1. DESCRIPTION

The BA537E-SS is a general purpose, one input rate totaliser housed in a rugged 316 stainless steel panel mounting enclosure, primarily intended for use with pulse output flowmeters.

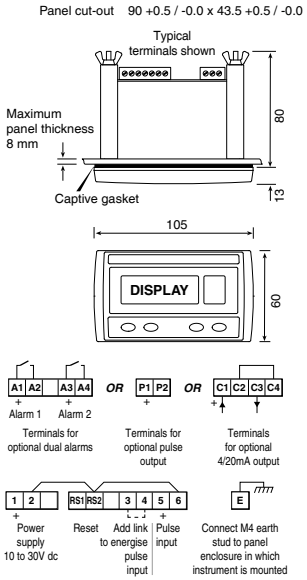
This abbreviated instruction sheet is intended to assist with installation, a comprehensive instruction manual describing system design and configuration may be downloaded from the BEKA website or may be requested from the BEKA sales office.

The BA537E-SS is CE marked to show compliance with the European EMC Directive 2014/30/EU. It is also UKCA marked to show compliance with UK Electromagnetic Compatibility Regulations UKSI 2016:1091 (as amended)

2. INSTALLATION

Cut-out dimensions

Mandatory to achieve an IP66 seal between instrument and panel.

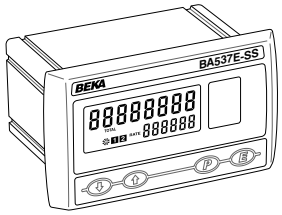


Support panel wiring to prevent vibration damage

Fig 1 Cut-out dimensions and terminals

Abbreviated instructions for

BA537E-SS Rugged one input General purpose Rate Totaliser



Issue 5
28th August 2025

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

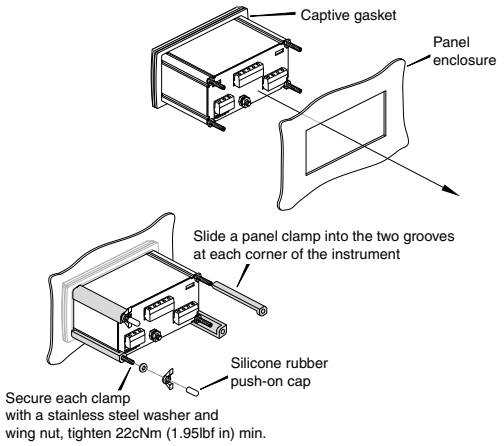


Fig 2 Installation procedure

EMC

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

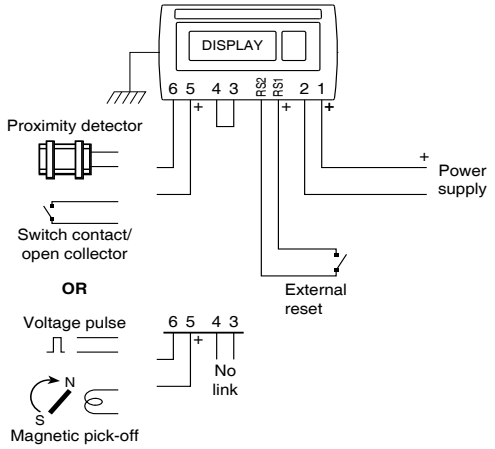


Fig 3 Typical system

Scale card

The Rate Totaliser's units of measurement are shown on a printed scale card visible through a window at the right hand side of the display. The scale card is mounted on a flexible strip that is inserted into a slot at the rear of the instrument as shown below

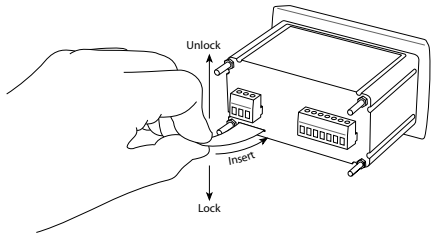
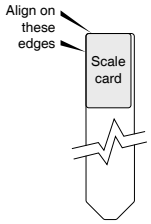


Fig 4 Inserting flexible strip carrying scale card into slot at the rear of Rate Totaliser.

Thus the scale card can easily be changed without removing the Rate Totaliser from the panel or opening the instrument enclosure.

New Rate Totalisers are supplied with a printed scale card showing the requested units of measurement, if this information is not supplied when the instrument is ordered a blank card will be fitted. A pack of self-adhesive scale cards printed with common units of measurement is available as an accessory from BEKA associates. Custom printed scale cards can also be supplied.

To change a scale card, unclip the protruding end of the flexible strip by gently pushing it upwards and pulling it out of the enclosure. Peel the existing scale card from the flexible strip and replace it with a new printed card, which should be aligned as shown below. Do not fit a new scale card on top of an existing card.



Align the self-adhesive printed scale card onto the flexible strip and insert the strip into the Rate Totaliser as shown.

Fig 5 Fitting scale card to flexible strip

3. OPERATION

The Rate Totaliser is controlled by four front panel push buttons. When in the operating mode they have the following functions:

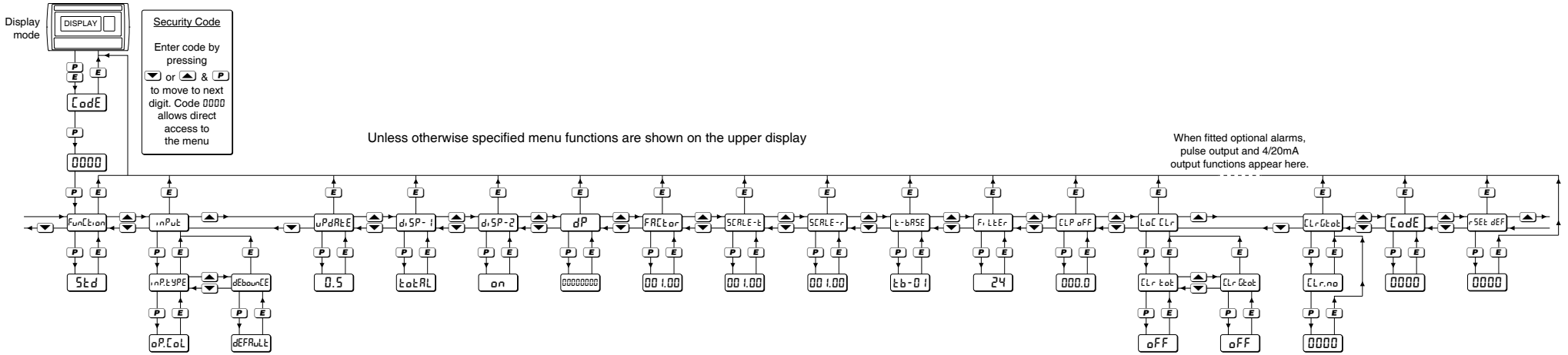
- P + E — Access to configuration menu.
- E + ▼ — Grand total - shows Lo followed by least significant 8 digits of the 16 digit grand total.
- E + ▲ — Grand total - shows Hi followed by the most significant 8 digits of the 16 digit grand total.
- ▼ + ▲ — If Local Total Reset CLr tot in the configuration menu has been activated, operating the ▼ + ▲ buttons for three seconds will reset the total display to zero and clear any pulses stored in the optional pulse output. The Grand Total is not reset.
- P + ▼ — Shows in succession, firmware version number, instrument function totALSE and any output accessories that are fitted:
  - A Dual Alarm Outputs
  - P Pulse output
  - C 4/20mA output.
- P + ▲ — When optional alarms are fitted provides direct access to the alarm setpoints if ASCP (access setpoints) in the configuration menu has been enabled.

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 6 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 the linearisers and 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 0000 the first parameter FunCt, 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.



Function

▼ or ▲ to select Function of rate totaliser

Std
Linear

Lin
16 segment linearisers

Input

▼ or ▲ to select Input type

oP.CoL
Open Collector.

VoLt5 L
Pulse <1V >3V

VoLt5 H
Pulse <3V >10V

Coil
Magnetic pick-off.

Pr.dEt
Proximity detector.

ContACt
Switch contact.

Debounce

▼ or ▲ to select level of debounce.

dEFAuLt
HEAVY
LiGHt

Update

▼ or ▲ to select interval between display updates, may be set to 0.5, 1, 2, 3, 4 or 5 seconds

Upper Display

▼ or ▲ to select whether rAtE or totAL is shown on the upper display

Lower Display

▼ or ▲ to turn lower display on or oFF

Decimal point

▼ or ▲ to select position of decimal point and P to toggle between rate and total displays

K-factor

▼ or ▲ to select value and P to move to next digit or decimal point

Note: When Lin is selected 16 values for FACtor may be entered

Total scale factor

Divides FACtor to produce total display

Press ▼ or ▲ to adjust value and P to move to next digit or decimal point

Rate scale factor

Divides FACtor to produce rate display

Press ▼ or ▲ to adjust value and P to move to next digit or decimal point

Timebase

▼ or ▲ to select rate display timebase

tb-01
for flow/sec

tb-60
for flow/min

tb-3600
for flow/hour

Filter

▼ or ▲ to adjust value of each digit and P to transfer control to other digit

First digit: filter magnitude

second digit: step response

Note: While making adjustments the filtered rate display is shown on lower display so stability can be assessed

Clip off

Rate display below which totalisation is inhibited

Press ▼ or ▲ to adjust value of each digit and P to move to next digit

Local total reset

▼ or ▲ to turn the local total reset function on or oFF. When on, total display is reset to zero when ▼ and ▲ are operated simultaneously in display mode for more than 3 seconds

Local grand total reset

▼ or ▲ to turn the local grand total reset function on or oFF. When on, grand total display may be reset to zero when E and ▲ are operated simultaneously in display mode for more than 10 seconds

Clear grand total

Press ▼ or ▲ to select YES to reset grand total to zero

Confirm instruction by entering SurE. Press ▼ or ▲ to adjust each digit and P to move to next digit

Define Security Code

Enter by pressing ▼ or ▲ and P to move to next digit

Reset configuration to factory defaults

Confirm instruction by entering SurE. Press ▼ or ▲ to adjust each digit and P to move to next digit

Manuals, certificates and data-sheets can be downloaded from http://www.beka.co.uk/ba537e-ss

Fig 6 Configuration menu