

The **BA307NE** loop powered, panel mounting Indicator has a rugged stainless steel housing allowing it to be safely installed in an Ex n, Ex p, Ex e or Ex tc panel enclosure located in Zone 2 or 22, without the need for Zener barriers or galvanic isolators. The indicator has a full 4 digit display with guaranteed performance between -40 and 70°C. The scale card can easily be marked to show the units of measurement and can be installed on-site without dismantling the instrument or removing it from the panel.

The **main application** of the BA307NE is to display a measured variable in meaningful engineering units in Zone 2 or 22. The front of the indicator has certified impact and ingress protection allowing it to be installed in an Ex n, Ex p, Ex e or Ex tc panel enclosure without invalidating the panel's impact and ingress protection.

The **bold 15mm high 4 digit display** provides maximum contrast and has a wide viewing angle, allowing the BA307NE to be read easily in most lighting conditions over a wide temperature range. An optional factory fitted backlight is available for applications in poorly illuminated areas. The four digits, with three decimal point positions and a negative sign, may be configured to display any variable between -9999 and 9999.

**ATEX, IECEx and ETL Ex nA non sparking certification** allows the BA307NE, when installed in a Ex n, Ex p, or Ex e panel, to be operated in a Zone 2 gas hazardous area without the need for Zener barriers or galvanic isolators. For Zone 2 applications the BA307NE offers a less expensive alternative to intrinsically safe and flameproof indicators.

**Ex tc dust certification** also allows the BA307NE, when installed in an

Ex tc panel enclosure, to be operated in a Zone 22 dust hazardous area, again without the need for Zener barriers or galvanic isolators.

A **backlight** which may be loop or separately powered is available as a factory fitted option. It provides green background illumination allowing the display to be read at night or in poorly illuminated areas. When powered from the 4/20mA loop no additional field wiring is required but the indicator's voltage drop increases. Powering from a separate supply produces a brighter backlight but requires additional wiring.

**Optional dual alarm outputs** which can switch hazardous or safe area loads, such as sounders, beacons or solenoid valves are available as a factory fitted option. The two galvanically isolated solid state alarm outputs may be independently configured as high or low alarms with normally open or closed outputs. Annunciators on the display show the status of both outputs.

**Units of measurement** may be shown on the scale card which is visible through the window on the right hand side of the display. Instruments are supplied with the units legend requested when ordered, but the scale card may be easily changed on-site without removing the BA307NE from the panel or opening the instrument enclosure.

**Application Guide AG310** which explain how Ex nA certified instruments should be installed may be downloaded from the BEKA associates website, or requested from the BEKA sales office.

**Other models in this range include** the BA327NE which has a similar specification with five 11mm high digits and a 31 segment bargraph.

# BA307NE

## Rugged 2-wire 4/20mA 4 digit indicator

*Ex nA and Ex tc certified for installation in Ex n, Ex e, Ex p or Ex tc panel enclosure located in Zones 2 or 22*

- ◆ Rugged IP66 stainless steel enclosure.
- ◆ Ex nA & Ex tc certification eliminates the need for Zener barriers and galvanic isolators.
- ◆ Loop powered only 1.2V drop.
- ◆ 4 digit 15mm high display.
- ◆ Optional backlight & alarms.
- ◆ Easy on-site scale card installation.
- ◆ Root extractor and 16 segment lineariser.
- ◆ 3 year guarantee

[www.beka.co.uk/ba307ne](http://www.beka.co.uk/ba307ne)



# BEKA

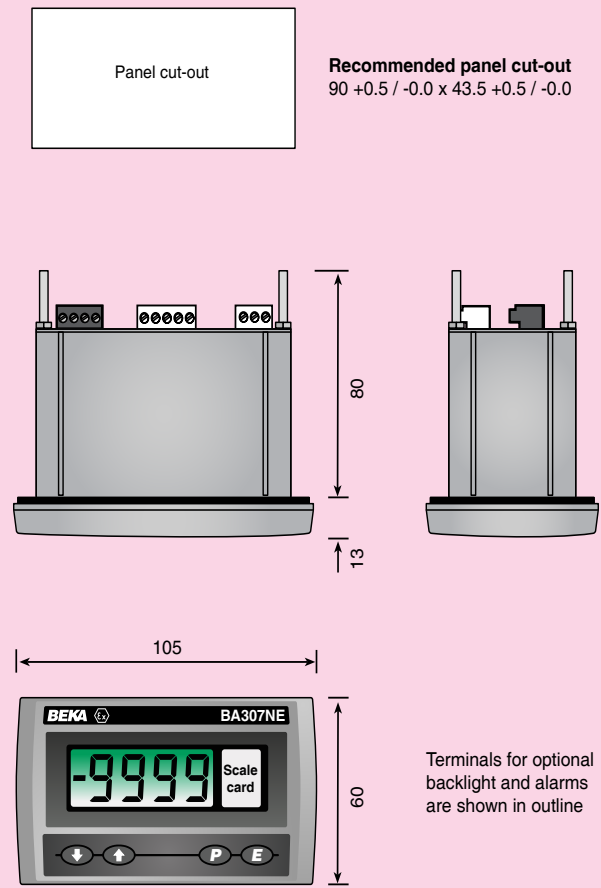
## associates

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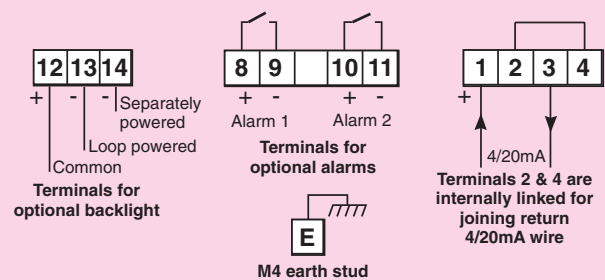
## SPECIFICATION

|  |  |
|--|--|
| <b>Input</b>                           |  |
| Current                                | 4 to 20mA HART® transparent  |
| Voltage                                | Less than 1.2V at 20°C<br>Less than 1.3V at -40°C  |
| Over range                             | Less than 5V with optional loop powered backlight<br>±200mA or ±30V will not damage the indicator  |
| <b>Display</b>                         |  |
| Type                                   | Liquid crystal, non-multiplexed 4 digits 15mm high   |
| Span                                   | Adjustable between 0 & ±9999 for a 4/20mA input  |
| Zero                                   | Adjustable between 0 & ±9999 with 4mA input  |
| Decimal point                          | 1 of 3 positions or absent   |
| Polarity                               | Automatic minus sign   |
| Zero blanking                          | Blanked apart from 0 in front of the decimal point   |
| Direction                              | Display may increase or decrease with increasing 4/20mA input.   |
| Reading rate                           | 2 per second   |
| Over range                             | 9999 or -9999 with flashing decimal points   |
| <b>Push buttons</b>                    |  |
| ▼                                      | Shows display with 4mA input   |
| ▲                                      | Shows display with 20mA input  |
| P                                      | Displays input in mA or as a % of span, has a modified function when alarms are fitted.  |
| E                                      | Used for Tare function   |
| <b>Accuracy at 20°C</b>                |  |
| Linear                                 | ±0.02% of span ±1 digit  |
| Root extracting                        | ±16µA at input ±1 digit  |
| Temperature effect on:                 |  |
| Zero                                   | Less than 25ppm of span/°C   |
| Span                                   | Less than 50ppm of span/°C   |
| Series mode rejection                  | Less than 0.05% of span error for 1mA pk to pk 50 or 60Hz interference.  |
| <b>Hazardous area certification</b>    |  |
| <b>Europe ATEX</b>                     |  |
| Code                                   | (Special conditions permit installation in Ex n, Ex e, Ex p and Ex tc enclosures)<br>Group II Category 3GD<br>Ex nA ic IIC T5 Gc<br>Ex ic tc IIIC T80°C Dc<br>-40°C ≤ Ta ≤ 70°C<br>ITS14ATEX48028X |
| Cert. No.                              |  |
| <b>International IECEx</b>             |  |
| Code                                   | Ex nA ic IIC T5 Gc<br>Ex ic tc IIIC T80°C Dc<br>-40°C ≤ Ta ≤ 70°C<br>IECEx ITS 14.0026X  |
| Cert. No.                              |  |
| <b>USA &amp; Canada ETL &amp; cETL</b> |  |
| Code                                   | Class I, Zone 2, AEx nA ic IIC T5 Gc<br>Zone 22, AEx ic tc IIIC T80°C Dc<br>-40°C ≤ Ta ≤ 60°C  |
|  | USA  |
|  | Ex nA ic IIC T5 Gc: Ex n IIC T5 Gc<br>Ex ic tc IIIC T80°C Dc<br>-40°C ≤ Ta ≤ 60°C  |
|  | Canada   |
| ETL control No.                        | 4008610  |
| <b>Environmental</b>                   |  |
| Operating temperature                  | -40 to 70°C  |
| Storage temperature                    | -40 to 85°C  |
| Humidity                               | To 95% at 40°C non-condensing  |
| Vibration                              | Report available   |
| Enclosure                              |  |
| Ingress protection                     | Front IP66, rear IP20  |
| Material                               | Stainless steel BS 3146-2:1977 ANC4B (316)   |
| EMC                                    | Complies with 2014/30/EU   |
| <b>Mechanical</b>                      |  |
| Terminals                              | Screw clamp for 0.5 to 1.5mm <sup>2</sup> cable with removable terminal blocks.  |
| Weight                                 | 0.85kg   |
| <b>Accessories</b>                     |  |
| Backlight                              |  |
| Loop powered                           | Green may be loop or separately powered  |
| Separately powered                     | Indicator input voltage increased to 5V max.<br>9V at 22mA   |
| Alarms                                 | Two alarm outputs each of which may be independently configured as a high or low alarm contact with a NO or NC output.   |
| Output                                 |  |
| Ron                                    | Isolated solid state switch  |
| Roff                                   | 5Ω + 0.7V max<br>1MΩ min   |
| Printed scale card                     | Blank card fitted to each indicator can be supplied printed with specified units of measurement.   |
| Pack of printed scale                  | Contains 26 common units of measurement cards and 2 blank cards.   |
| Tag legend                             | Specified tag number or application information laser etched on rear of instrument.  |

## DIMENSIONS (mm)



## TERMINAL CONNECTIONS



BA495 rear cover and sealing kit

Provides impact and IP66 protection for rear of instrument. #

# See accessory datasheet for details

## HOW TO ORDER

Model number  
Display mode  
Display at:  
4.000mA  
20.000mA

### Please specify

BA307NE  
Linear, root or lineariser\*

XXXX  
XXXX

\* Include position of decimal point & sign if negative. Together with intermediate points if linearisation is required.\*

### Accessories

Display backlight  
Dual alarms  
Scale card  
Tag  
Rear cover and sealing kit

Backlight  
Alarms  
Legend if required  
Legend if required  
BA495

\* Will be set to display 0.0 at 4mA and 100.0 at 20mA with a linear display if calibration information is not supplied. Can easily be recalibrated on-site.