

The BA337E is a third generation intrinsically safe rate totaliser that has similar functions as the BA338E, but is housed in a smaller 96 x 48mm DIN 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. A slide-in scale card simplifies identification and international intrinsic safety certification permits worldwide installation.

The main application of the BA337E 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 BA337E will 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.

IP66 front panel protection with a neoprene gasket to seal the joint between the totaliser and the instrument panel allows the BA337E to be installed in areas that will be washed down. To simplify installation and maintenance, the totaliser has removable terminal blocks enabling panel wiring to be completed before the instrument is installed.

International intrinsic safety certification allows the BA337E rate totaliser to be installed 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.

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 BA337E rate totaliser. All are isolated and have been certified as separate intrinsically safe circuits complying with the requirements for *simple apparatus*.

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.

An 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 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 rate or total alarms with normally open or closed outputs. Annunciators on the BA337E display show the status of both alarm outputs.

Rugged versions and a larger display are available in other models within the range. The BA337E-SS is identical to the BA337E except that it is housed in a rugged stainless steel enclosure with a 10mm thick window that may be installed in an Ex e or Ex p panel enclosure without invalidating the enclosure's certification. The BA337NE has Ex nA certification allowing installation in Zone 2 or 22 without Zener barriers or galvanic isolators.

If a larger display is required, the BA338E offers similar features as the BA337E in a 144 x 72mm enclosure.

BA337E

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 rate and total displays.
- ◆ Intrinsically safe
- ◆ 96 x 48mm DIN enclosure with IP66 front protection.
- ◆ Lineariser
- ◆ Optional: Backlight dual alarms or 4/20mA output or pulse output

- ◆ 3 year guarantee



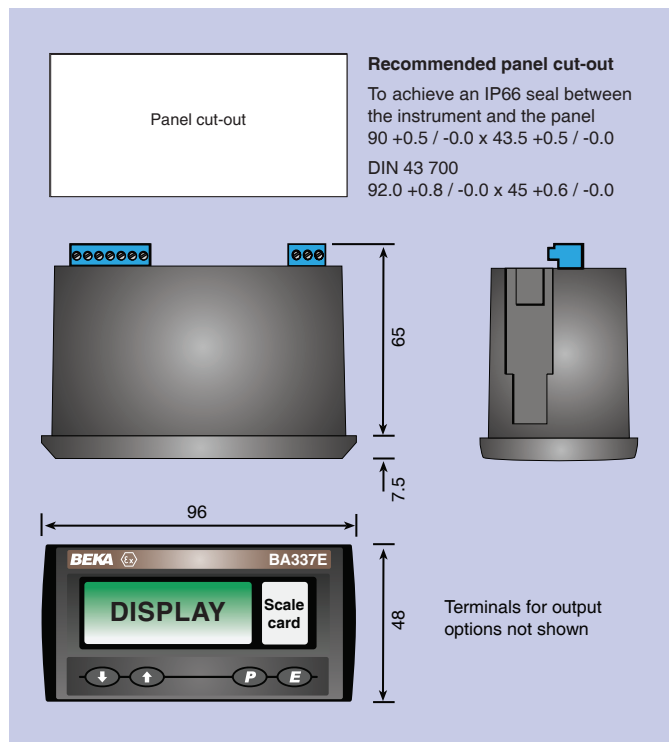
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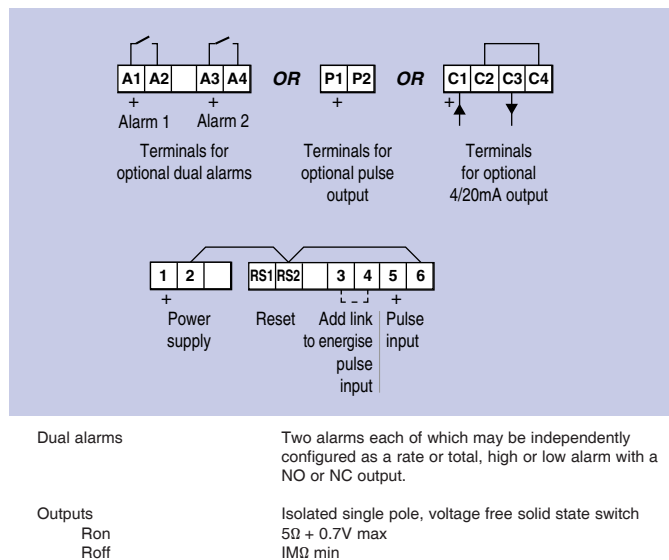
SPECIFICATION

Power supply		
Voltage	10 to 28V from a Zener barrier or galvanic isolator	
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 28V max	
Voltage pulse (high)	3V 10V 28V max	
Frequency] Depends upon pulse width and debounce setting.	
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	
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	
# 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		
Lineariser	Up to 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		
Europe ATEX		
Code	Group II Category 1G Ex ia IIC T5 Ga	
Cert. No.	-40°C ≤ Ta ≤ 70°C ITS16ATEX28408X	
International IECEx		
Code	Ex ia IIC T5 Ga	
Cert. No.	-40°C ≤ Ta ≤ 70°C IECEx ITS 16.0004X	
ETL & cETL		
Code	Class I Div 1 Gp A, B, C, D T5 (USA & Canada) Class II Div 1 Gp E, F, G, Class III Div 1(USA & Canada) Class I Zone 0 AEx ia IIC T5 Ga (USA) Ex ia IIC T5 Ga (Canada) -40°C ≤ Ta ≤ 70°C	
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	Noryl SE1GFN3. Front IP66, rear IP20	
EMC	Complies with EMC Directive 2014/30/EU	
Mechanical		
Terminals	Screw clamp for 0.5 to 1.5mm ² cable, removable terminal blocks.	
Weight	0.15kg	
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 printed 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. All have isolated outputs which have been certified as separate intrinsically safe circuits and comply with the requirements for <i>simple apparatus</i> .		
Pulse output	Isolated open collector	
Source	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	
Ron	1MΩ min	
Roff	10mA	
I max		
4/20mA output	Isolated current sink	
Voltage drop	5 to 28V	

DIMENSIONS (mm)



TERMINAL CONNECTIONS



See accessory datasheet for details

HOW TO ORDER

Model number	Please specify BA337E
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	
Display backlight	Please specify if required Backlight
Scale card	Legend required No charge if ordered with totaliser.
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.