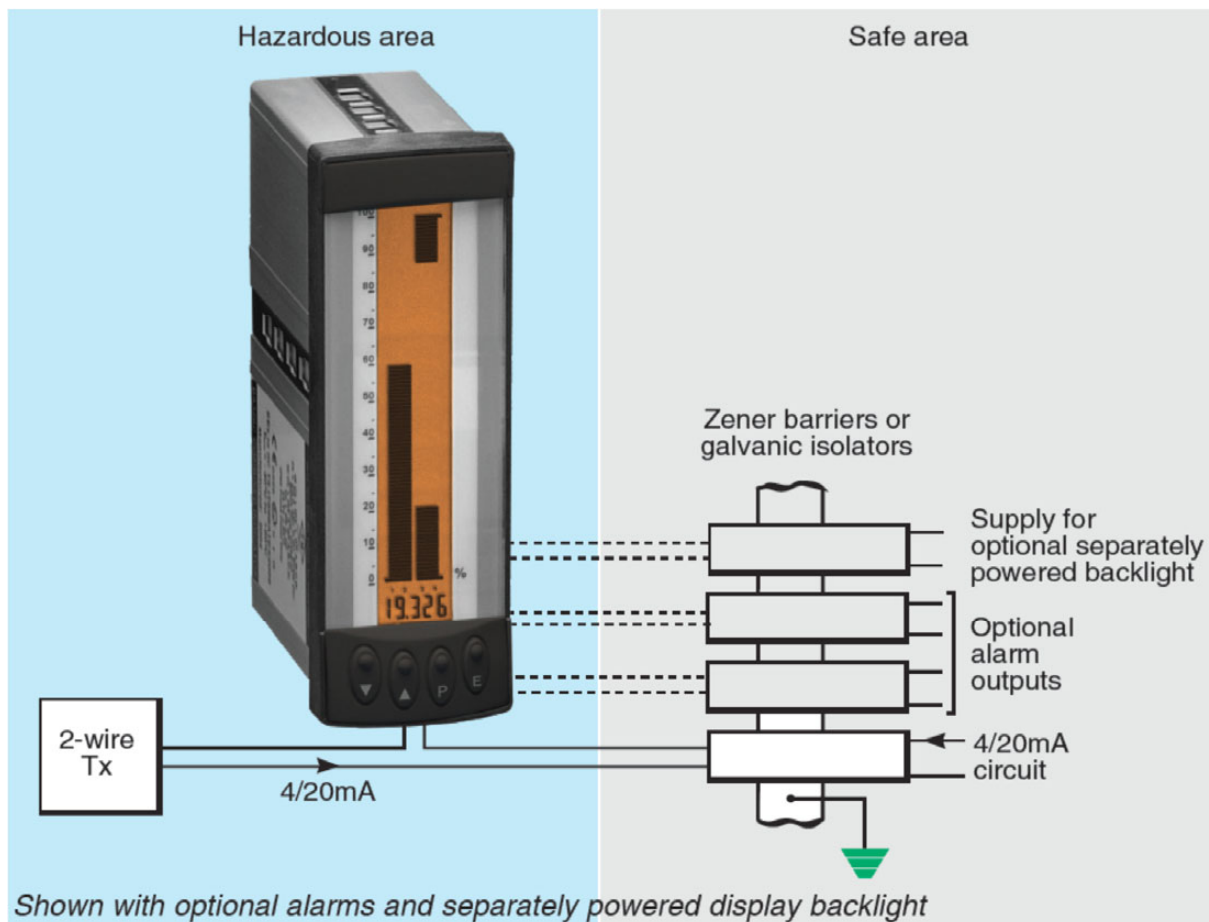


BA326C Intrinsically Safe 2-wire 4-20mA Analogue and Digital Indicator



- Intrinsically safe for use in all gas & dust 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 & lineariser
- 144 x 48mm DIN enclosure with IP65 front
- 3 year guarantee

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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.

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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.

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
Reading rate	
Analogue	4 per second
Digital	2 per second
Analogue	95mm long 100 segment column or single segment
Range	0 to 100% for 4-20mA 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 and ±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

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Push buttons

▼	(Function in display mode) Shows display with 4mA input
▲	Shows display with 20mA input
'P'	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
Temperature effect on:	
Analogue	±0.5% between -20 & 60°C
Digital	
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 1 G Ex ia IIC T5 Ga Ta = -40 to 60°C
Certificate No.	ITS99ATEX2009X
Output parameters	Complies with requirements for <i>simple apparatus</i>
U _o	1.1V dc
I _o	70mA dc
P _o	23mW
Location	Zone 0, 1 or 2
Installation	The BA326C may be connected to any certified intrinsically safe circuit whose output parameters do not exceed: U _o 28V I _o 200mA P _o 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 Temperature	-40 to 60°C (certified for use at -40°C)
Storage Temperature	-40 to 85°C
Humidity	to 95% at 40°C noncondensing
Enclosure	Front IP65 rear IP20
EMC	In accordance with EU Directive 2004/108/EC, full report available

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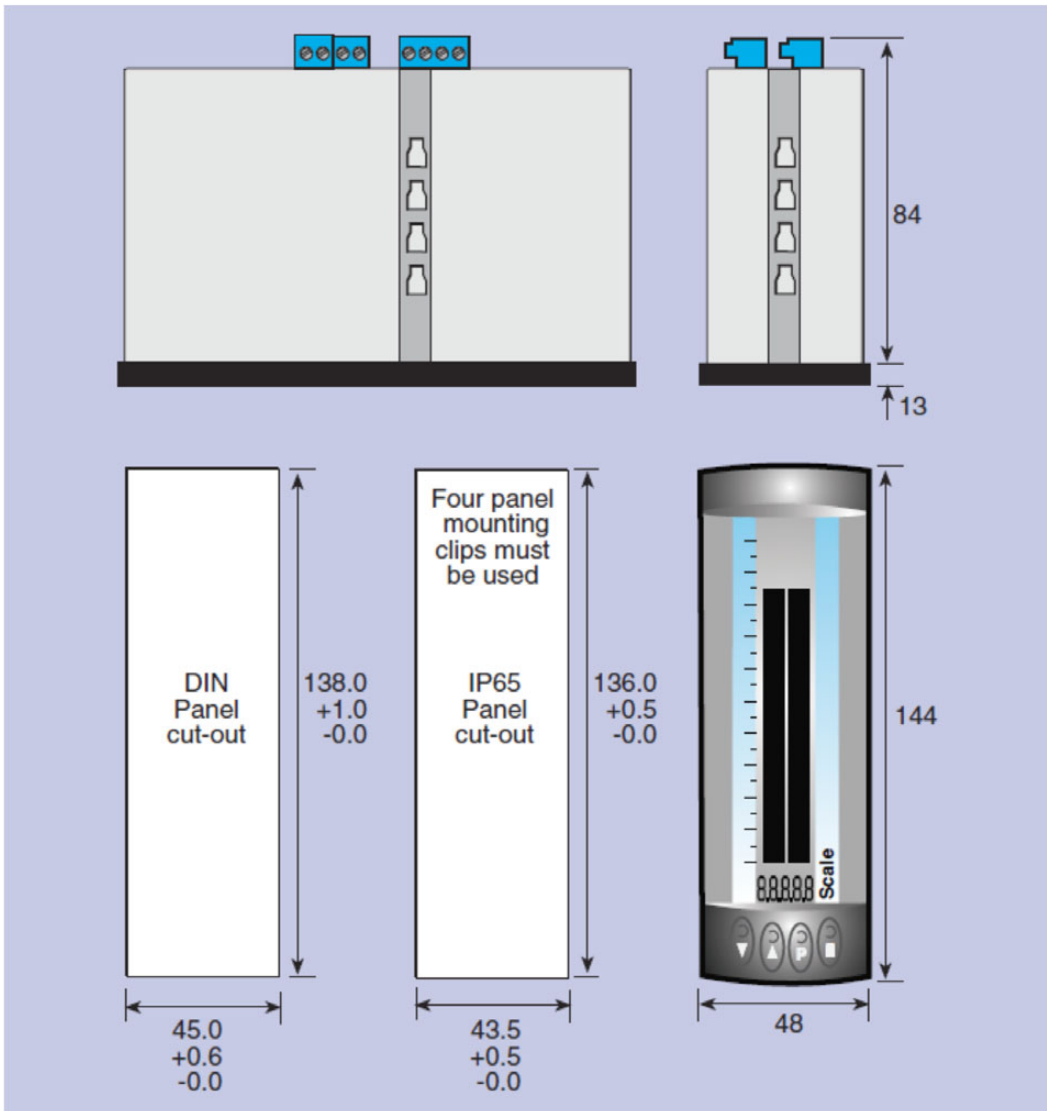
Mechanical

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

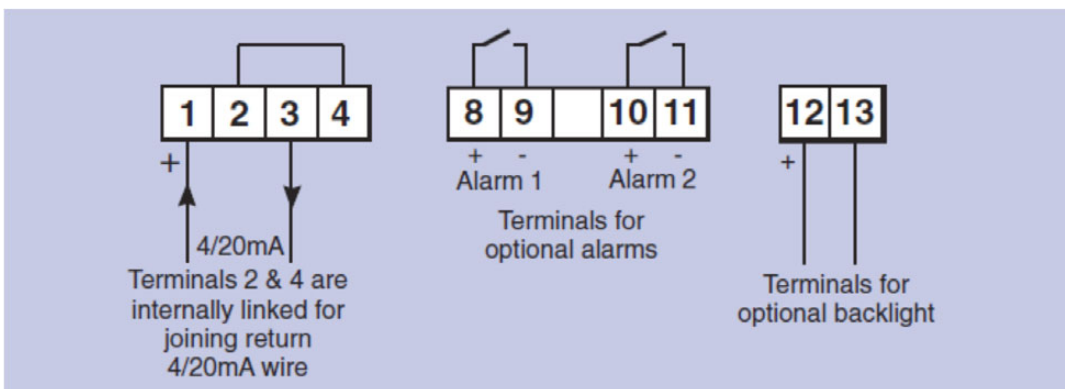
Accessories

Separately powered backlight	LED backlight powered from 28V 300Ω Zener barrier or galvanic isolator
Alarms	Two alarm outputs, each of which may be independently configured as a high or low alarm contact with a NO or NC output
Output	Isolated single pole solid state switch
R _{on}	Less than 5Ω + 0.6V
R _{off}	Greater than 180kΩ
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 instrument can be supplied typeset with analogue scale
Tag number	Thermally printed on rear of instrument

BA326C Intrinsically Safe 2-wire 4-20mA Analogue and Digital Indicator Dimensions



Terminal Connections



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Ordering Information

Model Number	Please specify BA326C
Display mode	Linear or root extracting <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.</i>
Display at:	
4.000mA	<i>Include position of decimal point, dummy zero if required & sign if negative</i>
20.000mA	
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