

1. DESCRIPTION

The BA374G is a field mounting intrinsically safe, instrument which can be configured as a Timer or as a Clock. As a Timer the BA374G can measure and display the elapsed time between external events, or control external events via two optional factory fitted control outputs. When configured as a Clock the BA374G displays local time and the optional control outputs can turn on and off twice in each 24 hour period.

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 BA374G Timer or Clock 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.



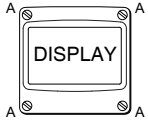
Typical certification information label

2. INSTALLATION

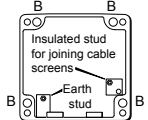
The BA374G Timer or Clock has a robust IP66 glass reinforced polyester (GRP) carbon loaded enclosure incorporating an armoured glass window & stainless steel fittings. It is suitable for exterior surface mounting in most industrial environments, or pipe mounting using an accessory kit.

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.

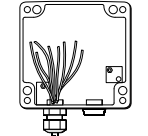
Terminals A1, A2, A3 and A4 are only fitted when the Timer or Clock includes optional control outputs. See full manual for details.



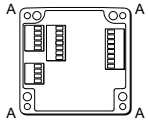
Step A
Unscrew the four captive 'A' screws and separate the indicator assembly and the back-box.



Step B
Secure the enclosure back-box to a flat surface with M6 screws through the four 'B' holes. Alternatively use a pipe mounting kit.



Step C
Remove the temporary hole plug and install an appropriate IP rated cable gland or conduit fitting. Feed the field wiring through the cable entry.



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

Fig 1 BA374G installation procedure

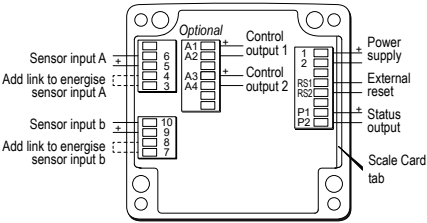
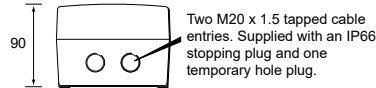
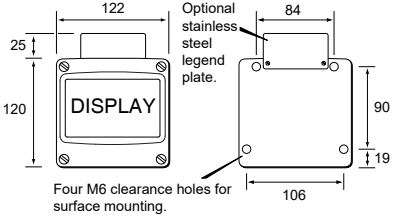


Fig 2 Dimensions and terminal connections

EMC

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

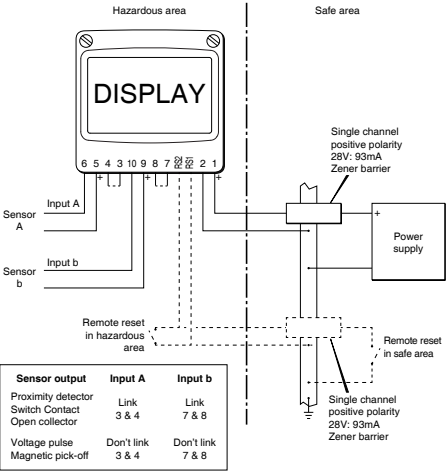


Fig 3 Typical timer system

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.

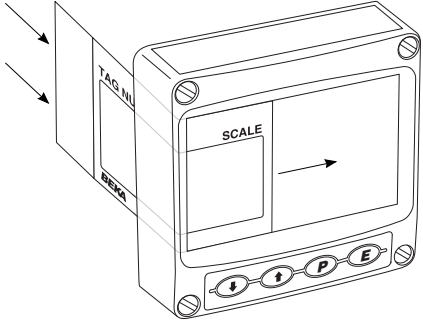


Fig 4 Inserting scale card into instrument assembly

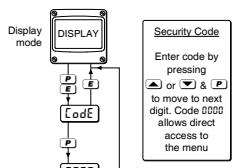
To replace the scale card carefully insert it into the slot shown in Fig 2. Force should be applied evenly to both sides of the scale card to prevent it twisting. The card should be inserted until about 2mm of the transparent tab remains protruding.

3. OPERATION

The BA374G is controlled and configured via four front panel push buttons. When configured as a Timer the push button functions are:

- When local control is enabled starts the Timer
- When local control is enabled stops the Timer
- Shows the grand total (run time) in hours and tenths of an hour irrespective of Timer configuration. If buttons are held for longer than ten seconds the grand total may be reset to zero if the grand total reset sub-function `ELr Etot` is enabled in the `LoE r SEt` configuration function.
- To reset the grand total to zero from the display mode press the `ELr` + `ELt` buttons for ten seconds until `ELr no` is displayed. Using the `ELr` or `ELt` button change the display to `ELr YE5` and press `ELr`.
- Resets the Timer to zero or to the set time `SEt t` depending on whether the Timer is configured to *time-up* or *time-down* when the two buttons are operated simultaneously for more than three seconds. This is a configurable function.
- When enabled in the configuration menu, operating these two buttons simultaneously provides direct access from the display mode to the set time `SEt t` and, if the repeat timing cycle is enabled, to the restart delay `r SEt dELr`.
- Shows in succession, firmware version number, instrument function `ELAPSE` or `LoE` and output accessories:
 - R Control outputs
 - P Status output (always fitted)

See full instruction manual for description of use when configured as a Clock.



4. CONFIGURATION

BA374G Timer or Clocks are supplied configured as requested at time of ordering. If not specified default Timer configuration will be supplied but can easily be changed on-site. Fig 5 shows the location of each function within the Timer configuration menu with a brief summary of the function. Please refer to the full instruction manual for detailed configuration information. Access to the configuration menu is obtained by pressing the **F** and **E** buttons simultaneously. If the Timer or Clock's security code is set to default 0000 the first parameter **FunCE** 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

Only included when optional Control Outputs are fitted

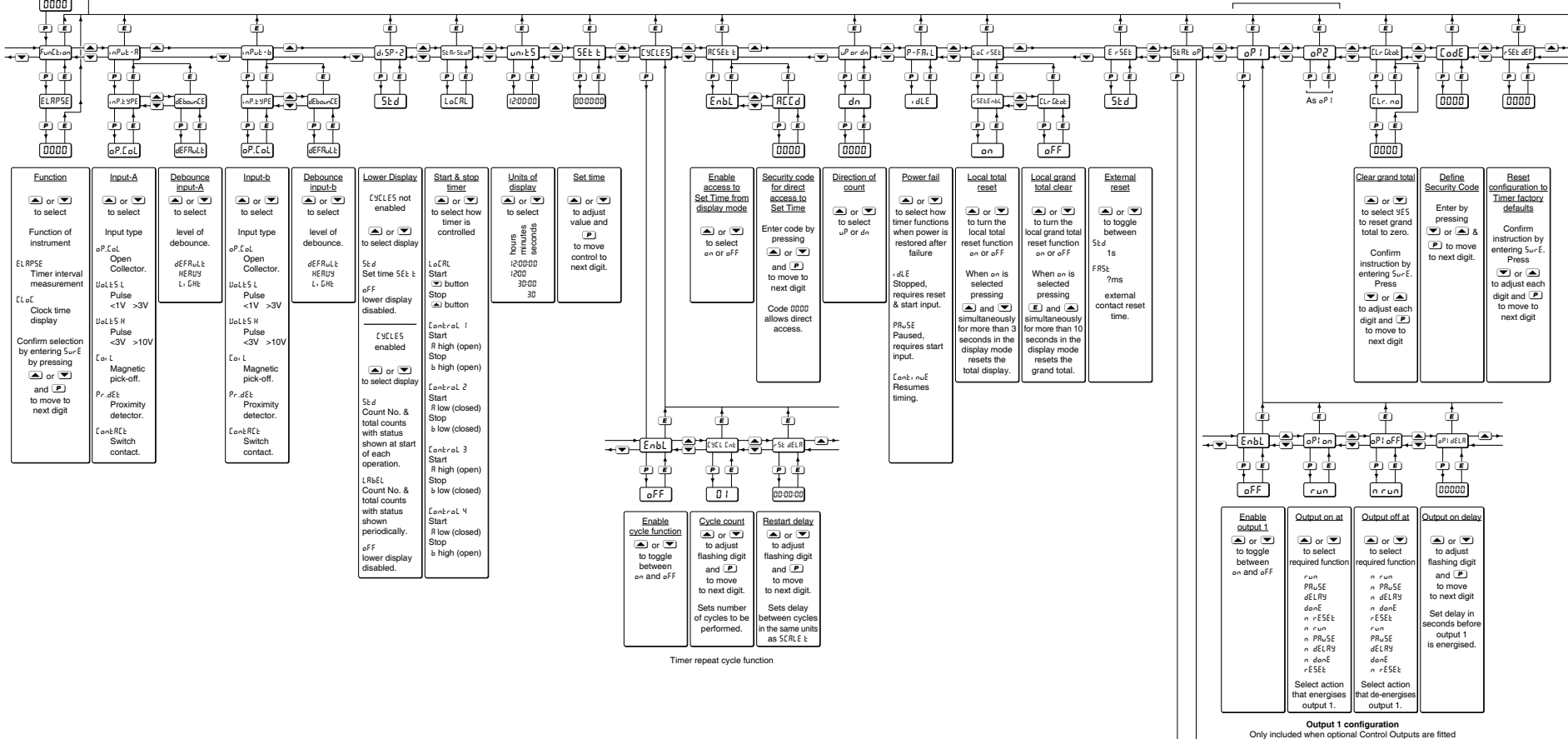


Fig 5 Configuration menu

The BA374G is CE marked to show compliance with the *European Explosive Atmospheres Directive 2014/34/EU* and the *European EMC Directive 2014/30/EU*.

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 the Electromagnetic Compatibility Regulations UKSI 2016:1091 (as amended).



Manuals and datasheets can be downloaded from <http://www.beka.co.uk/ba374g>