

The **BA364G** is a two input, field mounting, intrinsically safe counter which can display the sum or difference of the two pulse inputs, or the count direction of input A may be controlled by input b. The output from a quadrature encoder can also be decoded to show speed and direction of movement. The counter is easy to use and each input can be independently configured on-site to operate with a magnetic pick-off, switch contact, proximity detector, open collector or a sensor with a voltage pulse output. A slide-in scale card simplifies identification and international intrinsic safety certification permits worldwide installation.

Any display application requiring the sum or difference of pulse outputs from two sensors can be performed by the BA364G, 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.

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.

International intrinsic safety certification allows the BA364G counter to be installed in gas and dust hazardous areas worldwide. When configured to operate with a sensor having a voltage or magnetic pick-off output, the input terminals comply with the requirements for *simple apparatus* reducing system design and documentation.

An optional isolated 4/20mA current sink output, which has been certified as a separate intrinsically safe circuit complying with the requirements for *simple apparatus*, 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 area loads such as a sounder or solenoid valve, or safe area loads via a Zener barrier or isolator. 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 BA364G display show the status of both alarm outputs.

BA364G

two input counter

Intrinsically safe for use in gas & dust hazardous areas

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

◆ **Separate displays**

◆ **Intrinsically safe**

◆ **IP66 GRP enclosure**

◆ **Isolated pulse output**

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

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

◆ **3 year guarantee**

www.beka.co.uk/ba364g



BEKA

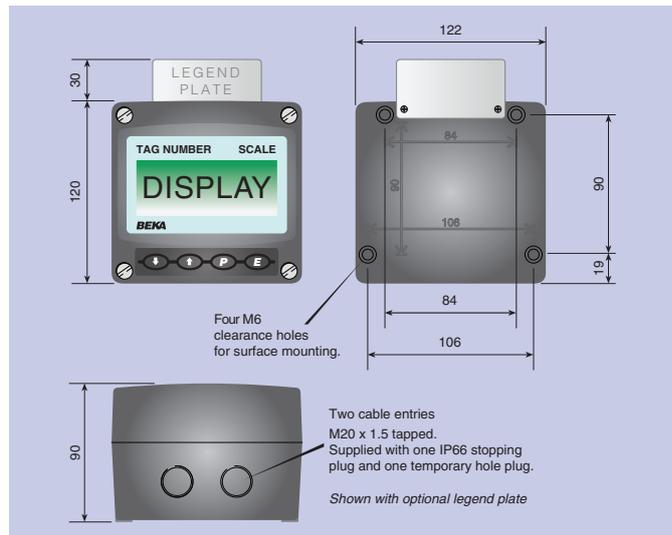
associates

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

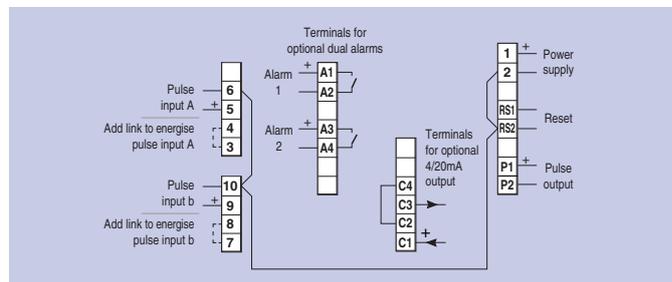
SPECIFICATION

Power supply		
Voltage	10 to 28V from a Zener barrier or galvanic isolator	
Current	16mA max plus 16mA 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 28V max
Voltage pulse (high)	3V	10V 28V 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 18mm high	
Decimal point	1 of 5 positions or absent	
Rate #	6 digits 12mm 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	
Pulse output	Isolated open collector, certified as a separate intrinsically safe circuit complying with the requirements for <i>simple apparatus</i> .	
Source and output	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	
I max	10mA	
Configurable functions	Each input individually configurable	
Input function	Input A + b: Input A – b: Input A direction controlled by input b or quadrature encoder 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	
Intrinsic safety		
International IECEx		
Code	Ex ia IIC T5 Ga -40 ≤ Ta ≤ 70°C Ex ia IIIC T80°C Db -40 ≤ Ta ≤ 60°C IECEx ITS 16.0004X	
Cert. No.		
Europe ATEX and UKEX		
Code	Group II Category 1G Ex ia IIC T5 Ga -40 ≤ Ta ≤ 70°C Group II Category 2D Ex ia IIIC T80°C Db -40 ≤ Ta ≤ 60°C ITS16ATEX28408X & ITS21UKEX0098X	
Cert. No.s		
ETL & cETL		
Code	Class I Div 1 Gp A, B, C, D T5 Class II Div 1 Gp E, F, G Class III Class I Zone 0 AEx ia IIC T5 Ga Zone 20 AEx ia IIIC T80°C Da Ex ia IIC T5 Ga Ex ia IIIC T80°C Da -40°C ≤ Ta ≤ 70°C 4008610	
ETL Control No.		
China CCC	As IECEx - see certificate	
India CCOE/PESO	As ATEX - see certificate	
Nonincendive USA & Canada ETL & cETL		
Code	Class I Div 2 Gp A, B, C & D T5 Class II Div 2 Gp F, G. Class III Div 2 Ex ia IIC T5 Ga -40 ≤ Ta ≤ 70°C 4008610	
ETL Control No.		
Environmental		
Operating temp	-40 to +70°C display -20 to +70°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 EU and UK Directives	
Mechanical		
Terminals	Screw clamp for 0.5 to 1.5mm ²	
Weight	1.1kg	
Accessories		
Backlight	Green LED internally powered	
4/20mA output	Isolated current sink	
Voltage drop	5 to 28V	

DIMENSIONS (mm)



TERMINAL CONNECTIONS



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
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 # BA494G GRP sealing #

See accessory datasheet for details

HOW TO ORDER

Model number	Please specify for each input BA364G
Input function	Input A + b: Input A – b: Input A direction controlled by input b or quadrature encoder input (Inputs 90° out of phase). *
Input	Type *
Total scale factor	XXXXX *
Rate scale factor	XXXXX *
Rate timebase	Seconds, minutes or hours*
Accessories	Please specify if required
Display backlight	Backlight
4/20mA output	4/20mA output
Dual alarms	Alarms
Scale card marking	Legend required Legend required No charge if ordered with counter
Units	
Tag	
Stainless legend plate	Legend required
Pipe mounting kit	BA393G
Panel mounting kit	BA394G or BA494G

* 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.