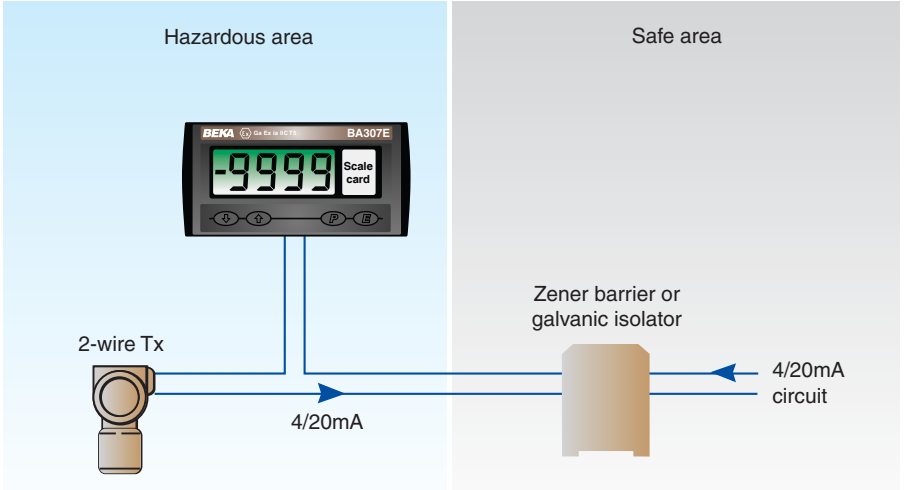
4/20mA Loop Powered Digital Indicators
Panel Mounting



An extensive range of panel mounting 4/20mA loop powered indicators in Noryl® or rugged 316 stainless steel enclosures.

- **Large high contrast displays with a wide viewing angle**
- **General purpose and certified hazardous area models**
  International Ex ia intrinsic safety and Ex nA non sparking certification.
- **Rugged stainless steel Ex ia models**
  May be installed in certified Ex e, Ex p or Ex t panel enclosure without invalidating the enclosure's certification.
- **Combined analogue and digital display indicators**
- **IP66 front panels**
- **Internal calibrator, root extractor, lineariser & tare function**
- **-40 to +70˚C operating temperature range**
- **Accessories**
  Dual isolated alarms
  Display backlight may be loop or separately powered
  Scale card - *can be supplied printed with units of measurement and tag information for no additional charge.*
  BA495 rear IP66 sealing kit



Intrinsically safe

Ex nA

General purpose



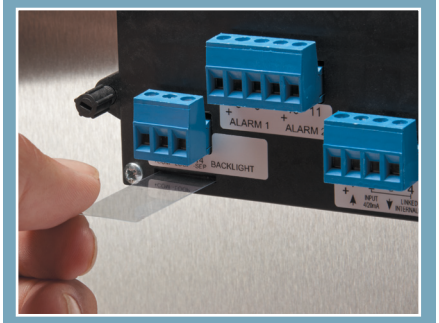
Rugged indicator maintains panel enclosure's impact & ingress protection and does not invalidate its certification.



Gasket provides IP66 seal to panel



Sturdy panel clamps supplied with unit



Easy scale card installation without the need to remove indicator from the panel.

4/20mA Loop Powered Digital Indicators. Panel mounting models available:

Model No.	Enclosure	Display				Certification					
		Digits		Bargraph		Europe ATEX		International IECEx		USA & Canada	
		Number	Height	Segments	Length	Gas	Dust	Gas	Dust	Gas	Dust
Ex ia intrinsically safe - for use in Zones 0, 1 & 2 and 20, 21 & 22											
BA304G-SS-PM*	Rugged 120 x 122	4	34mm	–	–	✔	✔	✔	✔	–	–
BA324G-SS-PM*	Rugged 120 x 122	5	29mm	31	83mm	✔	✔	✔	✔	–	–
BA307E	96 x 48	4	15mm	–	–	✔	✔	✔	✔	✔	–
BA308E	144 x 72	4	34mm	–	–	✔	✔	✔	✔	✔	–
BA327E	96 x 48	5	11mm	31	44mm	✔	✔	✔	✔	✔	–
BA328E	144 x 72	5	29mm	31	83mm	✔	✔	✔	✔	✔	–
BA326C	144 x 48 Combined	4½	5.5mm	100	95mm	✔	–	✔	–	–	–
BA307E-SS*	Rugged 105 x 60	4	15mm	–	–	✔	✔	✔	✔	✔	–
BA327E-SS*	Rugged 105 x 60	5	11mm	31	44mm	✔	✔	✔	✔	✔	–
Ex nA & Ex tc - for use in Zones 2 and 22 without Zener barriers or galvanic isolators											
BA307NE	Rugged 105 x 60	4	15mm	–	–	✔	✔	✔	✔	–	–
BA327NE	Rugged 105 x 60	5	11mm	31	44mm	✔	✔	✔	✔	–	–
General Purpose - for use in safe areas											
BA504G-SS-PM	Rugged 120 x 122	4	34mm	–	–						
BA524G-SS-PM	Rugged 120 x 122	5	29mm	31	83mm						
BA507E	96 x 48	4	15mm	–	–						
BA508E	144 x 72	4	34mm	–	–						
BA527E	96 x 48	5	11mm	31	44mm						
BA528E	144 x 72	5	29mm	31	83mm						
BA526C	144 x 48 Combined	4½	5.5mm	100	95mm						
BA507E-SS	Rugged 105 x 60	4	15mm	–	–						
BA527E-SS	Rugged 105 x 60	5	11mm	31	44mm						

** Certification allows installation in an Ex e, or Ex p or Ex t panel enclosure without invalidating enclosure certification*



Shown with optional backlight - loop powered

BA304G-SS-PM 2-wire 4/20mA 4 digit indicator

Intrinsically safe for use in Ex e, Ex p or Ex t panel enclosures and in harsh environments.

- **IP66 stainless steel indicator front maintains Ex e, Ex p or Ex t panel enclosure certification.**
- **Intrinsically safe ATEX and IECEx certification.**
- **Loop powered only 1.2V drop.**
- **4 digit 34mm high display**
- **Optional backlight & alarms.**
- **Root extractor, lineariser and tare function.**
- **Easy scale card installation on-site.**
- **3 year guarantee**

beka.co.uk/ba304g-ss-pm

The BA304G-SS-PM loop powered 4/20mA indicator is an intrinsically safe panel mounting instrument with a large 4 digit display. It has a rugged, impact resistant IP66 stainless steel front allowing it to be safely mounted in an Ex e, Ex p or Ex t panel enclosure.

IECEx and ATEX intrinsic safety gas and dust certification permit world wide installation. The 4/20mA input terminals comply with the requirements for *simple apparatus* which, together with the low voltage drop, allow the indicator to be connected in series with most intrinsically safe 4/20mA loops.

Main application of the BA304G-SS-PM is to display a measured variable in engineering units when mounted in an Ex e, Ex p or Ex t panel enclosure or cubicle. The front of the indicator has IECEx and ATEX impact and ingress certification allowing it to be installed in a certified panel enclosure without invalidating the enclosure's certification. The rugged front and IP66 protection also make the indicator ideal for intrinsically safe applications in marine environments or where the front of the instrument is likely to be impacted.

The large 34mm high 4 digit display provides maximum contrast and has a very wide viewing angle, thus the BA304G-SS-PM indicator is easily read in most lighting conditions. An optional backlight is available for installations in poorly illuminated areas. The four digits, with three decimal points and a negative sign, may be configured to display any variable between -9999 and 9999.

Display backlighting 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 is required and the indicator input remains compliant with the requirements for *simple apparatus*. Powering from a separate supply produces a slightly brighter backlight but requires an additional 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 outputs may be independently conditioned as high or low alarms with normally open or closed outputs. Annunciators on the display show the status of both alarms.

The scale card which shows units of measurement and tag information slides into an internal slot and can easily be changed on-site. New instruments can be supplied with the scale card printed to show customer specified information for no additional charge, if this is not requested a blank card is fitted which can easily be marked on-site.

A Zener barrier or galvanic isolator is not required when the indicator is installed in an Ex pxb, Ex pzc or Ex t panel enclosure. See Application Guide AG300 for details.

BEKA associates

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SPECIFICATION

Input

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

Display

Type	Liquid crystal, 4 digits 34mm high non-multiplexed
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 decimal point
Direction	Display may increase or decrease with increasing 4/20mA input.
Reading rate	2 per second
Overrange	9999 or -9999 with all decimal points flashing

Push buttons (Function in display mode)

▼	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 ±1digit
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.

Intrinsic safety

International IECEx

Code	Ex ia IIC T5 Ga Ex ia IIIC T80°C Da IP66 -40°C ≤ Ta ≤ 70°C
Input parameters	
Ui	30V dc
Ii	200mA
Pi	0.84W
Output parameters	Comply with requirements for *simple apparatus*
Cert. No.	IECEx ITS 11.0014X (Special conditions only apply for Zone 0)

Europe ATEX

Code	Group II Category 1GD Ex ia IIC T5 Ga Ex ia IIIC T80°C Da IP66 -40°C ≤ Ta ≤ 70°C
Safety parameters	As IECEx certification
Cert. No.	ITS11ATEX27253X (Special conditions only apply for Zone 0)

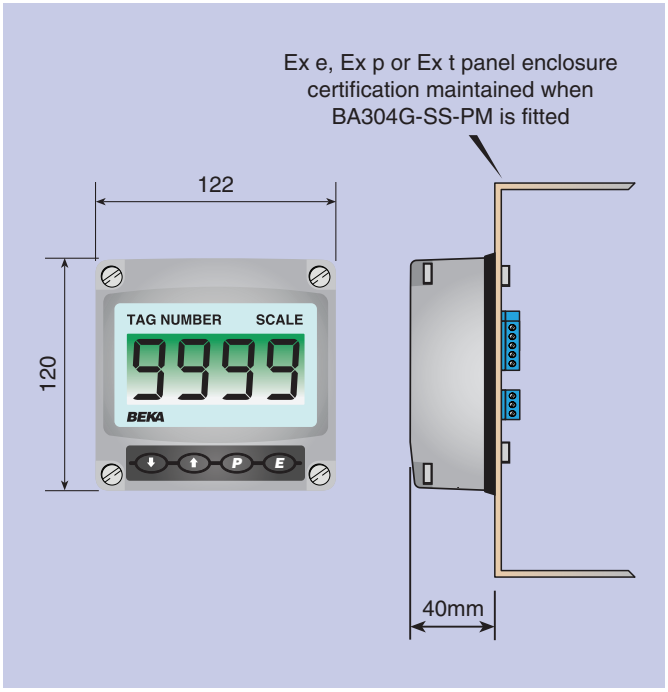
Environmental

Operating temp	-40 to +70°C
Storage temp	-40 to +85°C
Humidity (front)	to 95% at 40°C noncondensing
EMC	Complies with EMC Directive 2014/30/EU

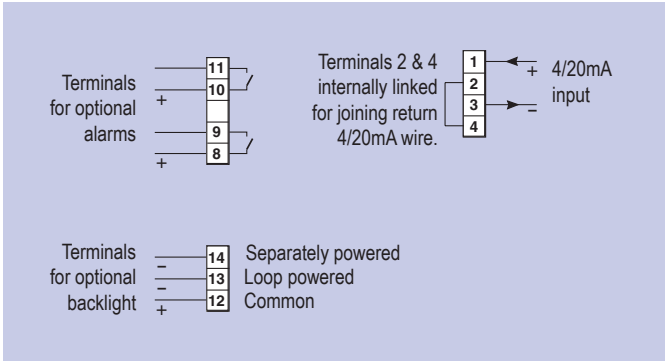
Mechanical

Front of indicator	
Material	316 stainless steel
Ingress protection	IECEx & ATEX certified IP66 ingress protection after thermal endurance, 7J (front) and 4J (window) impacting.
Rear of indicator	
Ingress protection	IP20
Terminals	Blue with screw clamp for 0.5 to 1.5mm² cable
Weight	1.2kg
Scale card	Slide-in card showing units of measurement and tag information through display window.

DIMENSIONS (mm)



TERMINAL CONNECTIONS



Accessories

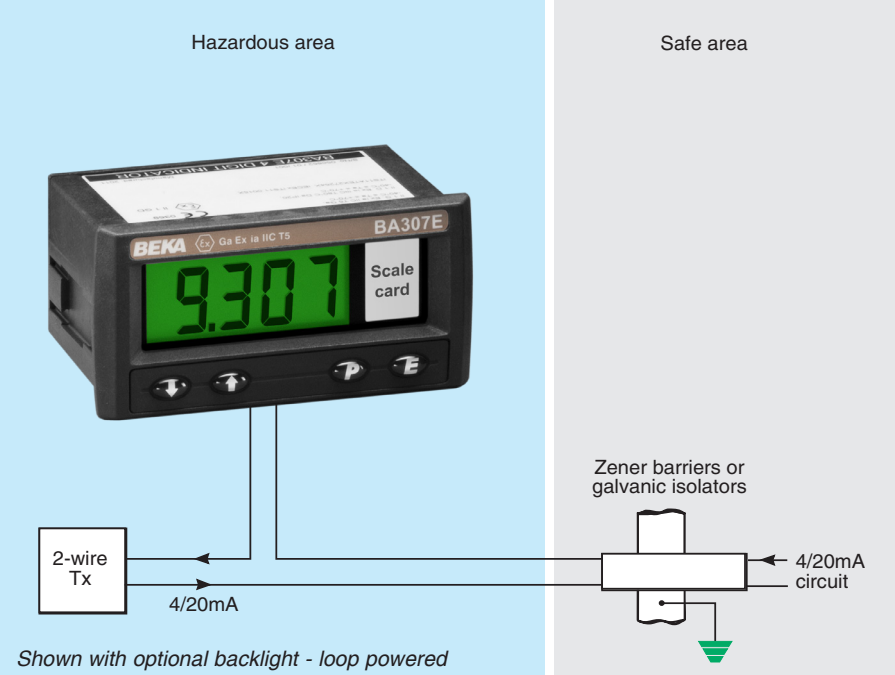
Backlight	Green, may be loop or separately powered
Loop powered	Indicator input voltage 5V
Separately powered	11V at 35mA from IS interface
Alarms	Two alarm outputs each of which may be independently configured as a high or low alarm contact with a NO or NC output.
Output complying with	Isolated, voltage free solid state switch requirements for *simple apparatus*.
Ron	5Ω + 0.7V max
Roff	1MΩ min

HOW TO ORDER

	Please specify	
Model number	BA304G-SS-PM	
Display mode	Linear, root or lineariser*	
Display at:		
4.000mA	XXXX	Include position of decimal point & sign if negative.*
20.000mA	XXXX	
Scale card marking		
Units	Legend required	
Tag	Legend required	

Accessories	Please specify if required
Display backlight	Backlight
Dual alarms	Alarms

* 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.



Shown with optional backlight - loop powered

BA307E

2-wire 4/20mA 4 digit indicator

Intrinsically safe for use in all gas & dust hazardous areas

- **Loop powered only 1.2V drop.**
- **4 digit 15mm high display.**
- **Intrinsically safe ATEX, FM, cFM & IECEx.**
- **Optional backlight & alarms.**
- **Easy on-site scale card installation.**
- **IP66 front**
- **Root extractor and 16 segment lineariser.**
- **96 x 48mm DIN enclosure.**
- **3 year guarantee**

www.beka.co.uk/ba307e

The BA307E loop powered 4/20mA indicator is a fourth generation instrument that is electrically and mechanically compatible with the earlier industry standard BA307C, but has a much larger full 4 digit display providing maximum visibility from a 96 x 48mm instrument. The new model has guaranteed performance between -40 & 70°C, dust certification and an even shorter enclosure depth than its predecessor. The scale card can easily be marked to show the units of measurement and be installed on-site without dismantling the indicator enclosure or removing it from the panel. If the units of measurement are not specified when the indicator is ordered, a blank scale card will be fitted.

The main application of the BA307E is to display a measured variable in meaningful engineering units within a hazardous area. The zero and span of the display are independently adjustable allowing the indicator to be calibrated to display any linear variable represented by the 4/20mA signal. A root extractor and an adjustable sixteen segment lineariser enables the indicator to display flow and non-linear variables such as tank level in linear engineering units. For weighing applications a tare function is included.

A bold 15mm high 4 digit display provides maximum contrast and has a very wide viewing angle, allowing the BA307E indicator 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 points and a negative sign, may be configured to display any variable between -9999 and 9999.

IP66 front panel protection and a neoprene gasket to seal the joint between the indicator and the panel make the instrument suitable for use in areas that will be cleaned with a hose. To simplify installation and maintenance, the indicator has a removable terminal block allowing panel wiring to be completed before the BA307E indicator is installed.

International intrinsic safety certification permits the BA307E to be installed throughout the world. The 4/20mA input terminals comply with the requirements for *simple apparatus* which, together with the low voltage drop, allow the indicator to be connected in series with most intrinsically safe 4/20mA loops. The BA307E may also be installed in dust hazardous areas. All input safety parameters are the same or greater than those for the preceding BA307C, thus allowing the BA307E to safely replace the earlier model.

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 is 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 and field wiring. 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 conditioned as high or low alarms with normally open or closed outputs. Annunciators on the display show the status of both alarm outputs.

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

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

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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 loop powered backlight.
Overrange	±200mA or ±30V will not damage the indicator.

Display

Type	Liquid crystal, non-multiplexed 4 digit 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 decimal point
Direction	Display may increase or decrease with increasing 4/20mA input.
Reading rate	2 per second
Overange	9999 or -9999 with all decimal points flashing.

Push buttons *(Function in display mode)*

▼	Shows display with 4mA input
▲	Shows display with 20mA input
'P'	Displays input in mA or 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 ±1digit
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.

Intrinsic safety

Europe ATEX

Code	Group II Category 1GD Ex ia IIC T5 Ga Ex ia IIIC T80°C Da IP20 Tamb = -40 to 70°C
Input parameters	
Ui	30V dc
Ii	200mA
Pi	0.84W
Output parameters	Complies with requirements for *simple apparatus.*
Cert. No.	ITS11ATEX27254X (Special conditions only apply for use in Group IIIC conductive dusts)

USA FM

Standard	3610 Entity
Code	CL I: Div 1 Gp A, B, C, & D T5 @ 70°C
Standard	3611 Nonincendive
Code	CL I, II, III: Div 2 Gp A, B, C, D, E, F & G T5 @ 70°C
File	3041487

Canada cFM

File	3041487C

International IECEx

Code	Ex ia IIC T5 Ga Ex ia IIIC T80°C Da IP20 Tamb = -40 to 70°C
Cert. No	IECEx ITS11.0015X (Special conditions only apply for use in Group IIIC conductive dusts)

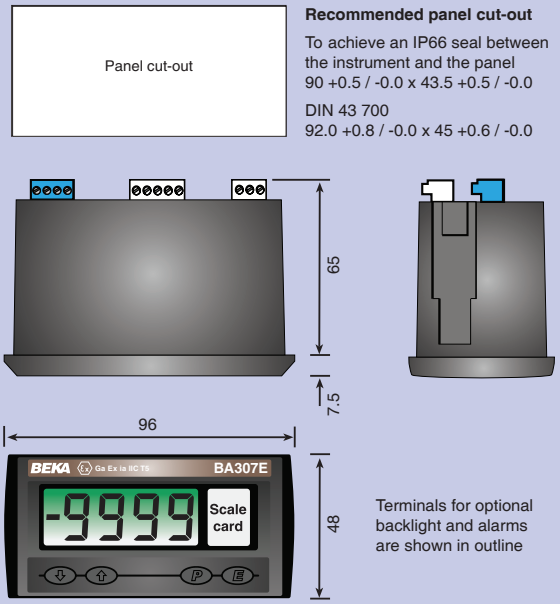
Environmental

Operating temp	-40 to 70°C
Storage temp	-40 to 85°C
Humidity	to 95% at 40°C noncondensing
Vibration	Report available
Enclosure	Front IP66, rear IP20
EMC	Complies with EMC Directive 2014/30/EU

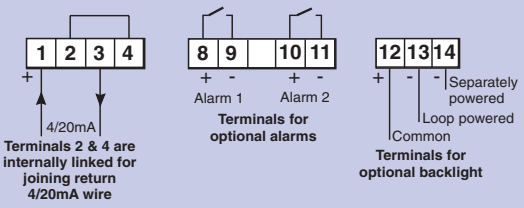
Mechanical

Terminals	Screw clamp for 0.5 to 1.5mm^2 cable, removable terminal blocks.
Weight	0.2kg

DIMENSIONS (mm)



TERMINAL CONNECTIONS



Accessories

Backlight	Green, may be loop or separately powered.
Loop powered	Indicator input voltage 5V max.
Separately powered	9V at 22.5mA from IS interface
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 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 26 common units of measurement and four blanks.
Tag legend	Specified tag number or application thermally printed 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

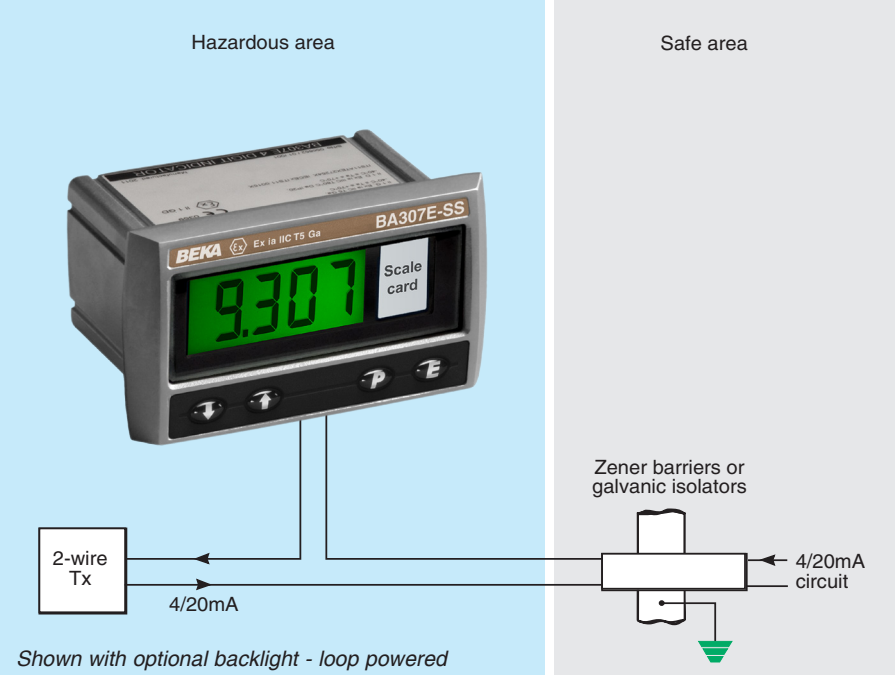
HOW TO ORDER

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

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

Accessories	**Please specify if required**
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.*



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**

www.beka.co.uk/ba307e-ss

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.

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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 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

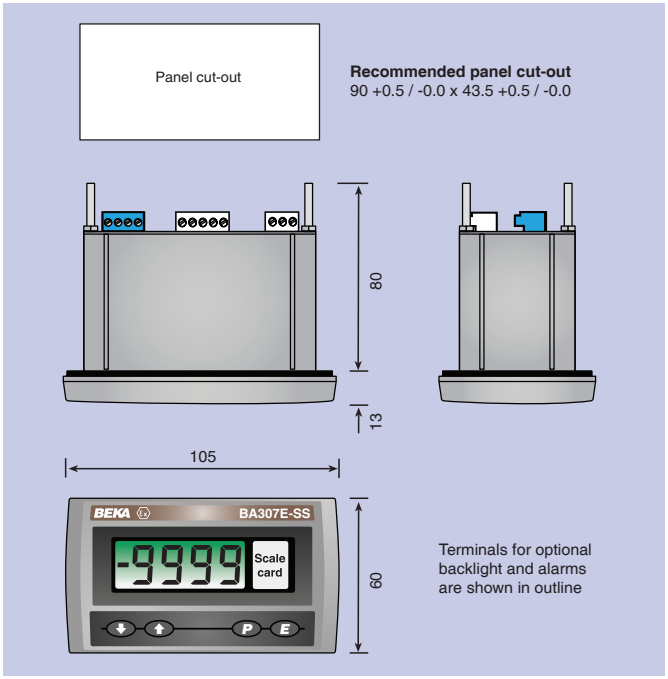
Mechanical

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

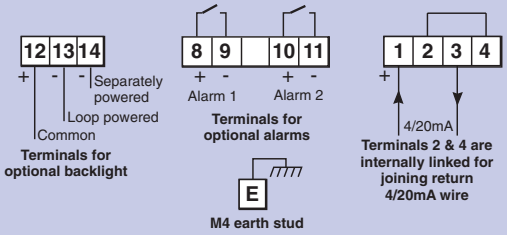
Accessories

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

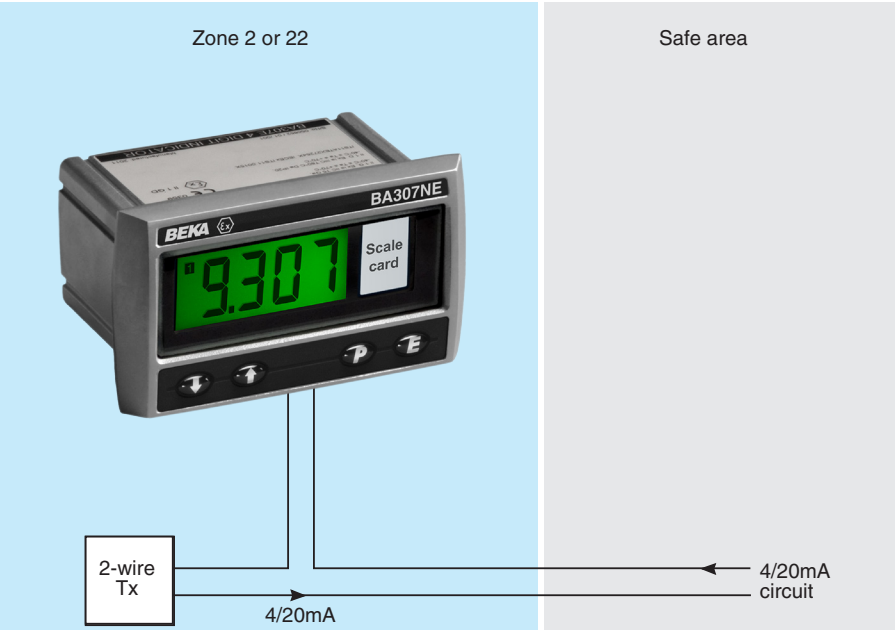
	Please specify
Model number	BA307E-SS
Display mode	Linear, root or linear iser*
Display at:	
4.000mA	XXXX
20.000mA	XXXX

*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.*



Shown with optional backlight - loop powered

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 linearliser.**
- **3 year guarantee**

www.beka.co.uk/ba307ne

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.

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Tel. (01462) 438301 Fax (01462) 453971
e-mail sales@beka.co.uk www.beka.co.uk

SPECIFICATION

Input

Current	4 to 20mA HART® transparent
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 *(Special conditions permit installation in Ex n, Ex e, Ex p and Ex tc enclosures)*

Code	Group II Category 3GD Ex nA ic IIC T5 Gc Ex ic tc IIIC T80°C Dc -40°C ≤ Ta ≤ 70°C
Cert. No.	ITS14ATEX48028X

International IECEx

Code	Ex nA ic IIC T5 Gc Ex ic tc IIIC T80°C Dc -40°C ≤ Ta ≤ 70°C
Cert. No.	IECEx ITS 14.0026X

USA & Canada ETL & cETL

Code	Class I, Zone 2, AEx nA ic IIC T5 Gc Zone 22, AEx ic tc IIIC T80°C Dc -40°C ≤Ta ≤ 60°C	USA
	Ex nA ic IIC T5 Gc: Ex n IIC T5 Gc Ex ic tc IIIC T80°C Dc -40°C ≤ Ta ≤ 60°C	Canada
ETL control No.	4008610	

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 2014/30/EU

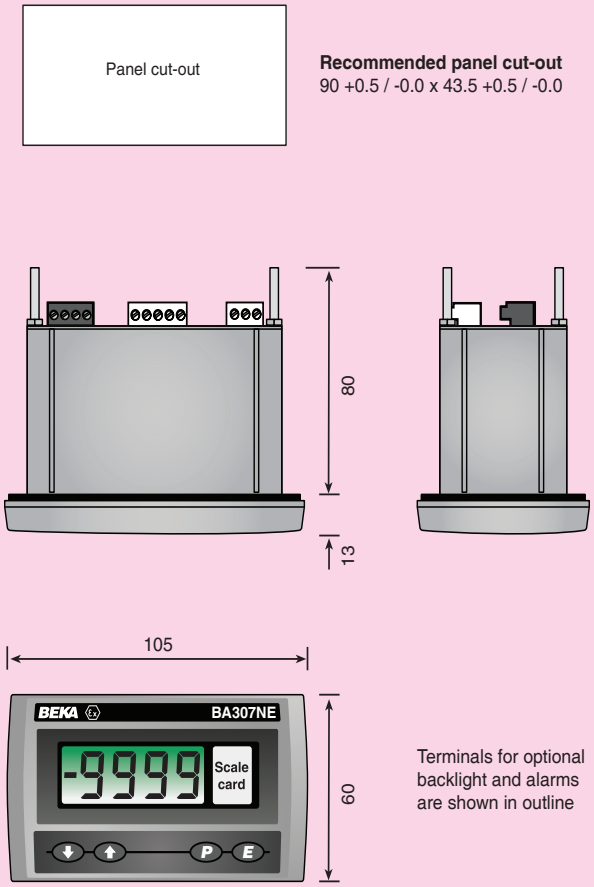
Mechanical

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

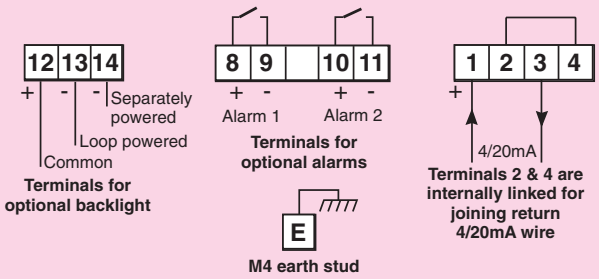
Accessories

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

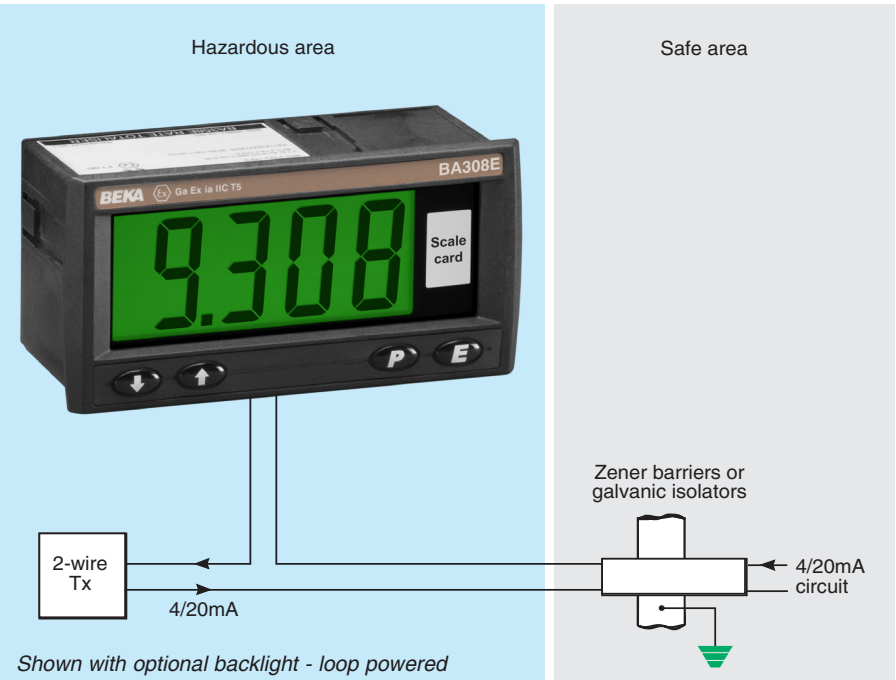
	Please specify
Model number	BA307NE
Display mode	Linear, root or linearisers*
Display at:	
4.000mA	XXXX
20.000mA	XXXX

*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 if required
Tag	Legend if 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.*



Shown with optional backlight - loop powered

BA308E

2-wire 4/20mA 4 digit indicator

Intrinsically safe for use in all gas & dust hazardous areas

- **Loop powered only 1.2V drop.**
- **4 digit 34mm high display.**
- **Intrinsically safe ATEX, FM, cFM & IECEx.**
- **Optional backlight & alarms.**
- **Easy on-site scale card installation.**
- **IP66 front**
- **Root extractor and 16 segment lineariser.**
- **144 x 72mm DIN enclosure.**
- **3 year guarantee**

www.beka.co.uk/ba308e

The BA308E loop powered 4/20mA indicator is a fourth generation instrument that is electrically and mechanically compatible with the earlier BA308C, but has a much larger full 4 digit display providing maximum visibility from a 144 x 72mm instrument. The new model has guaranteed performance between -40 & 70°C, dust certification and an even shorter enclosure depth than its predecessor. The scale card can easily be marked to show the units of measurement and be installed on-site without dismantling the indicator enclosure or removing it from the panel. If the units of measurement are not specified when the indicator is ordered, a blank scale card will be fitted.

The main application of the BA308E is to display a measured variable in meaningful engineering units within a hazardous area. The zero and span of the display are independently adjustable allowing the indicator to be calibrated to display any linear variable represented by the 4/20mA signal. A root extractor and an adjustable sixteen segment lineariser enables the indicator to display flow and non-linear variables such as tank level in linear engineering units. For weighing applications a tare function is included.

A bold 34mm high 4 digit display provides maximum contrast and has a very wide viewing angle, allowing the BA308E indicator 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 points and a negative sign, may be configured to display any variable between -9999 and 9999.

IP66 front panel protection and a neoprene gasket to seal the joint between the indicator and the panel make the instrument suitable for use in areas that will be cleaned with a hose. To simplify installation and maintenance, the indicator has a removable terminal block allowing panel wiring to be completed before the BA308E indicator is installed.

International intrinsic safety certification permits the BA308E to be installed throughout the world. The 4/20mA input terminals comply with the requirements for *simple apparatus* which, together with the low voltage drop, allow the indicator to be connected in series with most intrinsically safe 4/20mA loops. The BA308E may also be installed in dust hazardous areas. All input safety parameters are the same or greater than those for the preceding BA308C, thus allowing the BA308E to safely replace the earlier model.

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 is 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 and field 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 outputs may be independently conditioned as high or low alarms with normally open or closed outputs. Annunciators on the display show the status of both alarm outputs.

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

Other models in this range include the BA328E which has a similar specification with five 29mm high digits and a 31 segment bargraph.

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Tel. (01462) 438301 Fax (01462) 453971
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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 loop powered backlight.
Overrange	±200mA or ±30V will not damage the indicator.

Display

Type	Liquid crystal, non-multiplexed 4 digits 34mm 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 decimal point
Direction	Display may increase or decrease with increasing 4/20mA input.
Reading rate	2 per second
Overange	9999 or -9999 with all decimal points flashing.

Push buttons *(Function in display mode)*

▼	Shows display with 4mA input
▲	Shows display with 20mA input
'P'	Displays input in mA or 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 ±1digit
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.

Intrinsic safety

Europe ATEX

Code	Group II Category 1GD Ex ia IIC T5 Ga Ex ia IIIC T80°C Da IP20 Tamb = -40 to 70°C
Input parameters	
Ui	30V dc
Ii	200mA
Pi	0.84W
Output parameters	Complies with requirements for *simple apparatus.*
Cert. No.	ITS11ATEX27254X (Special conditions only apply for use in Group IIIC conductive dusts)

USA FM

Standard	3610 Entity
Code	CL I: Div 1 Gp A, B, C, & D T5 @ 70°C
Standard	3611 Nonincendive
Code	CL I, II, III: Div 2 Gp A, B, C, D, E, F & G T5 @ 70°C
File	3041487

Canada cFM

File	3041487C

International IECEx

Code	Ex ia IIC T5 Ga Ex ia IIIC T80°C Da IP20 Tamb = -40 to 70°C
Cert. No	IECEx ITS11.0015X (Special conditions only apply for use in Group IIIC conductive dusts)

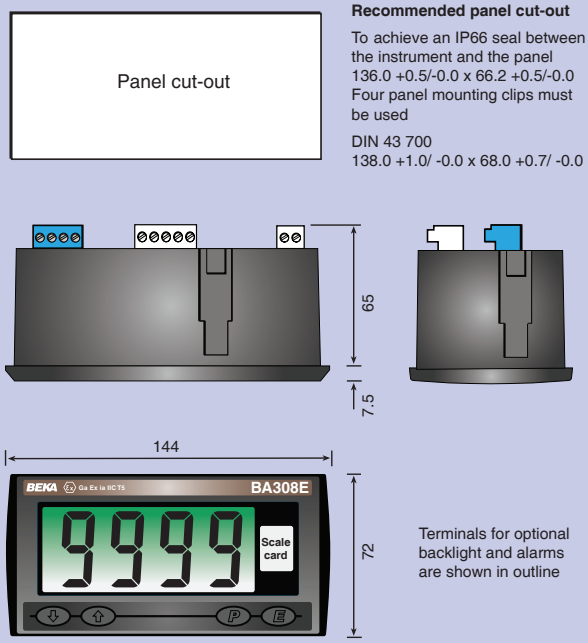
Environmental

Operating temp	-40 to 70°C
Storage temp	-40 to 85°C
Humidity	to 95% at 40°C noncondensing
Vibration	Report available
Enclosure	Front IP66, rear IP20
EMC	Complies with EMC Directive 2014/30/EU

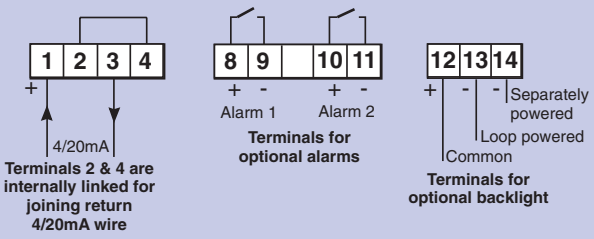
Mechanical

Terminals	Screw clamp for 0.5 to 1.5mm^2 cable, removable termial blocks.
Weight	0.35kg

DIMENSIONS (mm)



TERMINAL CONNECTIONS



Accessories

Backlight	Green, may be loop or separately powered
Loop powered	Indicator input voltage 5V
Separately powered	11V at 35mA from IS interface
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 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 26 common units of measurement and four blanks.
Tag legend	Specified tag number or application thermally printed onto rear of the instrument.

HOW TO ORDER

	Please specify
Model number	BA308E
Display mode	Linear, root or lineariser*
Display at:	
4.000mA	XXXX
20.000mA	XXXX

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

Accessories	**Please specify if required**
Display backlight	Backlight
Dual alarms	Alarms
Scale card	Legend required
Tag	Legend required

* 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.



Shown with optional backlight - loop powered

BA324G-SS-PM 2-wire 4/20mA 5 digit indicator

Intrinsically safe for use in Ex e, Ex p or Ex t panel enclosures and in harsh environments.

- **IP66 stainless steel indicator front maintains Ex e, Ex p or Ex t panel enclosure certification.**
- **Intrinsically safe ATEX and IECEx certification.**
- **Loop powered only 1.2V drop.**
- **5 digit 29m high display & 31 segment bargraph.**
- **Optional backlight & alarms.**
- **Root extractor, lineariser and tare function.**
- **Easy scale card installation on-site.**
- **3 year guarantee**

beka.co.uk/ba324g-ss-pm

The BA324G-SS-PM loop powered 4/20mA indicator is an intrinsically safe panel mounting instrument with a large 5 digit display. It has a rugged, impact resistant IP66 stainless steel front allowing it to be safely mounted in an Ex e, Ex p or Ex t panel enclosure.

IECEx and ATEX intrinsic safety gas and dust certification permit world wide installation. The 4/20mA input terminals comply with the requirements for *simple apparatus* which, together with the low voltage drop, allow the indicator to be connected in series with most intrinsically safe 4/20mA loops.

Main application of the BA324G-SS-PM is to display a measured variable in engineering units when mounted in an Ex e, Ex p or Ex t panel enclosure or cubicle. The front of the indicator has IECEx and ATEX impact and ingress certification allowing it to be installed in a certified panel enclosure without invalidating the enclosure's certification. The rugged front and IP66 protection also make the indicator ideal for intrinsically safe applications in marine environments or where the front of the instrument is likely to be impacted.

A large 29mm high 5 digit display and 31 segment bargraph provide maximum contrast and have a very wide viewing angle, allowing the BA324G-SS-PM indicator to be easily read in most lighting conditions over a wide temperature range. An optional factory fitted backlight is available for installations in poorly illuminated areas. The five digits, with four decimal points and a negative sign, may be configured to display any variable between -99999 and 99999.

Display backlighting 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 is required and the indicator input remains compliant with the requirements for *simple apparatus*. Powering from a separate supply produces a slightly brighter backlight but requires an additional 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 outputs may be independently conditioned as high or low alarms with normally open or closed outputs. Annunciators on the display show the status of both alarms.

The scale card which shows units of measurement and tag information slides into an internal slot and can easily be changed on-site. New instruments can be supplied with the scale card printed to show customer specified information for no additional charge, if this is not requested a blank card is fitted which can easily be marked on-site.

A Zener barrier or galvanic isolator is not required when the indicator is installed in an Ex pxb, Ex pzc or Ex t panel enclosure. See Application Guide AG300 for details.

BEKA associates

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SPECIFICATION

Input

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

Display

Type	Liquid crystal, non-multiplexed 5 digits 29mm high
Span	Adjustable between 0 & ±99999 for a 4/20mA input
Zero	Adjustable between 0 & ±99999 with 4mA input
Decimal point	1 of 4 positions or absent
Polarity	Automatic minus sign
Zero blanking	Blanked apart from 0 in front of decimal point
Direction	Display may increase or decrease with increasing 4/20mA input.
Reading rate	2 per second
Bargraph	31 segments 80mm long
Overrange	99999 or -99999 with all decimal points flashing

Push buttons *(Function in display mode)*

▼	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 ±1digit
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.

Intrinsic safety

Europe ATEX

Code	Group II Category 1GD Ex ia IIC T5 Ga Ex ia IIIC T80°C Da IP66 -40°C ≤ Ta ≤ 70°C
Input parameters	
Ui	30V dc
Ii	200mA
Pi	0.84W
Output parameters	Comply with requirements for *simple apparatus.*
Cert. No.	ITS11ATEX27253X (Special conditions only apply for Zone 0)

International IECEx

Code	Ex ia IIC T5 Ga Ex ia IIIC T80°C Da IP66 -40°C ≤ Ta ≤ 70°C
Parameters	As ATEX
Cert. No.	IECEx ITS 11.0014X (Special conditions only apply for Zone 0)

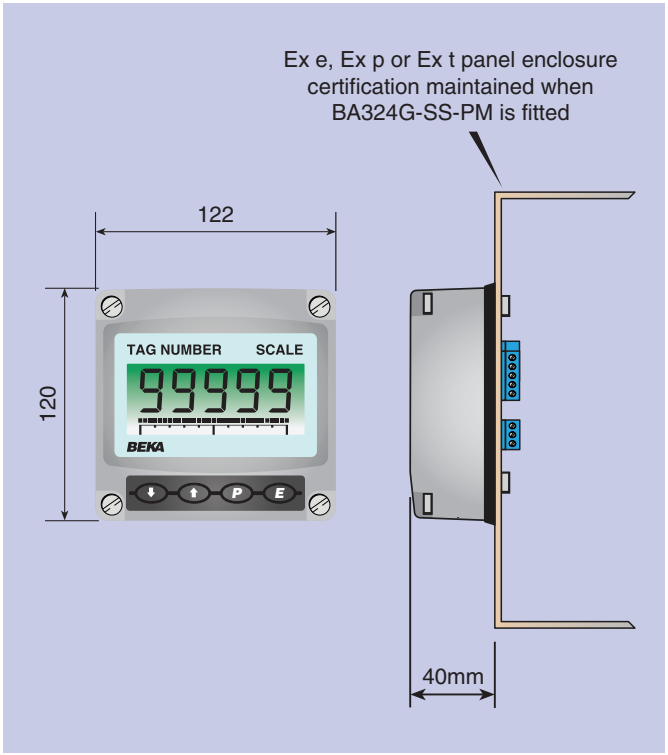
Environmental

Operating temp	-40 to +70°C
Storage temp	-40 to +85°C
Humidity	to 95% at 40°C noncondensing
EMC	Complies with EMC Directive 2014/30/EU

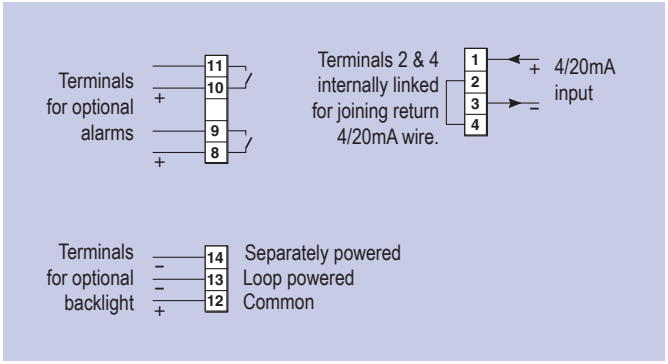
Mechanical

Enclosure	
Material	316 stainless steel
Ingress protection	IP66
Impact protection	Enclosure 7J, Window 4J
Weight	1.2.kg
Scale card	Slide-in card showing units of measurement and tag information through display window.

DIMENSIONS (mm)



TERMINAL CONNECTIONS



Accessories

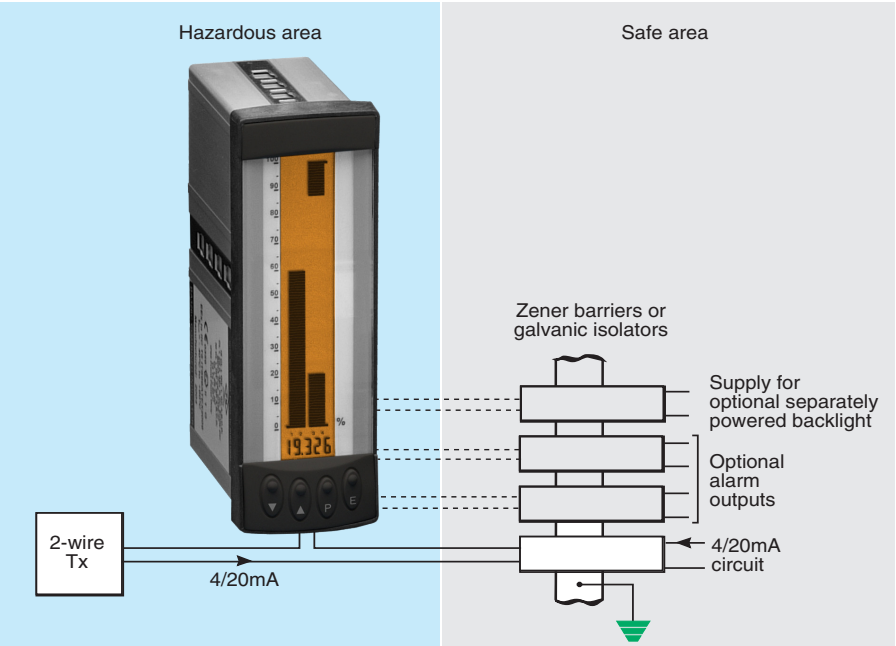
Backlight	Green, may be loop or separately powered
Loop powered	Indicator input voltage 5V
Separately powered	11V at 35mA from IS interface
Alarms	Two alarm outputs each of which may be independently configured as a high or low alarm contact with a NO or NC output.
Output	Isolated, voltage free solid state switch complying with requirements for *simple apparatus*.
Ron	5Ω + 0.7V max
Roff	1MΩ min

HOW TO ORDER

	Please specify	
Model number	BA324G-SS-PM	
Display mode	Linear, root or lineariser*	
Display at:		
4.000mA	XXXX	Include position of decimal point & sign if negative.*
20.000mA	XXXX	

Accessories	**Please specify if required**
Display backlight	Backlight
Dual alarms	Alarms
Scale card marking	
Units	Legend required
Tag	Legend required

** Will be set to display 0.00 at 4mA and 100.00 at 20mA with a linear display if calibration information is not supplied. Can easily be recalibrated on-site.*



Shown with optional alarms and separately powered display backlight

BA326C

2-wire 4/20mA analogue & digital indicator

Intrinsically safe for use in all gas hazardous areas

- **Loop powered only 1.2V drop.**
- **Optimum visibility**
- **Intrinsically safe ATEX & IECEx certification.**
- **100 segment bargraph plus digital display.**
- **Optional:**
  Display backlight
  Alarms
  Linearisers
- **144 x 48mm DIN enclosure with IP65 front.**
- **3 year guarantee**

www.beka.co.uk/ba326c

The BA326C is an intrinsically safe loop powered indicator that displays the 4/20mA input current on both a 100 segment analogue bargraph and in accurate engineering units on a digital display.

Main application of the BA326C is to display a measured variable or control signal in a hazardous process area. For level and similar measurements the combination of an analogue and digital display provides magnitude and trend information from the bargraph, plus accurate readings in engineering units from the digital display. The relative magnitude of variables can be effectively presented by mounting BA326C indicators side by side. An optional 16 point lineariser enables the BA326C to display non linear variables in linear engineering units.

Control and calibration of the combined indicator is performed via the front panel tactile push buttons. Using these buttons the operator can temporarily display the measured variable as a percentage of span, the input current in mA and the numerical display at 4 and 20mA input. All the calibration functions are contained in easy to understand menus which may be protected by a four digit user selectable security code.

Intrinsic safety certification to the ATEX Directive allows installation throughout Europe. The 4/20mA input terminals comply with the requirements for *simple apparatus* allowing the BA326C to be connected in series with most certified intrinsically safe circuits without the need for an additional system certificate. This, together with the low voltage drop, makes the BA326C very easy to apply. The optional backlight is electrically segregated from the indicator and has been certified as a separate intrinsically safe circuit which may be powered from a Zener barrier or galvanic isolator. Similarly, the two optional alarms are galvanically isolated and each is certified as a separate intrinsically safe circuit complying with the requirements for *simple apparatus.* IECEx certification permits international installation.

The analogue bargraph which contains 100 segments, provides a rapid indication of the input current, enabling an operator to quickly assess the magnitude and trend of a process variable. The bargraph displays zero to full scale for a 4 to 20mA input, but may be calibrated to show deviation from any input current. Either a column or a single segment display may be selected and if only the analogue display is required, the digital display may be disabled.

Separately powered backlighting is available as an option. The orange output enhances daylight contrast and enables the display to be read when the instrument is installed in a poorly illuminated area.

Optional alarms provide two galvanically isolated solid state outputs which may be independently programmed. For easy comparison with the 4/20mA input, both setpoints are displayed on a second bargraph with annunciators showing the alarm status. Each alarm can control a certified hazardous area load or the output may be transferred to the safe area via a Zener barrier or galvanic isolator.

The IP65 front panel is a robust, easy to clean Noryl moulding surrounding an armoured glass window. A captive neoprene gasket provides a seal between the instrument enclosure and the panel.

BEKA associates

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Tel. (01462) 438301 Fax (01462) 453971
e-mail sales@beka.co.uk www.beka.co.uk

SPECIFICATION

Input

Current	4 to 20mA
Voltage	Less than 1.2V at 20°C Less than 1.3V at -20°C
Overrange	±200mA will not cause damage

Display

Type	Liquid crystal
Reading rate	
Analogue	4 per second
Digital	2 per second
Analogue	95mm long 100 segment column or single segment.
Range	0 to100% for 4 to 20mA input
Digital	4½ digit (-19999 to 19999) 5.5mm high; selectable dummy trailing zero extends display range to (-19990 to 99990).
Span	Adjustable between 0 & ±19999
Zero	Adjustable between ±19999 with 4mA input
Decimal point	1 of 5 positions or absent
Polarity	Automatic minus sign
Direction	Display may increase or decrease with increasing current.
Over & underrange	4 least significant digits are blanked

Push-buttons (Function in operating mode)

▲ button	Shows display with 4mA input
▼ button	Shows display with 20mA input
P button	Displays input current in mA, or as a percentage of span.

Accuracy at 20°C

Analogue	±0.5%	
Digital	Linear	±0.02% ±1 digit
	Root extracting	16µA at input ±1 digit
Temp. effect		
Analogue	±0.5% between -20 & 60°C	
Digital		
Zero	Less than 25ppm/°C	
Span	Less than 50ppm/°C	
Series mode	Less than 0.5% error for 1mA pk to pk 50Hz or 60Hz signal.	

Intrinsic safety

Europe ATEX

Code	Group II Category 1 G Ex ia IIC T5 Ga Ta = -40 to 60°C	
Cert. No	ITS99ATEX2009X	
Output parameters		
Uo	1.1V dc	Complies with
Io	70mA dc	requirements for
Po	23mW	*simple apparatus*
Location	Zone 0, 1 or 2	
Installation	The BA326C may be connected to any certified intrinsically safe circuit whose output parameters do not exceed:	
	Uo	28V
	Io	200mA
	Po	0.84W

International IECEx

Standard	IEC 60079-0:2004
Code	Ex ia IIC T5 Ga Ta = -40 to 60°C
Cert. No.	IECEx ITS 08.0003X

Environmental

Operating temp	-20 to 60°C (Certified for use at -40°C)
Storage temp	-40 to 85°C
Humidity	To 95% at 40°C non-condensing
Enclosure	Front IP65 rear IP20
EMC	In accordance with EU Directive 2004/108/EC, full report available.

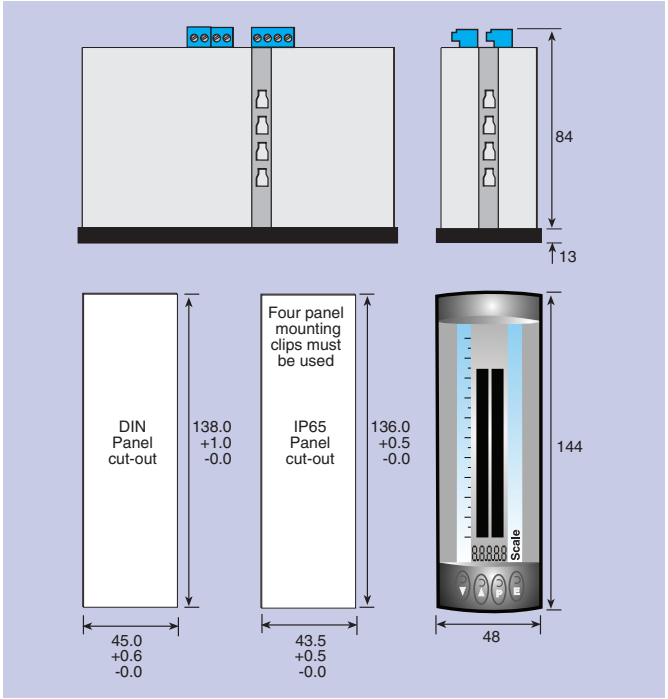
Mechanical

Terminals	Blue removable terminal block for 0.5 to 1.5mm^2 cables
Weight	0.5kg

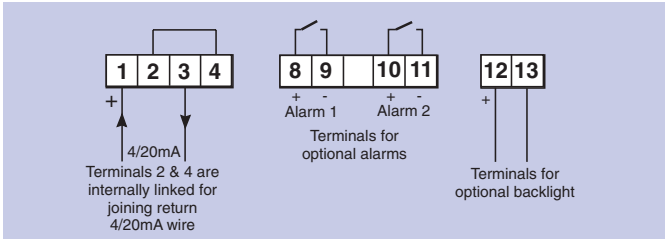
Accessories

Separately powered backlight	LED backlight powered from 28V 300Ω Zener barrier or galvanic isolator.
Alarms	Two independent alarms each of which may be programmed for high or low operation with a NC or NO output.

DIMENSIONS (mm)



TERMINAL CONNECTIONS



Outputs	Isolated single pole solid state switch: Ron less than 5Ω +0.6V Roff greater than 180k
Certification	Both outputs comply with the requirements for *simple apparatus*.
Lineariser	Provides 16 fully adjustable straight lines which may be positioned to compensate for almost any non-linear variable.
Typeset scale card	Blank scale card fitted to each indicator can be supplied typeset with units of measurement.
Bargraph scale	Blank scale fitted to each indicator can be supplied typeset with analogue scale.
Tag number	Thermally printed number on rear of the instrument.

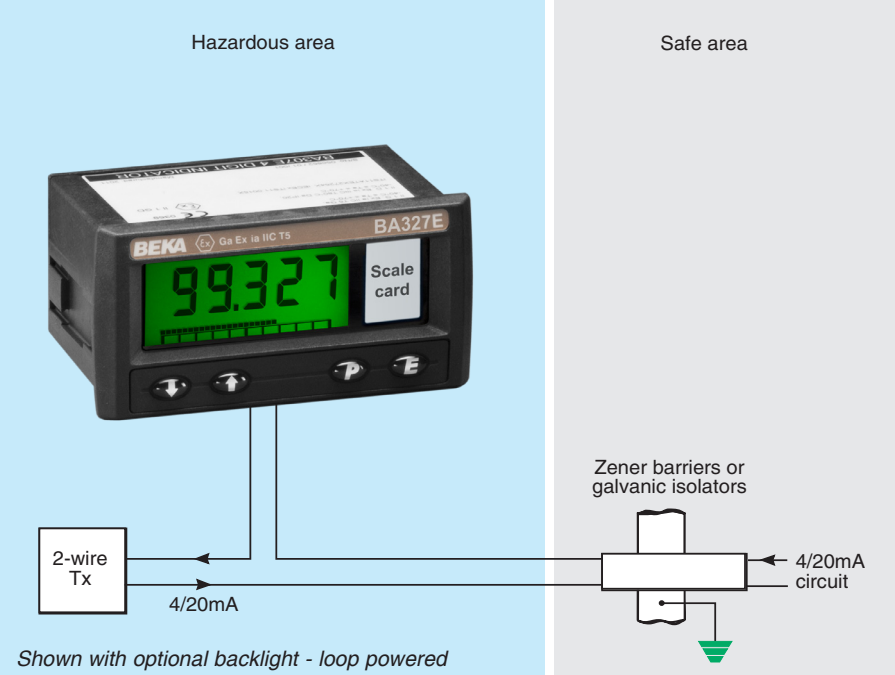
HOW TO ORDER

	Please specify:
Model number	BA326C
Display mode	Linear or root extracting*
Digital display	
at 4mA	XXXX* Include position of decimal point, dummy
at 20mA	XXXX* zero if required & sign if negative

Accessories	**Please specify if required**
Display backlight	Separately powered backlight
Alarms	Alarms#
Lineariser	Lineariser#
Scale card	Legend
Bargraph scale	Required scale graduations
Tag number	Legend

* Will be set to display 0.00 at 4mA and 100.00 at 20mA with a linear display if calibration information is not supplied.

Contact BEKA if calibration of accessories is required.



Shown with optional backlight - loop powered

BA327E

2-wire 4/20mA 5 digit indicator

Intrinsically safe for use in all gas & dust hazardous areas

- **Loop powered only 1.2V drop.**
- **5 digit 11mm high display & 31 segment bargraph.**
- **Intrinsically safe ATEX, FM, cFM & IECEx.**
- **Optional backlight & alarms.**
- **Easy on-site scale card installation.**
- **IP66 front**
- **Root extractor and 16 segment lineariser.**
- **96 x 48mm DIN enclosure.**
- **3 year guarantee**

www.beka.co.uk/ba327e

The BA327E loop powered 4/20mA indicator is a fourth generation instrument that is electrically and mechanically compatible with the earlier industry standard BA327C, but has a larger full 5 digit display plus a 31 segment analogue bargraph providing maximum visibility from a 96 x 48mm instrument. The new model has guaranteed performance between -40 & 70°C, dust certification and an even shorter enclosure depth than its predecessor. The scale card can easily be marked to show the units of measurement and be installed on-site without dismantling the indicator enclosure or removing it from the panel. If the units of measurement are not specified when the indicator is ordered, a blank scale card will be fitted.

The main application of the BA327E is to display a measured variable in meaningful engineering units within a hazardous area. The zero and span of the display are independently adjustable allowing the indicator to be calibrated to display any linear variable represented by the 4/20mA signal. A root extractor and an adjustable sixteen segment lineariser enables the indicator to display flow and non-linear variables such as tank level in linear engineering units. For weighing applications a tare function is included.

The bold 11mm high 5 digit display and 31 segment bargraph provide maximum contrast and have a very wide viewing angle, allowing the BA327E indicator 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 five digits, with four decimal points and a negative sign, may be configured to display any variable between -99999 and 99999.

IP66 front panel protection and a neoprene gasket to seal the joint between the indicator and the panel make the instrument suitable for use in areas that will be cleaned with a hose. To simplify installation and maintenance, the indicator has a removable terminal block allowing panel wiring to be completed before the BA327E indicator is installed.

International intrinsic safety certification permits the BA327E to be installed throughout the world. The 4/20mA input terminals comply with the requirements for *simple apparatus* which, together with the low voltage drop, allow the indicator to be connected in series with most intrinsically safe 4/20mA loops. The BA327E may also be installed in dust hazardous areas. All input safety parameters are the same or greater than those for the preceding BA327C, thus allowing the BA327E to safely replace the earlier model.

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 is required and the indicator input remain compliant with the requirements for *simple apparatus*. Powering from a separate supply produces a brighter backlight but requires an additional intrinsically safe interface and field 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 conditioned as high or low alarms with normally open or closed outputs. Annunciators on the display show the status of both alarm outputs.

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

Other models in this range include the BA307E which has a similar specification with four larger 15mm high digits without a bargraph.

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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 loop powered backlight.
Overrange	±200mA or ±30V will not damage the indicator.

Display

Type	Liquid crystal, non-multiplexed 5 digit 11mm high & 31 segment bargraph.
Span	Adjustable between 0 & ±99999 for a 4/20mA input.
Zero	Adjustable between 0 & ±99999 with 4mA input.
Decimal point	1 of 4 positions or absent
Polarity	Automatic minus sign
Zero blanking	Blanked apart from 0 in front of decimal point
Direction	Display may increase or decrease with increasing 4/20mA input.
Reading rate	2 per second
Bargraph	31 segments 43mm long
Overange	99999 or -99999 with all decimal points flashing.

Push buttons *(Function in display mode)*

▼	Shows display with 4mA input
▲	Shows display with 20mA input
'P'	Displays input in mA or 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 ±1digit
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.

Intrinsic safety

Europe ATEX

Code	Group II Category 1GD Ex ia IIC T5 Ga Ex ia IIIC T80°C Da IP20 Tamb = -40 to 70°C
Input parameters	
Ui	30V dc
Ii	200mA
Pi	0.84W
Output parameters	Complies with requirements for *simple apparatus*.
Cert. No.	ITS11ATEX27254X (Special conditions only apply for use in Group IIIC conductive dusts)

USA FM

Standard	3610 Entity
Code	CL I: Div 1 Gp A, B, C, & D T5 @ 70°C
Standard	3611 Nonincendive
Code	CL I, II, III: Div 2 Gp A, B, C, D, E, F & G T5 @ 70°C
File	3041487

Canada cFM

File	3041487C

International IECEx

Code	Ex ia IIC T5 Ga Ex ia IIIC T80°C Da IP20 Tamb = -40 to 70°C
Cert. No	IECEx ITS11.0015X (Special conditions only apply for use in Group IIIC conductive dusts)

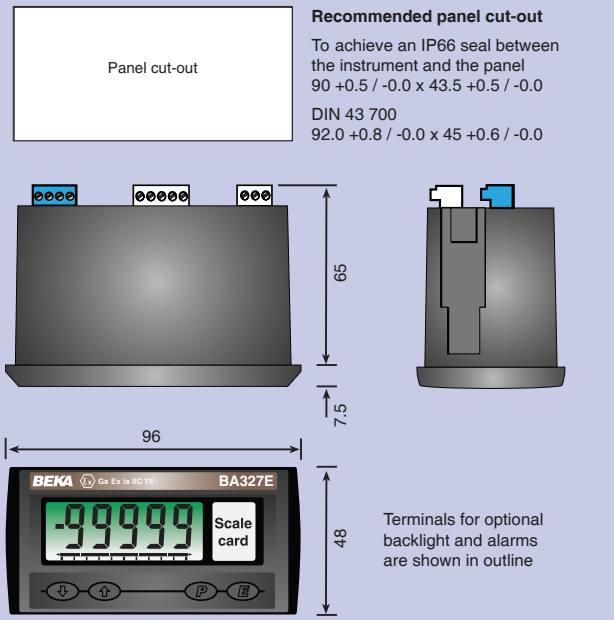
Environmental

Operating temp	-40 to 70°C
Storage temp	-40 to 85°C
Humidity	to 95% at 40°C noncondensing
Vibration	Report available
Enclosure	Front IP66, rear IP20
EMC	Complies with EMC Directive 2014/30/EU

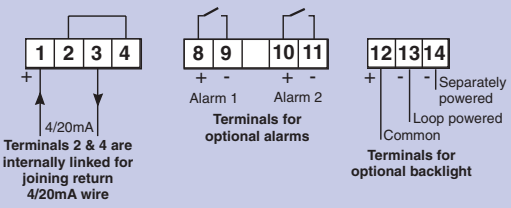
Mechanical

Terminals	Screw clamp for 0.5 to 1.5mm^2 cable, removable terminal blocks.
Weight	0.2kg

DIMENSIONS (mm)



TERMINAL CONNECTIONS



Accessories

Backlight	Green, may be loop or separately powered.
Loop powered	Indicator input voltage 5V max.
Separately powered	9V at 22.5mA from IS interface
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 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 26 common units of measurement and four blanks.
Tag legend	Specified tag number or application thermally printed 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

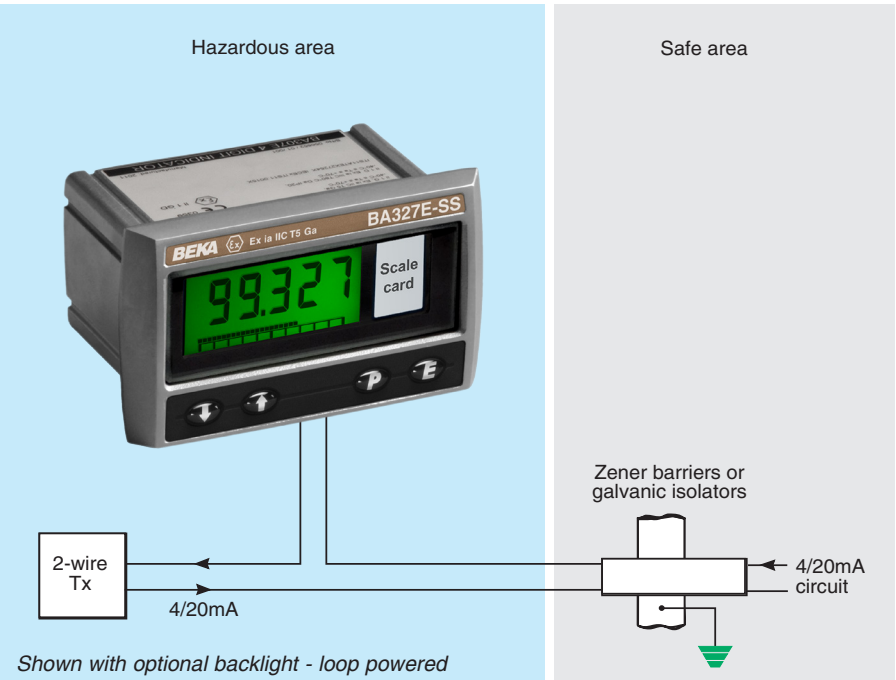
HOW TO ORDER

	Please specify
Model number	BA327E
Display mode	Linear, root or lineariser*
Display at:	
4.000mA	XXXXX
20.000mA	XXXXX

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

Accessories	**Please specify if required**
Display backlight	Backlight
Dual alarms	Alarms
Scale card	Legend required
Tag	Legend required
Rear cover and sealing kit	BA495

** Will be set to display 0.00 at 4mA and 100.00 at 20mA with a linear display if calibration information is not supplied. Can easily be recalibrated on-site.*



Shown with optional backlight - loop powered

BA327E-SS

Rugged 2-wire 4/20mA 5 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.**
- **5 digit 11mm high display & 31 segment bargraph.**
- **Optional backlight & alarms.**
- **Easy on-site scale card installation.**
- **Root extractor and 16 segment lineariser.**
- **3 year guarantee**

www.beka.co.uk/ba327e-ss

The BA327E-SS intrinsically safe, panel mounting loop powered Indicator has a rugged stainless steel enclosure 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 5 digit display plus a 31 segment bargraph 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 BA327E-SS is to display a measured variable in engineering units when mounted in an Ex e or Ex p 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 BA327E-SS ideal for intrinsically safe applications in marine environments or where the front of the instrument is likely to be impacted.

The bold 11mm high 5 digit display and 31 segment bargraph provides maximum contrast and have a wide viewing angle, allowing the BA327E-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 five digits, with four decimal point positions and a negative sign, may be configured to display any variable between -99999 and 99999.

International intrinsic safety certification allow the BA327E-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 intrinsically safe circuits.

For applications in combustible dusts the BA327E-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 BA327E-SS from the panel or opening the instrument enclosure.

Application Guide AG300 explains how the BA327E-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 BA307E-SS which has a similar specification with four 15mm high digits.

BEKA associates

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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 loop powered
backlight.	
Over range	±200mA or ±30V will not damage the indicator

Display

Type	Liquid crystal, non-multiplexed 5 digits 11mm high & 31 segment bargraph.
Span	Adjustable between 0 & ±99999 for a 4/20mA input.
Zero	Adjustable between 0 & ±99999 with 4mA input
Decimal point	1 of 4 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	99999 or -99999 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

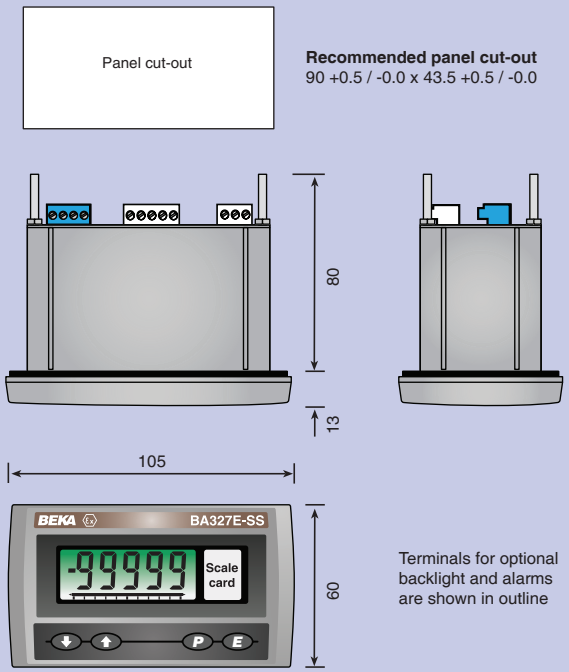
Mechanical

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

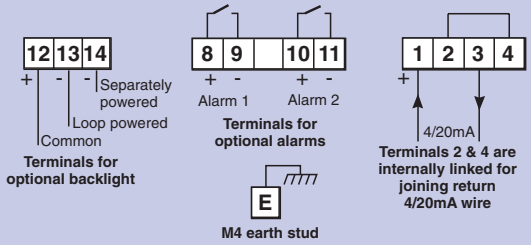
Accessories

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

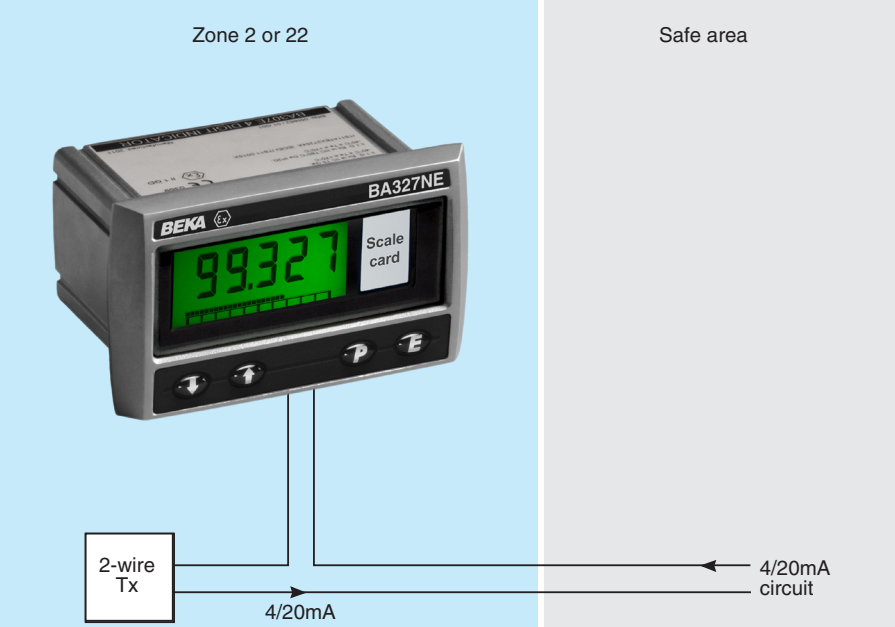
HOW TO ORDER

	Please specify
Model number	BA327E-SS
Display mode	Linear, root or lineariser*
Display at:	
4.000mA	XXXXX
20.000mA	XXXXX

*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 0.00 at 4mA and 100.00 at 20mA with a linear display if calibration information is not supplied. Can easily be recalibrated on-site.*



Shown with optional backlight - loop powered

BA327NE

Rugged 2-wire 4/20mA 5 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.**
- **5 digit 11mm high display & 31 segment bargraph.**
- **Optional backlight & alarms.**
- **Easy on-site scale card installation.**
- **Root extractor and 16 segment lineariser.**
- **3 year guarantee**

www.beka.co.uk/ba327ne

The BA327NE loop powered, panel mounting Indicator has a rugged stainless steel enclosure 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 5 digit display plus a 31 segment analogue bargraph 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 BA327NE 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 11mm high 5 digit display and 31 segment bargraph provide maximum contrast and have a wide viewing angle, allowing the BA327NE indicator 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 five digits, with four decimal point positions and a negative sign, may be configured to display any variable between -99999 and 99999.

ATEX, IECEx and ETL Ex nA non sparking certification allows the BA327NE, when installed in an Ex n, Ex p or Ex e panel to be located in a Zone 2 gas hazardous area without the need for Zener barriers or galvanic isolators. For Zone 2 applications the BA327NE offers a less expensive alternative to intrinsically safe and flameproof indicators.

Ex tc dust certification also allows the BA327NE, when installed in an Ex tc panel enclosure, to be locateded 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 BA327NE 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 BA307NE which has a similar specification with four 15mm high digits.

BEKA associates

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SPECIFICATION

Input

Current	4 to 20mA HART® transparent
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 5 digit 11mm high & 31 segment bargraph.
Span	Adjustable between 0 & ±99999 for a 4/20mA input.
Zero	Adjustable between 0 & ±99999 with 4mA input
Decimal point	1 of 4 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	99999 or -99999 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	(Special conditions permit installation in Ex n, Ex e, Ex p and Ex tc enclosures)
Code	Group II Category 3GD Ex nA ic IIC T5 Gc Ex ic tc IIIC T80°C Dc -40°C ≤ Ta ≤ 70°C
Cert. No.	ITS14ATEX48028X

International IECEx	
Code	Ex nA ic IIC T5 Gc Ex ic tc IIIC T80°C Dc -40°C ≤ Ta ≤ 70°C
Cert. No.	IECEx ITS 14.0026X

USA & Canada ETL & cETL		
Code	Class I, Zone 2, AEx nA ic IIC T5 Gc Zone 22, AEx ic tc IIIC T80°C Dc -40°C ≤ Ta ≤ 60°C	USA
	Ex nA ic IIC T5 Gc: Ex n IIC T5 Gc Ex ic tc IIIC T80°C Dc -40°C ≤ Ta ≤ 60°C	Canada
ETL control No.	4008610	

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	Front IP66, rear IP20
EMC	Complies with 2014/30/EU

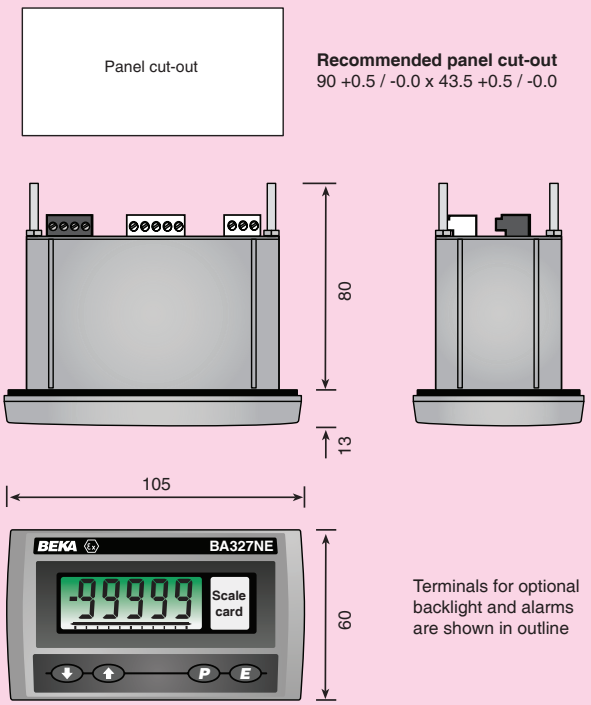
Mechanical

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

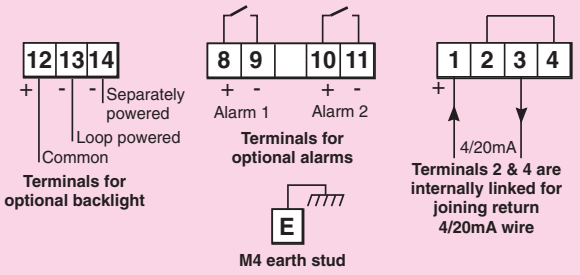
Accessories

Backlight	Green may be loop or separately powered
Loop powered	Indicator input voltage increased to 5V max.
Separately powered	9V at 22mA
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
Ron	5Ω + 0.7V max
Roff	1MΩ min

DIMENSIONS (mm)



TERMINAL CONNECTIONS



Printed scale card	Blank card fitted to each indicator can be supplied printed with specified units of measurement.
Pack of printed scale cards.	Contains 26 common units of measurement and 2 blank cards.
Tag legend	Specified tag number or application information laser etched on rear of instrument.
BA495 rear cover and sealing kit	Provides impact and IP66 protection for rear of instrument. #

 # See accessory datasheet for details

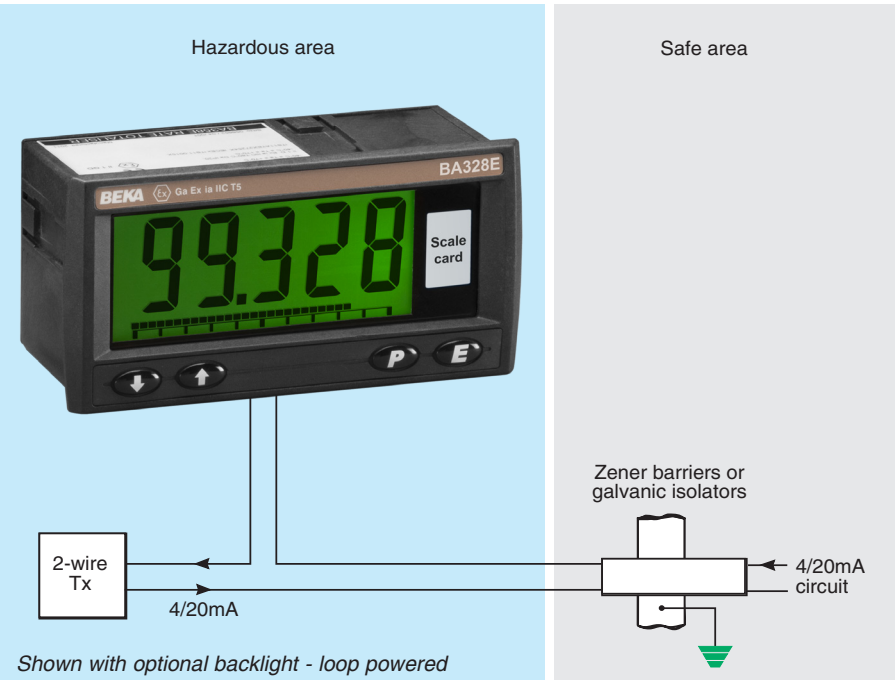
HOW TO ORDER

	Please specify
Model number	BA327NE
Display mode	Linear, root or linearisers*
Display at:	
4.000mA	XXXXX
20.000mA	XXXXX

*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
Rear cover and sealing kit	BA495

** Will be set to display 0.00 at 4mA and 100.00 at 20mA with a linear display if calibration information is not supplied. Can easily be recalibrated on-site.*



Shown with optional backlight - loop powered

BA328E

2-wire 4/20mA 5 digit indicator

Intrinsically safe for use in all gas & dust hazardous areas

- **Loop powered only 1.2V drop.**
- **5 digit 29mm high display & 31 segment bargraph.**
- **Intrinsically safe ATEX, FM, cFM & IECEx.**
- **Optional backlight & alarms.**
- **Easy on-site scale card installation.**
- **IP66 front**
- **Root extractor and 16 segment lineariser.**
- **144 x 72mm DIN enclosure.**
- **3 year guarantee**

www.beka.co.uk/ba328e

The BA328E loop powered 4/20mA indicator is a fourth generation instrument that is electrically and mechanically compatible with the earlier BA328C, but has a much larger full 5 digit display plus a 31 segment analogue bargraph providing maximum visibility from a 144 x 72mm instrument. The new model has guaranteed performance between -40 & 70°C, dust certification and an even shorter enclosure depth than its predecessor. The scale card can easily be marked to show the units of measurement and be installed on-site without dismantling the indicator enclosure or removing it from the panel. If the units of measurement are not specified when the indicator is ordered, a blank scale card will be fitted.

The main application of the BA328E is to display a measured variable in meaningful engineering units within a hazardous area. The zero and span of the display are independently adjustable allowing the indicator to be calibrated to display any linear variable represented by the 4/20mA signal. A root extractor and an adjustable sixteen segment lineariser enables the indicator to display flow and non-linear variables such as tank level in linear engineering units. For weighing applications a tare function is included.

The bold 29mm high 5 digit display and 31 segment bargraph provide maximum contrast and have a very wide viewing angle, allowing the BA328E indicator 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 five digits, with four decimal points and a negative sign, may be configured to display any variable between -99999 and 99999.

IP66 front panel protection and a neoprene gasket to seal the joint between the indicator and the panel make the instrument suitable for use in areas that will be cleaned with a hose. To simplify installation and maintenance, the indicator has a removable terminal block allowing panel wiring to be completed before the BA328E indicator is installed.

International intrinsic safety certification permits the BA328E to be installed throughout the world. The 4/20mA input terminals comply with the requirements for *simple apparatus* which, together with the low voltage drop, allow the indicator to be connected in series with most intrinsically safe 4/20mA loops. The BA328E may also be installed in dust hazardous areas. All input safety parameters are the same or greater than those for the preceding BA328C, thus allowing the BA328E to safely replace the earlier model.

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 is required and the indicator input remain compliant with the requirements for *simple apparatus*. Powering from a separate supply produces a brighter backlight but requires an additional intrinsically safe interface and field 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 outputs may be independently conditioned as high or low alarms with normally open or closed outputs. Annunciators on the display show the status of both alarm outputs.

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

Other models in this range include the BA308E which has a similar specification with four larger 34mm high digits without a bargraph.

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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 loop powered backlight.
Overrange	±200mA or ±30V will not damage the indicator.

Display

Type	Liquid crystal, non-multiplexed 5 digit 29mm high & 31 segment bargraph.
Span	Adjustable between 0 & ±99999 for a 4/20mA input.
Zero	Adjustable between 0 & ±99999 with 4mA input.
Decimal point	1 of 4 positions or absent
Polarity	Automatic minus sign
Zero blanking	Blanked apart from 0 in front of decimal point.
Direction	Display may increase or decrease with increasing 4/20mA input.
Reading rate	2 per second
Bargraph	31 segments 80mm long
Overange	99999 or -99999 with all decimal points flashing.

Push buttons *(Function in display mode)*

▼	Shows display with 4mA input
▲	Shows display with 20mA input
'P'	Displays input in mA or 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 ±1digit
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.

Intrinsic safety

Europe ATEX

Code	Group II Category 1GD Ex ia IIC T5 Ga Ex ia IIIC T80°C Da IP20 Tamb = -40 to 70°C
Input parameters	
Ui	30V dc
Ii	200mA
Pi	0.84W
Output parameters	Complies with requirements for *simple apparatus*.
Cert. No.	ITS11ATEX27254X (Special conditions only apply for use in Group IIIC conductive dusts)

USA FM

Standard	3610 Entity
Code	CL I: Div 1 Gp A, B, C, & D T5 @ 70°C
Standard	3611 Nonincendive
Code	CL I, II, III: Div 2 Gp A, B, C, D, E, F & G T5 @ 70°C
File	3041487

Canada cFM

File	3041487C

International IECEx

Code	Ex ia IIC T5 Ga Ex ia IIIC T80°C Da IP20 Tamb = -40 to 70°C
Cert. No	IECEx ITS11.0015X (Special conditions only apply for use in Group IIIC conductive dusts)

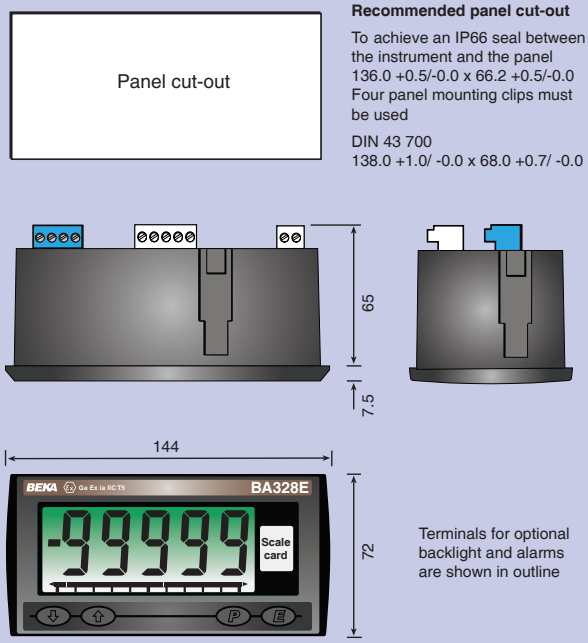
Environmental

Operating temp	-40 to 70°C
Storage temp	-40 to 85°C
Humidity	to 95% at 40°C noncondensing
Vibration	Report available
Enclosure	Front IP66, rear IP20
EMC	Complies with EMC Directive 2014/30/EU

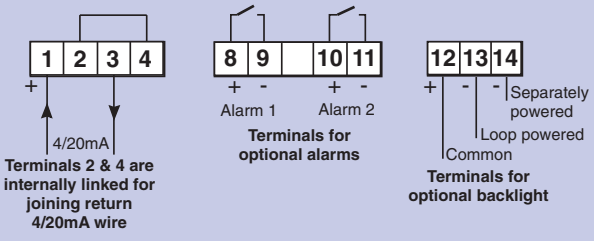
Mechanical

Terminals	Screw clamp for 0.5 to 1.5mm^2 cable, removable.
Weight	0.35kg

DIMENSIONS (mm)



TERMINAL CONNECTIONS



Accessories

Backlight	Green, may be loop or separately powered.
Loop powered	Indicator input voltage 5V max.
Separately powered.	11V at 35mA from IS interface
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 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 26 common units of measurement and four blanks.
Tag legend	Specified tag number or application thermally printed onto rear of the instrument.

HOW TO ORDER

	Please specify
Model number	BA328E
Display mode	Linear, root or lineariser*
Display at:	
4.000mA	XXXXX
20.000mA	XXXXX

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

Accessories	**Please specify if required**
Display backlight	Backlight
Dual alarms	Alarms
Scale card	Legend required
Tag	Legend required

* *Will be set to display 0.00 at 4mA and 100.00 at 20mA with a linear display if calibration information is not supplied. Can easily be recalibrated on-site.*



Shown with optional backlight - loop powered

BA504G-SS-PM Rugged 2-wire 4/20mA 4 digit indicator

General purpose panel mounting for use in harsh environments.

- **Rugged IP66 stainless steel front maintains panel enclosure's IP66 protection.**
- **Loop powered only 1.2V drop.**
- **4 digit 34mm high display.**
- **Optional backlight & alarms.**
- **Root extractor and 16 segment lineariser.**
- **Easy scale card installation on-site.**
- **3 year guarantee**

beka.co.uk/ba504g-ss-pm

The BA504G-SS-PM loop powered 4/20mA indicator is a rugged, general purpose panel mounting instrument with a large 4 digit display. It has an impact resistant IP66 stainless steel front which maintains the integrity of the panel enclosure in which it is mounted.

Main application of the BA504G-SS-PM is to display a measured variable in engineering units within a harsh process area. The zero and span of the display are independently adjustable allowing the indicator to be calibrated to display any linear variable represented by the 4/20mA signal. Root extraction and an adjustable sixteen segment lineariser enable flow and variables such as tank levels to be shown in linear engineering units. For weighing applications a tare function is included.

The large 34mm high 4 digit display provides maximum contrast and has a very wide viewing angle, thus the BA504G-SS-PM indicator is easily read in most lighting conditions. An optional backlight is available for installations in poorly illuminated areas. The four digit display, with three decimal points and a negative sign, may be configured to display any variable between -9999 and 9999.

IP66 and impact protection are provided by a rugged 316 stainless steel front with a 6mm thick armoured glass window and silicone gaskets. Impact and ingress protection have been independently assessed by a UKAS accredited authority.

Display backlighting which may be loop or separately powered is available as a factory fitted option. It provides green background illumination enabing the display to be read at night or in poorly illuminated areas. When powered from the 4/20mA loop, no additional wiring is required but the indicators voltage drop is increased. Powering from a separate supply produces a slightly brighter backlight but requires additional field wiring.

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

The scale card which shows units of measurement and tag information slides into an internal slot and can easily be changed on-site. New instruments can be supplied with the scale card printed to show customer specified information for no additional charge, if this is not requested a blank card is fitted which can easily be marked on-site.

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

Other panel mounting models in this range include the five digit BA524G-SS-PM and the smaller 4 digit BA507E-SS and 5 digit BA527E-SS.

If flammable atmospheres are present the intrinsically safe BA304G-SS-PM has the same features as the BA504G-SS-PM with international gas and dust certification.

BEKA associates

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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 loop powered backlight.
Overrange	±200mA or ±30V will not damage the indicator.

Display

Type	Liquid crystal, non-multiplexed 4 digits 34mm 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 decimal point.
Direction	Display may increase or decrease with increasing 4/20mA input.
Reading rate	2 per second
Overrange	9999 or -9999 with all decimal points flashing.

Push buttons (Function in display mode)

▼	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 ±1digit
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 temp	-40 to +70°C
Storage temp	-40 to +85°C
Humidity	To 95% at 40°C noncondensing
EMC	Complies with EMC Directive 2014/30/EU.

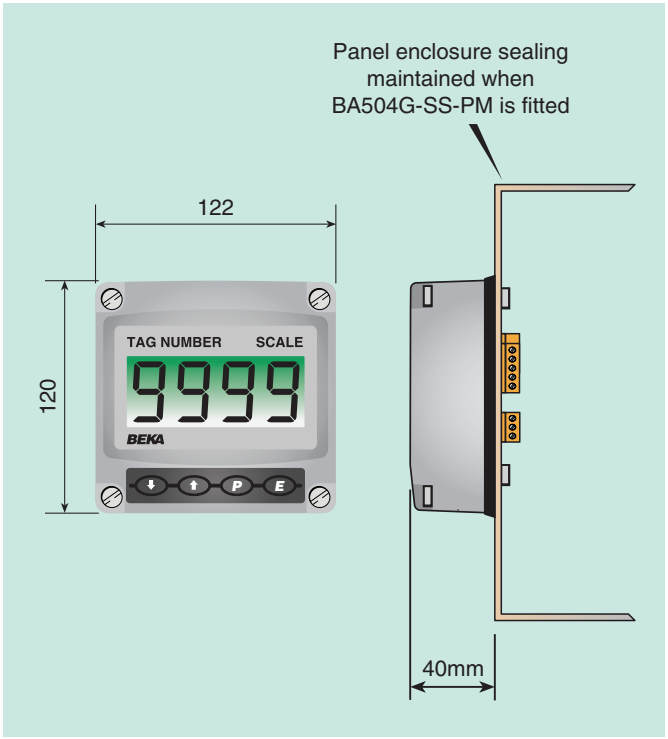
Mechanical

Front of indicator	
Material	316 stainless steel
Ingress protection	IP66
Impact	7J, Window 4J
Rear	IP20
Weight	1.1kg
Terminals	Orange with screw clamp for 0.5 to 1.5mm² cable.
Scale card	Slide-in card showing units of measurement and tag information through display window.

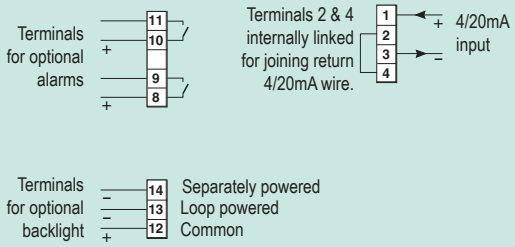
Accessories

Backlight	Green, may be loop or separately powered.
Loop powered	Indicator input voltage increases to 5V
Separately powered	
V supply	11 to 30V dc
I in	35mA

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, voltage free solid state switch
Vmax	40V dc
Imax	200mA
Ron	5Ω + 0.7V max
Roff	1MΩ min

HOW TO ORDER

	Please specify
Model number	BA504G-SS-PM
Display mode	Linear, root or lineariser*
Display at:	
4.000mA	XXXX] Include position of decimal point & sign if negative.*
20.000mA	XXXX]
Scale card marking	
Units	Legend required
Tag	Legend required

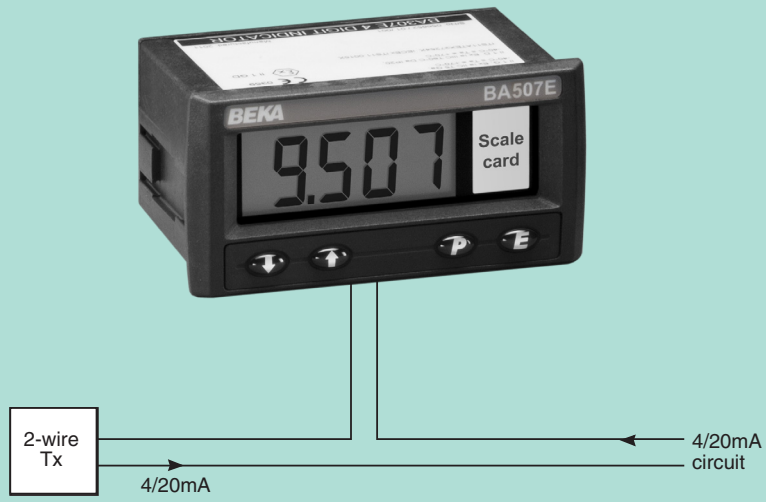
Accessories	**Please specify if required**
Display backlight	Backlight
Dual alarms	Alarms

* 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.

BA507E

2-wire 4/20mA 4 digit indicator

General purpose



- **Loop powered only 1.2V drop.**
- **4 digit 15mm high display.**
- **Optional backlight & alarms.**
- **Easy on-site scale card installation.**
- **IP66 front**
- **Root extractor and 16 segment lineariser.**
- **96 x 48mm DIN enclosure.**
- **3 year guarantee**

www.beka.co.uk/ba507e

The BA507E loop powered 4/20mA indicator is a fourth generation instrument that is electrically and mechanically compatible with the earlier industry standard BA507C, but has a much larger full 4 digit display providing maximum visibility from a 96 x 48mm instrument. The new model has guaranteed performance between -40 & 70˚C and an even shorter enclosure depth than its predecessor. The scale card can easily be marked to show the units of measurement and can be installed on-site without dismantling the indicator enclosure or removing the indicator from the panel. If the units of measurement are not specified when the indicator is ordered, a blank scale card will be fitted.

The main application of the BA507E is to display a measured variable in meaningful engineering units within a process area. The zero and span of the display are independently adjustable allowing the indicator to be calibrated to display any linear variable represented by the 4/20mA signal. A root extractor and an adjustable sixteen segment lineariser enables the indicator to display flow and variables such as tank level in linear engineering units. For weighing applications a tare function is included.

The bold 15mm high liquid crystal display provides maximum contrast and has a very wide viewing angle, allowing the BA507E indicator 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 points and a negative sign, may be configured to display any variable between -9999 and 9999.

IP66 front panel protection and a neoprene gasket to seal the joint between the indicator and the panel make the instrument suitable for use in areas that will be cleaned with a hose. To simplify installation and maintenance, the indicator has a removable terminal block allowing panel wiring to be completed before the BA507E indicator is installed.

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. Powering from a separate supply produces a brighter backlight but requires additional field wiring.

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

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

Other models in this range include the BA527E which has a similar specification with five 11mm high digits and a 31 segment bargraph.

If flammable atmospheres are present the BA307E should be used. This has the same features as the BA507E but has been certified for use in hazardous areas.

BEKA associates

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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 loop powered backlight.
Overrange	±200mA or ±30V will not damage indicator.

Display

Type	Liquid crystal, non-multiplexed 4 digit 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 decimal point.
Direction	Display may increase or decrease with increasing 4/20mA input.
Reading rate	2 per second
Overange	9999 or -9999 with all decimal points flashing.

Push buttons *(Function in display mode)*

▼	Shows display with 4mA input
▲	Shows display with 20mA input
'P'	Displays input in mA or 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 temp	-40 to 70°C
Storage temp	-40 to 85°C
Humidity	to 95% at 40°C noncondensing.
Vibration	Report available
Enclosure	Front IP66, rear IP20
EMC	Complies with EMC Directive 2014/30/EU

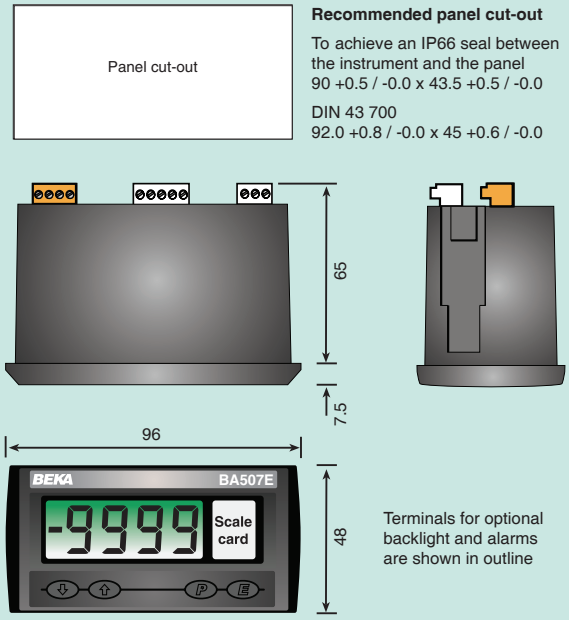
Mechanical

Terminals	Screw clamp for 0.5 to 1.5mm^2 cable, removable.
Weight	0.2kg

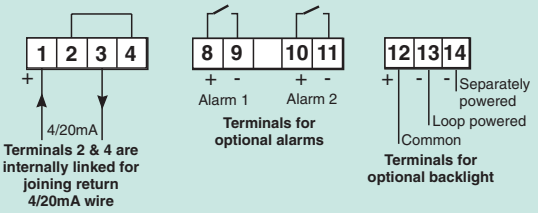
Accessories

Backlight	Green, may be loop or separately powered.
Loop powered	Indicator input voltage 5V
Separately powered	
V supply	9 to 30V dc
I in	22.5mA
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	40V dc
Imax	200mA
Ron	5Ω + 0.7V max
Roff	1MΩ min

DIMENSIONS (mm)



TERMINAL CONNECTIONS



Printed scale card	Blank card fitted to each Indicator can be supplied printed with specified units of measurement.
Pack of printed scale cards.	Contains 26 common units of measurement and four blanks.
Tag legend	Specified tag number or application thermally printed 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

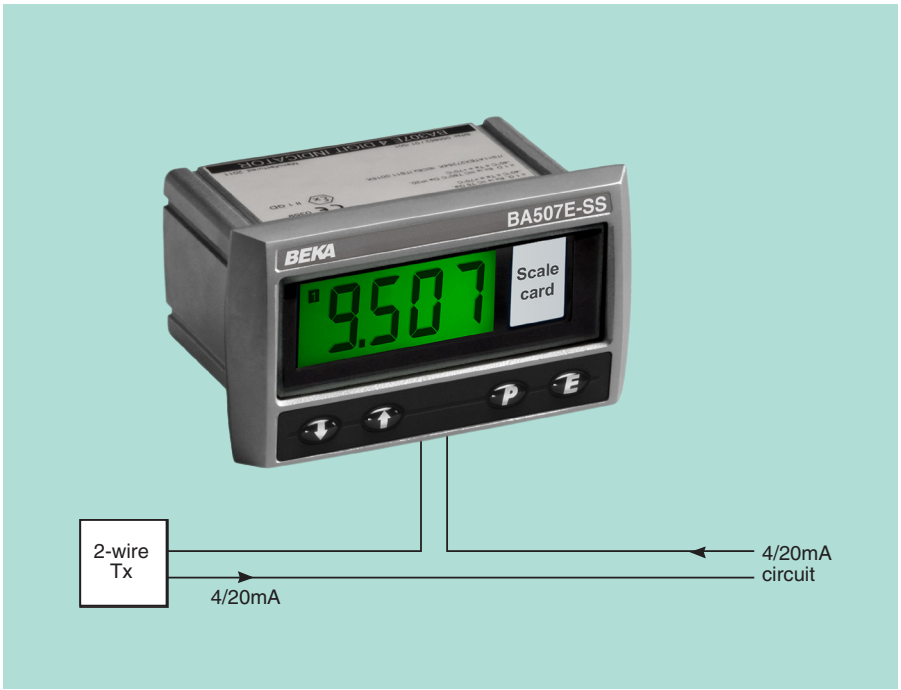
	Please specify
Model number	BA507E
Display mode	Linear, root or lineariser*
Display at:	
4.000mA	XXXX Include position of decimal point,*
20.000mA	XXXX sign if negative & intermediate points if lineariser is required.

Accessories	**Please specify if required**
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.*

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

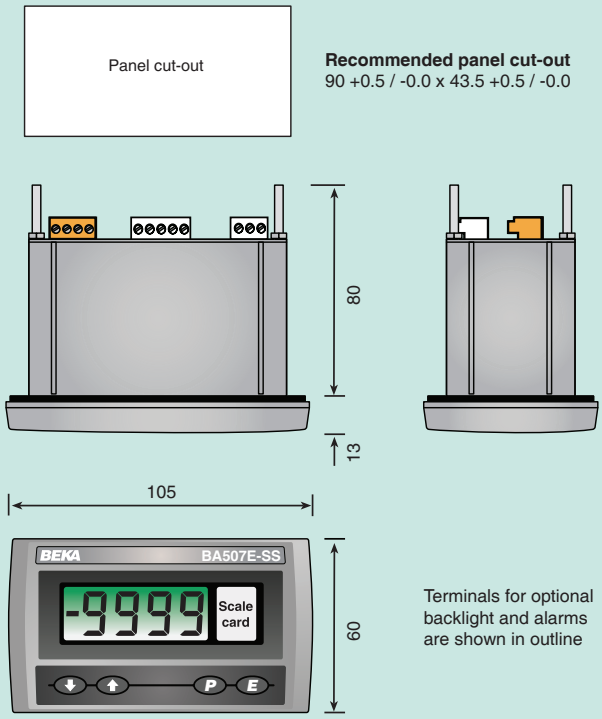
Mechanical

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

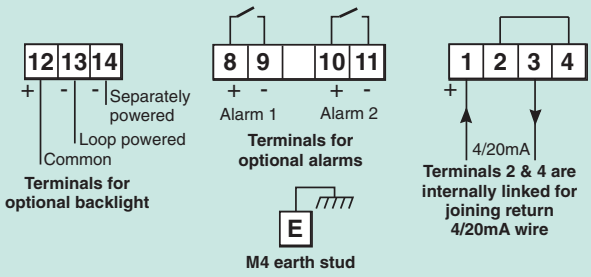
Accessories

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.
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

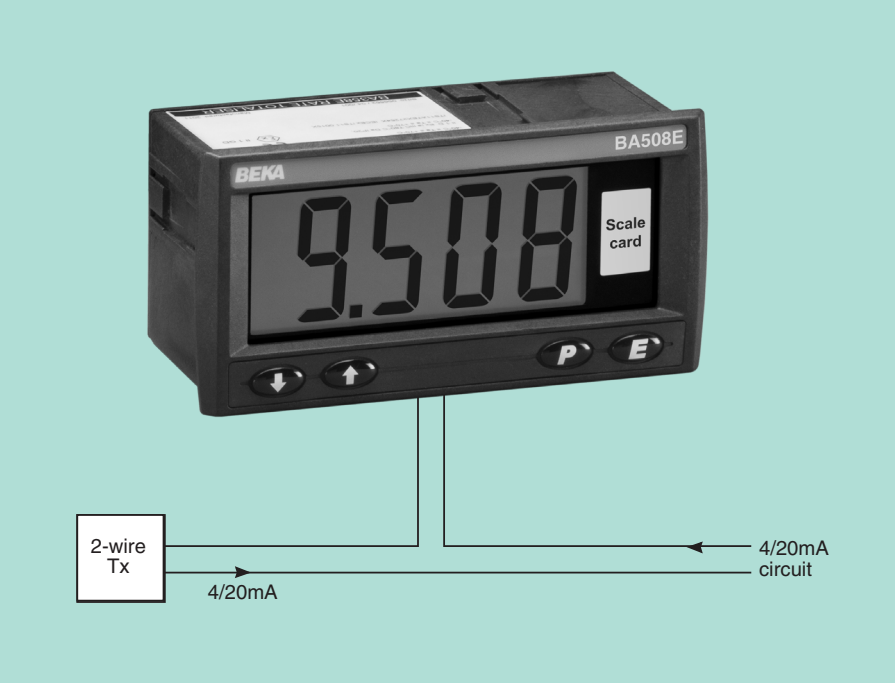
HOW TO ORDER

	Please specify
Model number	BA507E–SS
Display mode	Linear, root or lineariser*
Display at:	
4.000mA	XXXX Include position of decimal point &
20.000mA	XXXX sign if negative. Together with intermediate points is 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.



BA508E

2-wire 4/20mA 4 digit indicator

General purpose

- **Loop powered only 1.2V drop.**
- **4 digit 34mm high display.**
- **Optional backlight & alarms.**
- **Easy on-site scale card installation.**
- **IP66 front**
- **Root extractor and 16 segment lineariser.**
- **144 x 72mm DIN enclosure.**
- **3 year guarantee**

www.beka.co.uk/ba508e

The BA508E loop powered 4/20mA indicator is a fourth generation instrument that is electrically and mechanically compatible with the earlier BA508C, but has a much larger full 4 digit display providing maximum visibility from a 144 x 72mm instrument. The new model has guaranteed performance between -40 & 70˚C, and an even shorter enclosure depth than its predecessor. The scale card can easily be marked to show the units of measurement and can be installed on-site without dismantling the indicator enclosure or removing the indicator from the panel. If the units of measurement are not specified when the indicator is ordered, a blank scale card will be fitted.

The main application of the BA508E is to display a measured variable in meaningful engineering units within a process area. The zero and span of the display are independently adjustable allowing the indicator to be calibrated to display any linear variable represented by the 4/20mA signal. A root extractor and an adjustable sixteen segment lineariser enables the indicator to display flow and variables such as tank level in linear engineering units. For weighing applications a tare function is included.

The bold 34mm high 4 digit display provides maximum contrast and has a very wide viewing angle, allowing the BA508E indicator 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 five digits, with four decimal points and a negative sign, may be configured to display any variable between -9999 and 9999.

IP66 front panel protection and a neoprene gasket to seal the joint between the indicator and the panel make the instrument suitable for use in areas that will be cleaned with a hose. To simplify installation and maintenance, the indicator has a removable terminal block allowing panel wiring to be completed before the BA508E indicator is installed.

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. Powering from a separate supply produces a brighter backlight but requires additional field wirings.

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

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

Other models in this range include the BA528E which has a similar specification with five 29mm high digits and a 31 segment bargraph.

If flammable atmospheres are present the BA308E should be used. This has the same features as the BA508E but has been certified for use in hazardous areas

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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 loop powered backlight.
Overrange	±200mA or ±30V will not damage the indicator.

Display

Type	Liquid crystal, non-multiplexed 4 digits 34mm 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 decimal point.
Direction	Display may increase or decrease with increasing 4/20mA input.
Reading rate	2 per second
Overange	9999 or -9999 with all decimal points flashing.

Push buttons *(Function in display mode)*

▼	Shows display with 4mA input
▲	Shows display with 20mA input
'P'	Displays input in mA or 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 temp	-40 to 70°C
Storage temp	-40 to 85°C
Humidity	to 95% at 40°C noncondensing.
Vibration	Report available
Enclosure	Front IP66, rear IP20
EMC	Complies with EMC Directive 2014/30/EU

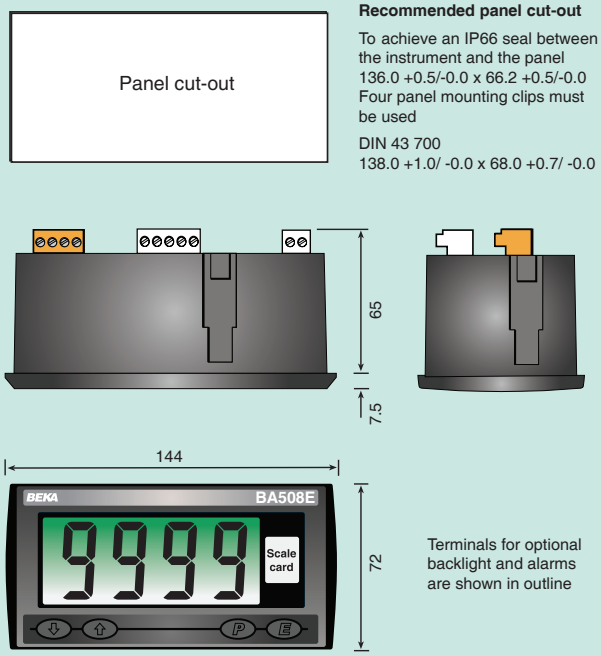
Mechanical

Terminals	Screw clamp for 0.5 to 1.5mm^2 cable, removable.
Weight	0.35kg

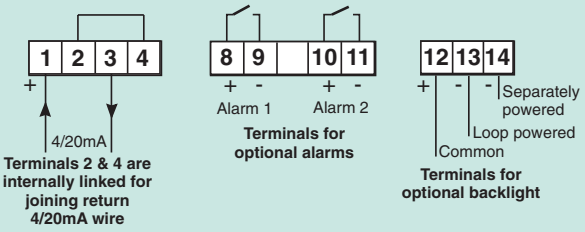
Accessories

Backlight	Green, may be loop or separately powered.
Loop powered	Indicator input voltage 5V
Separately powered	
V supply	11V to 30V dc
I in	35mA
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	40V dc
Imax	200mA
Ron	5Ω + 0.7V max
Roff	1MΩ min

DIMENSIONS (mm)



TERMINAL CONNECTIONS



Printed scale card	Blank card fitted to each Indicator can be supplied typeset with specified units of measurement.
Pack of printed scale cards	Contains 26 common units of measurement and four blanks.
Tag legend	Specified tag number or application thermally printed onto rear of the instrument.

HOW TO ORDER

	Please specify
Model number	BA508E
Display mode	Linear, root or lineariser*
Display at:	
4.000mA	XXXX Include position of decimal point,*
20.000mA	XXXX sign if negative & intermediate points if lineariser is required.

Accessories	**Please specify if required**
Display backlight	Backlight
Dual alarms	Alarms
Scale card	Legend required
Tag	Legend required

** 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.*

NEW PANEL MOUNTING MODEL



Shown with optional backlight - loop powered

BA524G-SS-PM Rugged 2-wire 4/20mA 5 digit indicator

General purpose panel mounting for use in harsh environments.

- **Rugged IP66 stainless steel front maintains panel enclosure's IP66 protection.**
- **Loop powered only 1.2V drop.**
- **5 digit 29mm high display & 31 segment bargraph.**
- **Optional backlight & alarms.**
- **Root extractor and 16 segment lineariser.**
- **Easy scale card installation on-site.**
- **3 year guarantee**

beka.co.uk/ba524g-ss-pm

The BA524G-SS-PM loop powered 4/20mA indicator is a rugged, general purpose panel mounting instrument with a large 5 digit display and a bargraph. It has an impact resistant IP66 stainless steel front which maintains the integrity of the panel enclosure in which it is mounted.

Main application of the BA524G-SS-PM is to display a measured variable in engineering units within a harsh process area. The zero and span of the display are independently adjustable allowing the indicator to be calibrated to display any linear variable represented by the 4/20mA signal. Root extraction and an adjustable sixteen segment lineariser also enable flow and variables such as tank levels to be shown in linear engineering units. For weighing applications a tare function is included.

The large 29mm high 5 digit display provides maximum contrast and has a very wide viewing angle, thus the BA524G-SS-PM indicator is easily read in most lighting conditions. An optional backlight is available for installations in poorly illuminated areas. The five digit display, with four decimal points and a negative sign, may be configured to display any variable between -99999 and 99999.

IP66 and impact protection are provided by a rugged 316 stainless steel front with a 6mm thick armoured glass window and silicone gaskets. Impact and ingress protection have been assessed by a UKAS accredited authority.

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

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

The scale card which shows units of measurement and tag information slides into an internal slot and can easily be changed on-site. New instruments can be supplied with the scale card printed to show customer specified information for no additional charge, if this is not requested a blank card is fitted which can easily be marked on-site.

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

Other panel mounting models in this range include the four digit BA504G-SS-PM and the smaller BA507E-SS and 5 digit BA527E-SS.

If flammable atmospheres are present the intrinsically safe BA324G-SS-PM has the same features as the BA524G-SS-PM with international gas and dust certification.

BEKA associates

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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 loop powered backlight.
Overrange	±200mA or ±30V will not damage the indicator.

Display

Type	Liquid crystal, non-multiplexed 5 digits 29mm high.
Span	Adjustable between 0 & ±99999 for a 4/20mA input.
Zero	Adjustable between 0 & ±99999 with 4mA input.
Decimal point	1 of 4 positions or absent
Polarity	Automatic minus sign
Zero blanking	Blanked apart from 0 in front of decimal point.
Direction	Display may increase or decrease with increasing 4/20mA input.
Reading rate	2 per second
Bargraph	31 segments 80mm long
Overrange	99999 or -99999 with all decimal points flashing.

Push buttons (Function in display mode)

▼	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 ±1digit
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 temp	-40 to +70°C
Storage temp	-40 to +85°C
Humidity	To 95% at 40°C noncondensing
EMC	Complies with EMC Directive 2014/30/EU.

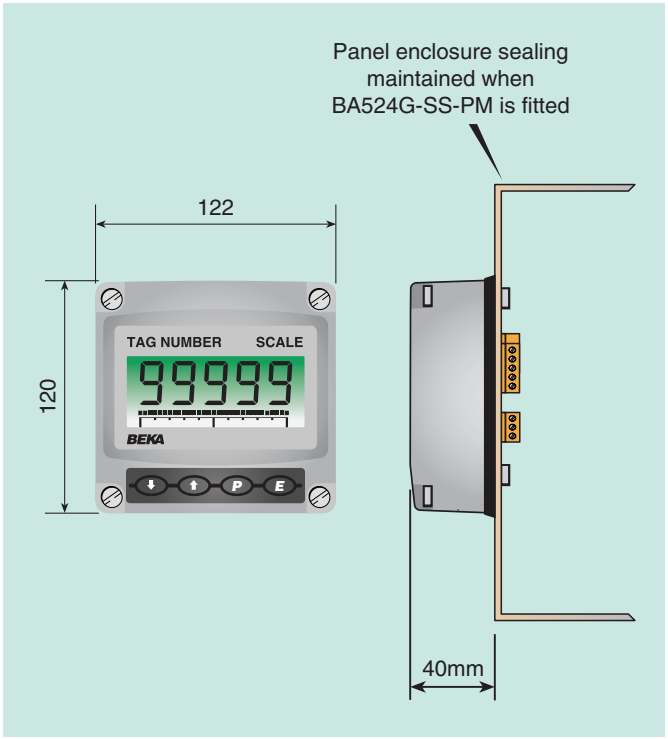
Mechanical

Front of indicator	
Material	316 stainless steel
Ingress protection	IP66
Impact	7J, Window 4J
Rear of indicator	IP20
Weight	1.1kg
Terminals	Orange with screw clamp for 0.5 to 1.5mm² cable.
Scale card	Slide-in card showing units of measurement and tag information through display window.

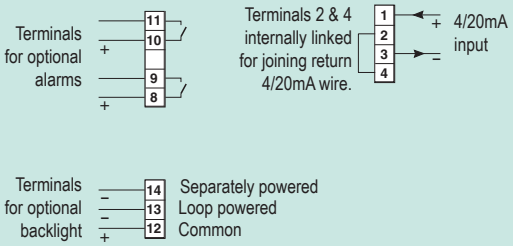
Accessories

Backlight	Green, may be loop or separately powered.
Loop powered	Indicator input voltage increases to 5V
Separately powered	
V supply	11 to 30V dc
I in	35mA

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, voltage free solid state switch.
Vmax	40V dc
Imax	200mA
Ron	5Ω + 0.7V max
Roff	1MΩ min

HOW TO ORDER

	Please specify
Model number	BA524G-SS-PM
Display mode	Linear, root or lineariser*
Display at:	
4.000mA 20.000mA	XXXXX XXXXX] Include position of decimal point & sign if negative.*
Scale card marking	
Units	Legend required
Tag	Legend required

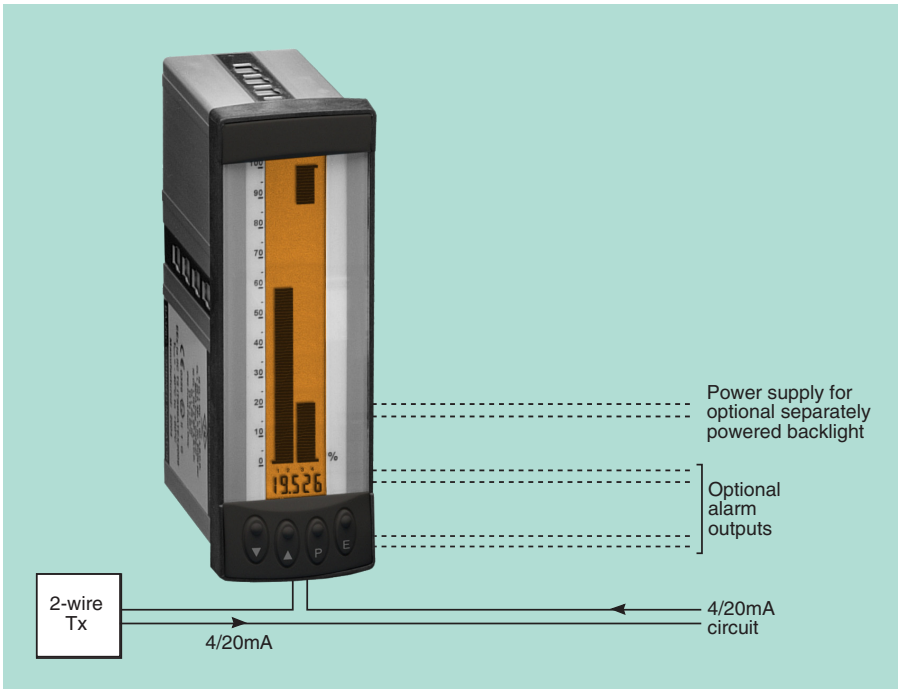
Accessories	**Please specify if required**
Display backlight	Backlight
Dual alarms	Alarms

* Will be set to display 0.00 at 4mA and 100.00 at 20mA with a linear display if calibration information is not supplied. Can easily be recalibrated on-site.

BA526C

2-wire 4/20mA analogue & digital indicator

General purpose



- **Loop powered only 1.1V drop.**
- **Optimum visibility**
- **100 segment bargraph plus digital display.**
- **Optional:**
  - **Display backlight**
  - **Alarms**
  - **Lineariser**
- **144 x 48mm DIN enclosure with IP65 front.**
- **3 year guarantee**

www.beka.co.uk/ba526c

The BA526C is a new combined analogue and digital indicator which replaces the BA526. It offers enhanced features and improved visibility in a shorter enclosure. Like its predecessor, the BA526C displays the current flowing in a 4/20mA loop on a 100 segment bargraph and in accurate engineering units on a digital display. The instrument is loop powered but only introduces a 1V drop allowing it to be installed in series with almost any 4/20mA loop.

Main application of the BA526C is to display a measured variable or control signal in a process area. For level and similar measurements the combination of an analogue and digital display provides magnitude and trend information from the bargraph, plus accurate readings in engineering units from the digital display. The relative magnitude of variables can be effectively presented by mounting BA526C indicators side by side. An optional 16 point lineariser enables the BA526C to display non linear variables in linear engineering units.

Control and calibration of the combined indicator is performed via the front panel tactile push buttons. Using these buttons the operator can tem-porarily display the measured variable as a percentage of span, the input current in mA and the numerical display at 4 and 20mA input. All the calibration functions are contained in easy to understand menus which may be protected by a four digit user selectable security code.

The analogue bargraph which contains 100 segments, provides a rapid indication of the input current, enabling an operator to quickly assess the magnitude and trend of a process variable.

The bargraph displays zero to full scale for a 4 to 20mA input, but may be calibrated to show deviation from any input current. Either a column or a single segment display may be selected and if only the analogue display is required, the digital display may be disabled.

Separately powered backlighting is available as an option. The orange output enhances daylight contrast and enables the display to be read when the instrument is installed in a poorly illuminated area.

Optional alarms provide two galvanically isolated solid state outputs which may be independently programmed for high or low operation with a normally open or closed output. For easy comparison with the 4/20mA input, both setpoints are displayed on a second bargraph together with annunciators showing the status of both alarms.

The IP65 front panel is a robust, easy to clean Noryl moulding surrounding an armoured glass window. A captive neoprene gasket provides a seal between the instrument enclosure and the panel.

Reliability is ensured by an ISO9001 approved quality control system supported by a three year guarantee. The BA526C is protected from reverse connection and overrange input currents, and incorporates extensive radio frequency filtering to comply with the European EMC Directive.

If flammable atmospheres are present the BA326C should be used. This has the same features as the BA526C and has been certified intrinsically safe in both Europe and the USA.

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SPECIFICATION

Input

Current	4 to 20mA
Voltage	Less than 1.1V at 20°C Less than 1.2V at -20°C
Overrange	±200mA will not cause damage

Display

Type	Liquid crystal
Reading rate	
Analogue	4 per second
Digital	2 per second
Analogue	95mm long 100 segment column or single segment.
Range	0 to100% for 4 to 20mA input
Digital	4½ digit (-19999 to 19999) 5.5mm high; selectable dummy trailing zero extends display range to (-19990 to 99990).
Span	Adjustable between 0 & ±19999
Zero	Adjustable between ±19999 with 4mA input
Decimal point	1 of 5 positions or absent
Polarity	Automatic minus sign
Direction	Display may increase or decrease with increasing current.
Over & underrange.	4 least significant digits are blanked

Push buttons (In operating mode)

Down button	Shows displays with 4mA input
Up button	Shows displays with 20mA input
'P' button	Displays input current in mA or as a percentage of span.

Accuracy at 20°C

Analogue	±0.5%	
Digital	Linear	±0.02% ±1 digit
	Root extracting	16µA at input ±1 digit
Temp. effect		
Analogue	±0.5% between -20 & 60°C	
Digital		
Zero	Less than 25ppm/°C	
Span	Less than 50ppm/°C	
Series mode	Less than 0.5% error for 1mA pk to pk 50Hz or 60Hz signal.	

Environmental

Operating temp	-20 to 60°C
Storage temp	-40 to 85°C
Humidity	To 95% at 40°C non-condensing
Enclosure	Front IP65 rear IP20
EMC	In accordance with EU Directive 2004/108/EC, full report available.

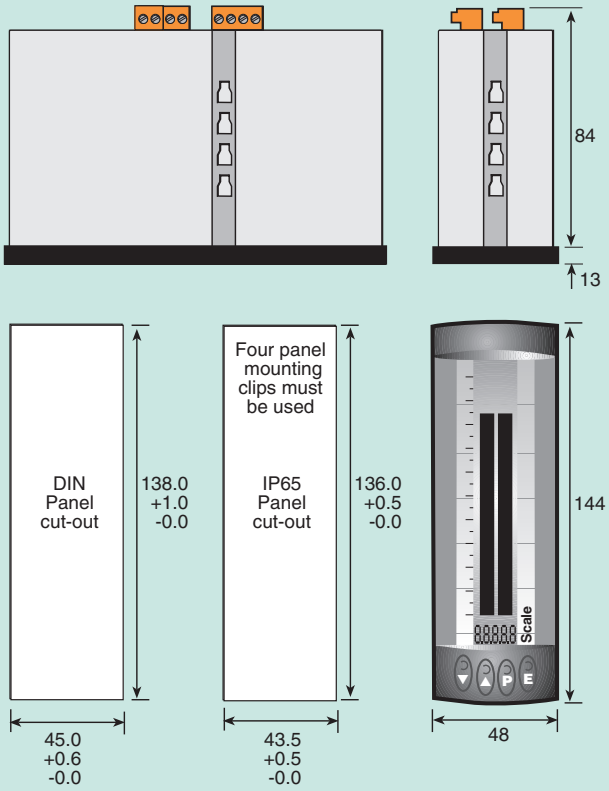
Mechanical

Terminals	Removable terminal block for 0.5 to 1.5mm^2 cables.
Weight	0.5kg

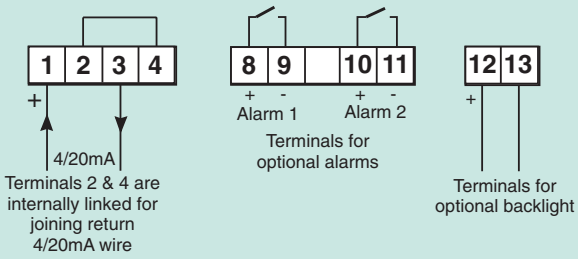
Accessories

Separately powered backlight.	LED backlight
Vin	18 to 30V dc, may be dimmed by reducing voltage below 18V.
Iin	40mA typical
Alarms	Two independent alarms each of which may be programmed for high or low operation with a NC or NO output.
Outputs	Isolated single pole solid state switch: Ron less than 5Ω +0.6V Roff greater than 180k
Lineariser	Provides 16 fully adjustable straight lines which may be adjusted to compensate for almost any non-linear variable.
Typeset scale card.	Blank scale card fitted to each indicator can be supplied typeset with units of measurement.
Bargraph scale	Blank scale fitted to each indicator can be supplied typeset with analogue scale.
Tag number	Thermally printed number on rear of the instrument.

DIMENSIONS (mm)



TERMINAL CONNECTIONS



HOW TO ORDER

	Please specify	
Model number	BA526C	
Display mode	Linear or root extracting*	
Digital display		
Display at 4mA	XXXX*	Include position of decimal point, dummy zero if required & sign if negative.
Display at 20mA	XXXX*	

Accessories	Please specify if required
Separately powered backlight.	Backlight
Alarms	Alarms
Lineariser	Lineariser#
Scale card	Legend
Bargraph scale	Required scale graduations
Tag number	Legend

**Will be set to display 0.00 at 4mA and 100.00 at 20mA with a linear display if calibration information is not supplied.*
#Contact BEKA if calibration of accessories is required.

BA527E

2-wire 4/20mA 5 digit indicator

General purpose



Shown with optional backlight - loop powered

- **Loop powered only 1.2V drop.**
- **5 digit 11mm high display & 31 segment bargraph.**
- **Optional backlight & alarms.**
- **Easy on-site scale card installation.**
- **IP66 front**
- **Root extractor and 16 segment lineariser.**
- **96 x 48mm DIN enclosure.**
- **3 year guarantee**

www.beka.co.uk/ba527e

The BA527E loop powered 4/20mA indicator is a fourth generation instrument that is electrically and mechanically compatible with the earlier industry tandard BA527C, but has a larger full 5 digit display plus a 31 segment analogue bargraph providing maximum visibility from a 96 x 48mm instrument. The new model has guaranteed performance between -40 & 70˚C and an even shorter enclosure depth than its predecessor. The scale card can easily be marked to show the units of measurement and can be installed on-site without dismantling the indicator enclosure or removing the indicator from the panel. If the units of measurement are not specified when the indicator is ordered, a blank scale card will be fitted.

The main application of the BA527E is to display a measured variable in meaningful engineering units within a process area. The zero and span of the display are independently adjustable allowing the indicator to be calibrated to display any linear variable represented by the 4/20mA signal. A root extractor and an adjustable sixteen segment lineariser enables the indicator to display flow and variables such as tank level in linear engineering units. For weighing applications a tare function is included.

The bold 11mm high 5 digit display and 31 segment bargraph provide maximum contrast and have a very wide viewing angle, allowing the BA527E indicator 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 five digits, with four decimal points and a negative sign, may be configured to display any variable between -99999 and 99999.

IP66 front panel protection and a neoprene gasket to seal the joint between the indicator and the panel make the instrument suitable for use in areas that will be cleaned with a hose. To simplify installation and maintenance, the indicator has a removable terminal block allowing panel wiring to be completed before the BA527E indicator is installed.

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. Powering from a separate supply produces a brighter backlight but requires additional field wiring.

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

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

Other models in this range include the BA507E which has a similar specification with four larger 15mm high digits without a bargraph.

If flammable atmospheres are present the BA327E should be used. This has the same features as the BA527E but has been certified for use in hazardous areas.

BEKA associates

BEKA associates Ltd. Old Charlton Rd. Hitchin, Hertfordshire, SG5 2DA, U.K. Tel. (01462) 438301 Fax (01462) 453971 e-mail sales@beka.co.uk www.beka.co.uk

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.
Overrange	±200mA or ±30V will not damage indicator.

Display

Type	Liquid crystal, non-multiplexed 5 digit 11mm high.
Span	Adjustable between 0 & ±99999 for a 4/20mA input.
Zero	Adjustable between 0 & ±99999 with 4mA input.
Decimal point	1 of 4 positions or absent
Polarity	Automatic minus sign
Zero blanking	Blanked apart from 0 in front of decimal point.
Direction	Display may increase or decrease with increasing 4/20mA input.
Reading rate	2 per second
Bargraph	31 segments 43mm long
Overange	99999 or -99999 with all decimal points flashing.

Push buttons *(Function in display mode)*

▼	Shows display with 4mA input
▲	Shows display with 20mA input
'P'	Displays input in mA or a % of span, has a modified function
'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 interference.

Environmental

Operating temp	-40 to 70°C
Storage temp	-40 to 85°C
Humidity	to 95% at 40°C noncondensing.
Vibration	Report available
Enclosure	Front IP66, rear IP20
EMC	Complies with EMC Directive 2014/30/EU

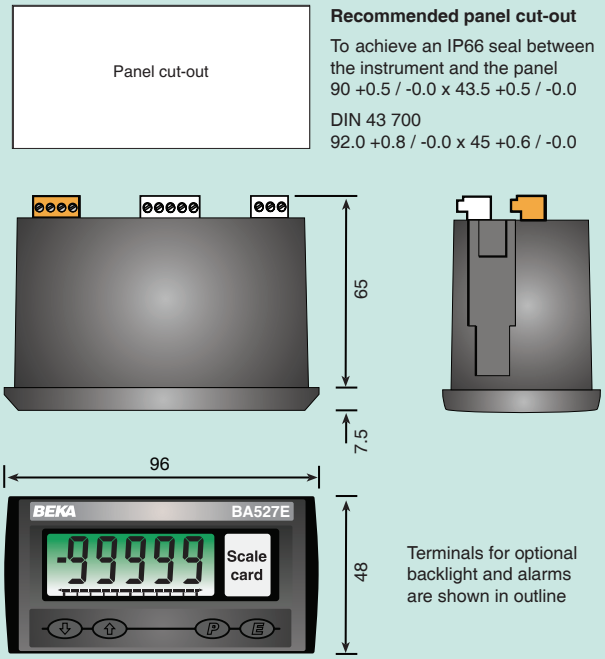
Mechanical

Terminals	Screw clamp for 0.5 to 1.5mm^2 cable, removable.
Weight	0.2kg

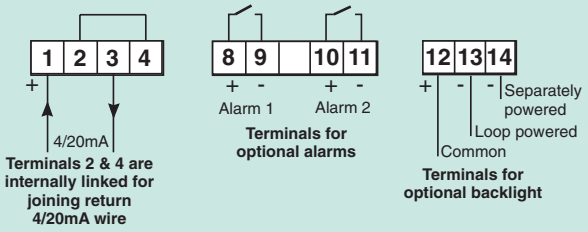
Accessories

Backlight	Green, may be loop or separately powered.
Loop powered	Indicator input voltage 5V
Separately powered	
V supply	9 to 30V dc
I in	22.5mA
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	40V dc
Imax	200mA
Ron	5Ω + 0.7V max
Roff	1MΩ min

DIMENSIONS (mm)



TERMINAL CONNECTIONS



Printed scale card	Blank card fitted to each Indicator can be supplied printed with specified units of measurement.
Pack of printed scale cards	Contains 26 common units of measurement and four blanks.
Tag legend	Specified tag number or application thermally printed 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

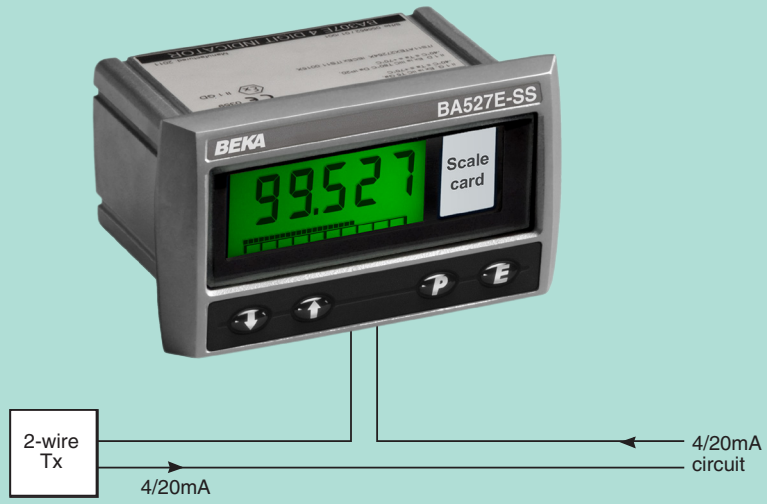
	Please specify
Model number	BA527E
Display mode	Linear, root or lineariser*
Display at:	
4.000mA	XXXX ⎫ Include position of decimal point,*
20.000mA	XXXX ⎭ sign if negative & intermediate points if lineariser is required.

Accessories	**Please specify if required**
Display backlight	Backlight
Dual alarms	Alarms
Scale card	Legend required
Tag	Legend required
Rear cover and sealing kit	BA495

** Will be set to display 0.00 at 4mA and 100.00 at 20mA with a linear display if calibration information is not supplied. Can easily be recalibrated on-site.*

BA527E-SS

Rugged 2-wire 4/20mA 5 digit indicator



General purpose for use in harsh & marine environments

- **Rugged IP66 stainless steel enclosure.**
- **Loop powered only 1.2V drop.**
- **5 digit 11mm high display & 31 segment bargraph.**
- **Optional backlight & alarms.**
- **Easy on-site scale card installation.**
- **Root extractor and 16 segment linearisers.**
- **3 year guarantee**

www.beka.co.uk/ba527e-ss

The BA527E-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 5 digit display plus a 31 segment bargraph 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 BA527-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 BA527E-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 lineariser 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 BA527E-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 11mm high 5 digit display and 31 segment bargraph provides maximum contrast and has a wide viewing angle, allowing the BA327E-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 five digits, with four decimal point positions and a negative sign, may be configured to display any variable between -99999 and 99999.

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 BA527E-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 BA507E–SS general purpose indicator which has a similar electrical specification as the BA527E-SS, but has four 15mm high display digits. 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.

BEKA associates

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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 5 digits 11mm high & 31 segment bargraph.
Span	Adjustable between 0 & ±99999 for a 4/20mA input.
Zero	Adjustable between 0 & ±99999 with 4mA input.
Decimal point	1 of 4 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	99999 or -99999 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

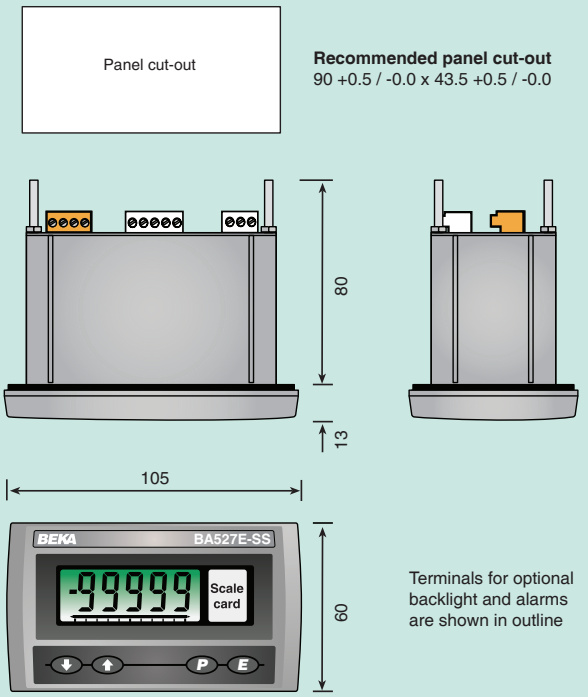
Mechanical

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

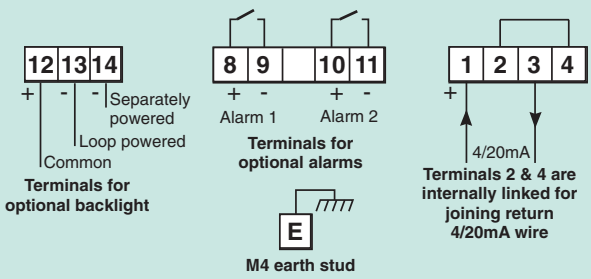
Accessories

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.
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	BA527E–SS
Display mode	Linear, root or lineariser*
Display at:	Include position of decimal point & sign if negative. Together with intermediate points if linearisation is required.*
4.000mA	XXXXX
20.000mA	XXXXX

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 0.00 at 4mA and 100.00 at 20mA with a linear display if calibration information is not supplied. Can easily be recalibrated on-site.