

The **BA314G** is a third generation intrinsically safe 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 intrinsic safety certification permits worldwide installation.

The **main application** of the BA314G is to measure and display rotational speed within a hazardous area. To assist with routine maintenance the BA314G tachometer includes a run-time clock that records the number of hours that the monitored machinery has been operating.

International intrinsic safety certification allows the BA314G tachometer to be installed in gas and dust hazardous areas worldwide. When configured to operate with a sensor having a voltage or magnetic pick-off output, the tachometer input terminals comply with the requirements for *simple apparatus* reducing system design and documentation.

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 display 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 and can easily be changed on-site. New instruments are supplied with a printed scale card showing customer specified information, if this is not supplied a blank card is fitted which can easily be marked on-site. For application requiring external marking an optional stainless steel legend plate is available.

The **isolated open collector pulse output** synchronously retransmits 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 **optional isolated 4/20mA current sink output**, which has been certified as a separate intrinsically safe circuit complying with the requirements for *simple apparatus*, may be configured to produce an output proportional to any part of the speed display.

Optional dual alarms can switch hazardous area loads such as a sounder or solenoid valve, or safe area loads via a Zener barrier or isolator. 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 BA314G display show the status of both alarm outputs.

Panel mounting tachometers with similar specifications are available in a variety of sizes and material for use in hazardous and safe areas.

BA314G

One input tachometer

Intrinsically safe for use in gas & dust hazardous areas

- ◆ **Configurable input:** magnetic pick-off, switch contact, proximity detector, open collector or voltage pulse.
- ◆ **Separate speed and run-time displays.**
- ◆ **Intrinsically safe**
- ◆ **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/ba314g



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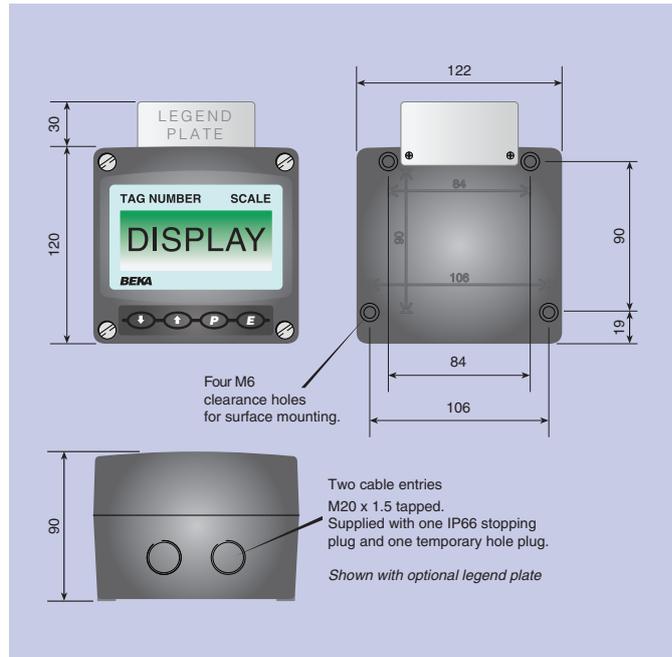
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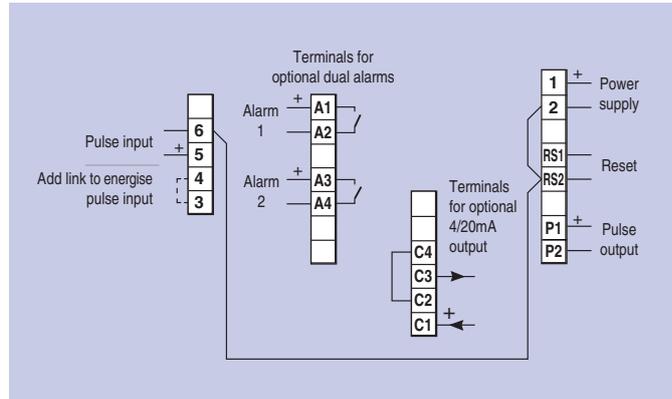
SPECIFICATION

Power supply		
Voltage	10 to 28V from a Zener barrier or galvanic isolator	
Current	16mA max plus 16mA for optional backlight.	
Input		
Switch contact	Lower	Upper switching thresholds
Proximity detector (NAMUR)	100Ω	1kΩ
Open collector	1.2mA	2.1mA
Magnetic pick-off	2kΩ	10kΩ
Voltage pulse (low)	0	+40mV
Voltage pulse (high)	1V	3V 28V max
	3V	10V 28V max
Frequency		
Switch contact	150Hz typical	
Other inputs	100kHz max	
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 10kΩ	
Pulse output		
Frequency	Isolated open collector	
	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	
I max	10mA	
Configurable functions		
Speed scale factor	Adjustable between 0.0001 and 99999 pulses / revolution.	
Speed timebase	Speed may be displayed per second, minute or hour	
Intrinsic safety		
International IECEx		
Code	Ex ia IIC T5 Ga	
	-40 ≤ Ta ≤ 70°C	
	Ex ia IIIC T80°C Db	
	-40 ≤ Ta ≤ 60°C	
Cert. No.	IECEX ITS 16.0004X	
Europe ATEX and UKEX		
Code	Group II Category 1G Ex ia IIC T5 Ga	
	-40 ≤ Ta ≤ 70°C	
	Group II Category 2D Ex ia IIIC T80°C Db	
	-40 ≤ Ta ≤ 60°C	
Cert. No.s	ITS16ATEX28408X ITS21UKEX0098X	
ETL & cETL		
Code	Class I Div 1 Gp A, B, C, D T5	
	Class II Div 1 Gp E, F, G Class III	
	Class I Zone 0 AEx ia IIC T5 Ga	
	Zone 20 AEx ia IIIC T80°C Da	
	Ex ia IIC T5 Ga	
	Ex ia IIIC T80°C Da	
	-40°C ≤ Ta ≤ 70°C	
ETL Control No.	4008610	
China CCC		
	As IECEx - see certificate	
India CCOE/PESO		
	As ATEX - see certificate	
Nonincendive USA & Canada ETL & cETL		
Code	Class I Div 2 Gp A, B, C, D T5	
	Class II Div 2 Gp F, G	
	Class III Div 2	
	-40°C ≤ Ta ≤ 70°C	
ETL Control No.	4008610	
Environmental		
Operating temp	-40 to +70°C display -20 to +70°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 EU and UK Directives	
Mechanical		
Terminals	Screw clamp for 0.5 to 1.5mm ²	
Weight	1.1kg	
Accessories		
Backlight	Green LED internally powered	
4/20mA output	Isolated current sink	
Voltage drop	5 to 28V	
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	1MΩ min	
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)



TERMINAL CONNECTIONS



Legend plate	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 # BA494G GRP sealing #

See accessory datasheet for details

HOW TO ORDER

Model number	Please specify BA314G
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	Legend required
Units	Legend required
Tag	No charge if ordered with tachometer
Stainless legend plate	Legend required
Pipe mounting kit	BA393G
Panel mounting kit	BA394G or BA494G

* 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 minutes with direct pulse retransmission. Can easily be reconfigured on-site.