

1. DESCRIPTION

The BA304E and BA324E are field mounting, intrinsically safe digital indicators that display the current flowing in a 4/20mA loop in engineering units. They are loop powered but only introduce a 1.2V drop into the loop.

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

Model	Display
BA304E	4 digits 34mm high
BA324E	5 digits 29mm high and 31 segment 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 our website.

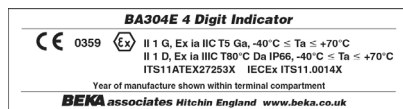
Both models have ATEX and IECEx intrinsic safety certification for use in flammable gas atmospheres. The certification labels, which are located on the top of the instrument enclosure show the certificate numbers and the certification codes. Copies of certificates may be down- loaded from our website.



CAUTION

Special conditions apply for installation in Zone0.
See certificates of full instruction manual

Dust certification is available as a factory option. Gas and dust certification labels are shown below.

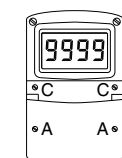


For installations in the USA and Canada, versions with FM and cFM approval are available.

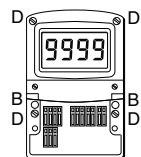
2. INSTALLATION

The BA304E & BA324E indicators have robust IP66 glass reinforced polyester (GRP) enclosures incorporating an armoured glass window & stainless steel fittings. They are suitable for exterior mounting in most industrial environments.

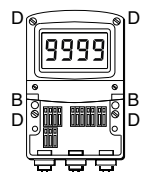
They are surface mounting, but may be pipe mounted using one of the accessory kits.



Step 1
Remove the terminal cover by unscrewing the two 'A' screws



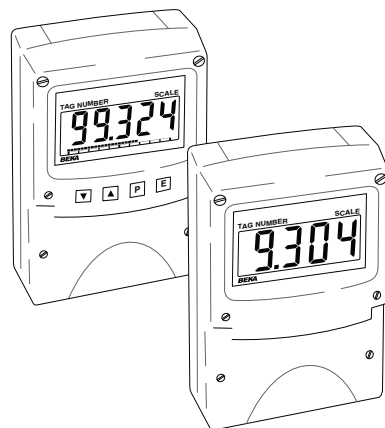
Step 2
Secure the instrument to a flat surface with M6 screws through the two 'B' holes. Alternatively use a pipe mounting kit.



Step 3 and 4
Remove the temporary hole plug and install appropriate IP rated cable gland or conduit fitting and terminate field wiring. Replace the terminal cover and tighten the two 'A' screws.

Fig 1 Installation procedure

Abbreviated Instruction for
BA304E and BA324E intrinsically safe field mounting loop powered indicators



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The indicator's earth terminal is connected to the carbon loaded GRP enclosure. If this enclosure is not bolted to an earthed post or structure, the earth terminal should be connected to the plant potential equalising conductor.

A bonding plate is provided to ensure electrical continuity between the three conduit / cable entries.

Terminals 8, 9, 10 & 11 are only fitted when the indicator includes optional alarms. See full manual for details.

Terminals 12, 13 & 14 are only fitted when the indicator includes an optional backlight. See full manual for details.

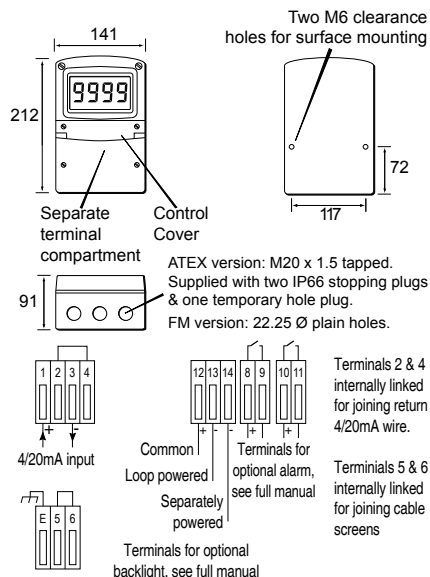


Fig 2 Dimensions and terminal connections

EMC

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

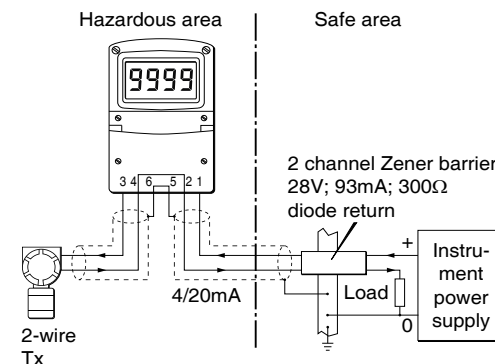


Fig 3 Typical measurement loop

Units of measurement & tag number

Both indicators have an escutcheon around the liquid crystal display which can be printed with any units of measurement and tag information specified when the indicator was ordered. If no information is supplied a blank escutcheon will be fitted but legends may be added on-site via an embossed strip, dry transfer or a permanent marker. Printed escutcheons are available from BEKA as an accessory which should be fitted on top of the blank escutcheon. Do not remove the blank escutcheon.

To gain access to the escutcheon remove the terminal cover by unscrewing the two 'A' screws which will reveal two concealed 'D' screws. If the instrument is fitted with an external keypad, also unscrew the two 'C' screws securing the keypad and unplug the five way connector. Finally unscrew all four 'D' screws and carefully lift off the front of the instrument. The location of all the screws is shown in Fig 1. Add the required legend to the escutcheon, or stick a new printed escutcheon on top of existing one.

3. OPERATION

The indicators are controlled and configured via four push buttons located behind the instrument control cover, or via an optional keypad on the outside of the control cover. 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.
- [V]** 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.
- [A]** 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] + [V]** Indicator displays firmware number followed by version.
- [P] + [A]** 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 BA324E has a bargraph.

The BA304E & BA324E are CE marked to show compliance with the European Explosive Atmospheres Directive 94/9/EC and the European EMC Directive 2004/108/EC

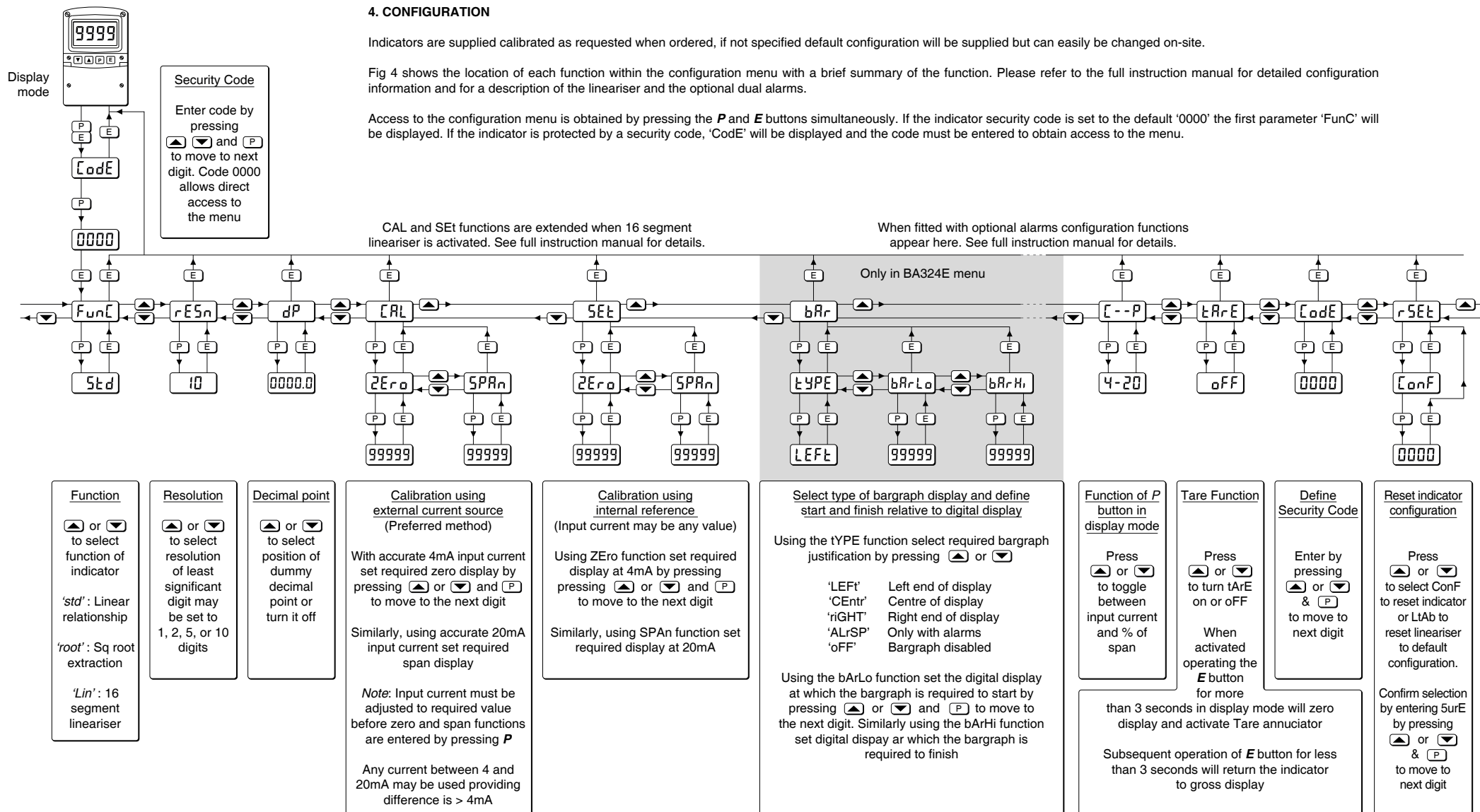


Fig 4 Configuration menu



Manuals, certificates and data-sheets can be downloaded from <http://www.beka.co.uk/lpi1/>

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