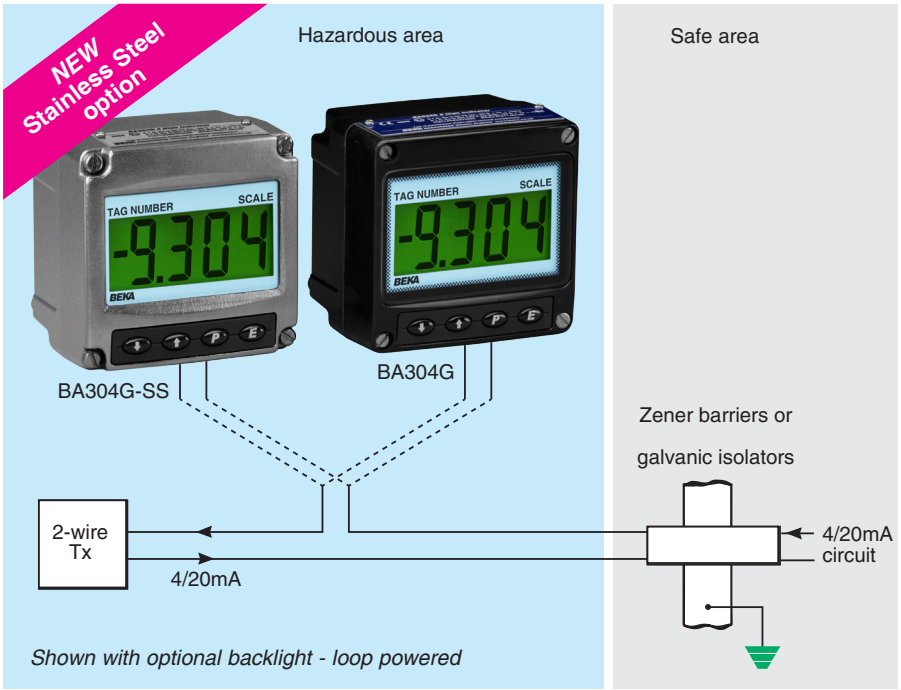

Shown with optional backlight - loop powered

BA304G
BA304G-SS
2-wire 4/20mA 4 digit indicator

Intrinsically safe for use in gas & dust hazardous areas

- **IP66 GRP or stainless steel enclosure.**
- **Intrinsically safe**
- **Loop powered only 1.2V drop.**
- **4 digit 34mm high display.**
- **Optional backlight & alarms.**
- **Easy scale card installation on-site.**
- **3 year guarantee**

www.beka.co.uk/ba304g

The BA304G loop powered 4/20mA indicator is an intrinsically safe field mounting instrument with a large 4 digit display housed in a robust IP66 GRP or stainless steel enclosure.

Main application of the BA304G is to display a measured variable in engineering units within a 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 large 34mm high 4 digit display provides maximum contrast and has a very wide viewing angle, allowing the BA304G indicator to be easily read in most lighting conditions. 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.

IP66 protection is provided by a robust GRP or 316 stainless steel enclosure, both have thick armoured glass windows and silicone gaskets. Impact and ingress protection have been assessed by UKAS accredited bodies. The BA304G is surface mounting but can be pipe or panel mounting using accessories.

International intrinsic safety gas and dust certification permit world wide installation. The 4/20mA input terminals comply with the requirements for *simple apparatus* which, together with the low voltage drop, allow the indicator to be connected in series with most intrinsically safe 4/20mA loops.

Display backlighting 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 intrinsically safe interface or wiring is required and the indicator input remains compliant with the requirements for *simple apparatus*. Powering from a separate supply produces a slightly brighter backlight but requires an additional intrinsically safe interface.

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 alarms.

The scale card which shows units of measurement and tag information slides into an internal slot and can easily be changed on-site. New instruments can be supplied with the scale card printed to show customer specified information for no additional charge. If this is not requested, a blank card is fitted which can easily be marked on-site.

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

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website: www.beka.co.uk

SPECIFICATION

Input

Current	4 to 20mA HART® transparent
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, 4 digits 34mm high non-multiplexed
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.
Reading rate	2 per second
Overrange	9999 or -9999 with all decimal points flashing

Push buttons (Function in display mode)

▼	Shows display with 4mA input
▲	Shows display with 20mA input
P	Displays input in mA or as a % of span, has a modified function when alarms are fitted.
E	Used for tare function

Accuracy at 20°C

Linear	±0.02% of span ±1digit
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

International IECEx

Code	Ex ia IIC T5 Ga Ex ia IIIC T80°C Db IP66 -40°C ≤ Ta ≤ 70°C
Input parameters	
Ui	30V dc
Ii	200mA
Pi	0.84W
Output parameters	Comply with requirements for *simple apparatus*
Cert. No.	IECEx ITS 11.0014X

Europe ATEX and UKEX

Code	Group II	Category 1G and 2D Ex ia IIC T5 Ga Ex ia IIIC T80°C Db IP66 -40°C ≤ Ta ≤ 70°C
Safety parameters		As IECEx certification
Cert. No.		ITS11ATEX27253X & ITS21UKEX0087X

USA & Canada ETL & cETL

Code	Class I, Div 1, Gp A, B, C, D. T5 Class I, Zone 0, AEx ia IIC T5 Ga -40°C ≤ Ta ≤ 70°C	USA & Canada USA
	Class II, Div 1, Gp E, F, G. Class III, Div 1 Zone 20 AEx ia IIIC T80°C Da -40°C ≤ Ta ≤ 60°C	USA & Canada USA
	Ex ia T5 Ga -40°C ≤ Ta ≤ 70°C Ex ia IIIC Da -40°C ≤ Ta ≤ 60°C	Canada
ETL control No.	4008610	

USA & Canada Nonincendive

ETL control No.	4008610

China CCC As IECEx - see certificate

India CCOE/PESO As ATEX - see certificate

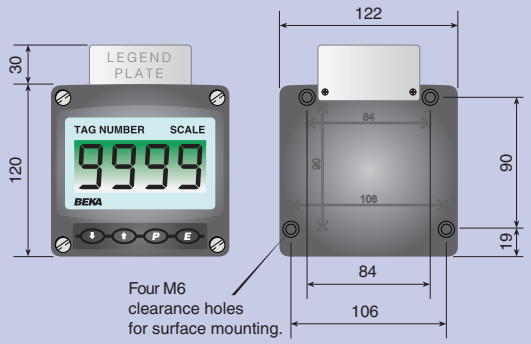
Environmental

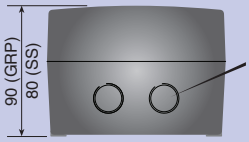
Operating temp	-40 to +70°C
Storage temp	-40 to +85°C
Humidity	to 95% at 40°C noncondensing
EMC	Complies with EU & UK EMC Directives

Mechanical

Enclosure	
Material	GRP or 316 stainless steel
Ingress protection	IP66
Impact protection	Enclosure 7J Window 4J
Weight	
GRP	1.1kg
Stainless steel	2.6kg
Terminals	Blue with screw clamp for 0.5 to 1.5mm² cable
Scale card	Slide-in card showing units of measurement and tag information through display window.

DIMENSIONS (mm)

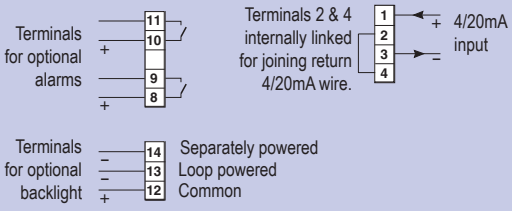




Two cable entries
M20 x 1.5 threaded.
Supplied with one IP66 stopping plug, nylon or stainless steel to match enclosure and one temporary hole plug.

Shown with optional legend plate

TERMINAL CONNECTIONS



Accessories

Backlight	Green, may be loop or separately powered
Loop powered	Indicator input voltage 5V
Separately powered	11V at 35mA from IS interface
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, voltage free solid state switch complying with requirements for *simple apparatus*.
Ron	5Ω + 0.7V max
Roff	1MΩ min
Legend plate	Stainless steel plate laser engraved tag number or application information attached to rear of the instrument, visible from the front. #
Pipe mounting kit	BA393G 316 stainless steel #
Panel mounting kits #	
For BA304G & BA304G-SS	
BA394G	Mounts indicator into an open panel aperture, does not seal aperture.
For BA304G	
BA494G	Mounts indicator into an open panel aperture & seals aperture
For BA304G-SS	
BA494G-SS	Mounts indicator into an open panel aperture & seals aperture
Back-box terminals for BA304G.	Including 4/20mA loop maintenance diode

See accessory datasheet for details

HOW TO ORDER

	Please specify
Model number	
GRP enclosure	BA304G
Stainless steel enclosure	BA304G-SS
Display mode	Linear, root or lineariser*
Display at:	
4.000mA	XXXX
20.000mA	XXXX
	Include position of decimal point & aign if negative.
Scale card marking	
Units	Legend required
Tag	Legend required

Accessories	Please specify if required
Display backlight	Backlight
Dual alarms	Alarms
Stainless legend plate	Legend required
Pipe mounting kit	BA393G
Panel mounting kit	BA394G, BA494G or BA494G-SS
Back-box terminals	Back-box terminals

* 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.

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