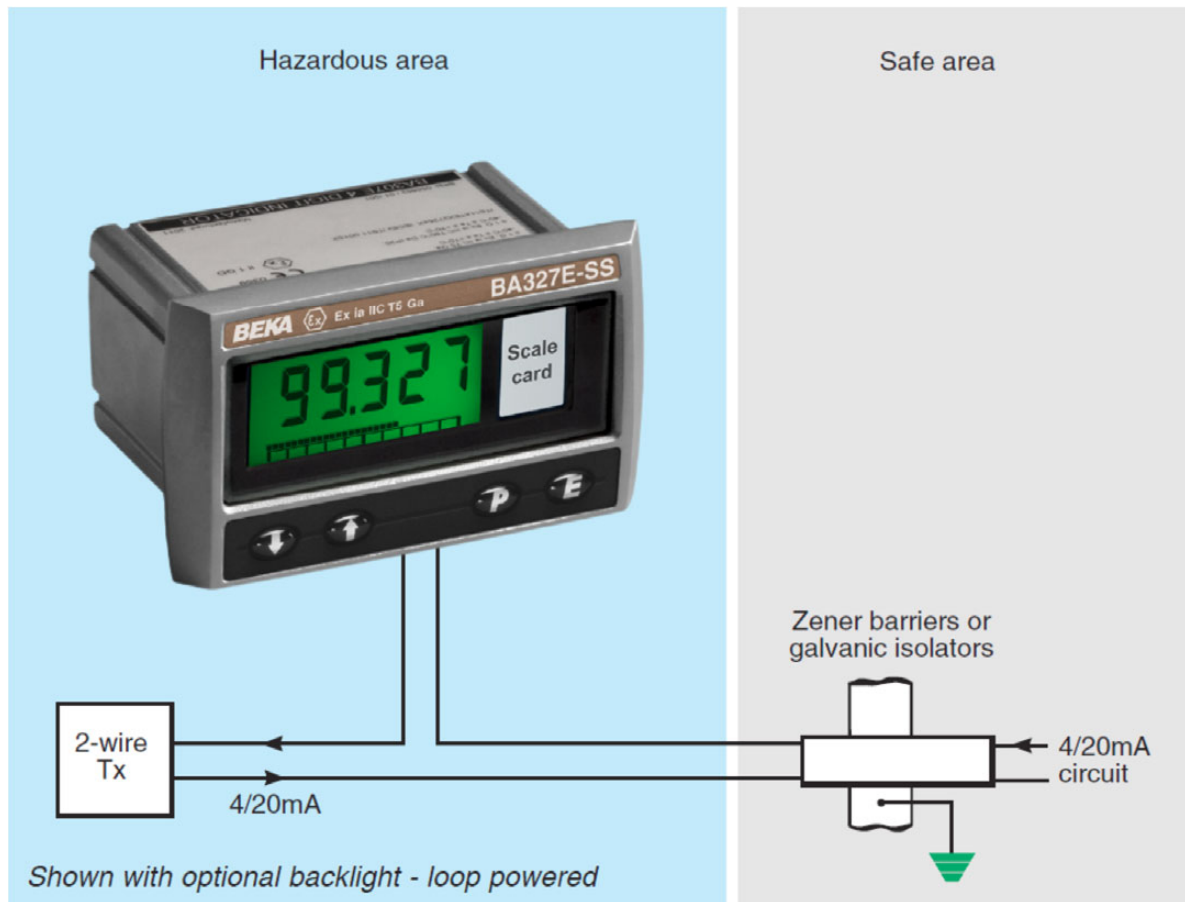


BA327E-SS Rugged Intrinsically Safe 2-wire 4-20mA 5 digit Indicator



- 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 and 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
- Root extractor and 16 segment lineariser
- Optional backlight & alarms
- Easy on-site scale card installation
- 3 year guarantee

BA327E-SS Rugged Intrinsically Safe 2-wire 4-20mA 5 digit Indicator

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 toughened 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

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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.

Other models in this range include the BA307E-SS which has a similar specification with four 15mm high digits.

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 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 |
| Overrange | 99999 or -99999 with all decimal points flashing |

BA327E-SS Rugged Intrinsically Safe 2-wire 4-20mA 5 digit Indicator

| | |
|---------------------|--|
| Push buttons | <i>(Function in display mode)</i> |
| ▼ | Shows display with 4mA input |
| ▲ | Shows display with 20mA input |
| 'P' | Displays unit in mA or % 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 |

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 <i>simple apparatus</i> |
| Cert. No. | ITS11ATEX28077X (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 <i>May be installed in an AEx e, AEx p or AEx n panel without invalidating panel's certification.</i> |
| 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 |
|------|----------|

BA327E-SS Rugged Intrinsically Safe 2-wire 4-20mA 5 digit Indicator

Intrinsic Safety (cont.)

International IECEx

| | |
|-----------|--|
| Code | Ex ia IIC T5 Ga Ex ia IIIC T80°C Da IP20 Tamb = -40 to 70°C |
| Cert. No. | IECEx ITS14.0048X (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 noncondensing |
| 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 |

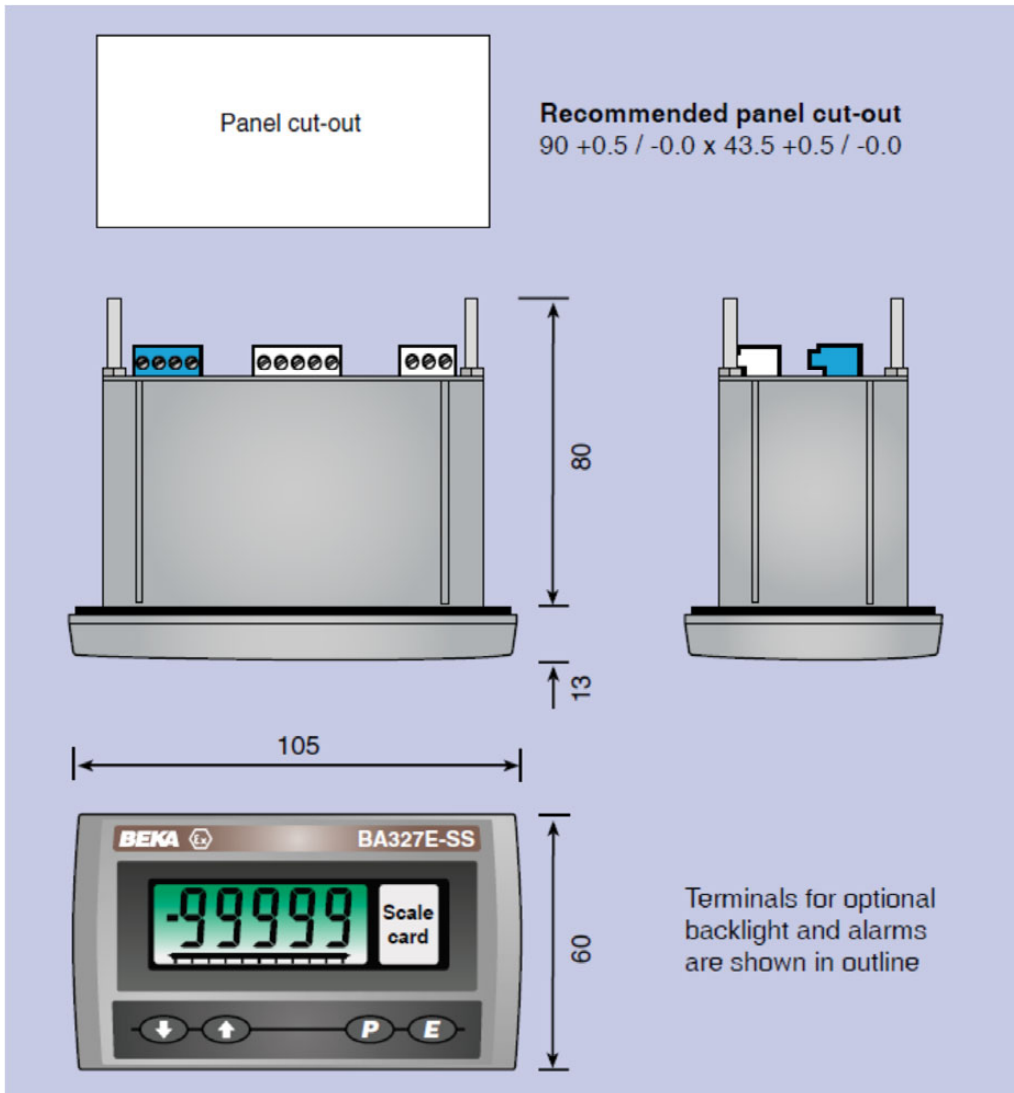
Mechanical

| | |
|-----------|--|
| Terminals | Screw clamp for 0.5 to 1.5mm ² cable, removable terminal blocks |
| Weight | 0.85kg |

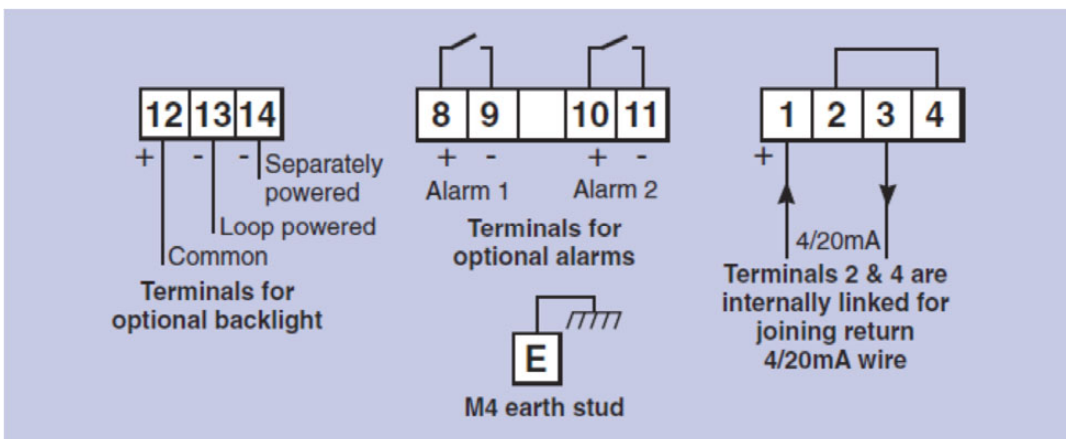
Accessories

| | |
|----------------------------------|--|
| 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 |
| 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 |
| R _{on} | 5Ω + 0.7V max |
| R _{off} | 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 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 |

BA327E-SS Rugged Intrinsically Safe 2-wire 4-20mA 5 digit Indicator Dimensions



Terminal Connections



BA327E-SS Rugged Intrinsically Safe 2-wire 4-20mA 5 digit Indicator

Ordering Information

| | |
|----------------------------|--|
| Model Number | Please specify BA327E-SS |
| Display mode | Linear, root or lineariser <i>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.</i> |
| Display at: | |
| 4.000mA | <i>Include position of decimal point & sign if negative, plus intermediate points if linearization is required</i> |
| 20.000mA | |
| Accessories | Please specify if required |
| Display backlight | Backlight |
| Dual alarms | Alarms |
| Scale card | Legend required |
| Tag | Legend required |
| Support plate | Support plate |
| Rear cover and sealing kit | BA495 |