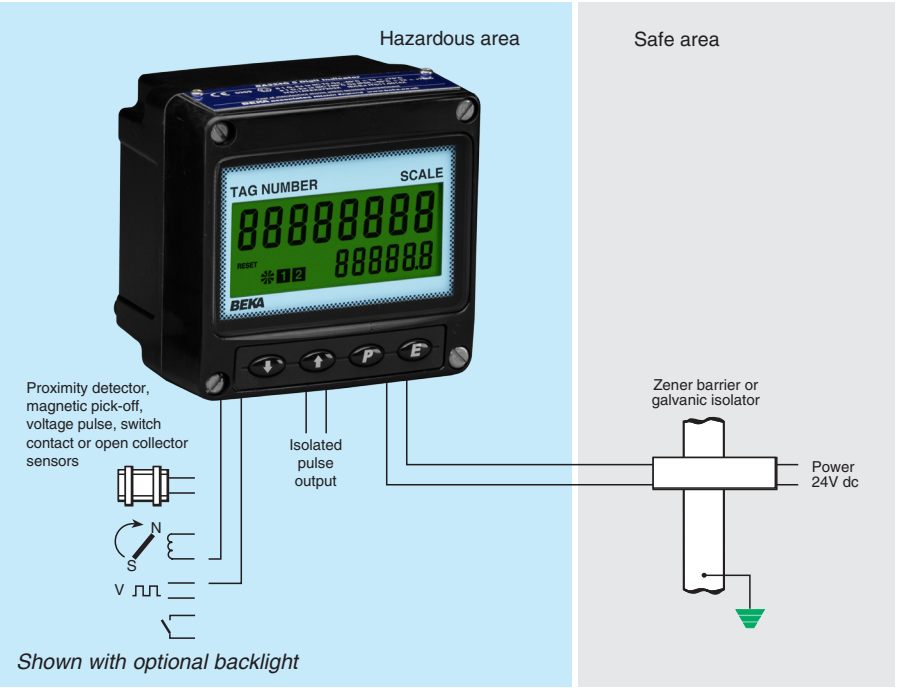


Shown with optional backlight

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

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.

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

SPECIFICATION

Power supply
- Voltage: 10 to 28V from a Zener barrier or galvanic isolator
- 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 28V max
Voltage pulse (high)	3V	10V 28V max

Frequency
- Switch contact: 150Hz typical
- Other inputs: 100kHz max
- All inputs: 0.01Hz min

Depends upon pulse width and debounce setting.

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 — USA & Canada
- Class I Zone 0 AEx ia IIC T5 Ga; Zone 20 AEx ia IIIC T80°C Da — USA
- Ex ia IIC T5 Ga; Ex ia IIIC T80°C Da — Canada
- -40°C ≤ Ta ≤ 70°C
- ETL Control No.: 4008610

China CCC: As IECEx - see certificate

India CCOE/PESO: As ATEX - see certificate

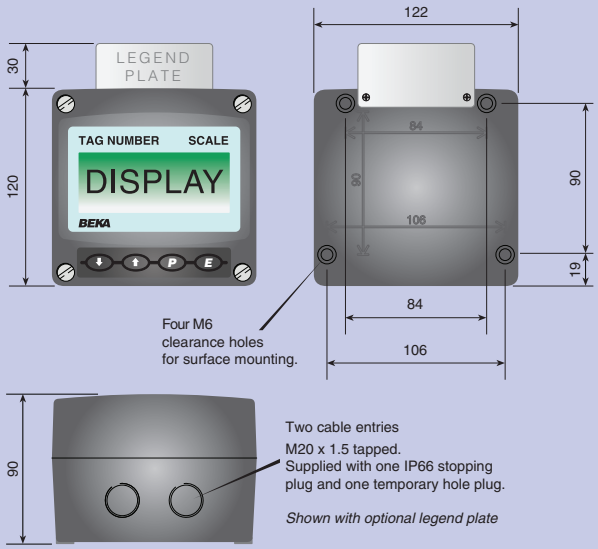
Nonincendive USA & Canada ETL & cETL
- Code: Class I Div 2 Gp A, B, C, D T5; Class II Div 2 Gp F, G; Class III Div 2; -40°C ≤ Ta ≤ 70°C
- ETL Control No.: 4008610

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

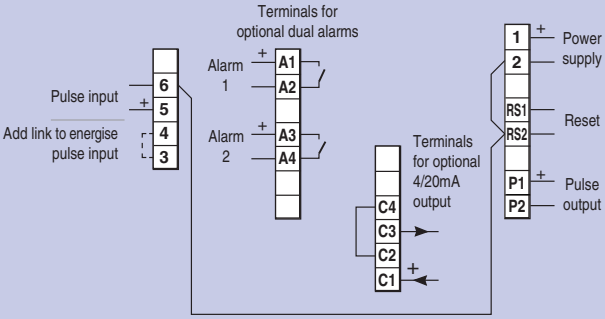
Mechanical
- Terminals: Screw clamp for 0.5 to 1.5mm²
- Weight: 1.1kg

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: IMΩ 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

	Please specify
Model number	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	
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 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.*