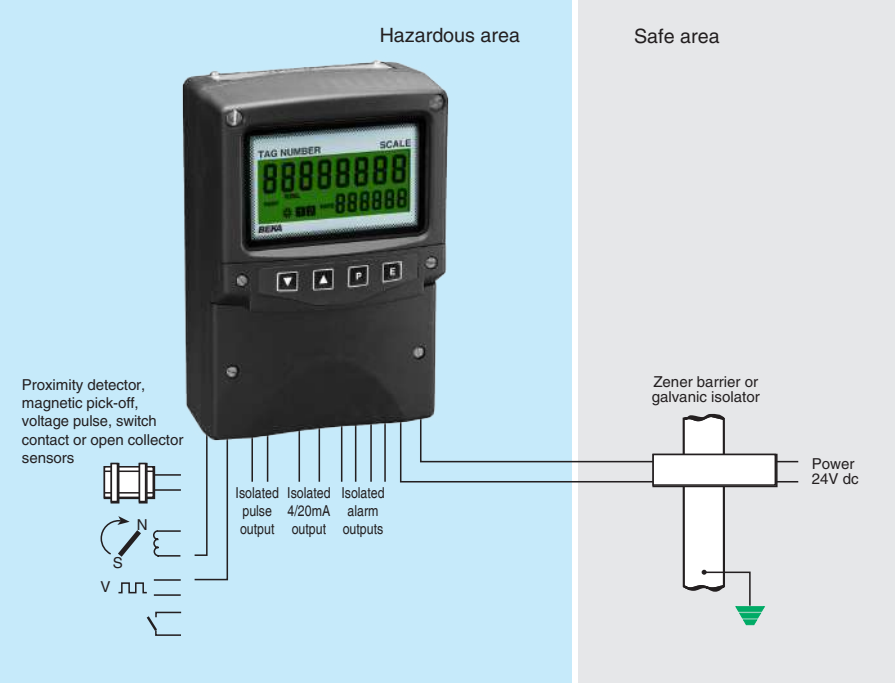

BA334E

one input rate totaliser

Intrinsically safe for use in all gas hazardous areas

- **Configurable input: magnetic pick-off, switch contact, proximity detector, open collector or voltage pulse.**
- **Separate displays with backlight.**
- **Intrinsically safe**
- **IP66 GRP enclosure with separate terminal compartment.**
- **Lineariser**
- **Isolated dual alarms, pulse and 4/20mA outputs.**
- **3 year guarantee**

www.beka.co.uk/ba334e

The BA334E is a third generation intrinsically safe field mounting rate totaliser housed in a robust IP66 GRP enclosure with a seperate terminal compartment. 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 BA334E 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 BA334E will compensate for flowmeter nonlinearity using up to sixteen flowmeter K-factors which can be entered on-site.

International intrinsic safety certification allows the BA334E rate totaliser to be installed in gas 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. Green backlighting enhances daylight viewing and allows the instrument to be easily read at night or when installed in a poorly illuminated area. 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.

IP66 protection is provided by the robust GRP enclosure which has stainless steel fittings, silicone gaskets and a 4mm thick armoured glass window. Ingress and impact protection have been independently assessed by Intertek. A separate terminal compartment allows connection of field wiring without exposing the instrument electronics.

Isolated pulse and 4/20mA outputs which comply with the requirements for *simple apparatus* are included. The pulse output can synchronously retransmit the rate totaliser's pulse input, or a scaled pulse when the least significant digit of the total display is incremented. The 4/20mA output may be configured to produce an output proportional to any part of the rate or total display.

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 BA334E display show the status of both alarm outputs.

The escutcheon which shows the Rate Totaliser's units of measurement and tag information can be changed on-site. New instruments are supplied with a printed escutcheon showing customer specified marking, if this information is not supplied a blank escutcheon is fitted which can easily be marked on-site. An optional laser engraved stainless steel legend plate secured to the front of the instrument is also available.

The compact BA334G has the same functions as the BA334E without a separate terminal compartment.

BEKA associates

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SPECIFICATION

Power supply

Voltage	10 to 28V from a Zener barrier or galvanic isolator
Current	32mA

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

Display

Type	Liquid crystal
Backlight	Green LED internally powered
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

Configurable functions

Rate scale factor	Adjustable between 0.0001 and 99999 pulses/unit vol.
Flowmeter K-factor	
Linearisер	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

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

4/20mA output Isolated current sink, configurable to represent any part of the rate or total display.

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

Intrinsic safety

Europe ATEX and UK UKCA

Code	Group II Category 1G Ex ia IIC T5 Ga -40 ≤ Ta ≤ 70°C
Cert. No.s	ITS16ATEX28408X ITS21UKEX0098X

International IECEx

Code	Ex ia IIC T5 Ga -40 ≤ Ta ≤ 70°C
Cert. No.	IECEx ITS 16.0004X

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 -40°C ≤ Ta ≤ 70°C	] Canada
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

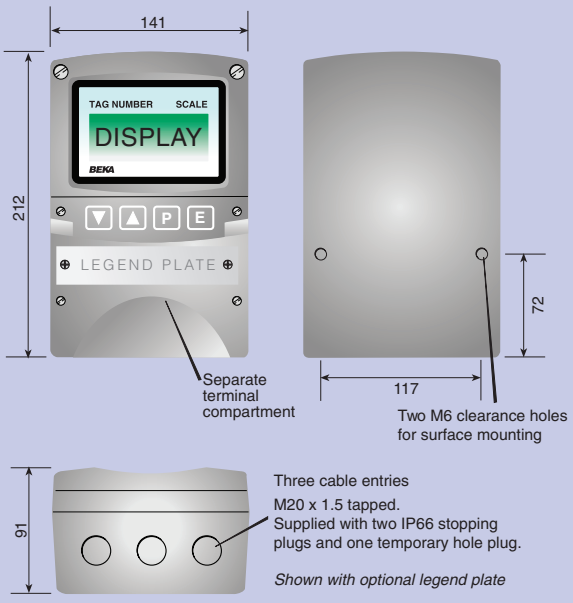
Environmental

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

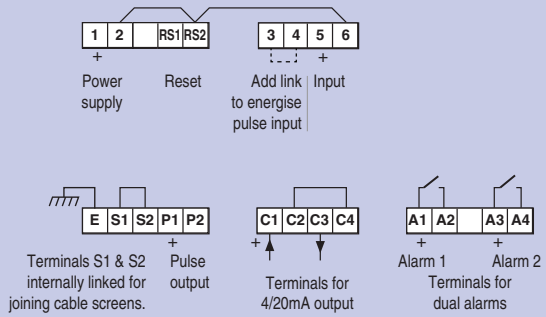
Mechanical

Terminals	Screw clamp for 0.5 to 1.5mm²
Weight	1.7kg

DIMENSIONS (mm)



TERMINAL CONNECTIONS



Accessories

Escutcheon	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 secured to the front of the instrument laser engraved with tag number or application information. #
Pipe mounting kit	BA392D or BA393 #

 # See accessory datasheet for details

HOW TO ORDER

	Please specify
Model number	BA334E
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**
Escutcheon marking	
Units	Legend required
Tag	Legend required *No charge if ordered with totaliser*
Stainless legend plate	Legend required
Pipe mounting kit	BA392D or BA393

** 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.*