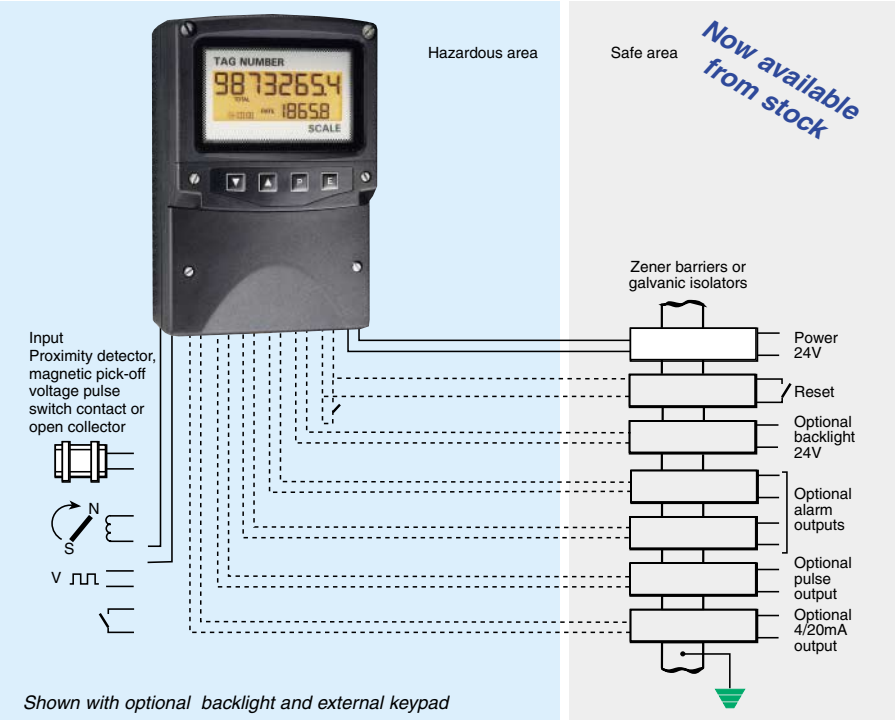


Shown with optional backlight and external keypad

BA334D

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***
- ***IP66 enclosure for surface, pipe or stem mounting***
- ***Optional:***
  Display backlight
  Alarms
  Pulse and 4/20mA outputs
  External keypad
- ***3 year guarantee***

The BA334D 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 BA334D 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. Either rate or flow may be shown on the large display. 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 of the BA334D is performed via four push-buttons which are protected from damage and tampering behind a sealed cover. For applications requiring frequent adjustment, the instrument can be supplied with a robust external membrane keypad. All the programme functions are contained in easy to understand menus which may be protected by a user definable security code. To simplify calibration the rate and total scaling factors employ floating decimal points.

ATEX intrinsic safety certification allows installation in all hazardous areas. The BA334D 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.

The enclosure, which is moulded in glass reinforced polyester (GRP), has stainless steel fittings, neoprene gaskets and an armoured glass window. Its robust construction provides IP66 protection. A separate terminal compartment allows the BA334D to be installed and terminated without exposing the display electronics. To further simplify field wiring and subsequent inspection, the terminal cable entries and clamping screws are forward facing.

Backlighting is available as an option to improve readability when the BA334D 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 BA334D an effective hazardous area pulse to 4/20mA converter.

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

SPECIFICATION

Power supply

Voltage	The BA334D must be powered via a Zener barrier or galvanic isolator.10V min between terminals 1 and 2
Current	12mA max., plus proximity detector current 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 inputs	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	ITS01ATEX2001
Location	Zone 0, 1 or 2

Environmental

Operating temperature	-20 to 60˚C (Certified for use at -40˚C)
Enclosure	IP66 ITS test report C87IV0383A available
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

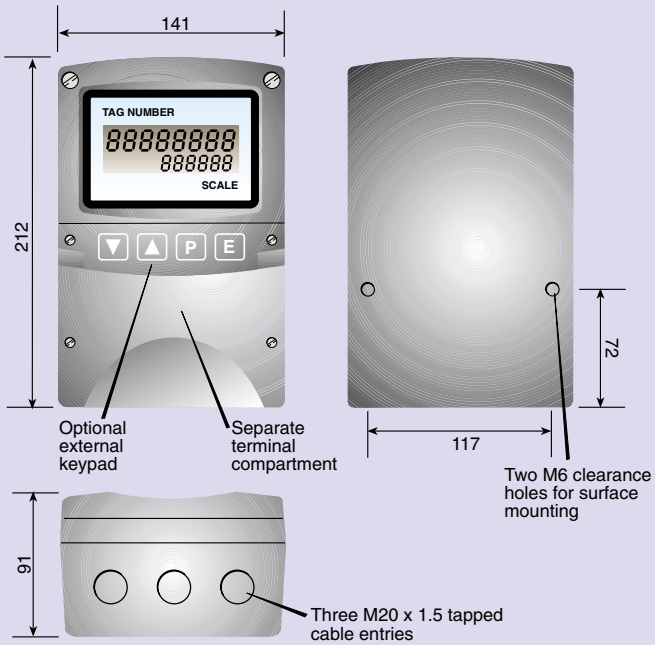
Mechanical

Terminals	Screw clamp for 0.5 to 2.5mm² cables.
Weight	1.6kg

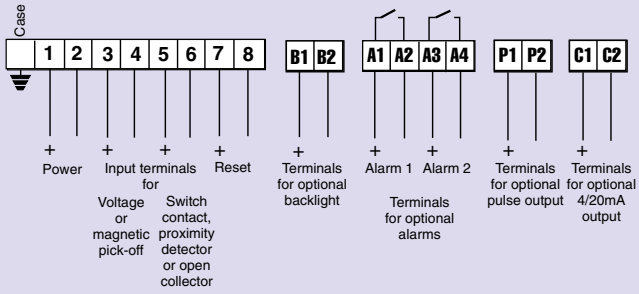
Accessories

Display backlighting	LED backlight powered from 28V 300Ω Zener barrier or galvanic isolator.
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*
Re-transmitted pulse	Isolated, certified as *simple apparatus.*
4/20mA output	Isolated current sink, certified as *simple apparatus*
Voltage drop	5V max.
External keypad	Membrane keypad enables instrument to be adjusted without removing the control cover.
Scale legend	Units of measurement marked onto display escutcheon. *
Tag legend	Tag number or applicational information marked onto display escutcheon. *

DIMENSIONS (mm)



TERMINAL CONNECTIONS



Stainless legend plate	Stainless steel plate secured to side of the instrument, engraved with tagging or applicational information. *
Pipe mounting kit	2 kits are available BA392D and BA393. *
Stem mounting kit	BA395 enables instrument to be mounted directly onto a flowmeter. *

** See accessory datasheet for details*

HOW TO ORDER

	please specify
Model number	BA334D
Input	Type
Rate scaling factor	XXXXXXX #
Total scaling factor	XXXXXXX #
Rate timebase	Seconds, minutes or hours #
Accessories	**please specify**
Display backlight	Backlight
Alarms	Alarms
Re-transmitted pulse output	Pulse output
4/20mA output	4/20mA output
External keypad	External keypad
Escutcheon marking	
Scale	Scale legend required
Tag	Tag legend required
Stainless legend plate	Legend required
Pipe mounting kit	BA392D or BA393
Stem mounting kit	BA395

 # 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.