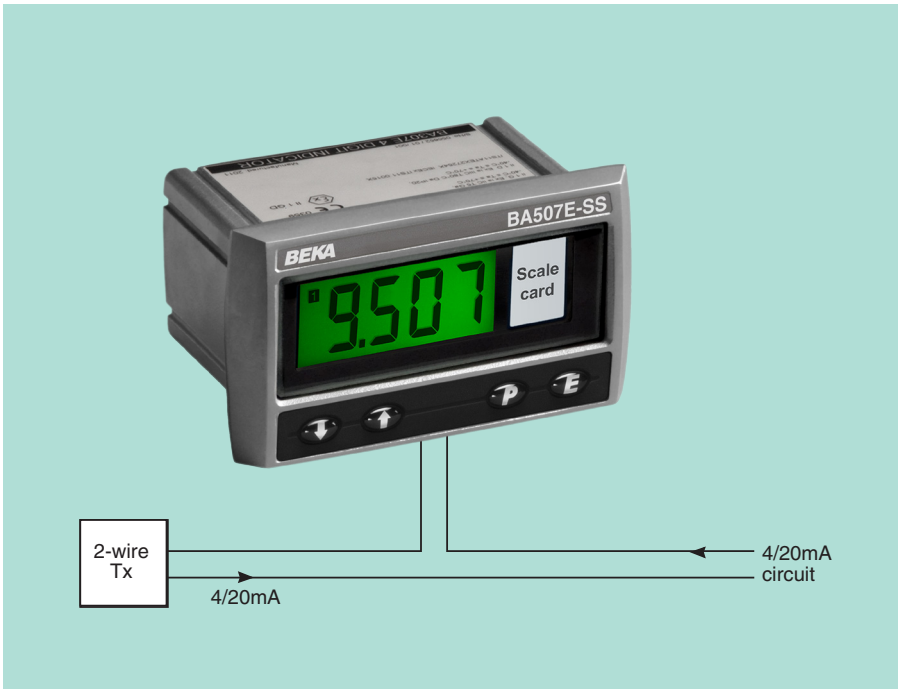
BA507E-SS

Rugged 2-wire 4/20mA 4 digit indicator



General purpose for use in harsh & marine environments

- **Rugged IP66 stainless steel enclosure.**
- **Loop powered only 1.2V drop.**
- **4 digit 15mm high display.**
- **Optional backlight & alarms.**
- **Easy on-site scale card installation.**
- **Root extractor, 16 segment lineariser and Tare function.**
- **3 year guarantee**

www.beka.co.uk/ba507e-ss

The BA507E-SS rugged general purpose, panel mounting 4/20mA loop powered Indicator, has a stainless steel housing allowing it to be safely installed in harsh industrial and marine environments, or where the front of the instrument is likely to be impacted. Incorporating a full 4 digit display with guaranteed performance between -40 and 70°C, the indicator can be calibrated to show the 4/20mA input current in almost any engineering units.

Main application of the BA507-SS is to display a measured variable in meaningful engineering units within an industrial process area. The rugged stainless steel housing and robust construction make the BA507E-SS ideal for installation in panel enclosures located in harsh environments such as agricultural vehicles and waste water processing plant. The indicator includes a square root extractor for flow applications, a sixteen point fully adjustable linearisers and a tare function which enable most types of 4/20mA process variables to be displayed in linear units.

The stainless steel cast front provides IP66 front of panel ingress protection and a captive silicone gasket seals the joint between the BA507E-SS and the panel enclosure in which it is mounted. The ingress and impact protection provided by the indicator's stainless steel housing, including the 10mm thick glass display window, have been independently tested at maximum and minimum operating temperatures by Intertek Testing and Certification.

A 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.

An optional 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. Powering from a separate supply produces a brighter backlight but requires additional wiring and another power supply.

Optional dual alarm outputs which can switch low power loads, such as a sounder, beacon or solenoid valve are available as a factory fitted option. The two galvanically isolated single pole 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 alarm 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 BA507E-SS from the panel enclosure or opening the instrument case.

Reliability is ensured by component conformal coating, protection from incorrect connection and from radio frequency interference. The indicator has been subjected to thermal endurance and vibration testing and is supported by a three year guarantee.

Other rugged models in this range of loop powered indicators, all of which have a stainless steel enclosure, include the BA527E–SS general purpose indicator which has a similar electrical specification as the BA507E-SS, but has five 11mm high display digits plus a 31 segment bargraph. Intrinsically safe Ex ia and Ex nA 4 and 5 digit models are also included, please see datasheets for the BA307E-SS, BA327E-SS, BA307NE and the BA327NE.

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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 backlight loop powered.
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.

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
Impact protection	Front 7J, window 4J
Material	Stainless steel BS 3146-2:1977 ANC4B (316)
EMC	Complies with 2004/108/EC

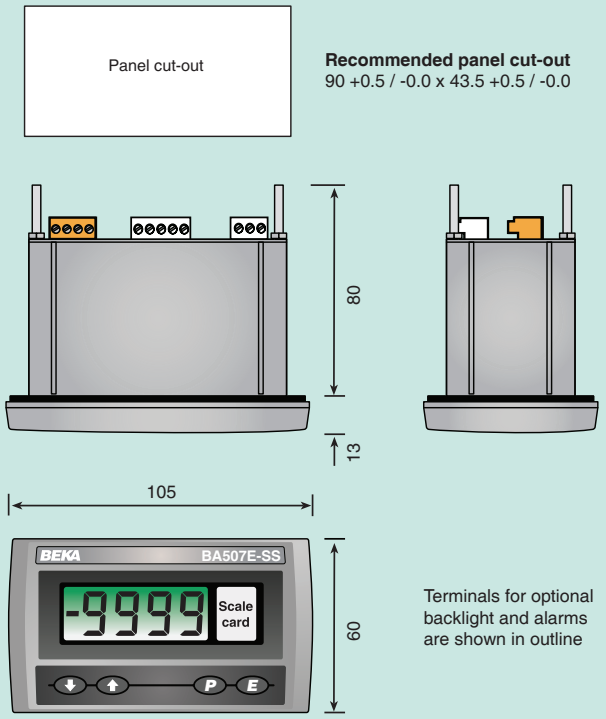
Mechanical

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

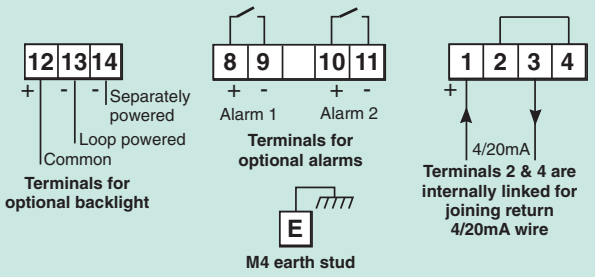
Accessories

Backlight	Green may be loop or separately powered
Loop powered	Indicator input voltage 5V
Separately powered	
Supply voltage	9 to 30V dc
Supply current	22.5mA at 9 to 30V
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
Vmax	30V dc
Imax	200mA
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.

DIMENSIONS (mm)



TERMINAL CONNECTIONS



Tag legend	Specified tag number or application information laser etched onto rear of the instrument.
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	BA507E–SS
Display mode	Linear, root or linearisers*
Display at:	Include position of decimal point & sign if negative. Together with intermediate points is linearisation is required.*
4.000mA	XXXX
20.000mA	XXXX

Accessories

Display backlight	Backlight
Dual alarms	Alarms
Scale card	Legend required
Tag Legend required	
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.