DESCRIPTION 1.

The BA384G is a field mounting intrinsically safe, two input Rate Totaliser which will function with a wide variety of sensors. The instrument can display rate of flow and total flow 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 BA384G Rate Totaliser has IECEx. ATEX. UKEX. 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



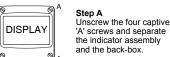
Typical certification information label

2. INSTALLATION

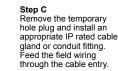
The BA384G Rate Totaliser has a robust IP66 glass reinforced polvester (GRP) carbon loaded enclosure incorporating an armoured glass window & stainless steel fittings. It is suitable for exterior surface mounting in most industrial environments, or pipe mounting using an accessory kit.

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 Rate Totaliser 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.







Secure the enclosure

back-box to a flat surface

the four 'B' holes. Alternatively

with M6 screws through

use a pipe mounting kit.

Step B



Fig 1 BA384G installation procedure

Abbreviated Instruction for

BA384G intrinsically safe

two input field mounting Rate Totaliser

SCALE

 \bigcirc

TAG NUMBER

REKA

Issue 4

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'A' screws.

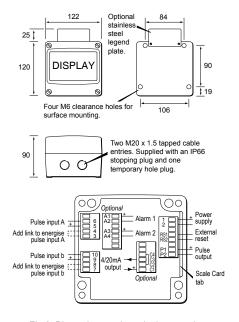
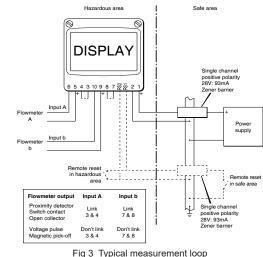


Fig 2 Dimensions and terminal connections

EMC

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



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

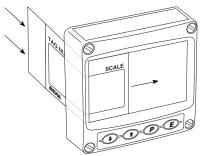


Fig 4 Inserting scale card into instrument assembly

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.

OPERATION 3

The BA384G is controlled and configured via four front panel push buttons. In the display mode i.e. when the instrument is displaying flow the push button functions are:

or Scrolls both displays between:

- Input 8
- Input **b**

Input R + b or Input R - b which is configurable

- + Grand total shows Lo followed by the least significant 8 digits of a 16 grand total.
- + ▲ Grand total shows H₁ followed by the most significant 8 digits of a 16 digit grand total. If buttons are pressed for longer than 10 seconds the grand total will be reset to zero if the grand total reset function ELr Etat is enabled.

To reset the grand total to zero from the operating mode press the *E* and *A* buttons for ten seconds until [Lr. no is displayed. Using the T or A button change the display to ELr. 985 and press 🗈 which will reset the grand total and restore the original display.

- If the local total reset function [Lr Lot is enabled in the configuration menu, simultaneously pressing the rand buttons for more than three seconds allows total R. total b or both totals to be selected by operating the so or button. Operating the E button will then reset the selected total to zero and clear any stored output pulses.
- Firmware and version numbers Function of instrument: 2081-0-81 Options fitted
 - -R Alarm outputs
 - -P Pulse output (always fitted)
 - -E 4/20mA output
- + ▼ Provides direct access to the alarm setpoints when the Rate Totaliser is fitted with optional alarms and the RESP setpoints function has been enabled

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4. CONFIGURATION

Display

mode

DISPLA

E

Security Code

Enter code by

pressing

or 💌 & P to move to next

digit. Code 0000 allows direct

Manuals and datasheets

can be downloaded from

http://www.beka.co.uk/ba384g

Rate Totalisers 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 **P** and **E** buttons simultaneously. If the Rate Totaliser's security code is set to default DDD the first parameter Function will be displayed. If the instrument is protected by a security code, CadE will be displayed. The four digit code must be entered to gain access to the menu.

	allows direct access to the menu															n fitted with opt nctions appear		When fitted with optional 4/20mA output functions appear here		
		▲→			€ € • • • • •	€ - - - - - - - - - - - - - - - - - - -									•		PuLSE oP			
↓ P ∉ ↓ Std				P F R:b	P E totRL						P E t t t t t t t	+ (P) (E) + - - - - - - - - - - - - -				P F SEE-book R				
Eunction or to select Function of instrument Std linear L: n 16 segment lineariser	Input-A or To select Input type oPfal Open Collector. UaLE5 L Pulse <1V >3V UaLE5 H Pulse <3V >10V Co. L Magnetic pick-off.	Debounce inputA or v to select level of debounce. dEFRuLE L.GME KERUS	Update or to select interval between display updates, may be set to 0.5, 1, 2, 3, 4 or 5 seconds.	Count to select arithmetic relationship between input b may be set to R:b Input A + Input b R:-b Input A - Input b	Upper Display or T to select display whether rREE or toFR is shown on upper display	Lower Display or To select LRbEL permanently identifies upper display. oFF display off Std alternates between display and identification	Decimal point or To select position of decimal point and P to toggle between rate and total displays.	K-factor input-A or ▼ to adjust value and ℙ to move to next digit or decimal point. Note: When L ∩ is selected 16 values for FRLEor-R may be entered each starting at a specified rate display	Total scale factor input-A Divides FREtor-R output to produce required total display. Press	Bate scale factor input-A Divides FREtor-R output to produce required rate display. Press or or to adjust value and D to move to next digit or decimal point.	Timebase ▲ or ▼ to select rate display timebase Łb-8; for flow/sec Łb-56; for flow/min Łb-3608; for flow/hour	Eitter input-A or or to adjust value of each digit and P to transfer control to the next digit. First digit: filter magnitude Second digit: step response Note: While making adjustments the filtered	Clip-off input-A Rate display below which totalisation is inhibited Press a or v to adjust value and r to move to next digit.	Local total reset or Teset to turn the local total reset function on or of F. When on is selected, Total A, or both totals may be reset when are pressed simultaneously for more than 3 seconds in the display mode.	Local grand total reset to turn the local grand total reset function on or oFF. When on, grand total display may be reset when f are pressed simultaneously for more than 10 seconds in the display mode.	External reset		Clear grand total Press ♥ or ▲ to select ½5 to reset grand total to zero Confirm instruction by entering Sur E. Press ♥ or ▲ to adjust each digit and ₽ to nove to next digit	Define Security Code Enter by pressing ♥ or ▲ and ₱ to move to next digit.	Beset configuration to factory defaults Confirm instruction by entering Sur E. Press (D) or ▲ to adjust each digit and (P) to move to next digit
	PrdEt PrdEt Frate display is shown on lower display. ContRCt Switch contact. Switch Unless otherwise specified menu functions are shown on the upper display Unless otherwise specified menu functions are shown on the upper display																			
Fig 5 Configuration menu														Pulse Enabl	output pulse or to select pulse source	Divides scaled output pulse	Duration of each pulse			
The BA384G is CE marked to show compliance with the European Explosive Atmospheres Directive 2014/34/EU and the European EMC Directive 2014/30/EU.											34/EU			These functions sub-menu whe is conditione	n pulse source					

It is also UKCA marked to show compliance with UK statutory requirements Equipment and Protective Systems Intended for Use in *Potentially Explosive Atmospheres Regulations* UKSI 2016:1107 (as amended) and with the Electromagnetic Compatibility Regulations UKSI 2016:1091 (as amended).