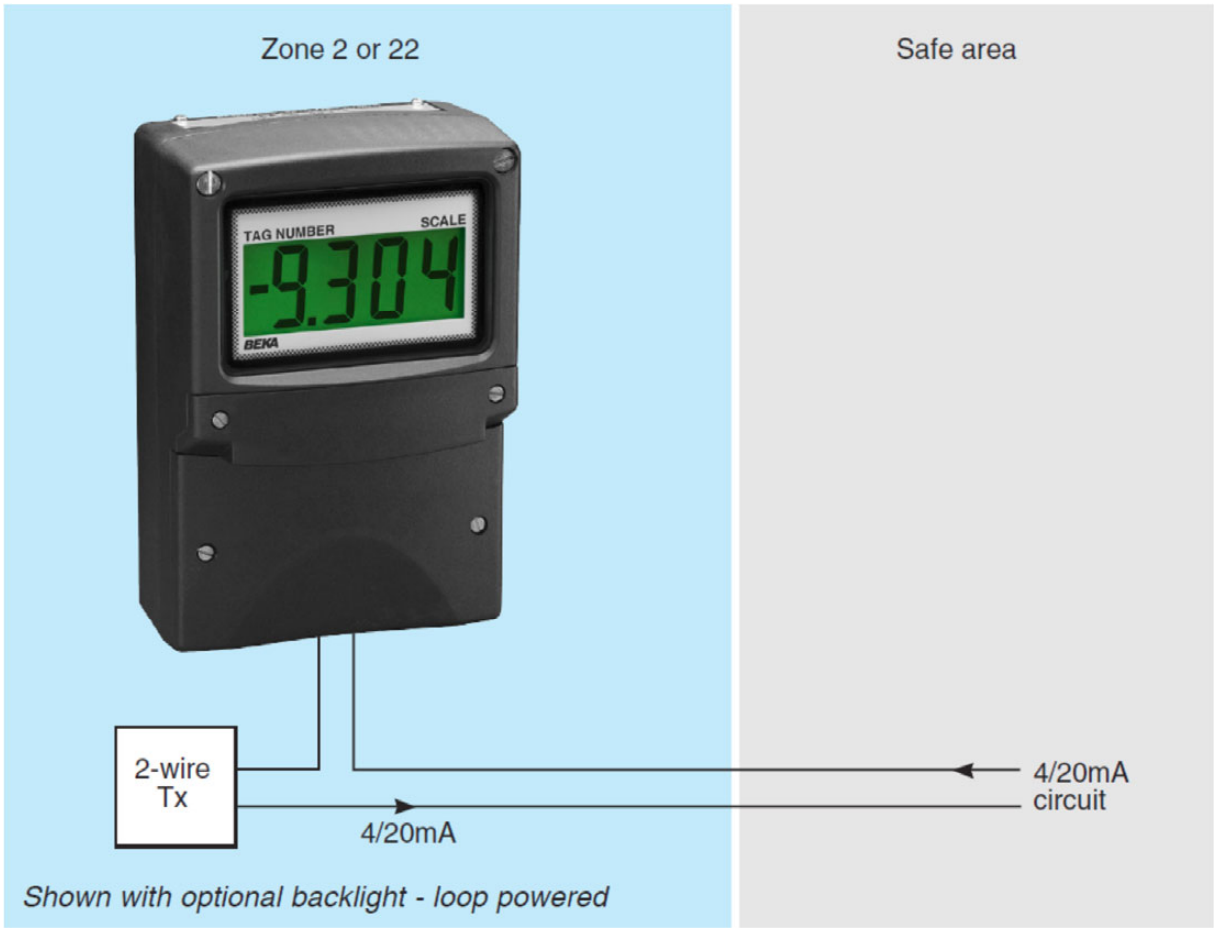
BA304NE Type nA 2-wire 4-20mA 4 digit Indicator



- Type nA & tc certified for use in Zones 2 & 22 hazardous areas
- Loop Powered – only 1.2V drop
- 4 digit 34mm high display
- Ex nA gas and Ex tc dust ATEX & IECEx certification
- IP66 GRP enclosure with separate terminal compartment
- Root extractor and 16 segment lineariser
- Optional backlight, alarms & external keypad
- 3 year guarantee

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The BA304NE loop powered 4/20mA indicator is a fourth generation field mounting instrument that is mechanically compatible and electrically similar to the earlier BA304ND. It has a much larger full 4 digit display and guaranteed performance between -40 and 70°C. Like its predecessor, the BA304NE is housed in a robust IP66 enclosure with a separate terminal compartment.

Main application of the BA304NE is to display a measured variable in meaningful engineering units within a Zone 2 or 22 hazardous area. The zero and span of the display are independently adjustable allowing the indicator to be calibrated to display any linear variable represented by the 4/20mA signal. A root extractor and an adjustable sixteen segment lineariser enable the indicator to display flow and variables such as tank level in linear engineering units. For weighing applications a tare function is included.

The bold 34mm high 4 digit display provides maximum contrast and has a very wide viewing angle, allowing the BA304NE indicator to be easily read in most lighting conditions over a wide temperature range. An optional factory fitted backlight is available for installations in poorly illuminated areas. The four digits, with three decimal points and a negative sign, may be configured to display any variable between -9999 and 9999.

The robust GRP enclosure has stainless steel fittings, silicone gaskets and an armoured glass window providing IP66 protection between -40 and 70˚C. Ingress and impact protection have been independently assessed by Intertek. A separate terminal compartment allows the instrument to be installed and terminated without exposing the display electronics. To further simplify field wiring and subsequent inspection, the terminal cable entries and clamping screws are forward facing. Additional terminals are provided which may be used for linking the return 4/20mA conductor and the cable screens.

ATEX and IECEx non sparking Ex nA certification allows the BA304NE to be installed in a Zone 2 gas hazardous areas without the need for Zener barriers, galvanic isolators or a flameproof enclosure. For European and international Zone 2 applications the BA304NE offers a less expensive alternative to intrinsic safety and flameproof instrumentation.

Ex tc dust certification also allows the BA304NE to be installed in Zone 22 dust hazardous areas, again without the need for Zener barriers, galvanic isolators or a flameproof enclosure.

A backlight which may be loop or separately powered is available as a factory fitted option. It provides green background illumination allowing the display to be read at night or in poorly illuminated areas. When powered from the 4/20mA loop no additional field wiring is required but

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the indicator's voltage drop is increased. Powering from a separate supply produces a brighter backlight but requires additional field wiring.

Optional dual alarm outputs which can switch hazardous or safe area loads, such as sounders, beacons or solenoid valves, are available as a factory fitted option. The two galvanically isolated solid state outputs may be independently conditioned as high or low alarms with normally open or closed outputs. Annunciators on the display show the status of both alarm outputs.

Reliability is ensured by component conformal coating, protection from incorrect connection and radio frequency interference. The indicator has been subjected to extensive vibration testing and is supported by a three year guarantee.

Other field mounting models in this range include the BA324NE which has a similar specification but has a five digit 29mm high display plus a 31 segment bargraph.

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, non-multiplexed 4 digits 34mm high
Span	Adjustable between 0 & ±9999 for a 4-20mA input
Zero	Adjustable between 0 & ±9999 with 4mA input
Decimal point	1 of 3 positions or absent
Polarity	Automatic minus sign
Zero blanking	Blanked apart from 0 in front of decimal point
Direction	Display may increase or decrease with increasing 4-20mA input
Root extractor	Selectable
Lineariser	16 adjustable segments
Reading rate	2 per second
Overrange	9999 or -9999 with all decimal points flashing

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Push buttons	*(Function in display mode)*
▼	Shows display with 4mA input
▲	Shows display with 20mA input
'P'	Displays unit in mA or % of span, has a modified function when alarms are fitted
'E'	Used for tare function

Accuracy at 20°C	
Linear	±0.02% of span ±1 digit
Root extracting	±16µA at input ±1 digit
Temperature effect on:	
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 3G Ex nA ic IIC T5 Gc Group II Category 3D Ex tc IIIC 80°C Dc IP66 Ta = -40 to 70°C
Input parameters	
Ii	100mA
Cert. No.	ITS11ATEX47255

International IECEx

Code	Ex nA ic IIC T5 Gc Ex tc IIIC T80°C Dc IP66 Tamb = -40 to 70°C
Cert. No.	IECEx ITS11.0016

Environmental

Operating Temperature	-40 to 70°C
Storage Temperature	-40 to 85°C
Humidity	to 95% at 40°C noncondensing
Vibration	Report available
Enclosure	IP66
EMC	Complies with EMC Directive 2014/30/EU

Mechanical

Terminals	Screw clamp for 0.5 to 1.5mm^2 cable
Weight	1.7kg

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Accessories

Backlight	Green, may be loop or separately powered
Loop powered	Input voltage increased to 5V
Separately powered	11V min at 35mA
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 solid state switch
R_{on}	5Ω + 0.7V max
R_{off}	1MΩ min
External keypad	Membrane keypad enables indicator to be controlled without removing cover
Scale legend	Units of measurement marked onto display escutcheon
Tag legend	Tag number or application marked onto display escutcheon
Stainless steel legend plate	Stainless steel plate etched with tag number or application attached to front of instrument
Pipe mounting kit	BA392D or BA393

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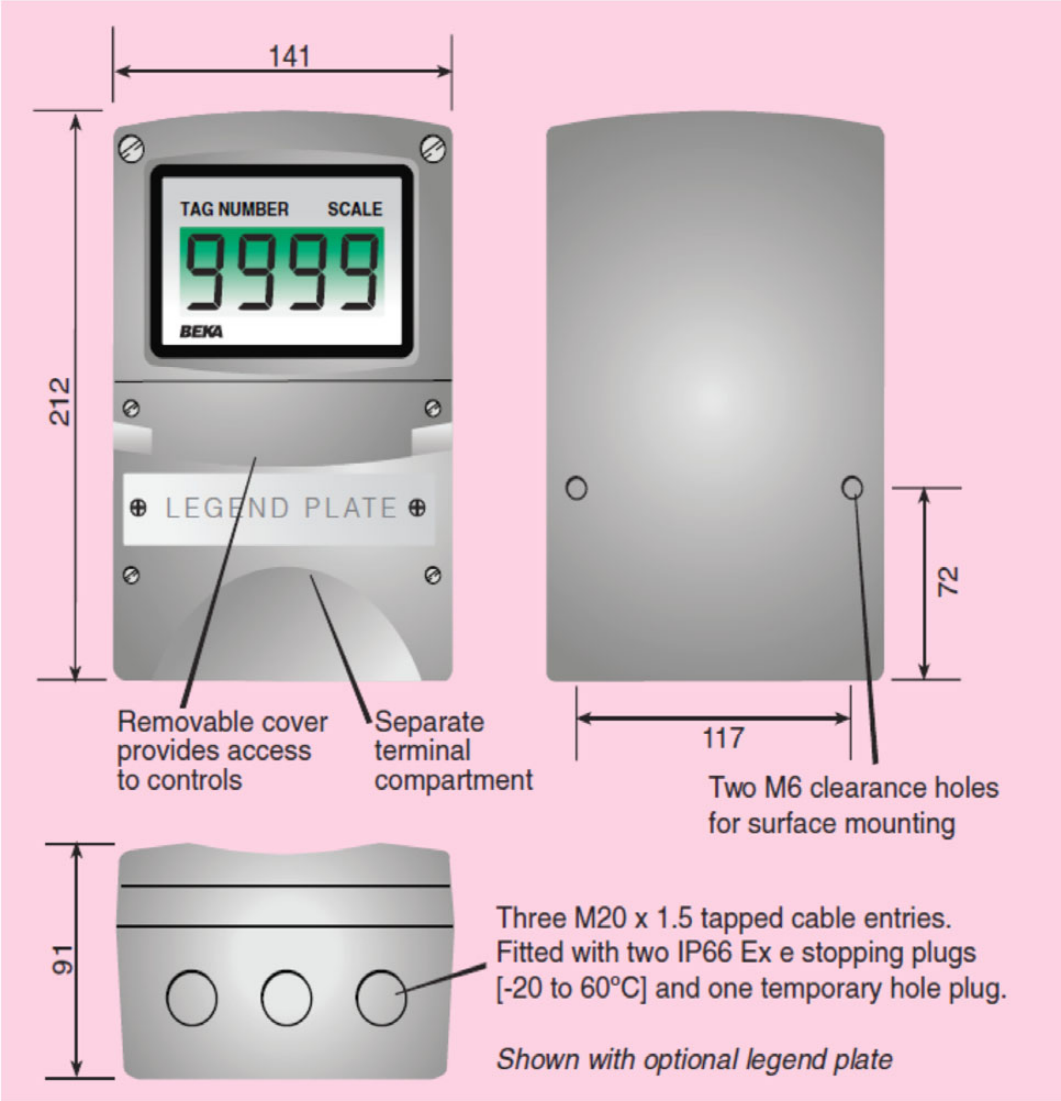
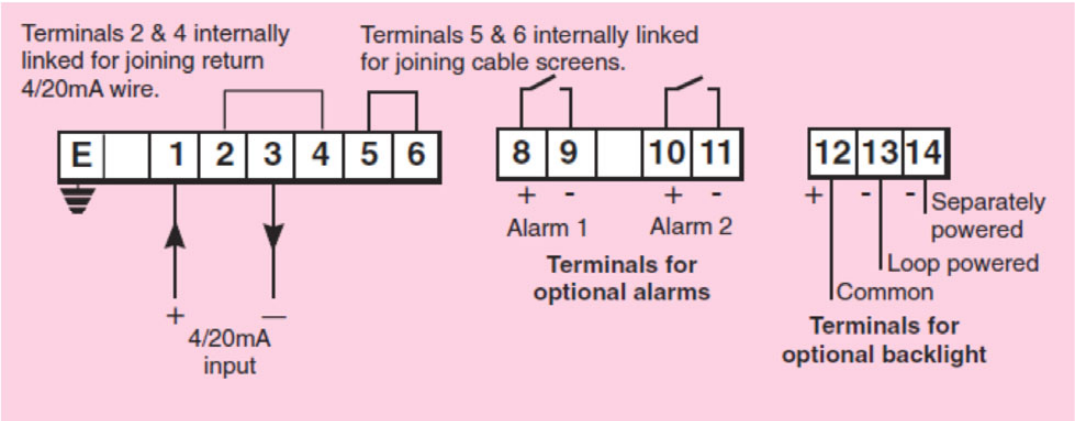
Dimensions



Terminal Connections



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Ordering Information

	Please specify
Model Number	BA304NE
Display mode	Linear, root or lineariser *Will be set to display 0.0 at 4mA and 100.0 at 20mA with a linear display if calibration information is not supplied. Can easily be recalibrated on-site.*
Display at:	
4.000mA	*Include position of decimal point & sign if negative, plus intermediate points if linearization is required*
20.000mA	

Accessories	**Please specify if required**
External keypad	External keypad
Display backlight	Backlight
Dual alarms	Alarms
Escutcheon marking	
Scale	Legend required
Tag	Legend required
Stainless Steel plate	Legend required
Pipe mounting kit	BA393D or BA393

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