

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](http://www.beka.co.uk/ba538e)

# BEKA

## associates

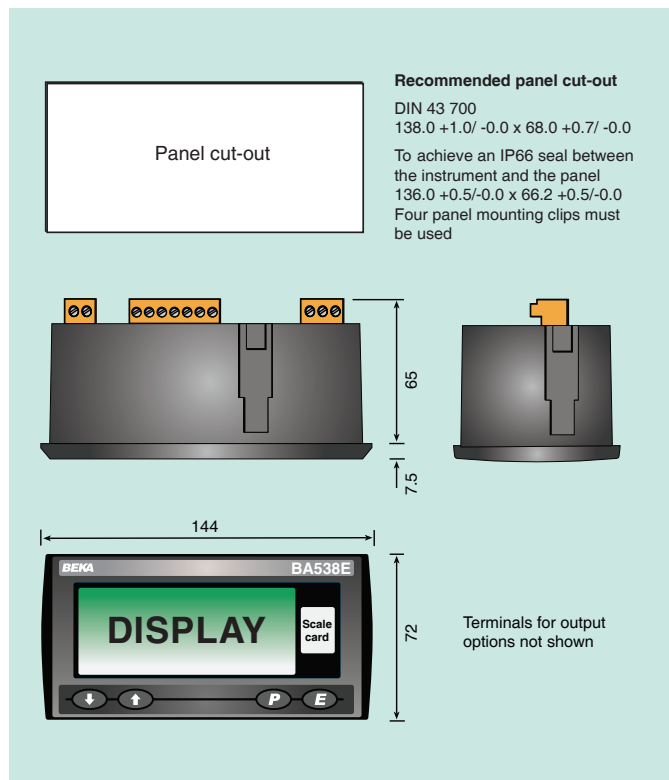
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## SPECIFICATION

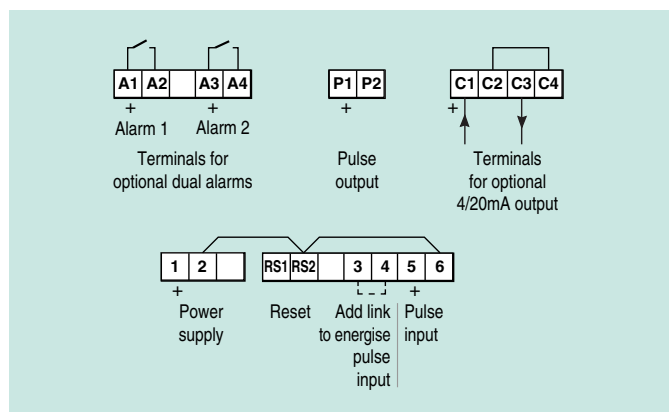
<b>Power supply</b>	
Voltage	10 to 30V dc
Current	16mA max plus 22.5mA for optional backlight
<b>Input</b>	
	<b>Lower      Upper</b> switching thresholds
Switch contact	100Ω      1kΩ
Proximity detector (NAMUR)	1.2mA      2.1mA
Open collector	2kΩ      10kΩ
Magnetic pick-off	0mV      +40mV
Voltage pulse (low)	1V      3V      30V max
Voltage pulse (high)	3V      10V      30V max
Frequency	
Switch contact	150Hz typical
Other inputs	100kHz max
All inputs	0.01Hz min
} <i>Depends upon pulse width and debounce setting.</i>	
<b>Display</b>	
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 <sup>16</sup>
<b>Remote reset</b>	Contact closure with resistance less than 10kΩ
<b>Pulse output</b>	
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
Ron	51Ω + 3V max
Roff	1MΩ min
I max	10mA
<b>Configurable functions</b>	
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
<b>Environmental</b>	
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 2014/30/EU
<b>Mechanical</b>	
Terminals	Screw clamp for 0.5 to 1.5mm <sup>2</sup> cable, removable
Weight	0.35kg
<b>Accessories</b>	
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	<b>Please specify</b>
Input	BA538E
	Type *
Rate scale factor	XXXXX *
	<i>If linearisation is required, up to 16 rate scale factors may be entered each at a specified flow rate.</i>
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.*
<b>Accessories</b>	<b>Please specify if required</b>
Display backlight	Backlight
4/20mA output	4/20mA output
Dual alarms	Alarms
Scale card	Legend required
	<i>No charge if ordered with totaliser</i>
	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.