

The **BA528C** is a general purpose 4 $\frac{1}{2}$  digit panel mounting indicator which displays the current flowing in a 4/20mA loop in meaningful engineering units. The instrument is loop powered, but only introduces a 1V drop allowing it to be used in series with almost any 4/20mA loop. Modular accessories enable only the required features to be selected thus reducing cost while retaining interchangeability between instruments.

**Main application** of the BA528C is to display a measured variable or control signal. The zero and span of the display are independently adjustable so that the indicator can easily be calibrated to display any linear or square law signal represented by a 4/20mA current, such as temperature, flow or pressure. An optional 16 point lineariser enables the BA528C to display non-linear variables in linear engineering units, and two optional alarms will switch loads such as annunciators or relays.

**Calibration** and programming of the indicator is performed via the front panel tactile push-buttons which 'click' when operated. Using the push-buttons the operator can temporarily select the measured variable as a percentage of span, the input current in mA or the instrument calibration at 4 & 20mA. The calibration functions are contained in easy to understand menus which are protected by a four digit user selectable security code.

**An internal calibrator** simulates 4 and 20mA input currents so that the indicator can be calibrated without the need for test equipment or disconnection from the 4/20mA loop.

Although not providing independent verification, it is an effective way to quickly check performance or to recalibrate.

**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 as high or low trips with normally open or closed contacts. The display shows when an alarm is activated, and each alarm output will switch a dc load such as an annunciator, solenoid valve or relay.

**The front panel** is a robust, easy to clean Noryl moulding sealed with a non-reflective, scratch resistant polyester membrane. A captive neoprene gasket provides an IP65 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 indicator is protected from reverse connection and overrange input current, and incorporates extensive radio frequency filtering to comply with the European EMC Directive.

**If flammable atmospheres are present** a BA328C indicator should be used. This has the same features as the BA528C, but has been certified for use in hazardous areas.

# BA528C

2-wire 4/20mA  
4 $\frac{1}{2}$  digit indicator

*General purpose*

- ◆  $\pm 19999$  display  
20mm high
- ◆ Loop powered  
only 1V drop
- ◆ Internal calibrator  
& root extractor
- ◆ Optional:  
Backlight  
Alarms  
Lineariser  
Tare function
- ◆ IP65 front
- ◆ 144 x 72mm DIN  
enclosure
- ◆ 3 year guarantee

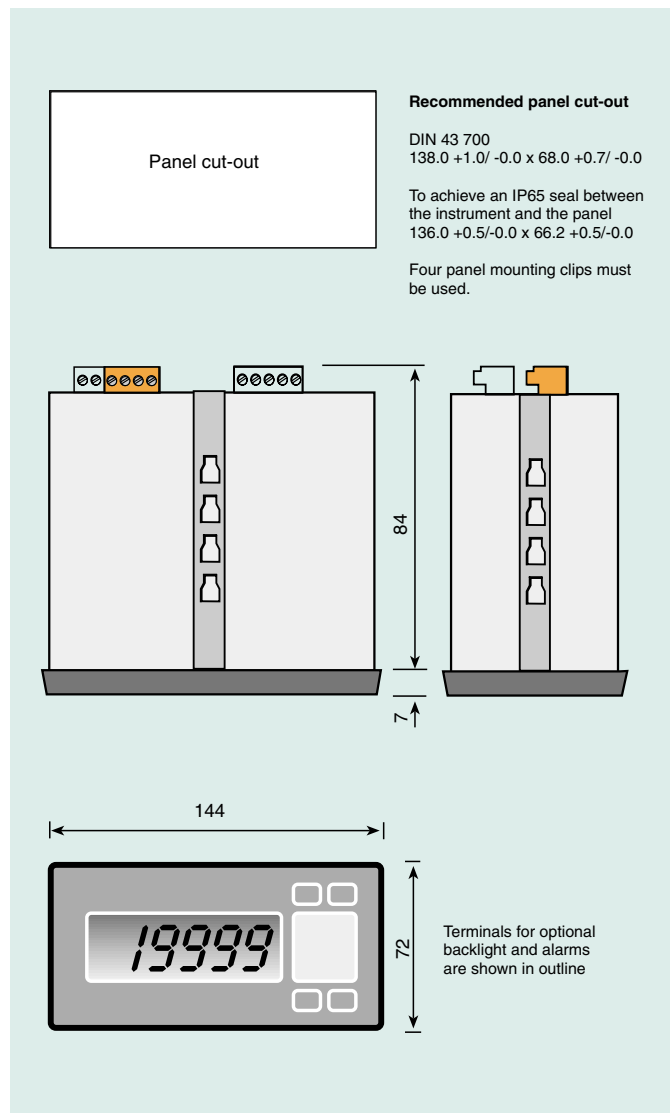
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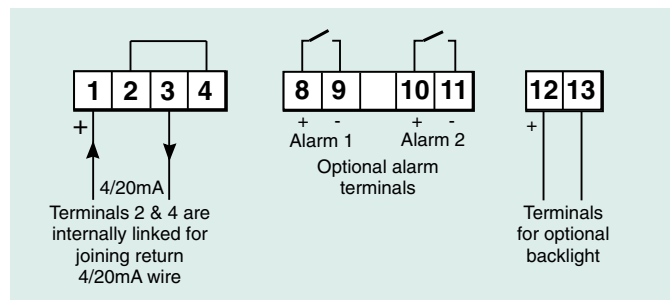
## SPECIFICATION

<b>Input</b>	
Current	4 to 20mA
Voltage	Less than 1V at 20°C than 1.1V at -20°C
Overrange	±200mA will not cause damage.
<b>Display</b>	
Type	4 <sup>1</sup> / <sub>2</sub> digit (-19999 to 19999) Liquid crystal 20mm high
Span	Adjustable between 0 & ±19999 for a 4 to 20mA input.
Zero	Adjustable between -19999 & 19999 with 4mA input.
Decimal point	1 of 4 positions or absent
Zero blanking	Only one leading zero is displayed
Polarity	Automatic minus sign
Direction	Display may increase or decrease with increasing current.
Reading rate	2 per second
Overrange	4 least significant digits are blanked
<b>Push-buttons</b>	
▼ button	(In operating mode) Shows display with 4mA input
▲ button	Shows display with 20mA input
'P' button	Displays input current in mA, or as a percentage of span. When tare or alarms are fitted has modified function.
<b>Accuracy</b>	
At 20°C	Linear: ±0.02% of span ±1 digit Root extracting: ±16µA at input ±1digit
Temperature effect on:	
Zero	Less than 25ppm/°C
Span	Less than 50ppm/°C
Series mode rejection	Less than 0.05% of span error for 1mA pk to pk 50Hz or 60Hz signal
<b>Environmental</b>	
Operating temp	-20 to +60°C
Storage temp	-40 to +85°C
Humidity	To 95% at 40°C non-condensing
Enclosure	Rear IP20 Front IP65
EMC	In accordance with EU Directive 89/336/EEC, full report available.
Immunity	Less than 1% of span error for 10V/m field strength between 27MHz & 1 GHz.
Emissions	Undetectable above background noise. Class B equipment
<b>Mechanical</b>	
Terminals	Screw clamp for 0.5 to 1.5mm <sup>2</sup> cables. Terminal block removable.
Weight	0.5kg
<b>Accessories</b>	
Separately powered backlight	LED backlight
Vin	18 to 30V dc, may be dimmed by reducing voltage below 18V. 40mA typical
Iin	40mA typical
Alarms	Two independent outputs each of which may be programmed as a high or low trip with NC or NO output.
Outputs	Isolated solid state switch, single pole Ron Less than 5Ω + 0.6V Roff Greater than 180k Vmax 30V Imax 250mA
Tare function	Primarily intended for weighing applications, sets indicator display to zero when the 'P' push-button is operated.
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.
Tag number	Thermally printed tag number on rear of the instrument.
Front cover	BA398 provides additional mechanical protection: front panel switches can not be operated

## DIMENSIONS (mm)



## TERMINAL CONNECTIONS



## HOW TO ORDER

Model number	BA528C
Display mode	Linear or root extracting*
Display at 4mA	XXXX } Include position of decimal point
at 20mA	XXXX } & sign if display is negative*
Display resolution	1, 2, 5 or 10 digits*
<b>Accessories</b>	
Display backlight	Separately powered backlight
Alarms	Alarms#
Tare function	Tare
Lineariser	Lineariser#
Scale card	Legend
Tag strip	Legend
Front cover	BA398

\*Will be set to display 0.00 at 4mA and 100.00 at 20mA with linear display mode and resolution of 1 digit if calibration information is not supplied.