1. DESCRIPTION

The BA364G is a field mounting intrinsically safe, two input Counter which will function with a wide variety of sensors. The instrument can display rate and total of the two inputs and their sum or difference.

This abbreviated instruction sheet is intended to assist with installation, a comprehensive instruction manual describing safety certification, system design and configuration may be downloaded from the BEKA website or may be requested from the BEKA sales office.

The BA364G Counter has IECEx, ATEX, ETL and cETL intrinsic safety certification for use in flammable gas and dust atmospheres. The certification information label, which is located on the top of the instrument assembly, shows the certification numbers and codes. Other certifications may be shown. Copies of certificates may be downloaded from the BEKA website.



Typical certification information label

2. INSTALLATION

The BA364G Counter has a robust IP66 glass reinforced polyester (GRP) carbon loaded enclosure incorporating an armoured glass window & stainless steel fittings. It is suitable for exterior surface mounting in most industrial environments, or pipe mounting using an accessory kit.

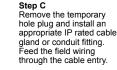
If the enclosure is not bolted to an earthed post or structure, the earth terminal on the cable entry bonding plate, which may be assembled on the inside or outside of the enclosure, should be connected to local earthed metalwork or to the plant's potential equalising conductor.

Terminals A1, A2, A3 and A4 are only fitted when the Counter includes optional alarms. Similarly terminals C1, C2, C3 and C4 are only fitted when the instrument has an optional 4/20mA output. See full manual for details.

DISPLAY A Step A Unscrew the four captive 'A' screws and separate the indicator assembly and the back-box.

Step B





Secure the enclosure

back-box to a flat surface

the four 'B' holes. Alternatively

with M6 screws through

use a pipe mounting kit.



Terminate field wiring on the instrument assembly. Replace the assembly on the enclosure back-box and tighten the four 'A' screws.

Fig 1 BA364G installation procedure

Abbreviated Instruction for

BA364G intrinsically safe

two input field mounting Counter

SCALE

Ø

TAG NUMBER

BEKA

888888888

* **107**AL ****8888888

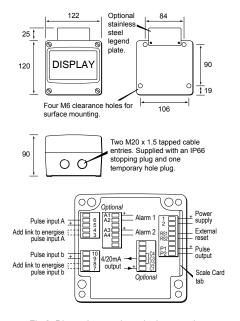


Fig 2 Dimensions and terminal connections

EMC

For specified immunity all wiring should be in screened twisted pairs with screens earthed at one point within the safe area.

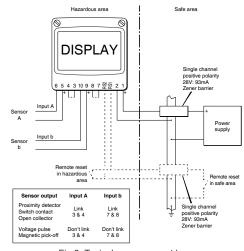


Fig 3 Typical measurement loop

Scale card

The instrument's units of measurement and tag information are shown above the display on a slide-in scale card. New instruments are fitted with a scale card showing the information specified when the instrument was ordered, if this was not provided a blank scale card will be fitted which can easily be marked on-site. Custom printed scale cards are available from BEKA associates. To remove the scale card carefully pull the tab perpendicularly away from the instrument assembly. See Fig 2 for the location of the scale card tab.

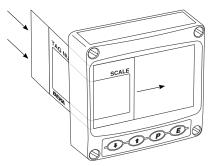


Fig 4 Inserting scale card into instrument assembly

To replace the scale card carefully insert it into the slot shown in Fig 2. Force should be applied evenly to both sides of the scale card to prevent it twisting. The card should be inserted until about 2mm of the transparent tab remains protruding.

3. OPERATION

The BA364G is controlled and configured via four front panel push buttons. In the display mode i.e. when the instrument is counting the push button functions are:

- + Grand total shows the least significant 8 digits of a 16 digit counter.
- E + A Grand total shows the most significant 8 digits of a 16 digit counter. If buttons are pressed for longer than 10 seconds the grand total will be reset to zero if the grand total reset function [Lr [LoL] is enabled.

To reset the grand total to zero from the operating mode press the \mathbb{E} and \mathbb{A} buttons for ten seconds until [Lr. no is displayed. Using the \mathbb{T} or \mathbb{A} button change the display to [Lr. JE5 and press \mathbb{E} which will reset the grand total and restore the original display.

- + If the local total reset function LLr LoL is enabled in the configuration menu, simultaneously pressing the T and D buttons for more than three seconds allows total R, total b or both totals to be selected by operating the T or D button. Operating the E button will then reset the selected total and clear any stored output pulses.
- +
 Shows each for 2 seconds: Firmware and version number Function of instrument: 2[H[nbr Options fitted:
 - -R Alarms
 - -P Pulse output (always fitted)
 - -E 4/20mA output
- **P** + Provides direct access to the alarm setpoints when the Counter is fitted with optional alarms and the RESP setpoints function has been enabled.

The BA364G is CE marked to show compliance with the ATEX Directive 2014/34/EU and the EMC Directive 2014/30/EU.

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4. CONFIGURATION

Display

mode

DISPLA

LodE

É

Security Code

Enter code by pressing 🔺 or 💌 & 🖻

to move to next

digit. Code 0000

Counters are supplied configured as requested at time of ordering, if not specified default configuration will be supplied but can easily be changed on-site. Fig 5 shows the location of each function within the configuration menu with a brief summary of the function. Please refer to the full instruction manual for detailed configuration information and for description of optional outputs. Access to the configuration menu is obtained by pressing the 🕑 and 🗉 buttons simultaneously. If the Counter's security code is set to default DDD the first parameter _ nPut-R will be displayed. If the instrument is protected by a security code, LodE will be displayed. The four digit code must be entered to gain access to the menu.

Unless otherwise specified menu functions are shown on the upper display

| EodE | digit. Code allows dire | ect | Unless | otherwise spe | ecified menu f | unctions are | shown on the | e upper displa | ау | | | | | | | | | | |
|------------------------------|----------------------------|-----------------------------|---------------------------------|------------------------|-------------------------------------|----------------------------|-------------------------------------|-----------------------------------|--------------------------------------|---------------------------|---|----------------------|--|--|---|-----------------------|--|--|---|
| | access t the men | | | | | | | | | | | | | Alarms fur | nctions appear | here 4 | 1/20mA output fun | ctions appear h | ere |
| | | È | Ē | , te | | + E | Ē | Ě | É | , te | Ē | Ě | È | | | | <u>+</u> | •••••••••••••••••••••••••••••••••••••• | |
| | ▶ | * _ | _ T . | | T | T | Т | | T | _ T . | _ T _ | | T | | ▲ → | | | | |
| | | | ▼───── ● Ē | | | | | ▼───── ● Ē | ▼────── ● Ē | ▼−−−−−+€ ■ Ē | | | ▼−−−−−+÷ | | | | +v | ╸ └ ╵ ╹ ╹ | |
| | dEbounEE | E 90E 1 | Ţ <u>T</u> [0.5] | T R:b | F T EoERL | Ŧ Ţ | | | | F T [EB-01] | ∓ <u>⊤</u> [24] | T L | | | | Ţ | ELr.no | | ∓ ⊤ [0000] |
| | | | | | | | | | | | | | | | | | ↓ ↓ | | |
| oP.CoL | dEFRULE | | | | | | | | | | | | | ↓ FF | ٥FF | | | | |
| Input-A | Debounce | Counting edge input-A | Update | Count | Upper Display | Lower Display | Decimal point | Total scale factor | Rate scale factor | Timebase | Filter input | Direction of count | Reset value | Local total reset | Local grand total reset | וון | Grand total reset | Define Security Code | Reset configuration |
| ▼ or ▲ to select | ▼ or ▲ to select | To toggle | ▼ or ▲ to select | ▼ or ▲ to select | ▼ or ▲ to select | ▼ or ▲ to turn | ▼ or ▲ to select | Dividing factor which defines | Dividing factor which defines | ▼ or ▲ to select | ▼ or ▲ to adjust value | To to toggle | or adjust value | To turn the | To turn the | | press | Enter by | to factory defaults |
| Input type | level of debounce. | between EdGE (| interval between display | Input type Я:ь | display whether LotRL or rRLE | lower display on Of oFF | position of decimal point and | total display. To adjust value | rate display. or to adjust value | rate display timebase. | of each digit and P to | between uP and do | of each digit and P to | local total reset function on or oFF. | local grand total reset function | | to select ELr.3E5 to reset grand | pressing | Confirm instruction by |
| oP.EoL Open Collector | dEFRult | volts rising edge and | updates, may be set to | Input A + Input b | is shown on upper | | to toggle between rate | and P to move to | and P to move to | ٤٥-۵۱ for pulses/sec | transfer control to the next digit. | | transfer control to the next digit | When on, total display may be | on Or oFF. When on, | | total to zero. | and P to move to next digit. | entering Sur É. Press |
| UoLES L Pulse | HERUY L, GHE | EdGE2 volts falling edge | 0.5, 1, 2, 3, 4 or 5 seconds | Я:-ь Input A - | display | | and total displays | next digit or decimal point | next digit or decimal point | եե-60 for pulses/min | First digit: | | | reset when | grand total display may be reset when | | Confirm instruction by entering Sur E. | Default code | or to adjust each |
| <1V >3V | | | J | Input b | | | L | J | J | ь-3600 | filter magnitude Second digit: | | | are pressed simultaneously for more than 3 | E and A | | Press | 0000 allows direct access to configuration | digit and P to move to next digit |
| Pulse <3V >10V | | | | A count direction | | | | | | for pulses/hour | step response | | | seconds in the display mode | simultaneously for more than 10 | , | to adjust each digit and P | menu | |
| Eo, L Magnetic | | | | controlled by b | | | | | | | Note: While making adjustments | | | | seconds in the display mode | | to move to next digit | | |
| pick-off Pr.dEt | | | | R r EL b Quadrature | | | | | | | the filtered rate display is | L | J | J | IL | | L |] | |
| Proximity detector | | | | counting mode | | | | | | | shown on lower display so stability can | | | | | | Ē | É | Ē |
| EonEREE Switch contact | | | | | | | | | | | be assessed | | | | - | EnbL | | | |
| Contact | | | | | J | | | | | | | | | | | P E | P E | ₽ Ė | P E |
| | | | | | | | | | | | | | | | | oFF | SERLEd | 1000 | 0.1 |
| | | | | | | | | | | | | | | | | Alarm Enable | e Source or output pulse | Divides scaled output pulse | Duration of each pulse |
| | | | | | | | | | | | | | | | | to toggle | 🔺 or 💌 | 🔺 or 💌 | ▲ or ▼ to select |
| | | | | | | | | | | | | | | | | between on and oFF | to select pulse source. SERLEd | to select frequency dividing factor | duration of scaled output |
| * Followed by | identical fun | nction for inr | put b | | | | | | | | | | | | | | Input pulse frequency may | for scaled output pulse | pulse in ms |
| Unless otherw | | | | hown on the | upper displa | ay | | | | | | | | | | | be divided and duration extended. | 1 10 | 0.5 I |
| | | | | | | | | | | | | | | | | | OR | 100 1000 10000 | 2.5 5 |
| | | | |] | | | | | | | | | | | | | di r EEE R Retransmission of input A | 10000 | 25 50 |
| | Manuals | s and data | sheets | | | | | | | | | | | | | | OR | | 100 250 500 |
| 2567 | | downloade | | 10 | | | | | | | | | | | | | di rEEE b Retransmission of input b | | s only appear in |
| | nttp://wv | ww.beka.c | o.uk/ba36 | 4g | | | | _ | ia E Confi | | | | | | | | | | hen SERLEd is SourEE function |