

The BA367NE has a rugged stainless steel enclosure with Ex nA and Ex tc certification allowing it to be safely installed in an Ex n or Ex tc panel enclosure located in Zones 2 and 22, without the need for Zener barriers or galvanic isolators. The counter is easy to use and can be configured on-site to operate with a wide variety of sensors. A slide-in scale card simplifies identification.

Main application of the BA367NE is to count the number of pulses received from a hazardous area sensor such as a 2-wire proximity detector and simultaneously display the total number and their rate in engineering units within a Zone 2 or 22 hazardous area.

The display has high contrast and a wide viewing angle enabling the counter to be read in most lighting conditions over a wide temperature range. The total number of pulses may be scaled and displayed in almost any units to represent the engineering variable being counted. The total display may be reset using the front panel push buttons or an external contact closure. The pulse rate may be shown in the same or different units per second, minute or hour.

IP66 front panel protection with a silicone gasket to seal the joint between the counter and the instrument panel, allows the BA367NE to be installed in areas that will be washed down. To simplify installation and maintenance, the counter has removable terminal blocks allowing panel wiring to be completed before the instrument is installed.

International Ex nA certification permits the BA367NE counter to be installed worldwide. When mounted in a panel enclosure complying with Ex n (non sparking) impact and ingress requirements, the enclosure and counter may be installed in a Zone 2 hazardous area without barriers or isolators. Certified Ex n or Ex e enclosures are often used. Similarly the BA367NE can be mounted in an Ex tc enclosure located in Zone 22. BEKA Application Guide AG310 provides Ex nA installation recommendations.

Display backlighting which is internally powered from the counter 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 installed in a poorly illuminated area.

One of the following three optional outputs may be factory fitted to the BA367NE counter. All are isolated and have defined output parameters.

Optional isolated pulse output synchronously retransmits the counter input pulse to other instruments or a pulse when the least significant digit of the total display is incremented. When transmitting a pulse representing the total count the output pulse frequency may be divided and the output pulse width may be defined.

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

Optional dual alarms can switch suitably protected hazardous area loads such as an Ex e sounder or solenoid valve, or safe area loads. 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 BA367NE display show the status of both alarm outputs.

Intrinsically safety models and instruments with larger displays are available within the range. The BA367E-SS has the same features as the BA367NE including a rugged stainless steel enclosure, but is intrinsically safe certified Ex ia.

The intrinsically safe BA367E offers similar features in a Noryl enclosure and the BA368E is a two input intrinsically safe counter in a 144 x 72mm Noryl enclosure with a larger display.

BA367NE

Rugged Ex nA & Ex tc one input counter

Can be installed in Zones 2 or 22 without Zener barriers or galvanic isolators.

- ◆ **Configurable input:** magnetic pick-off, switch contact, proximity detector, open collector or voltage pulse.
- ◆ **Separate rate and total displays.**
- ◆ **Ex nA & Ex tc certified**
- ◆ **105 x 60mm rugged 316 stainless steel enclosure with IP66 front protection.**
- ◆ **Optional:** Backlight dual alarms or 4/20mA output or pulse output
- ◆ **3 year guarantee**

www.beka.co.uk/ba367ne



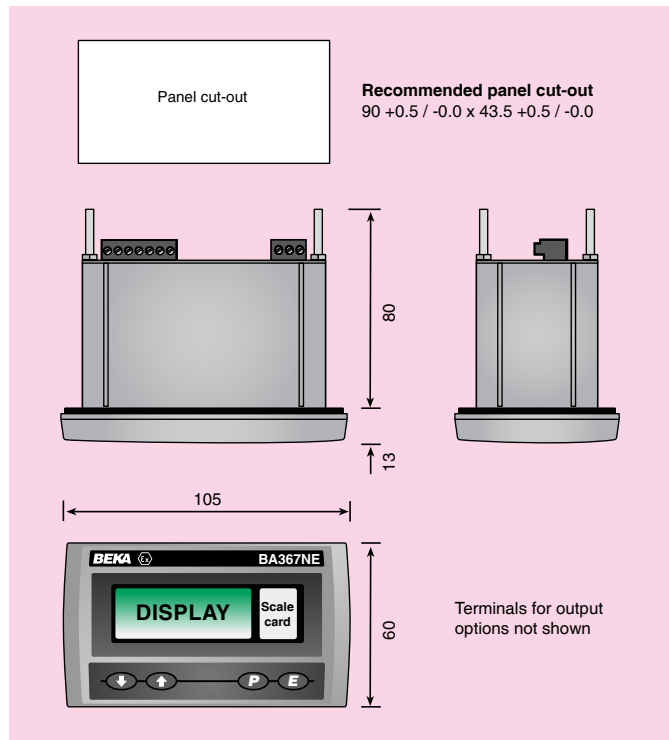
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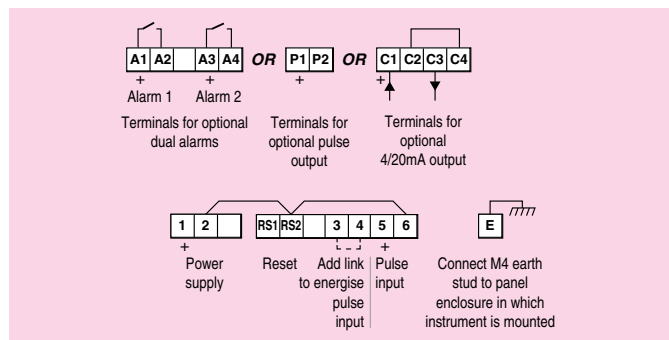
SPECIFICATION

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	0	+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 9mm high	
Decimal point	1 of 7 positions or absent	
Rate #	6 digits 6mm 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	
Configurable functions		
Total scale factor	Adjustable between 0.0001 and 99999	
Rate scale factor	Adjustable between 0.0001 and 99999	
Rate timebase	Rate may be displayed per second, minute or hour	
Rate display filter	Adjustable digital filter	
Certification	Note: Ex ic in codes refers to instrument push button contacts which are nonincendive	
Europe ATEX Code	Group II Category 3G Ex nA ic IIC T5 Gc Group II Category 3D Ex ic tc IIIC T80°C Dc -40°C ≤ Ta ≤ +60°C ITS16ATEX48409X	
Cert. No.		
International IECEx Code	Ex nA ic IIC T5 Gc Ex ic tc IIIC T80°C Dc -40°C ≤ Ta ≤ +60°C IECEx ITS 16.0005X	
Cert. No.		
ETL & cETL Code	Class I Zone 2 AEx nA ic IIC T5 Gc (USA) Zone 22 AEx ic tc IIIC T80°C Dc (USA) Ex nA ic IIC T5 Gc (Canada) Ex n IIC T5 Gc (Canada) Ex ic tc IIIC T80°C Dc (Canada) -40°C ≤ Ta ≤ 60°C 4008610	
ETL Control No.		
Environmental		
Operating temp	-40 to +60°C display -20 to +60°C	
Storage temp	-40 to +85°C	
Humidity	to 95% at 40°C non condensing	
Vibration	Report available	
Enclosure		
Ingress	Front IP66, rear IP20	
Material	BS 3146-2:1977 ANC4B (316)	
EMC	Complies with 2014/30/EU	
Mechanical		
Terminals	Screw clamp for 0.5 to 1.5mm ² cable, removable terminal blocks.	
Weight	0.85kg	
Accessories		
Backlight	Green LED internally powered	
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 laser etched onto rear of instrument. #	
BA495 rear cover and sealing kit	Provides impact and IP66 protection for rear of instrument. #	
One of the following three output accessories may be factory fitted to each counter.		
Pulse output	Isolated open collector	
Source & output	Counter input: synchronous pulse output, 5kHz max or Least significant digit of total display 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		

DIMENSIONS (mm)



TERMINAL CONNECTIONS



4/20mA output

Source
Voltage

Isolated current sink.

Rate or total
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

Ron
Roff

Isolated single pole, voltage free solid state switch
5Ω + 0.7V max
1MΩ min

See accessory datasheet for details

HOW TO ORDER

Model number	BA367NE
Input	Type *
Total scale factor	XXXXX *
Rate scale factor	XXXXX *
Rate timebase	Seconds, minutes or hours*
Accessories	Please specify if required
Display backlight	Backlight
Scale card	Legend required
	No charge if ordered with counter.
Tag	Legend required
Rear cover and sealing kit	BA495
One of following three output options:	
Pulse output	Direct retransmission or scaled
or 4/20mA output	4/20mA output
or Dual alarms	Alarms

* counter 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 total and rate scaling factors of 1.0 and a timebase of seconds. Can easily be reconfigured on-site.