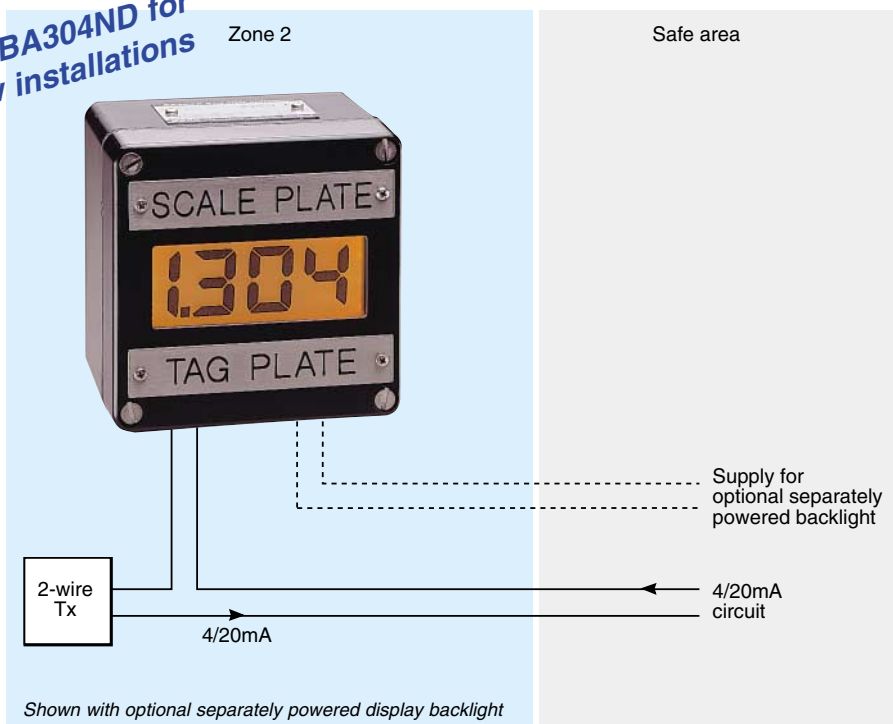


Use BA304ND for  
new installations



The **BA304NC** is a Type nL certified field mounting indicator which displays the current flowing in a 4/20mA process loop in engineering units. This indicator has a 25mm high 3½ digit liquid crystal display and is available in an IP66 aluminium or GRP enclosure.

For most new installations the BA304ND indicator, which has a separate terminal compartment and an extended range of accessories, should be used. The BA304NC has been retained for customers requiring an aluminium enclosure, or compatibility with earlier 'C' instruments.

**Main application** of the BA304NC 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 be calibrated to display any variable represented by a 4/20mA current, such as temperature, pressure, level or actuator position. When used with a differential flow transmitter an optional square root extractor allows the BA304NC to display flow in linear engineering units.

**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.

**A Declaration of Conformity** has been issued to confirm that the BA304NC complies with the requirements for Group II Category 3G equipment defined in the European ATEX Directive.94/9/EC. This allows

the indicator to be installed in a Zone 2 hazardous areas without Zener barriers or galvanic isolators. For Zone 2 applications, Type 'n' protection offers a less expensive alternative than intrinsic safety or flameproof techniques.

**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 offshore and water treatment. For installation 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 BA304NC is fitted with additional terminals which may be used to link the return 4/20mA conductor and the cable screen. The indicator assembly can 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 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.

# BA304NC

2-wire 4/20mA  
3½ digit indicator

Type nL certified for use  
in Zone 2 hazardous areas

- ◆ Loop powered only  
1V drop
- ◆ Type nL ATEX  
certification
- ◆ ±1999 display  
25.4mm high
- ◆ Optional:  
Backlight  
Root extractor
- ◆ IP66 GRP or  
aluminium enclosure
- ◆ 3 year guarantee



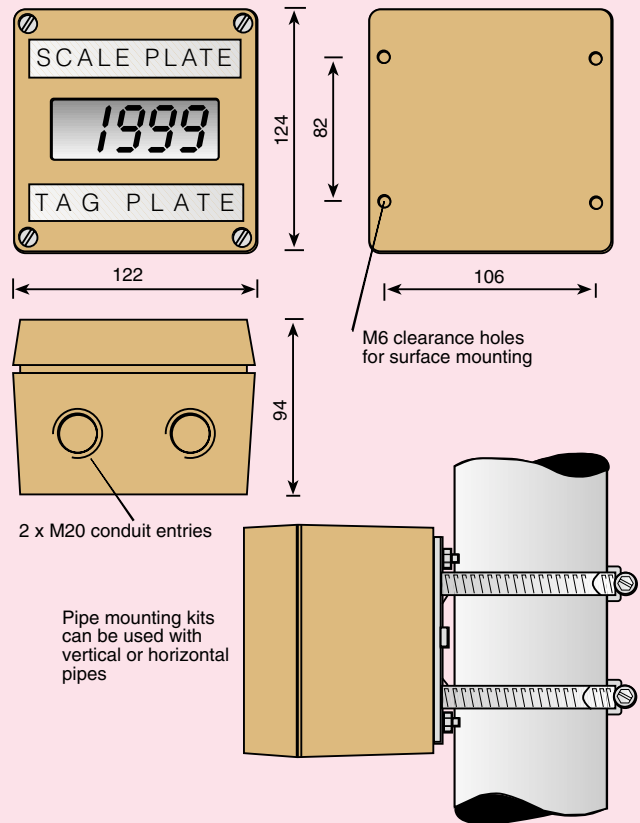
**BEKA**  
associates

BEKA associates Ltd. Old Charlton Rd.  
Hitchin, Hertfordshire, SG5 2DA, U.K.  
Tel. (01462) 438301 Fax (01462) 453971  
e-mail sales@beka.co.uk www.beka.co.uk

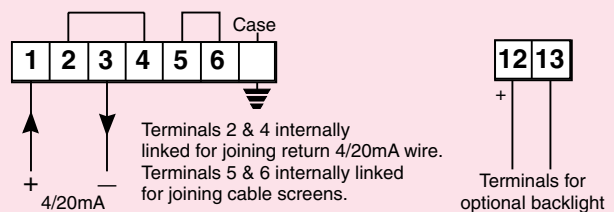
## SPECIFICATION

<b>Input</b>	
Current	4 to 20mA
Voltage	Less than 1V at 20°C Less than 1.1V at -20°C
Overrange	±200mA will not cause damage
<b>Display</b>	
Type	3 1/2 digit (-1999 to 1999) Liquid crystal 25mm high
Span	Adjustable between 000 & 1999 for a 4 to 20mA input.
Zero	Adjustable between ±1000 with 4mA input.
Decimal point	1 of 3 positions or absent
Polarity	Automatic minus sign
Direction	Display may increase or decrease with increasing current. Factory set option.
Reading rate	2.5 per second
Overrange	3 least significant digits are blanked
<b>Accuracy</b>	
At 20°C	±1 digit
Temperature effect on:	
Zero	Typ ±0.05 digit ±100ppm/°C Max ±0.1 digit ±200ppm/°C
Span	Typ ±50ppm; max ±100ppm/°C
Series mode rejection	Typ 1 digit error for 1mA pk to pk 50Hz signal.
<b>Type n certification</b>	
<b>ATEX Declaration of Conformity</b>	
Code	Group II, Category 3G, Ex nL IIC T5
Tamb	-40 to +60°C
Standard	EN 60079-15:2005
Location	Zone 2
Cert. No.	BEKA03ATEX0015
Installation	The BA304NC may be connected in series with most 4/20mA Zone 2 circuits providing maximum current in normal operation is less than 40mA. See Declaration of Conformity and instruction manual for full installation details.
<b>Environmental</b>	
Operating temperature	-20 to +60°C (Certified for use at -40°C)
Storage temperature	-40 to +85°C
Humidity	To 95% at 40°C
Enclosure	IP66 see ERA test report 5046/228
EMC	In accordance with EU Directive 2004/108/EC, 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
<b>Mechanical</b>	
Terminals	Screw clamp for 0.5 to 2.5mm <sup>2</sup> cables
Weight	GRP enclosure 1kg Aluminium enclosure 1.3kg
<b>Accessories</b>	
Separately powered backlight	LED backlight powered from 18 to 30V dc supply
Root extractor	
Accuracy	±16µA at input ±1 digit for inputs between 4.16 and 20mA (10 to 100% of flow)
Clip-off	Selectable by internal plug-in link, operates at 4.04mA input (5% of flow).
Etched scale plate	Removable blank stainless steel plate fitted to each indicator, can be supplied etched with units of measurement.*
Etched tag plate	Removable blank stainless steel plate fitted to each indicator, can be supplied etched with tagging information.*
Pipe mounting kit	2 kits are available BA392C and BA393*
Panel mounting kit	BA394 mounts BA304NC into a panel aperture*
	*See accessory datasheet for details.

## DIMENSIONS (mm)



## TERMINAL CONNECTIONS



## HOW TO ORDER

Model number  
Display at 4mA  
at 20mA

**Accessories**  
Display backlight  
Root extractor  
Scale plate  
Tag plate  
Pipe mounting kit  
Panel mounting kit

### Please specify

BA304NC  
XXXX Include position of decimal point  
XXXX & sign if display is negative#

### Please specify if required

Separately powered backlight  
Root extractor  
Legend  
Legend  
BA392C or BA393  
BA394

#Will be set to display 00.0 at 4mA and 100.0 at 20mA if calibration information is not supplied.