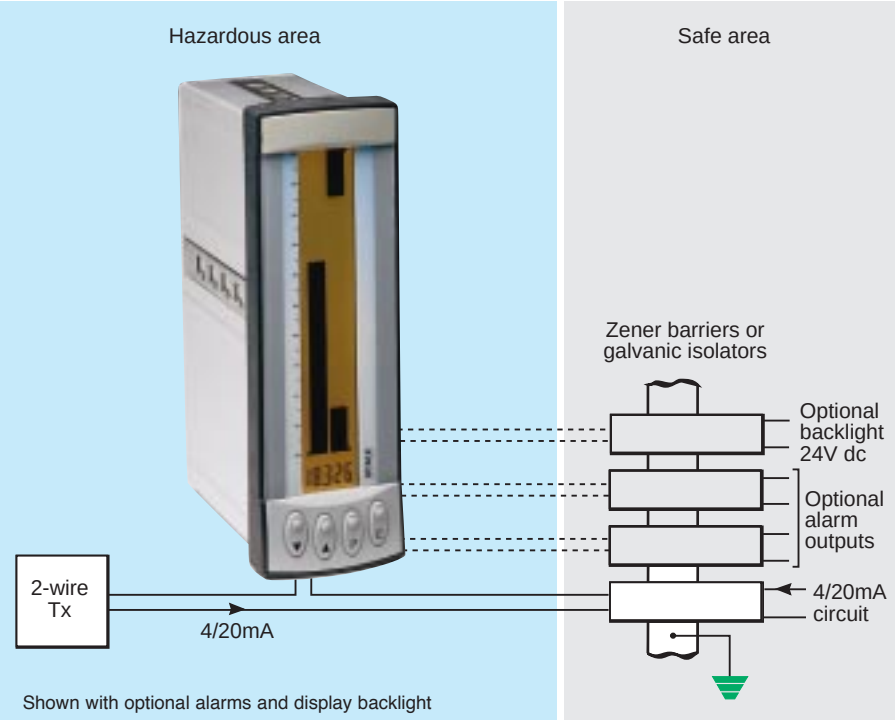

Shown with optional alarms and display backlight

BA326C

2-wire 4/20mA analogue & digital indicator

Intrinsically safe for use in all hazardous areas

- *Loop powered only 1V drop*
- *Optimum visibility*
- *Intrinsically safe ATEX certification*
- *100 segment bargraph plus digital display*
- *Optional:*
  - *Display backlight*
  - *Alarms*
  - *Lineariser*
- *144 x 48mm DIN enclosure with IP65 front*
- *3 year guarantee*

The BA326C is a new combined analogue and digital indicator which replaces the BA326B. It offers enhanced features and improved visibility in a shorter enclosure. Like its predecessor, the BA326C displays the current flowing in a 4/20mA loop on both 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 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.

The analogue bargraph displays the input current on an easy to read 100 segment display which may be supplied with a graduated scale to show any engineering units represented by the 4/20mA current. The bargraph displays zero to full scale for 4 to 20mA input, or may be offset to show deviation from any selected input current. Either a column or a single segment display may be selected, and the digital display may be disabled when not required.

Display backlighting is available as an option to improve readability when the BA326C is installed in a poorly illuminated area. High efficiency LEDs provide an even glow to enhance the display contrast.

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.

Reliability is ensured by an ISO9001 approved quality control system supported by a three year guarantee. The BA326C is protected from reverse connection and overrange input currents, and incorporates extensive radio frequency filtering to comply with the European EMC Directive.

BEKA associates

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SPECIFICATION

Input

Current	4 to 20mA
Voltage	Less than 1V at 20˚C Less than 1.1V at -20˚C
Overrange	±200mA will not cause damage

Display

Type	Liquid crystal
Reading rate	2 per second
Analogue	95mm long 100 segment column or single segment.
Range	0 to100% for 4 to 20mA input
Digital	$4^1/_2$ 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

Standard	EN50020:1994	
Code	Group II Category 1 G EEx ia IIC T5	
Cert. No	ITS99ATEX2009	
Output parameters		
Uo	1.1V dc	Complies with Clause 5.4
Io	70mA dc	of EN50020:1994
Po	23mW	simple apparatus
Ceq	20nF	
Leq	10µH	
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	30V
Io	200mA
Po	0.85W

USA FM

Standard	3610 Entity
Code	CL I: Div 1: GP A, B, C & D CL II, III: Div 2, GP F & G
File	Anticipated late 2000

Environmental

Operating temp	-20 to +60˚C (Certified for use at -40˚C)
Humidity	To 95% at 40˚C non-condensing
Enclosure	Front IP65 rear IP20
EMC	In accordance with EU Directive 89/336/EEC, full report available.

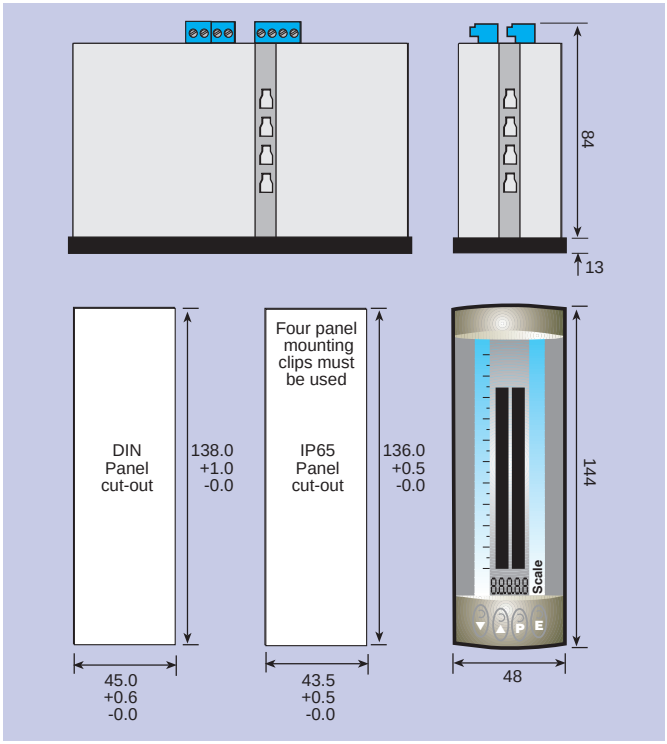
Mechanical

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

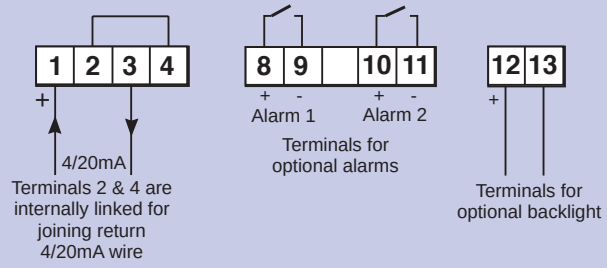
Accessories

Display 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.
Outputs	Isolated single pole solid state switch: Ron less than 5Ω +0.6V Roff greater than 180k

DIMENSIONS (mm)



TERMINAL CONNECTIONS



Certification	Both outputs comply with Clause 5.4 of EN50020:1995 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	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.