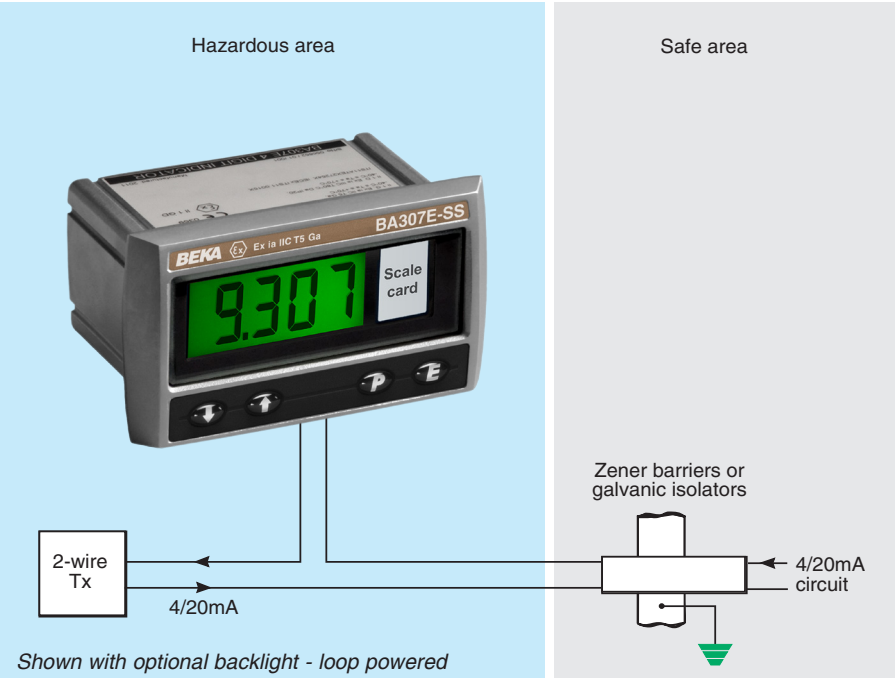


Shown with optional backlight - loop powered

BA307E-SS

Rugged 2-wire 4/20mA 4 digit indicator

Intrinsically safe for use in Zone 1 Ex e or Ex p panel enclosures and in harsh marine environments

- **Rugged IP66 stainless steel enclosure.**
- **Intrinsically safe Ex ia ATEX, FM, cFM & IECEx.**
- **Front of indicator maintains Ex e, Ex p and Ex t enclosure certification.**
- **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 linearliser.**
- **3 year guarantee**

The BA307E-SS intrinsically safe, panel mounting loop powered Indicator has a rugged stainless steel housing allowing it to be safely installed in an Ex e or Ex p panel, in marine environments or where the front of the instrument is likely to be impacted. 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.

Main application of the BA307E-SS is to display a measured variable in engineering units when mounted in an Ex e or Ex p panel enclosure located in Zones 1 or 2. The front of the indicator has IP66 ingress and impact protection which allows it to be installed in a certified Ex e or Ex p panel enclosure without invalidating the enclosure certification. The indicator's rugged stainless steel housing and 10mm thick toughtened glass window also make the BA307E-SS ideal for intrinsically safe applications in marine environments or where the front of the instrument is likely to be impacted.

The bold 15mm high 4 digit display provides maximum contrast and has a wide viewing angle, allowing the BA307E-SS to be easily read 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.

International intrinsic safety certification allow the BA307E-SS to be installed worldwide. The 4/20mA input terminals comply with the requirements for *simple apparatus* which, together with the low voltage drop, permit connection to most intrisically safe circuits.

For applications in combustible dusts the BA307E-SS may be installed in a certified Ex t panel enclosure without invalidating the enclosure's certification.

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 intrinsically safe interface or wiring are required and the indicator input remains compliant with the requirements for *simple apparatus*. Powering from a separate supply produces a brighter backlight but requires an additional intrinsically safe interface. Two backlights may be separately powered from one intrinsically safe interface.

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 BA307E-SS from the panel or opening the instrument enclosure.

Application Guide AG300 explains how the BA307E-SS and similar instruments may be safely installed in gas and dust hazardous areas. Copies may be downloaded from the BEKA website or requested from the BEKA sales office.

Other models in this range include the BA327E-SS which has a similar specification with five 11mm high digits and a 31 segment bargraph.

BEKA associates

Sales & Support Distributor:-
Stockshed Limited. Stoneycroft House,
Mud Lane, Eversley. Hampshire. RG27 0QS. U.K. Tel. (0118) 9734955
e-mail info@stockshed.com

SPECIFICATION

Input

Current	4 to 20mA
Voltage	Less than 1.2V at 20°C Less than 1.3V at -40°C Less than 5V with optional loop powered backlight.
Over range	±200mA or ±30V will not damage the indicator

Display

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

Push buttons

▼	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

Accuracy at 20°C

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.

Hazardous area certification

Europe ATEX

Code	Group II Category 1GD Ex ia IIC T5 Ga Ex ia IIIC T80°C Da IP20 Ta = -40 to 70°C
Input parameters	
Ui	30V dc
Ii	200mA
Pi	0.84W
Output paramters	Comply with requirements for *simple apparatus*
Cert. Number	ITS14ATEX28077X *(Special conditions permit installation in Ex e, Ex p and Ex t enclosures and apply for use in Group IIIC conductive dusts)*

USA FM

Standard	3610 Entity
Code	CL I: Div 1: Gp A, B, C, & D CL I: Zone 0: AEx ia IIC T5 @ 70°C *May be installed in an AEx e, AEx p or AEx n panel without invalidating panel's certification.*
Standard	3611 Nonincendive
Code	CL I, II, III: Div 2: Gp A, B, C & D CL I: Zone 2: Gp IIC T5 @ 70°C
File	3041487

Canada cFM

File	3041487C

International IECEx

Code	Ex ia IIC T5 Ga Ex ia IIIC T80°C Da IP20 Ta = -40 to 70°C
Cert. Number	IECEx ITS 14.0048X *(Special conditions permit installation in Ex e, Ex p and Ex t enclosures and apply for use in Group IIIC conductive dusts)*

Environmental

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 2004/108/EC

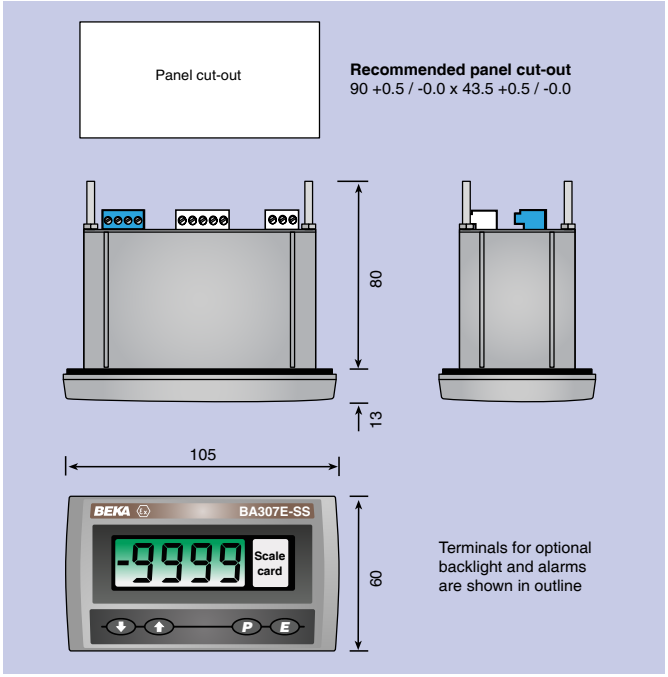
Mechanical

Terminals	Screw clamp for 0.5 to 1.5mm² cable with removable terminal blocks.
Weight	0.85kg

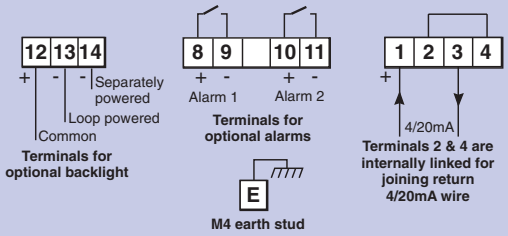
Accessories

Backlight	Green may be loop or separately powered
Loop powered	Indicator input voltage increased to 5V max.
Separately powered	9V at 22mA from IS interface

DIMENSIONS (mm)



TERMINAL CONNECTIONS



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	Isolated solid state switch complying with the requirements for *simple apparatus*.
Ron	5Ω + 0.7V max
Roff	1MΩ min
Printed scale card	Blank card fitted to each indicator can be supplied printed with specified units of measurement.
Pack of printed scale cards.	Contains 28 common units of measurement and 2 blank cards.
Tag legend	Specified tag number or application information laser etched on rear of instrument.
Support plate	Evenly distributes clamping force when the indicator is installed in a non-metallic or thin panel less than 1mm thick.
BA495 rear cover and sealing kit	Provides impact and IP66 protection for rear of instrument. #

 # See accessory datasheet for details

HOW TO ORDER

	Please specify
Model number	BA307E-SS
Display mode	Linear, root or linariser*
Display at:	
4.000mA	XXXX
20.000mA	XXXX

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

Accessories

Display backlight	Backlight
Dual alarms	Alarms
Scale card	Legend required
Tag Legend required	
Support plate	Support plate
Rear cover and sealing kit	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.*