

Shown with optional backlight

The **BA538C** is an externally powered rate totaliser with separate rate and total displays which will operate from a switch contact, voltage pulse, magnetic pick-off, open collector or a proximity detector input. A novel adaptive measuring technique plus an adjustable digital filter ensure that optimum rate display stability and step response can be achieved over a wide input frequency range.

**Main application** of the BA538C is to process the pulse output from a flow meter and to display the rate of flow and the total flow in the same or different engineering units. The instrument may be used with any flowmeter having a pulse output proportional to flow rate, such as a turbine flowmeter. When fitted with optional alarms, the instrument can perform simple flow batching applications. Optional pulse and 4/20mA outputs enable the rate totaliser to operate remote counters and analogue instruments.

**Control and programming** is performed via the front panel tactile push-buttons which 'click' when operated. All the programme functions are contained in easy to understand menus which may be protected by a user definable security code. Display scaling factors employ floating decimal points to simplify calibration.

**The front panel** is a robust, easy to clean Noryl moulding sealed with a non-reflective, scratch resistant polyester membrane. A captive neoprene

gasket provides an IP65 seal between the enclosure and the panel.

**Backlighting** is available as an option to improve readability when the BA538C is installed in a poorly illuminated area. High efficiency amber LEDs provide an even glow to enhance display contrast.

**Optional alarms** provide two galvanically isolated solid state outputs which may be independently programmed for high or low operation on either the rate or total displays. Each output will switch a dc load such as a solenoid valve or sounder, and the status of each alarm is indicated by a display annunciator.

**The optional 4/20mA output** is isolated and may be programmed to produce an analogue output proportional to any part of the rate display, thus making the BA538C an effective pulse to 4/20mA converter.

**Reliability** is ensured by an ISO9001 approved quality control system supported by a three year guarantee. The instrument is protected from overrange and reverse connection and incorporates extensive radio frequency filtering.

**If flammable atmospheres** are present the BA338C should be used. This has the same features as the BA538C, but has been certified intrinsically safe for use in hazardous areas.

# BA538C

## Externally powered pulse input rate totaliser

*General purpose for use with pulse output flowmeters*

◆ **Magnetic pick-off, switch contact, proximity detector, open collector or voltage pulse input**

◆ **Separate rate and total displays**

◆ **144 x 72 DIN enclosure with IP65 front**

◆ **Optional: Display backlight Alarms Pulse and 4/20mA outputs**

◆ **3 year guarantee**

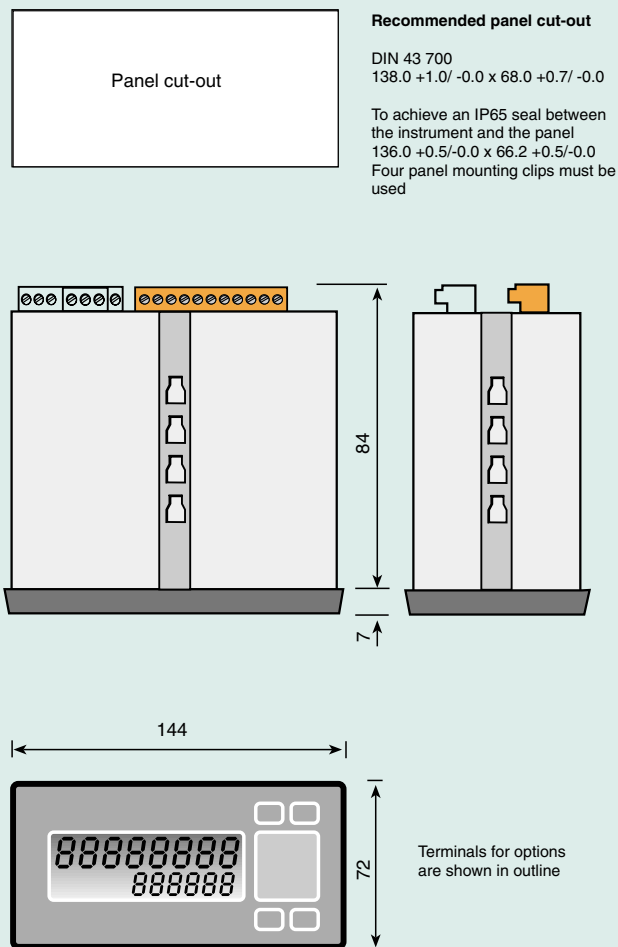
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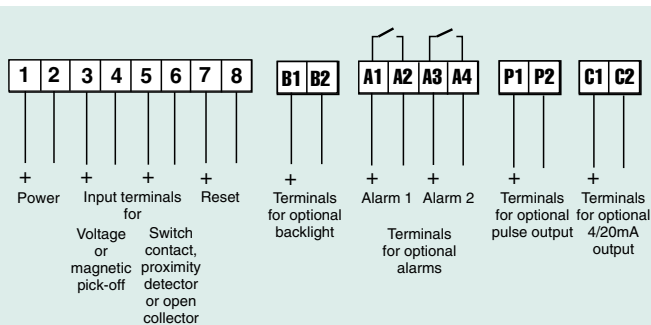
## SPECIFICATION

<b>Power supply</b>	
Voltage	10 to 30V dc
Current	12mA max., plus proximity detector current when used.
<b>Input</b>	
Switch contact	
Closed	Less than 100Ω
Open	Greater than 1kΩ
Proximity detector	2-wire NAMUR
Magnetic pick-off	40mV peak to peak typical
Voltage pulse	
Low	Less than 1V
High	Greater than 3V; 30V max
Open collector	
Closed	Less than 2kΩ
Open	Greater than 10kΩ
Frequency	
switch contact	0.01Hz to 100Hz
other inputs	0.01Hz to 5kHz max
<b>Display</b>	
Type	Liquid crystal
Rate ~	6 digits 9.5mm high
Decimal point	1 of 5 positions or absent
Total ~	8 digits 14mm high
Decimal point	1 of 7 positions or absent
Grand total	Max count 10 <sup>16</sup>
-Rate or total can be shown on either display	
<b>Remote reset</b>	Contact closure with resistance less than 1kΩ.
<b>Programmable functions</b>	
Total dividing scale factor	Adjustable between 0.001 & 99999999
Rate dividing scale factor	Adjustable between 0.001 & 99999999
Rate timebase	Rate may be displayed per second, minute or hour.
Rate display filter	Adjustable digital filter
<b>Environmental</b>	
Operating temperature	-20 to 60°C
Storage temp	-40° to 85°C
EMC	In accordance with EU Directive 89/336/EEC.
Immunity	Less than 1% of rate span error at 10V/m
Emissions	Undetectable above background noise. Class B equipment
<b>Mechanical</b>	
Terminals	Screw clamp for 0.5 to 1.5mm <sup>2</sup> cables.
Weight	0.6kg
<b>Accessories</b>	
Alarms	Two independent alarms each of which may be programmed for high or low operation with NC or NO output.
Outputs	Isolated solid state switch
On	Less than 5Ω +0.6V
Off	Greater than 180kΩ
Rating	30Vdc: 250mA
Display backlight	LED backlight
Vin	18 to 30V dc May be dimmed by reducing voltage below 18V.
Iin	40mA typical
Re-transmitted pulse	Isolated pulse sink
Width	Adjustable 0.5 to 50ms
On	Less than 60Ω
Off	Greater than 1MΩ
Rating	30Vdc: 10mA
4/20mA output	Galvanically isolated current sink
Voltage drop	5V max.
Typeset scale card	Blank scale card fitted to each instrument, can be supplied typeset with units of measurement. *
Tag number	Thermally printed number or applicational information on rear of instrument.*

## DIMENSIONS (mm)



## TERMINAL CONNECTIONS



## HOW TO ORDER

Model number	<b>please specify</b> BA538C
Input	Type XXXXXXX #
Rate scaling factor	XXXXXXX #
Total scaling factor	XXXXXXX #
Rate timebase	Seconds, minutes or hours #
<b>Accessories</b>	
Alarms	<b>please specify</b> Alarms
Display backlight	Backlight
Re-transmitted pulse output	Pulse output
4/20mA output	4/20mA output
Scale card	Legend required
Tag number	Legend required

# If calibration information is not supplied, instrument will be set for open collector input with rate timebase of seconds, rate scaling factor of 1 and total scaling factor of 1.

\* See accessory datasheet for details