

The BA337E-SS is an intrinsically safe rate totaliser housed in a rugged stainless steel enclosure. The intrinsic safety certification and the rugged enclosure allow the BA337E-SS to be safely installed in an Ex e, Ex p, Ex n or Ex t panel enclosure without invalidating the panel enclosures certification. The intrinsically safe totaliser may also be installed in any uncertified panel enclosure located in Zone 0, 1 or 2 and is particularly suitable for marine environments or where the front of the instrument is likely to be impacted. 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 BA337E-SS 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-SS will compensate for flowmeter non-linearity 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 intrinsic safety certification allows the BA337E-SS 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-SS 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.

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-SS display show the status of both alarm outputs.

Zone 2 certification and a larger display are available in other models within the range. The BA337NE has the same features as the BA337E-SS, but is Ex nA and Ex tc certified allowing installation in Zones 2 or 22 without Zener barriers or galvanic isolators.

The BA338E offers similar features as the BA337E-SS in a 144 x 72mm Noryl enclosure with a larger display.

BA337E-SS

Rugged one input rate totaliser

Intrinsically safe gas and dust certified for use in an Ex e, Ex n, p or Ex t panel enclosure or in harsh hazardous areas

- ◆ Configurable input: magnetic pick-off, switch contact, proximity detector, open collector or voltage pulse.
- ◆ Separate rate and total displays.
- ◆ Intrinsically safe ATEX and IECEx.
- ◆ 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/ba337e-ss



BEKA
associates

BEKA associates Ltd. Old Charlton Rd. Hitchin, Hertfordshire, SG5 2DA, U.K. Tel. (01462) 438301 Fax (01462) 453971 e-mail sales@beka.co.uk www.beka.co.uk

SPECIFICATION

SPECIFICATION

Power supply
Voltage 10 to 28V from a Zener barrier or galvanic isolator
Current 16mA max plus 22.5mA 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 typ. } *Depends upon pulse width & totalisers debounce setting.*
Other inputs 20kHz max. }

Display
Type Liquid crystal
Zero blanking Blanked apart from 0 in front of decimal point
Total \emptyset 8 digits 9mm high
Decimal point 1 of 7 positions or absent
Rate \emptyset 6 digits 6mm high
Decimal point 1 of 4 positions or absent

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

Grand total Maximum count 10¹⁶

Remote reset Contact closure with resistance less than 2kΩ

Configurable functions

Rate scale factor Adjustable between 0.0001 and 99999 pulses/unit vol.
Flowmeter K-factor 16 K-factors may be entered
Lineariser 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
Group II Category 1D Ex ia IIIC T*80 Da
-40°C ≤ Ta ≤ +60°C ‡
Cert. No. ITS16ATEX28408X

International IECEx Code Ex ia IIC T5 Ga
Ex ia IIIC T*80 Da
-40°C ≤ Ta ≤ +60°C ‡
Cert. No. IECEx ITS 16.0004X

USA & Canada ETL and cETL Certification pending

‡ +70°C when **not** relying upon the certified impact and ingress protection provided by the front of the BA337E-SS enclosure to maintain the certification of the panel enclosure in which the BA337E-SS is mounted.

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 Front IP66, rear IP20
Ingress BS 3146-2:1977 ANC4B (316)
Material Complies with 2014/30/EU
EMC

Mechanical

Terminals Screw clamp for 0.5 to 1.5mm² cable, removable terminal blocks.
Weight 0.85kg

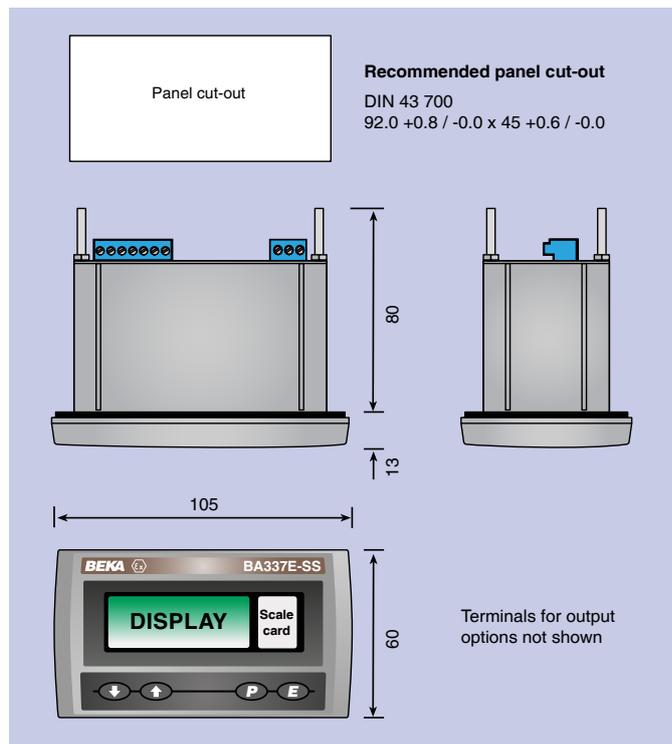
Accessories

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. ~

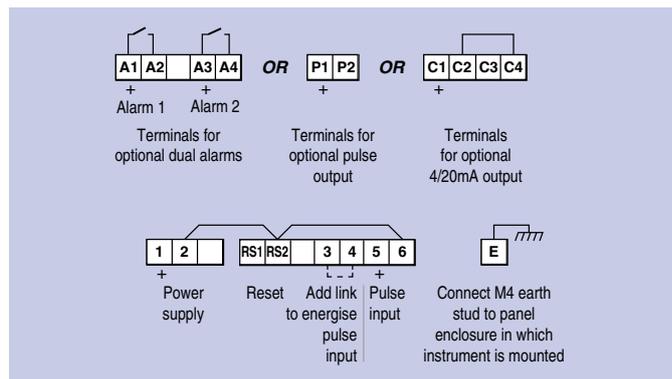
One of the following three output accessories may be factory fitted to each rate totaliser. All have isolated outputs which have been certified as separate intrinsically safe circuits and comply with the requirements for *simple apparatus*.

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
Ron 51Ω + 3V max
Roff 1MΩ min
I max 10mA

DIMENSIONS (mm)



TERMINAL CONNECTIONS



4/20mA output
Voltage drop

Isolated current sink
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
5Ω + 0.7V max
IMΩ min

~ See accessory datasheet for details

HOW TO ORDER

Model number
Input
Rate scale factor

Please specify

BA337E-SS
Type *
XXXXX *
If linearisation is required, up to 16 rate scale factors may be entered for different flow rates.
Seconds, minutes or hours *
XXXXX *

Rate timebase
Total scale factor

Accessories
Display backlight
Scale card

Please specify if required

Backlight
Legend required
No charge if ordered with totaliser.
Legend required

Tag

One of following three output options:

Pulse output Direct retransmission or scaled
or 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 with direct pulse retransmission. Can easily be reconfigured on-site.*