

The **BA337NE** rate totaliser has a rugged stainless steel enclosure allowing it to be safely installed in an Ex n or Ex tc panel enclosure located in Zones 2 or 22 without the need for Zener barriers or galvanic isolators. The rate totaliser is easy to use and can be configured on-site to operate with flowmeters having a wide variety of pulse outputs. A slide-in scale card simplifies identification.

The main application of the BA337NE 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 in a Zone 2 or 22 hazardous area. The BA337NE can compensate for flowmeter nonlinearity using up to sixteen flowmeter K-factors which can be entered on-site.

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.

International Ex nA certification permits the BA337NE rate totaliser to be installed worldwide. When mounted in a panel enclosure complying with Ex n (non sparking) impact and ingress requirements, the enclosure and rate totaliser may be installed in a Zone 2 hazardous area without barriers or isolators. Certified Ex n or Ex e enclosures are often used. Similarly, the BA337NE can be mounted in an Ex tc enclosure located in Zone 22. BEKA Application Guide AG310 provides Ex nA installation recommendations.

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.

One of the following three optional outputs may be factory fitted to the BA337NE rate totaliser.

Optional isolated pulse output will synchronously retransmit the rate totaliser input pulse, or a pulse when the least significant digit of the total display is incremented.

Optional isolated 4/20mA output may be configured to produce an analogue output proportional to any part of the rate or total display.

Optional dual alarms can switch hazardous or safe area loads such as a sounder or solenoid valve. The two galvanically isolated, solid state voltage free outputs may be independently conditioned as rate or total alarms with normally open or closed outputs. Annunciators on the BA337NE display show the status of both alarm outputs.

Intrinsically safety models and instruments with larger displays are available within the range. The BA337E-SS has the same features as the BA337NE including a rugged stainless steel enclosure, but is certified intrinsically safe Ex ia.

The intrinsically safe BA337E offers similar features in a Noryl 96 x 48mm enclosure and the BA338E has similar features in a 144 x 72mm Noryl enclosure with a larger display.

BA337NE

Rugged Ex nA & Ex tc one input rate totaliser

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 rate and total displays.**
- ◆ **Ex nA & Ex tc certified**
- ◆ **105 x 60mm rugged 316 stainless steel enclosure with IP66 front protection.**
- ◆ **Optional:** Backlight dual alarms or 4/20mA output or pulse output
- ◆ **3 year guarantee**

www.beka.co.uk/ba337ne



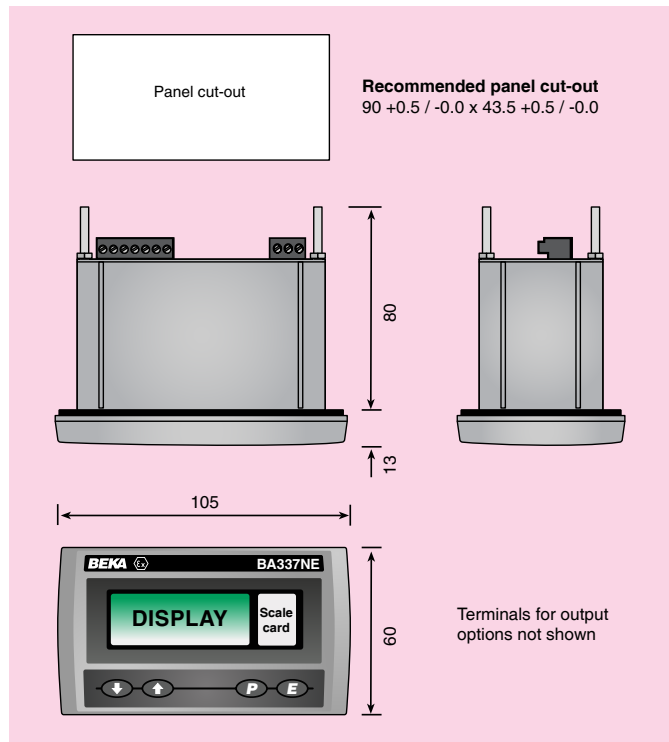
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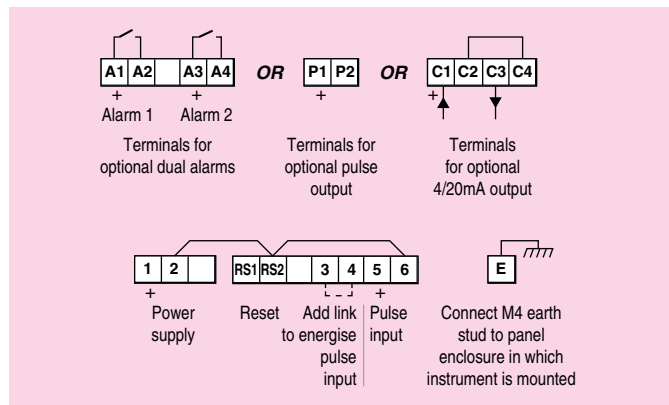
SPECIFICATION

Power supply	
Voltage	10 to 30V dc
Current	16mA max plus 22.5mA for optional backlight
Input	
Switch contact	Lower 100Ω Upper 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
Other inputs	100kHz max
All inputs	0.01Hz min
	<i>Depends upon pulse width and debounce setting.</i>
Display	
Type	Liquid crystal
Zero blanking	Blanked apart from 0 in front of decimal point
Total #	8 digits 9mm high
Decimal point	1 of 7 positions or absent
Rate #	6 digits 6mm high
Decimal point	1 of 4 positions or absent
	<i># Rate & Total can be shown on either 6 or 8 digit display</i>
Grand total	Maximum count 10 ¹⁵
Remote reset	Contact closure with resistance less than 10kΩ
Configurable functions	
Rate scale factor	Adjustable between 0.0001 and 99999 pulses/unit volume.
Flowmeter K-factor	Up to 16 K-factors may be entered
Lineariser	Rate may be displayed per second, minute or hour.
Rate timebase	Adjustable digital filter
Rate display filter	Adjustable between 0.0001 and 99999
Total scale factor	
Certification	Note: Ex ic in codes refers 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
Cert. No.	-40°C ≤ Ta ≤ +60°C ITS16ATEX48409X
International IECEx	
Code	Ex nA ic IIC T5 Gc Ex ic tc IIIC T80°C Dc
Cert. No.	-40°C ≤ Ta ≤ +60°C IECEX ITS 16.0005X
ETL & cETL	
Code	Class I Zone 2 AEx nA ic IIC T5 Gc (USA) Zone 22 AEx ic tc IIIC T80°C Dc (USA) Ex nA ic IIC T5 Gc (Canada) Ex n IIC T5 Gc (Canada) Ex ic tc IIIC T80°C Dc (Canada)
ETL Control No.	-40°C ≤ Ta ≤ 60°C 4008610
Environmental	
Operating temp	-40 to +60°C display -20 to +60°C
Storage temp	-40 to +85°C
Humidity	to 95% at 40°C non condensing
Vibration	Report available
Enclosure	
Ingress	Front IP66, rear IP20
Material	BS 3146-2:1977 ANC4B (316)
EMC	Complies with 2014/30/EU
Mechanical	
Terminals	Screw clamp for 0.5 to 1.5mm ² cable, removable terminal blocks.
Weight	0.85kg
Accessories	
Backlight	Green LED internally powered
Scale card	Blank card fitted to all instruments. Can be supplied typeset with specified units of measurement for no additional charge at time of purchase. #
Tag legend	Specified tag number or application laser etched onto rear of instrument. #
BA495 rear cover and sealing kit	Provides impact and IP66 protection for rear of instrument. #
One of the following three output accessories may be factory fitted to each rate totaliser.	
Pulse output	Isolated open collector
Source & output	Totaliser input: synchronous pulse output, 5kHz max or Least significant digit of total display output: divisible by 1, 10, 100, 1000 or 10000; pulse width definable as 0.1, 0.5, 1, 2.5, 5, 10, 25, 50, 100, 250 or 500ms 51Ω + 3V max 1MΩ min 10mA
Ron	
Roff	
I max	
4/20mA output	Isolated current sink.
Voltage drop	5 to 30V

DIMENSIONS (mm)



TERMINAL CONNECTIONS



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
Ron
Roff

Isolated single pole, voltage free solid state switch
50 + 0.7V max
1MΩ min

See accessory datasheet for details

HOW TO ORDER

Model number	Please specify BA337NE
Input	Type *
Rate scale factor	XXXXX *
	<i>If linearisation is required, up to 16 rate scale factors may be entered for different flow rates.</i>
Rate timebase	Seconds, minutes or hours *
Total scale factor	XXXXX *
Accessories	Please specify if required
Display backlight	Backlight
Scale card	Legend required
	<i>No charge if ordered with totaliser.</i>
Tag	Legend required
Rear cover and sealing kit	BA495
One of following three output options:	
Pulse output	Direct retransmission or scaled *
or 4/20mA output	4/20mA output
or Dual alarms	Alarms

* 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.
Can easily be reconfigured on-site.