

The **BA364NG** is a third generation field mounting two input counter housed in a compact IP66 GRP enclosure. The counter is easy to use and each input can be individually configured on-site to operate with sensors having a magnetic pick-off, switch contact, proximity detector, open collector or a voltage pulse output. International Ex nA and Ex tc certification permits worldwide installation in Zones 2 or 22 without Zener barriers or galvanic isolators which significantly reduces installation cost.

**Any display application** requiring the sum or difference of pulse outputs from two sensors can be performed by the BA364NG, such as counting the number of strokes performed by two reciprocating pumps and displaying total volume and rate of pumping in engineering units. The counter's quadrature decoder also enables the position of a shaft or a cable to be displayed together with its speed and direction of movement.

**International Ex nA and Ex tc certification** allows the BA364NG counter to be installed in gas and dust hazardous areas worldwide. BEKA Application Guide AG310 contains Ex nA installation recommendations.

**The large 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 display may be shown in almost any engineering units and may be reset using the front panel push buttons or an external contact closure. Rate may be displayed in the same or different units of measurement per second, minute or hour.

**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.

**The isolated open collector pulse output** may be configured to synchronously retransmit either pulse input, or a scaled pulse when the least significant digit of the total display is incremented.

**IP66 protection** is provided by the robust GRP enclosure which has stainless steel fittings, a silicone gasket and an 8mm thick armoured glass window. Ingress and impact protection have been independently assessed by Intertek.

**An optional isolated 4/20mA current sink output** may be configured to produce an output proportional to any part of the rate or total display.

**Optional dual alarms** with galvanically isolated solid state outputs can switch hazardous or safe area loads such as a sounder or solenoid valve. Both may be independently configured as a rate or a total alarm monitoring either input, or the sum or difference of the two inputs. Annunciators on the BA364NG display show the status of both alarm outputs.

**Other field mounting counters** include the intrinsically safe BA364E and BA364G which have the same functions as the BA364NG. The BA564G is a general purpose model for use in safe areas.

# BA364NG

## Ex nA two input counter

*Can be installed in Zone 2 or 22 without Zener barriers or galvanic isolators*

◆ **Configurable input:** magnetic pick-off, switch contact, proximity detector, open collector, voltage pulse or quadrature decoder.

◆ **Separate displays**

◆ **Ex nA & Ex tc certified**

◆ **IP66 GRP enclosure**

◆ **Isolated pulse output**

◆ **Simple on-site scale card installation.**

◆ **Optional:**  
Backlight  
Dual alarms  
4/20mA output

◆ **3 year guarantee**



# BEKA

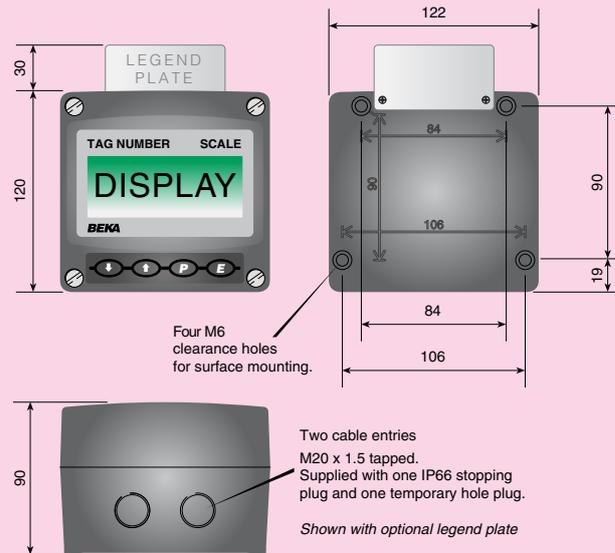
## associates

Sales & Support Distributor:-  
Stockshed Limited. Stoneycroft House,  
Mud Lane, Eversley, Hampshire.  
RG27 0QS. U.K. Tel. (0118) 9734955  
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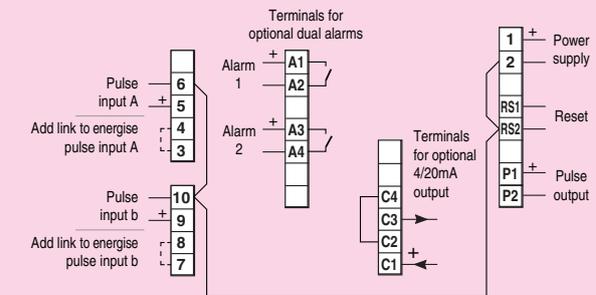
## SPECIFICATION

|   |  |
|---|--|
| <b>Power supply</b>   |  |
| Voltage   | 10 to 30Vdc  |
| Current   | 16mA max plus 16mA for optional backlight  |
| <b>Input</b>  |  |
|   | <b>Lower</b> <b>Upper</b> 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  |
| 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 5 positions or absent   |
| Rate #  | 6 digits 12mm high   |
| Decimal point   | 1 of 4 positions or absent   |
| <i># Rate &amp; Total can be shown on either 6 or 8 digit display</i> |  |
| Grand total   | Maximum count 10 <sup>16</sup>   |
| <b>Remote reset</b>   |  |
|   | Contact closure with resistance less than 10kΩ   |
| <b>Pulse output</b>   |  |
| Source and output   | Isolated open collector  |
|   | Either 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  |
| Ui  | 30Vdc  |
| I max   | 10mA   |
| <b>Configurable functions</b>   |  |
| Each input individually configurable                                  |  |
| Input function  | Input A + b: Input A – b: Input A direction controlled by input b or quadrature input (Inputs 90° out of phase).       |
| 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  |
| <b>Certification</b>  |  |
| <b>Europe ATEX</b>  |  |
| Code  | Group II Category 3G Ex nA ic IIC T5 Gc  |
|   | Group II Category 3D Ex ic tc IIIC T80°C Dc  |
|   | -40 ≤ Ta ≤ 60°C  |
| Cert. No.   | ITS16ATEX48409X  |
| <b>International IECEx</b>  |  |
| Code  | Ex nA ic IIC T5 Gc   |
|   | Ex ic tc IIIC T80°C Dc   |
|   | -40 ≤ Ta ≤ 60°C  |
| Cert. No  | IECEx ITS 16.0005X   |
| <b>ETL &amp; cETL</b>   |  |
| Code  | Class I Zone 2 AEx nA ic IIC T5 Gc   |
|   | Zone 22 AEx ic tc IIIC T80°C Dc  |
|   | Ex nA ic IIC T5 Gc   |
|   | Ex n IIC T5 Gc   |
|   | Ex ic tc IIIC T80°C Dc   |
|   | Class III Div 2, Class II Div 2, Gp F, G   |
|   | -40°C ≤ Ta ≤ 60°C  |
| ETL Control No.   | 4008610  |
| <b>Environmental</b>  |  |
| Operating temp  | -40 to +70°C display -20 to +70°C  |
| Certification temp  | -40 to +60°C   |
| Storage temp  | -40 to +85°C   |
| Humidity  | to 95% at 40°C non condensing  |
| Vibration   | Report available   |
| Enclosure   |  |
| Material  | GRP  |
| Ingress   | IP66   |
| EMC   | Complies with 2014/30/EU   |
| <b>Mechanical</b>   |  |
| Terminals   | Screw clamp for 0.5 to 1.5mm <sup>2</sup>  |
| Weight  | 1.1kg  |
| <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. |
|   | Isolated single pole, voltage free solid state switch  |
| Outputs   | 5Ω + 0.7V max  |
| Ron   | IMΩ min  |
| Roff  | 30V dc   |
| Ui  | 200mA  |
| Ii  |  |

## DIMENSIONS (mm)



## TERMINAL CONNECTIONS



|                     |   |
|---------------------|---|
| Scale card          | Blank card fitted to all instruments. Can be supplied printed with specified units of measurement and tag information for no additional charge at time of purchase. # |
| Legend plate        | 316 stainless steel plate laser engraved with tag number or application information attached to rear of the instrument, visible from the front. #                     |
| Pipe mounting kit   | BA393G 316 stainless steel #  |
| Panel mounting kits | BA394G 316 stainless steel not sealing #  |

# See accessory datasheet for details

## HOW TO ORDER

|                        |  |
|------------------------|--|
| Model number           | BA364NG  |
| Input function         | Input A + b: Input A – b: Input A direction controlled by input b or quadrature input (Inputs 90° out of phase). *<br>Type *<br>XXXXX *<br>XXXXX *<br>Seconds, minutes or hours* |
| Input                  |  |
| Total scale factor     |  |
| Rate scale factor      |  |
| Rate timebase          |  |
| <b>Accessories</b>     | <b>Please specify if required</b>  |
| Display backlight      | Backlight  |
| 4/20mA output          | 4/20mA output  |
| Dual alarms            | Alarms   |
| Scale card marking     |  |
| Units                  | Legend required  |
| Tag                    | Legend required  |
|                        | <i>No charge if ordered with counter</i>   |
| Stainless legend plate | Legend required  |
| Pipe mounting kit      | BA393G   |
| Panel mounting kit     | BA394G   |

\* Counter can be supplied configured as required for no additional charge. If configuration information is not supplied, instrument will be configured for Input A + b, open collector inputs with rate and total scaling factors of 1.0 and a timebase of seconds with direct pulse retransmission. Can easily be reconfigured on-site.