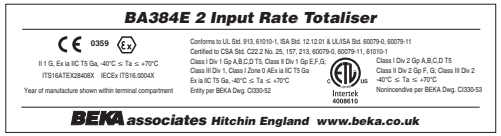
1. DESCRIPTION

The BA384E is a field mounting intrinsically safe, two input Rate Totaliser with a separate terminal compartment 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 BA384E Rate Totaliser has IECEx and ATEX intrinsic safety certification for use in flammable gas atmospheres, plus ETL and cETL gas and dust certification. 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.



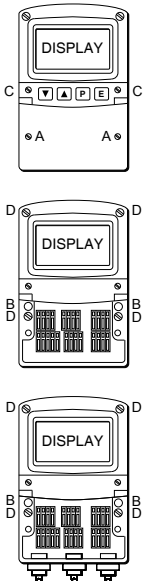
Typical certification information label

2. INSTALLATION

The BA384E Rate Totaliser has a robust IP66 GRP enclosure with a separate terminal compartment 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 should be connected to local earthed metalwork or to the plant's potential equalising conductor.

The BA384E is CE marked to show compliance with the ATEX Directive 2014/34/EU and the EMC Directive 2014/30/EU.



Step A
Remove the terminal cover by unscrewing the two 'A' screws

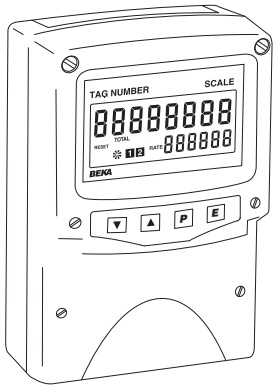
Step B
Secure the instrument to a flat surface with M6 screws through the two 'B' holes. Alternatively use a pipe mounting kit.

Step C and D
Remove the temporary hole plug and install an appropriate IP rated cable gland or conduit fitting and terminate field wiring. Finally replace the terminal cover and tighten the two 'A' screws.

Fig 1 BA384E installation procedure

Abbreviated Instruction for

BA384E intrinsically safe two input field mounting Rate Totaliser



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BEKA associates Ltd. Old Charlton Rd, Hitchin, Hertfordshire, SG5 2DA, UK Tel: +44(0)1462 438301 Fax: +44(0)1462 453971
e-mail: sales@beka.co.uk web: www.beka.co.uk

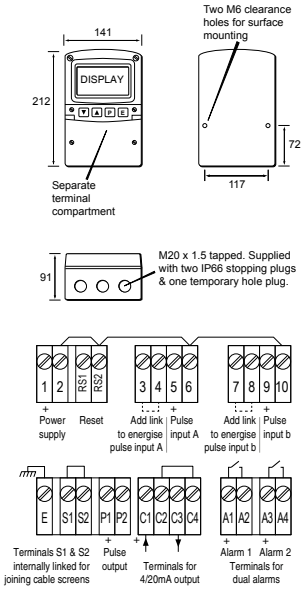
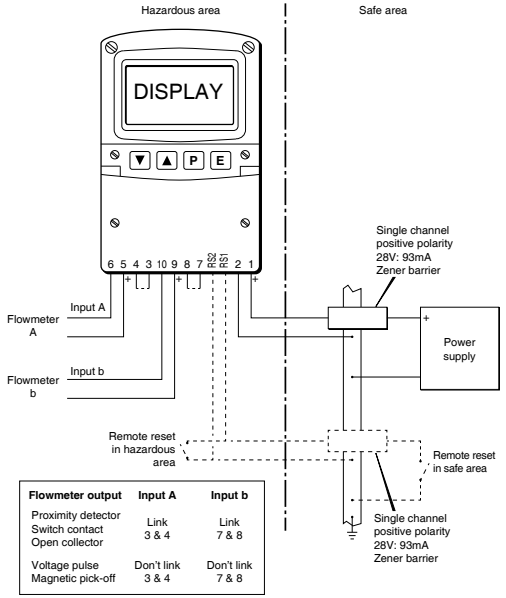


Fig 2 Dimensions and terminal connections

EMC

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



Flowmeter output	Input A	Input b
Proximity detector Switch contact Open collector	Link 3 & 4	Link 7 & 8
Voltage pulse Magnetic pick-off	Don't link 3 & 4	Don't link 7 & 8

Fig 3 Typical Timer system

Units of measurement and tag number

The BA384E is fitted with a blank escutcheon around the liquid crystal display. This can be supplied printed with any units of measurement and tag information specified at the time of ordering. Alternatively, the information may be added on-site via an embossed strip, dry transfer or a permanent marker.

To gain access to the escutcheon remove the terminal cover by unscrewing the two 'A' screws which will reveal two concealed 'D' screws. Remove the push buttons by unscrewing the two 'C' screws and un-plug the five way connector. Finally, unscrew all four 'D' screws and carefully lift off the front of the instrument. The location of all the screws is shown in Fig 1.

3. OPERATION

The BA384E 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 A
Input b
Input A + b or Input A – b which is configurable

E + ▼ Grand total - shows Lo followed by the least significant 8 digits of a 16 digit grand total.

E + ▲ Grand total - shows Hi 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 CLr Gtot is enabled.

To reset the grand total to zero from the operating mode press the E and ▲ buttons for ten seconds until CLr.no is displayed. Using the ▼ or ▲ button change the display to CLr.YES and press E which will reset the grand total and restore the original display.

▼ + ▲ If the local total reset function CLr tot is enabled in the configuration menu, simultaneously pressing the ▼ and ▲ buttons for more than three seconds allows total A, total b or both totals to be selected by operating the ▼ or ▲ button. Operating the E button will then reset the selected total to zero and clear any stored output pulses.

P + ▼ Shows in succession, firmware version number, instrument function 2CHtotAL and output accessories which are always fitted.
-A Control outputs
-P Pulse output
-C 4/20mA output

P + ▼ Provides direct access to the alarm setpoints when the ALSP setpoints function has been enabled.

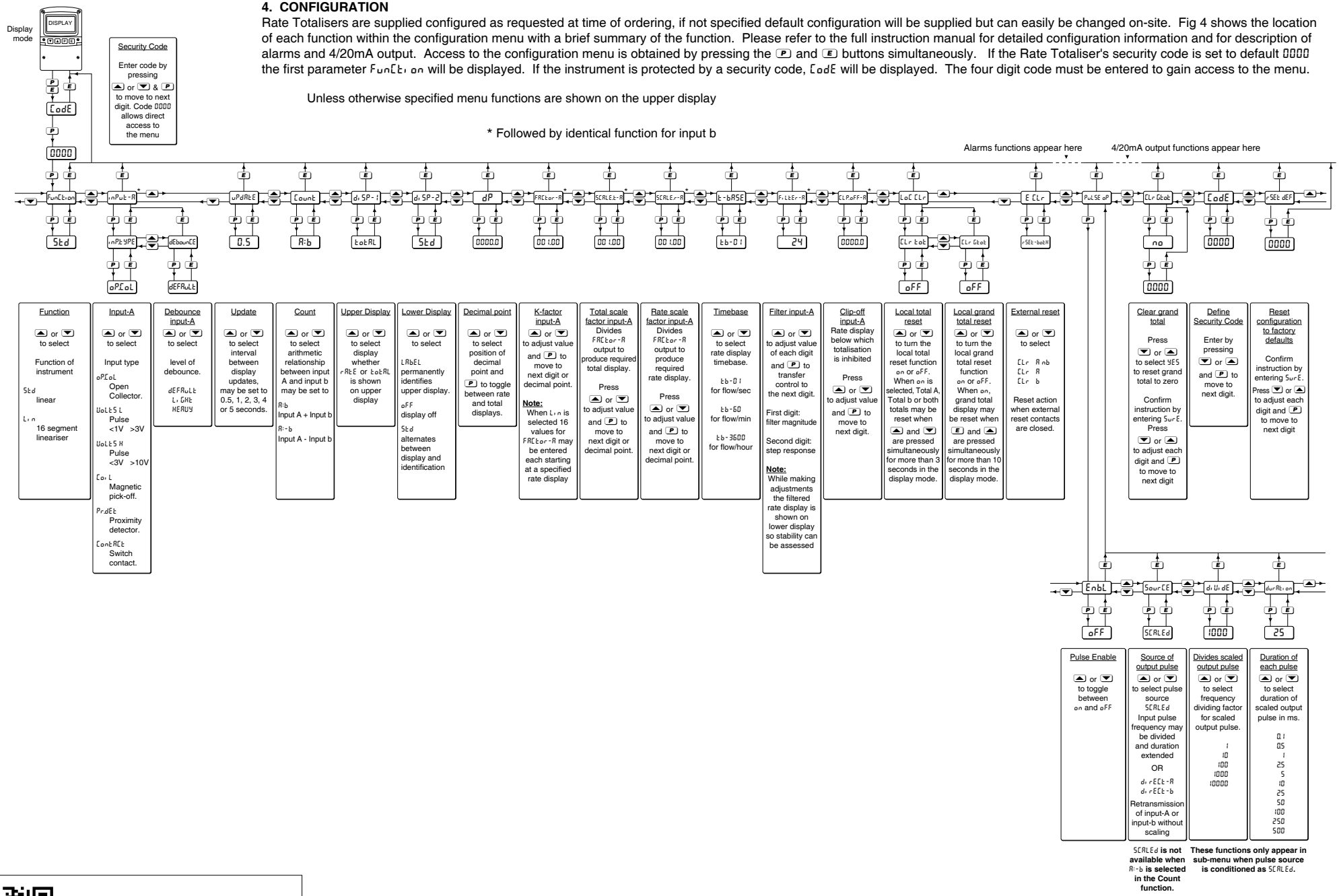
P + E Access to configuration menu

4. CONFIGURATION

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 4 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 alarms and 4/20mA output. 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 0000 the first parameter FunCti on will be displayed. If the instrument is protected by a security code, CodE 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

* Followed by identical function for input b



SCALEd is not available when A:-b is selected in the Count function.

These functions only appear in sub-menu when pulse source is conditioned as SCALEd.

Manuals and datasheets can be downloaded from http://www.beka.co.uk/ba384e

Fig 4 Configuration menu