

The **BA324NC** is a Type N field mounting indicator which displays the current flowing in a 4/20mA loop in meaningful engineering units. The BA324NC has a 20mm high, easy to read liquid crystal display, and is housed in a robust IP66 enclosure. Modular accessories enable only the required features to be incorporated thus reducing cost while retaining interchangeability between instruments.

Main application of the BA324NC is to display a measured variable or control signal in a Zone 2 hazardous process area. 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, pressure or flow. An optional 16 point lineariser enables the BA324NC to display non-linear variables in linear engineering units, and two optional alarms can control hazardous or safe area loads.

Calibration and programming of the indicator is performed via four sealed push-buttons located behind the instrument front cover where they are protected from damage and tampering. The calibration functions are contained in easy to understand menus which are accessed by entering a four digit user selectable security code.

Backlighting is available as an option to improve readability when the BA324NC is installed in a poorly illuminated area. High efficiency LED's provide an even glow to enhance the display contrast.

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

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.

Type N certification by BASEEFA to BS6941 permits the BA324NC to be installed in a Zone 2 hazardous area without Zener barriers or galvanic isolators at the interface to the safe area. For indicator applications within Zone 2, the BA324NC offers a cost effective alternative to intrinsically safe or flameproof instruments.

Two types of enclosure are available, each has stainless steel fittings and a polycarbonate window and is sealed with a neoprene gasket. The sturdy glass reinforced polyester (GRP) enclosure is suitable for most industrial applications including off-shore and water treatment. For installations where solvents may be encountered, the epoxy painted aluminium enclosure provides maximum protection. Both the GRP and aluminium enclosures, which have been tested by ERA, provide IP66 protection as specified in BS5490. To simplify installation, the BA324NC is fitted with additional terminals which may be used to link the return 4/20mA conductor and the cable screen. The indicator assembly may be removed from the enclosure without disconnecting the field wiring or disturbing the 4/20mA loop, continuity being maintained by a diode within the terminal assembly.

Reliability is ensured by an ISO9001 approved quality control system backed 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.

BA324NC

2-wire 4/20mA
4½ digit indicator

Type N certified for use
in Zone 2

- **Loop powered only 1V drop**
- **Type N certified**
- **±19999 display 20mm high**
- **Internal calibrator & root extractor**
- **Optional:
Backlight
Alarms
Lineariser
Tare function**
- **IP66 GRP or aluminium enclosure**
- **3 year guarantee**



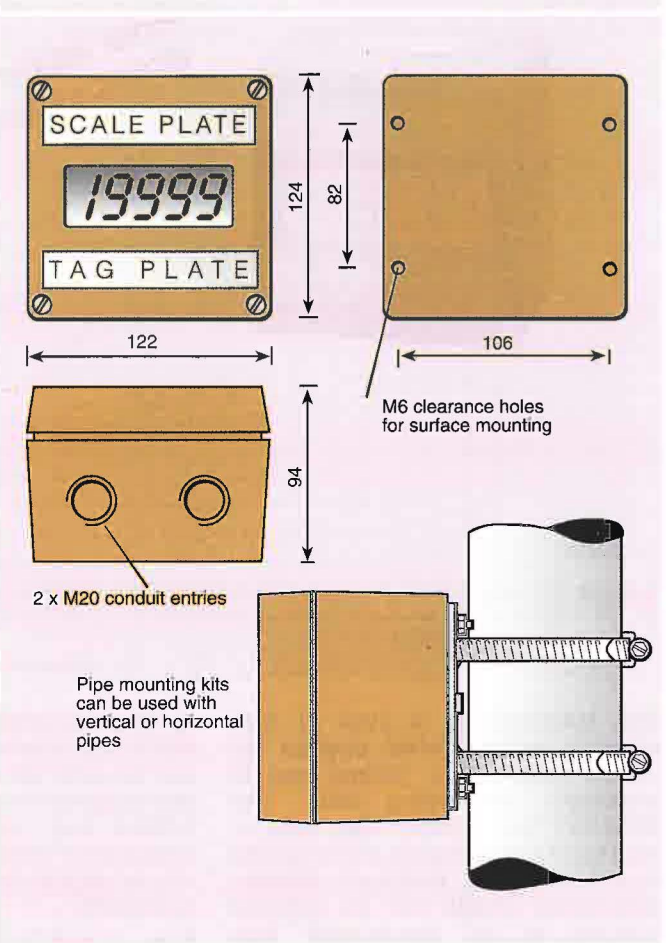
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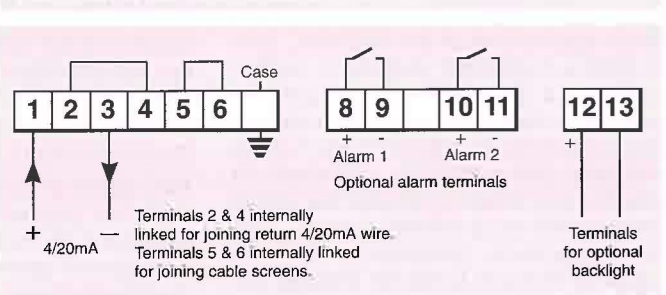
SPECIFICATION

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	4 1/2 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
Push-buttons	(In operating mode, front cover removed)
▼ 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. When tare or alarms are fitted has modified function. Optional external push-button allows 'P' button to be operated without removing front cover.
Accuracy	
At 20°C	Linear: ±0.02% of span ±1 digit Root extracting: ±16µA at input ±1digit
Temperature affect 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.
Type N certification	
Standard	BS6941 : 1988
Code	Ex N IIC T6
Tamb	-40 to +60°C
Cert No	BAS Ex96Y4065 Ex N IIC T5 with backlight
Location	Zone 2
Installation	Must comply with BS5345: Part 7: 1977
Environmental	
Operating temp	-20 to +60°C (certified for use at -40°C)
Humidity	To 95% at 40°C
Enclosure	IP66
EMC	In accordance with EU Directive 89/336/EEC, full report available.
Immunity	Less than 2% of span error for 10V/m field strength between 27MHz & 1 GHz.
Emissions	Undetectable above background noise. Class B equipment
Mechanical	
Terminals	Screw clamp for 0.5 to 2.5mm ² cables.
Weight	GRP enclosure 1.1kg Aluminium enclosure 1.4kg
Accessories	
Display backlight	LED backlight powered from 18 to 30V dc supply
Alarms	Two independent alarms each of which may be programmed as a high or low trip with NC or NO output.
Outputs	Isolated solid state single pole switch Ron less than 5Ω + 0.6V Roff greater than 180k
Certification	Vmax in 30V Imax in 100mA
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.
External push-button	Enables 'P' button to be operated without removing front cover.
Engraved scale plate	Removable blank stainless steel plate fitted to each indicator, can be supplied engraved with units of measurement. See accessory datasheet for details of legend size.
Engraved tag plate	Removable blank stainless steel plate fitted to each indicator, can be supplied engraved with tagging information. See accessory datasheet for details of legend size.

DIMENSIONS (mm)



TERMINAL CONNECTIONS



Pipe mounting kit 3 kits are available BA391, BA392 and BA393, see accessory datasheet for details.
Panel mounting kit BA394 mounts BA324NC into a panel aperture, see accessory datasheet for details.

HOW TO ORDER

Model number	BA324NC
Display mode	Linear or root extracting*
Display at 4mA	XXXX <input type="checkbox"/> Include position of decimal point
at 20mA	XXXX <input type="checkbox"/> & sign if display is negative*
Display resolution	1, 2, 5 or 10 digits*

Accessories	Please specify if required:
Display backlight	Backlight
Alarms	Alarms#
Tare function	Tare
Lineariser	Lineariser#
External push-button	Push-button
Scale card	Legend
Tag strip	Legend
Pipe mounting kit	BA391, BA392 or BA393 & pipe dia.
Panel mounting kit	BA394

*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.
#Contact BEKA if calibration of accessories is required.