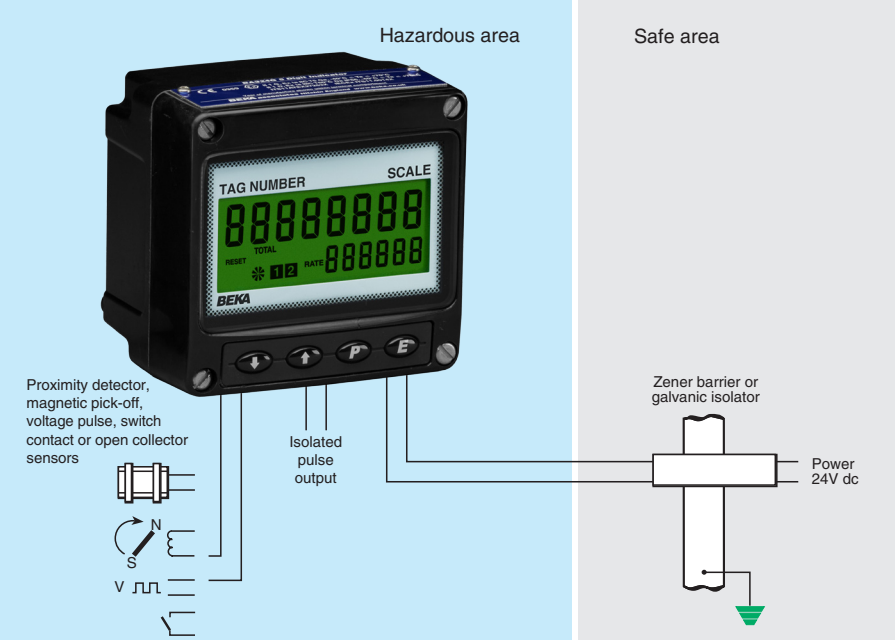

Shown with optional backlight

BA334G

one input rate totaliser

Intrinsically safe for use in gas & dust hazardous areas

- **Configurable input: magnetic pick-off, switch contact, proximity detector, open collector or voltage pulse.**
- **Separate displays**
- **Intrinsically safe**
- **IP66 GRP enclosure**
- **Linearisers**
- **Isolated pulse output**
- **Simple on-site scale card installation.**
- **Optional: Backlight Dual alarms 4/20mA output**
- **3 year guarantee**

www.beka.co.uk/ba334g

The BA334G is a third generation intrinsically safe field mounting rate totaliser housed in a compact IP66 GRP enclosure. The totaliser is easy to use and can be configured on-site to operate with flowmeters having a magnetic pick-off, switch contact, proximity detector, open collector or a voltage pulse output. International intrinsic safety certification permits worldwide installation.

The main application of the BA334G is to process the pulse output from a hazardous area flowmeter such as a turbine meter and simultaneously display the rate and total flow in engineering units within the hazardous area. The BA334G will compensate for flowmeter nonlinearity using up to sixteen flowmeter K-factors which can be entered on-site.

International intrinsic safety certification allows the BA334G rate totaliser to be installed in gas and dust hazardous areas worldwide. When configured to operate with a flowmeter having a voltage or magnetic pick-off output, the 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 rate totaliser to be read in most lighting conditions over a wide temperature range. Rate of flow may be displayed in almost any units of measurement per second, minute or hour. Total flow may be shown in the same or in different units and the total display may be reset using the front panel push buttons or an external contact closure.

Display backlighting which is internally powered from the totaliser, 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 Rate Totaliser'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 applications requiring external marking an optional stainless steel legend plate is available.

The isolated open collector pulse output may be configured to synchronously retransmit the rate totalisers pulse input, or a scaled pulse when the least significant digit of the total display is incremented.

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 rate or total 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 galvanic isolator. The two isolated, solid state voltage free outputs may be independently conditioned as rate or total alarms with normally open or closed outputs. Annunciators on the BA334G display show the status of both alarm outputs.

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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
- Total ‡: 8 digits 18mm high
  - Decimal point: 1 of 7 positions or absent
- Rate ‡: 6 digits 12mm high
  - Decimal point: 1 of 5 positions or absent

‡ Rate & Total can be shown on either 6 or 8 digit display

- Grand total: Maximum count 10^{16}

Remote reset: Contact closure with resistance less than 10kΩ

Pulse output: Isolated open collector
- Frequency: 5kHz max, synchronous with input pulse, or when least significant digit of total display is incremented. Divisible with selectable 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
- Rate scale factor: Adjustable between 0.0001 and 99999 pulses/unit vol.
- *Flowmeter K-factor*
- Linearisers: 16 K-factors may be entered
- Rate timebase: Rate may be displayed per second, minute or hour
- Rate display filter: Adjustable digital filter
- Total scale factor: Adjustable between 0.0001 and 99999

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

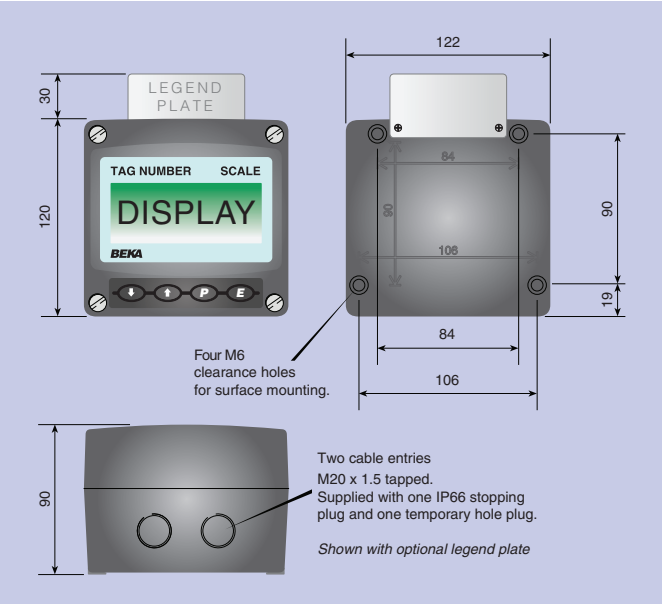
Nonincendive USA & Canada ETL & cETL
- Code: Class I Div 2 Gp A, B, C, D T5; Class II Div 2 Gp F, G; Class III Div 2; -40°C ≤ Ta ≤ 70°C
- ETL Control No.: 4008610

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

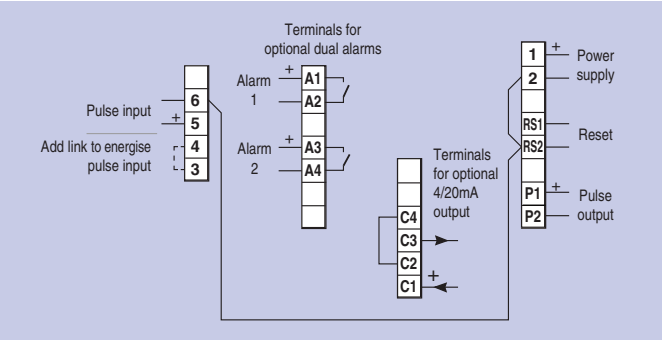
Mechanical
- Terminals: Screw clamp for 0.5 to 1.5mm²
- Weight: 1.1kg

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 rate or total, 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

DIMENSIONS (mm)



TERMINAL CONNECTIONS



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. #
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 # BA494G GRP sealing #

 # See accessory datasheet for details

HOW TO ORDER

	Please specify
Model number	BA334G
Input	Type *
Rate scale factor	XXXXX * *If linearisation is required, up to 16 rate scale factors may be entered for different flow rates.*
Rate timebase	Seconds, minutes or hours*
Total scale factor	XXXXX *
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 totaliser*
Stainless legend plate	Legend required
Pipe mounting kit	BA393G
Panel mounting kit	BA394G or BA494G

** Totaliser 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 rate and total scaling factors of 1.0 and a timebase of seconds with direct pulse retransmission. Can easily be reconfigured on-site.*