

The **BA538E** is a third generation general purpose rate totaliser that is compatible with the earlier BA538C, but has a much larger display, a lineariser and an isolated synchronous pulse output. 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 shows the units of measurement and simplifies identification.

Main application of the BA538E is to process the pulse output from a process area flowmeter such as a turbine meter and simultaneously display the rate and total flow in engineering units. The BA538E will compensate for flowmeter nonlinearity using up to sixteen flowmeter K-factors which can be entered on-site.

The large display has high contrast and a very 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 the totaliser is installed in a poorly illuminated area.

An open collector pulse output will synchronously retransmit the rate totaliser's input pulse to another instrument, or a pulse when the least significant digit of the total display is incremented.

IP66 front panel protection with a neoprene gasket to seal the joint between the totaliser and the instrument panel allow the BA538E to be installed in areas that will be washed down. To simplify installation and maintenance, the totaliser has removable terminal blocks allowing panel wiring to be completed before the instrument is installed.

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

Optional dual alarms can switch 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 BA538E display show the status of both alarm outputs.

When panel space is limited the BA537E provides similar features in a smaller 96 x 48mm enclosure. A rugged version, the BA537E-SS, housed in a stainless steel enclosure is also available

For applications in flammable atmospheres the BA338E, which is identical to the BA538E, and the smaller BA337E have international intrinsic safety certification. For Zone 2 or 22 applications, the rugged stainless steel BA337NE has Ex nA and Ex tc certification allowing installation without Zener barriers or galvanic isolators.

BA538E

One input rate totaliser

General purpose

- ◆ **Configurable input:** magnetic pick-off, switch contact, proximity detector, open collector or voltage pulse.
- ◆ **Separate rate and total displays.**
- ◆ **144 x 72mm DIN enclosure with IP66 front protection.**
- ◆ **Lineariser**
- ◆ **Simple on-site scale card installation.**
- ◆ **Optional:**
Backlight
Dual alarms
4/20mA output
- ◆ **3 year guarantee**

www.beka.co.uk/ba538e

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associates

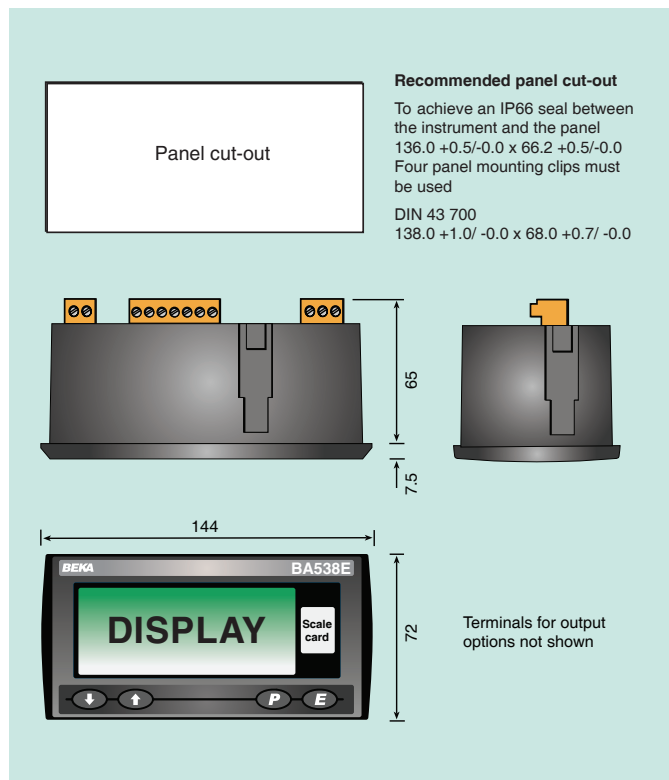
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SPECIFICATION

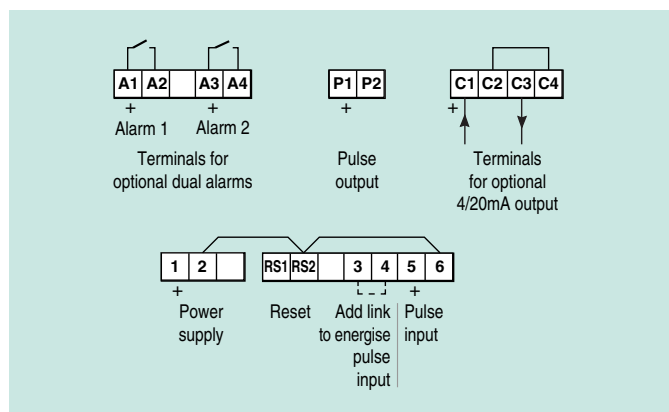
| | | |
|------------------------------------------------------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-----------------------------------------------------|
| Power supply | | |
| Voltage | 10 to 30V dc | |
| 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 | 0mV | +40mV |
| Voltage pulse (low) | 1V | 3V 30V max |
| Voltage pulse (high) | 3V | 10V 30V max |
| Frequency | | |
| Switch contact | 150Hz typical |] Depends upon pulse width and debounce setting. |
| 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 18mm high | |
| Decimal point | 1 of 7 positions or absent | |
| Rate‡ | 6 digits 12mm 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 | |
| Pulse output | | |
| Source & output | Isolated open collector Totaliser input: synchronous pulse output, 5kHz max. or Least significant digit of total display: pulse 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 | | |
| Configurable functions | | |
| Rate scale factor (<i>K-factor</i>) | Adjustable between 0.0001 and 99999 pulses/unit volume. | |
| 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 | |
| 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 | |
| Weight | 0.35kg | |
| Accessories | | |
| Backlight | Green LED internally powered | |
| 4/20mA output | Isolated current sink | |
| Voltage drop | 5 to 30V | |
| 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 | 1MΩ min | |
| V max | 30V dc | |
| I max | 200mA | |
| 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. ~ | |

~ See accessory datasheet for details

DIMENSIONS (mm)



TERMINAL CONNECTIONS



HOW TO ORDER

| | |
|--------------------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Model number | Please specify BA538E |
| Input | Type * |
| Rate scale factor | XXXXX * If linearisation is required, up to 16 rate scale factors may be entered each at a specified flow rate. |
| Rate timebase | Seconds, minutes or hours* |
| Total scale factor | XXXXX * |
| Pulse output | Direct retransmission or derived from least significant digit of total display: pulse output divided by 1, 10, 100, 1000 or 10000; pulse width defined as 0.1, 0.5, 1, 2.5, 5, 10, 25, 50, 100, 250 or 500ms.* |
| Accessories | Please specify if required |
| Display backlight | Backlight |
| 4/20mA output | 4/20mA output |
| Dual alarms | Alarms |
| Scale card | Legend required |
| | No charge if ordered with totaliser |
| | Legend required |
| Tag | |

* 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.