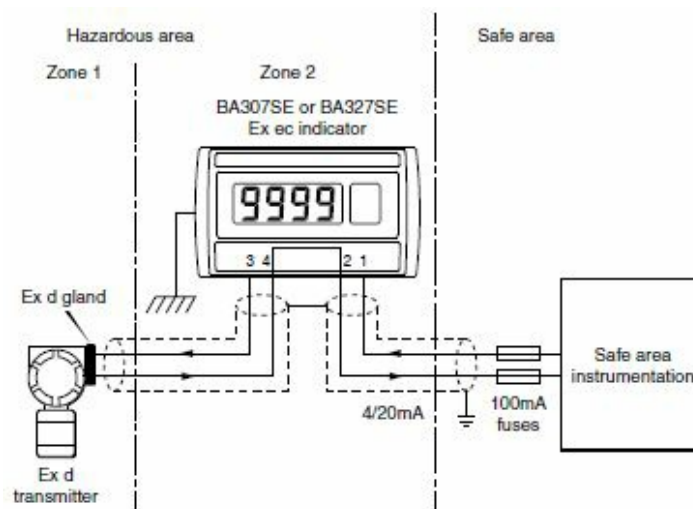


Fig 3 Typical transmitter loop

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.

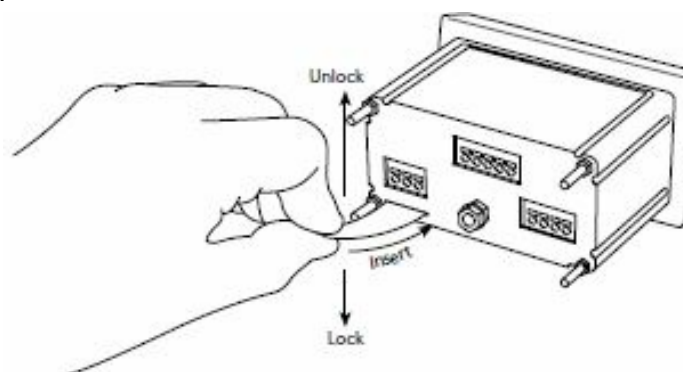
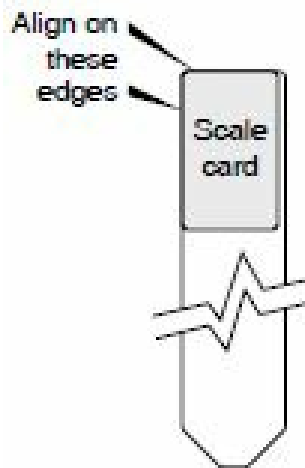


Fig 4 Inserting flexible strip carrying scale card into slot at the rear of indicator.

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



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 analog bar graph* 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 analog bar graph* 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 + ▼** The indicator displays the firmware number followed by the version.
- **P + ▲** When optional alarms are fitted provide direct access to the alarm setpoints if the 'ACSP' access setpoints in the display mode function have been enabled.
- **P + E** Provides access to the configuration menu via an optional security code.
- Only the BA327SE has a bar graph

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 linearizer and the optional dual alarms. 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.

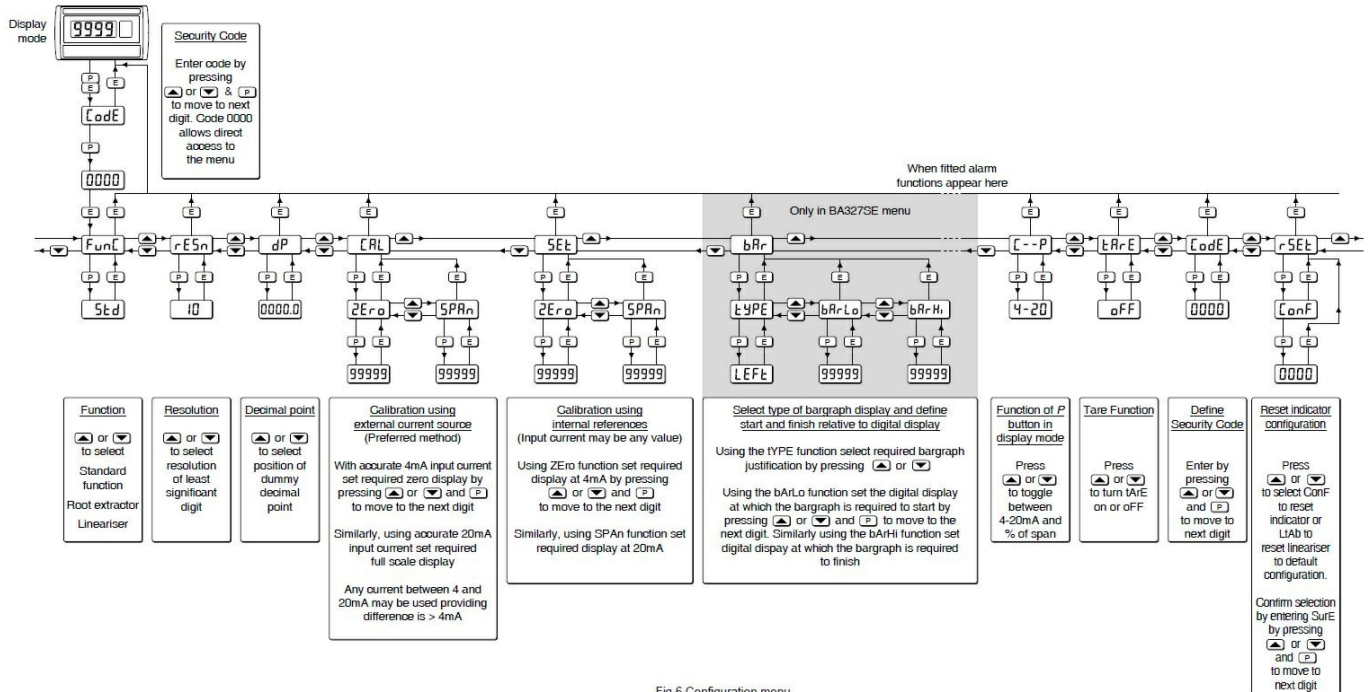


Fig 6 Configuration menu

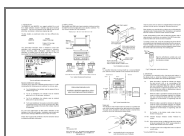
UK manuals, certificates and data sheets can be downloaded from <http://www.beka.co.uk/lpi9/>.

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).

Documents / Resources



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BA307SE Rugged 4 20mA Loop Powered indicators, BA307SE, Rugged 4 20mA Loop Powered indicators, 20mA Loop Powered indicators, Loop Powered indicators, Powered indicators

References

- [!\[\]\(694fcb4611893e9db5249daba48abfc1_img.jpg\) **BEKA associates Ltd.**](#)
- [!\[\]\(8ec8d5dc48934930a762fecf6ecbe179_img.jpg\) **Rugged 4/20mA Loop powered indicators, Ex ec and Ex tc**](#)

Manuals+.