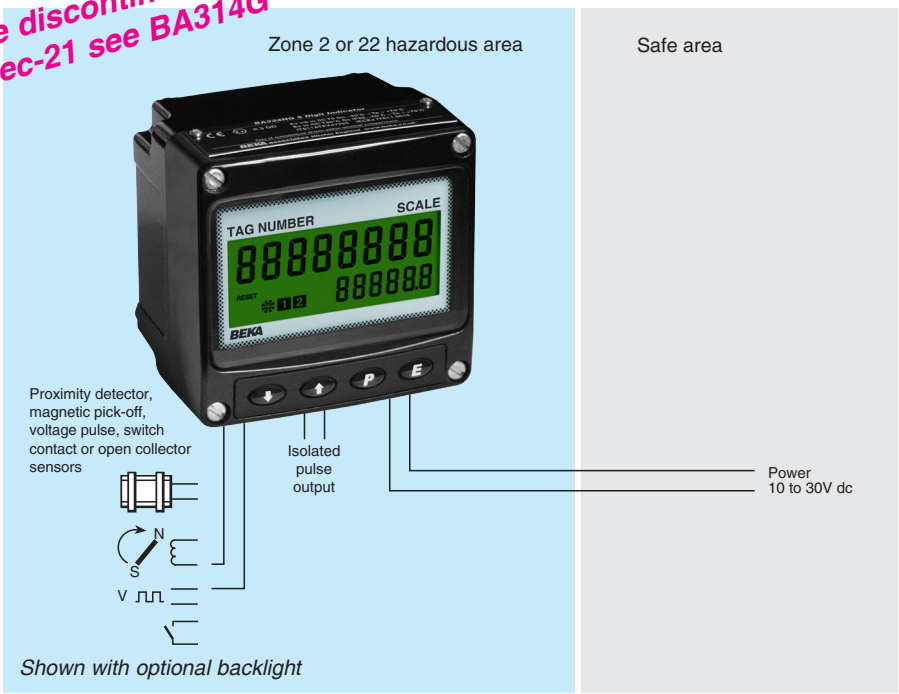
To be discontinued by 31-Dec-21 see BA314G



Shown with optional backlight

BA314NG

Ex nA one input tachometer

Can be installed in Zones 2 or 22 without Zener barriers or galvanic isolators

- **Configurable input: magnetic pick-off, switch contact, proximity detector, open collector or voltage pulse.**
- **Separate speed and run-time displays.**
- **Ex nA & Ex tc certified**
- **IP66 GRP enclosure**
- **Isolated pulse output**
- **Simple on-site scale card installation.**
- **Optional: Backlight Dual alarms 4/20mA output**
- **3 year guarantee**

www.beka.co.uk/ba314ng

The BA314NG is a third generation field mounting tachometer housed in a compact IP66 GRP enclosure. The tachometer is easy to use and can be configured on-site to operate with a magnetic pick-off, switch contact, proximity detector or open collector sensor. International Ex nA and Ex tc certification permits worldwide installation in Zones 2 or 22 without Zener barriers or galvanic isolators which significantly reduces installation costs.

The main application of the BA314NG is to measure and display rotational speed within a Zone 2 or 22 hazardous area. To assist with routine maintenance the BA314NG tachometer includes a run-time clock that records the number of hours that the monitored machinery has been operating.

International Ex nA and Ex tc certification allows the BA314NG tachometer to be installed in gas and dust hazardous areas worldwide. BEKA Application Guide AG310 contains Ex nA installation recommendations.

The display has high contrast and a wide viewing angle, enabling the tachometer to be read in most lighting conditions over a wide temperature range. Speed may be displayed in almost any units of measurement per second, minute or hour. Run-time is shown on the lower display in hours with a tenth of an hour resolution. If not required the run-time display may be disabled.

Display backlighting which is internally powered from the tachometer is available as a factory fitted option. It provides green background illumination enhancing daylight viewing and allowing the tachometer to be easily read at night or when installed in a poorly illuminated area.

IP66 protection is provided by the robust GRP enclosure which has stainless steel fittings, a silicone gasket and an 8mm thick armoured glass window. Ingress and impact protection have been independently assessed by Intertek.

The scale card which shows the tachometer's units of measurement and tag information slides into an internal slot allowing on-site removal and marking. New instruments are fitted with a printed scale card showing customer specified information, if this information is not supplied a blank card is fitted which can easily be marked on-site. For applications requiring external marking an optional stainless steel legend plate is available.

The isolated open collector pulse output can synchronously retransmit the tachometer's input pulse to other instruments. The retransmitted output pulse frequency may be divided and the output pulse width may be defined.

An isolated 4/20mA current sink output, which is available as a factory fitted option, may be configured to produce an output proportional to any part of the speed display.

Optional dual alarms can switch hazardous or safe area loads such as a sounder or a solenoid valve. The two galvanically isolated, solid state voltage free outputs may be independently conditioned as speed or run-time alarms with normally open or closed outputs. Annunciators on the BA314NG display show the status of both alarm outputs.

Other field mounting tachometers include the intrinsically safe BA314E and BA314G, and the general purpose BA514G, all of which have the same functions as the BA314NG.

Panel mounting tachometers with similar specifications are available in a variety of sizes and material for hazardous and general purpose applications.

BEKA associates

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Tel. (01462) 438301 Fax (01462) 453971
e-mail sales@beka.co.uk www.beka.co.uk

SPECIFICATION

Power supply

Voltage	10 to 30V dc
Current	16mA max plus 16mA for optional backlight

Input

	Lower	Upper switching thresholds
Switch contact	100Ω	1kΩ
Proximity detector (NAMUR)	1.2mA	2.1mA
Open collector	2kΩ	10kΩ
Magnetic pick-off	0	+40mV
Voltage pulse (low)	1V	3V 30V max
Voltage pulse (high)	3V	10V 30V max

Frequency

Switch contact	150Hz typical] *Depends upon pulse width*
Other inputs	100kHz max] *and debounce setting.*
All inputs	0.01Hz min

Display

Type	Liquid crystal
Zero blanking	Blanked apart from 0 in front of decimal point
Speed	8 digits 18mm high
Decimal point	1 of 7 positions or absent
Run-time	6 digits 12mm high, 99999.9 hours max
Grand total run-time	5 x 10^6 hours max

Remote reset — Contact closure with resistance less than 10k Ω

Pulse output

	Isolated open collector
Frequency	5kHz max, synchronous with input pulse, or divisible with selectable pulse width.
Divisible by	1, 10, 100, 1000 or 10000
Pulse width	0.1, 0.5, 1, 2.5, 5, 10, 25, 50, 100, 250 or 500ms
Ron	51Ω + 3V max
Roff	1MΩ min
Ui	30Vdc
I max	10mA

Configurable functions

Speed scale factor	Adjustable between 0.0001 and 99999pulses/revolution
Speed timebase	Speed may be displayed per second, minute or hour

Certification — **Note: Ex ic codes refer to instrument push button contacts which are nonincendive.**

Europe ATEX

Code	Group II Category 3G Ex nA ic IIC T5 Gc Group II Category 3D Ex ic tc IIIC T80°C Dc -40 ≤ Ta ≤ 60°C
Cert. No.	ITS16ATEX48409X

International IECEx

Code	Ex nA ic IIC T5 Gc Ex ic tc IIIC T80°C Dc -40 ≤ Ta ≤ 60°C
Cert. No	IECEx ITS 16.0005X

ETL & cETL

Code	Class I Zone 2 AEx nA ic IIC T5 Gc Zone 22 AEx ic tc IIIC T80°C Dc	USA
	Ex nA ic IIC T5 Gc Ex n IIC T5 Gc Ex ic tc IIIC T80°C Dc Class III Div 2, Class II Div 2, Gp F, G	Canada
	-40°C ≤ Ta ≤ 60°C	
ETL Control No.	4008610	

Environmental

Operating temp	-40 to +70°C display -20 to +70°C
Certification temp	-40 to +60°C
Storage temp	-40 to +85°C
Humidity	to 95% at 40°C non condensing
Vibration	Report available
Enclosure	
Material	GRP
Ingress	IP66
EMC	Complies with 2014/30/EU

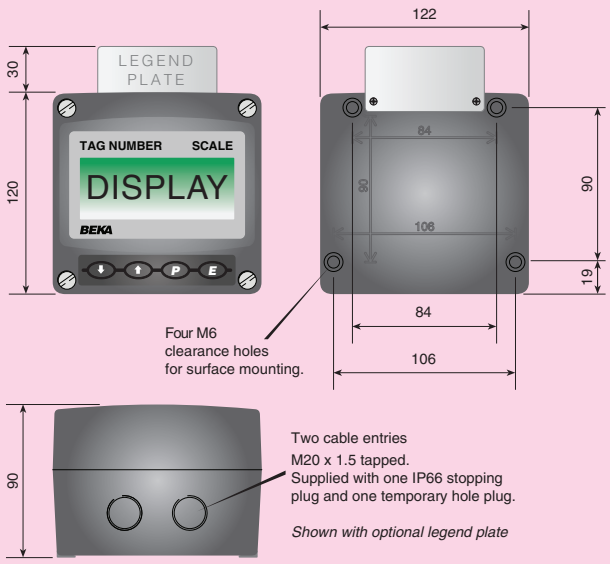
Mechanical

Terminals	Screw clamp for 0.5 to 1.5mm²
Weight	1.1kg

Accessories

Backlight	Green LED internally powered
4/20mA output	Isolated current sink
Voltage drop	5 to 30V
Dual alarms	Two alarms each of which may be independently configured as a speed or run-time, high or low alarm with a NO or NC output.
Outputs	Isolated single pole, voltage free solid state switch
Ron	5Ω + 0.7V max
Roff	IMΩ min
Ui	30V dc
Ii	200mA
Scale card	Blank card fitted to all instruments. Can be supplied printed with specified units of measurement and tag information for no additional charge at time of purchase. #

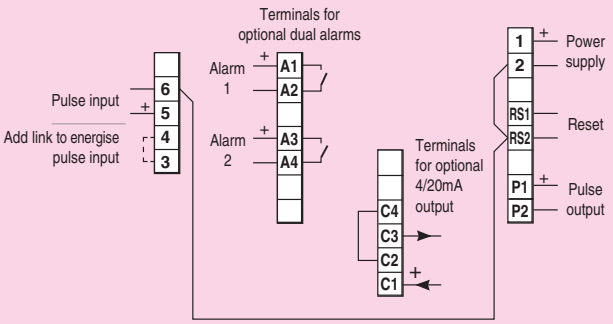
DIMENSIONS (mm)



Two cable entries
M20 x 1.5 tapped.
Supplied with one IP66 stopping plug and one temporary hole plug.

Shown with optional legend plate

TERMINAL CONNECTIONS



Legend plate	316 stainless steel plate laser engraved with 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	BA394G 316 stainless steel not sealing #

 # See accessory datasheet for details

HOW TO ORDER

	Please specify
Model number	BA314NG
Input	Type *
Speed scale factor	XXXXX *
Speed timebase	Seconds, minutes or hours*
Accessories	**Please specify if required**
Display backlight	Backlight
4/20mA output	4/20mA output
Dual alarms	Alarms
Scale card marking	
Units	Legend required
Tag	Legend required *No charge if ordered with tachometer*
Stainless legend plate	Legend required
Pipe mounting kit	BA393G
Panel mounting kit	BA394G

** Tachometer can be supplied configured as required for no additional charge. If configuration information is not supplied, instrument will be configured for open collector input with speed scaling factor of 1.0 and a timebase of seconds with direct pulse retransmission. Can easily be reconfigured on-site.*