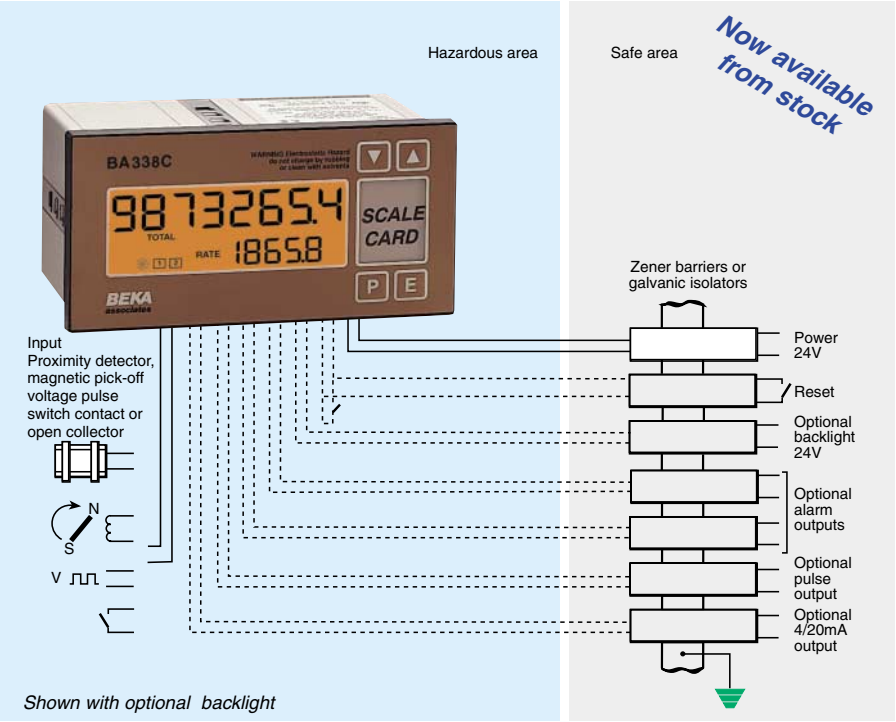

Shown with optional backlight

BA338C

Externally powered pulse input rate totaliser

Intrinsically safe for use with pulse output flowmeters in all hazardous areas

- ***Magnetic pick-off, switch contact, proximity detector, open collector or voltage pulse input***
- ***Separate rate and total displays***
- ***Intrinsically safe ATEX certification***
- ***144 x 72 DIN enclosure with IP65 front***
- ***Optional:***
  Display backlight
  Alarms
  Pulse and 4/20mA outputs
- ***3 year guarantee***

The BA338C is an externally powered, intrinsically safe 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 BA338C is to process the pulse output from a hazardous area flowmeter, 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 flow meter. 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.

ATEX intrinsic safety certification allows installation in all hazardous areas. The BA338C voltage input complies with the requirements for *simple apparatus* and may therefore be connected to almost any certified magnetic pick-off or voltage pulse source without the need for additional certification.

Backlighting is available as an option to improve readability when the BA338C 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 is certified as a separate intrinsically safe circuit and complies with the requirements for *simple apparatus*. Almost any hazardous area certified load such as a solenoid valve or sounder may be controlled by these outputs.

The optional 4/20mA output is isolated and complies with the requirements for intrinsic safety simple apparatus allowing connection to a wide range of Zener barriers and galvanic isolators. It may be programmed to produce an analogue output proportional to any part of the rate display, thus making the BA338C an effective hazardous area pulse to 4/20mA converter.

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e-mail sales@beka.co.uk

SPECIFICATION

Power supply

Voltage	The BA338C must be powered via a Zener barrier or galvanic isolator.10V min between terminals 1 and 2
Current	12mA max., plus proximiter detector currents when used.

Input

Switch contact	
Closed	Less than 100Ω
Open	Greater than 1kΩ
Proximity detector	2-wire NAMUR
Magnetic pick-off	10mV min peak to peak
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 outputs	0.01Hz to 5kHz max

Display

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^{16}

~Rate or total can be shown on either display

Remote reset Contact closure with resistance less than 1kΩ.

Programmable functions

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

Intrinsic safety

Europe ATEX	
Standard	EN50020:1994
Code	Group II, Category 1G, EEx ia IIC T5
Certificate number	ITS01ATEX2002
Location	Zone 0, 1 or 2

Environmental

Operating temperature	-20 to 60˚C (Certified for use at -40˚C)
Enclosure	Front IP65 Rear IP20
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

Mechanical

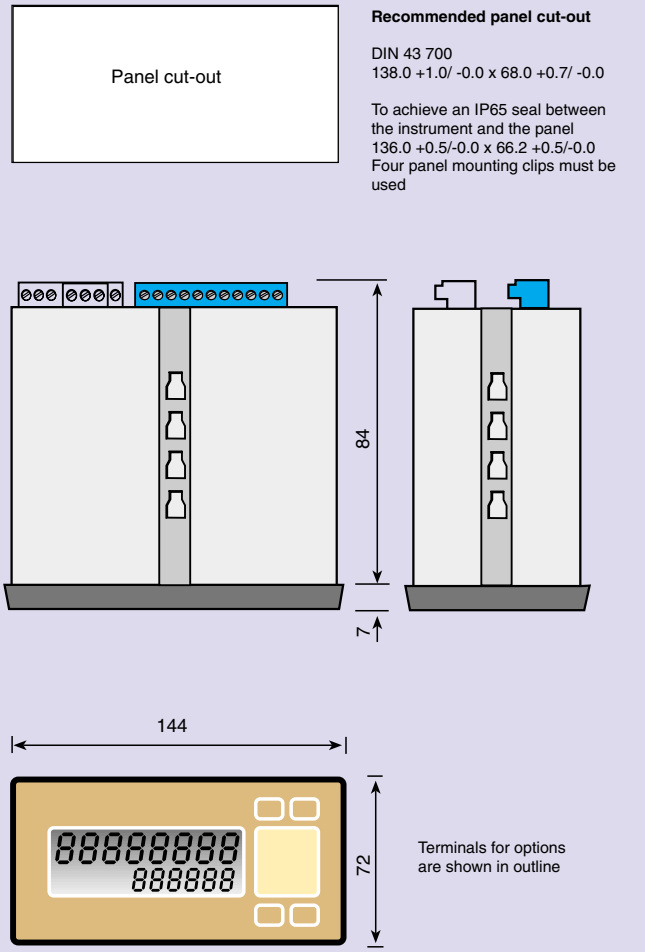
Terminals	Screw clamp for 0.5 to 1.5mm² cables.
Weight	0.6kg

Accessories

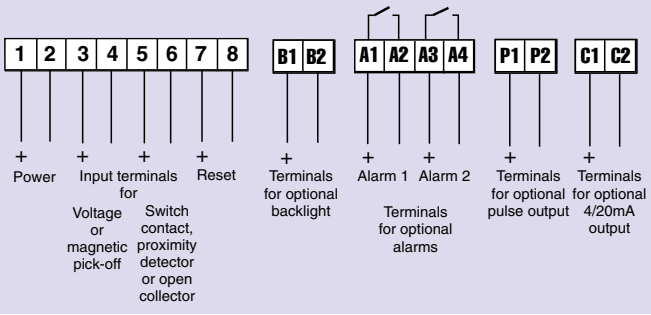
Alarms	Two independent alarms each of which may be programmed for high or low operation with NC or NO output.
Outputs	Isolated solid state switch
On	Less than 5Ω+0.6V
Off	Greater than 180kΩ
	Certified as *simple apparatus*
Display backlight	LED backlight powered from 28V 300Ω Zener barrier or galvanic isolator.
Re-transmitted pulse	Isolated, certified as *simple apparatus.*
4/20mA output	Isolated current sink, certified as *simple apparatus*
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.*
Front cover	BA398 provides additional mechanical protection: front panel switches can not be operated.*

** See accessory datasheet for details*

DIMENSIONS (mm)



TERMINAL CONNECTIONS



HOW TO ORDER

	please specify
Model number	BA338C
Input	Type
Rate scaling factor	XXXXXXX #
Total scaling factor	XXXXXXX #
Rate timebase	Seconds, minutes or hours #

Accessories	**please specify**
Alarms	Alarms
Display backlight	Backlight
Re-transmitted pulse output	Pulse output
4/20mA output	4/20mA output
Scale card	Legend required
Tag number	Legend required
Front cover	BA398

 # 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.