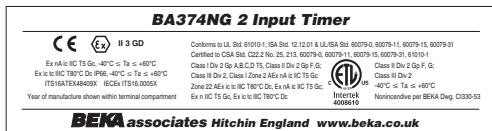


## 1. DESCRIPTION

The BA374NG is a field mounting Ex nA and Ex tc certified, instrument which can be configured as a Timer or as a Clock. As a Timer the BA374NG 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 BA374NG 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 BA374NG Timer or Clock has IECEx, ATEX, ETL and cETL certification permitting installation in Zone 2 or Zone 22 without Zener barriers or galvanic isolators. 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 down loaded from the BEKA website.



Typical certification information label

## 2. INSTALLATION

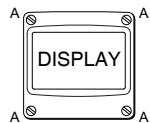
The BA374NG Timer or Clock has a robust IP66 glass reinforced polyester (GRP) carbon loaded enclosure incorporating an armoured glass window and stainless steel fittings. It is suitable for exterior surface mounting in most industrial environments, or pipe mounting using an accessory kit.

The BA374NG should be powered from a limited energy circuit with output parameters in normal operation equal to, or less than the instrument's input parameters.

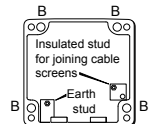
If the enclosure is not bolted to an earthed post or structure, the earth terminal on the cable entry bonding plate, which may be assembled on the inside or outside of the enclosure, should be connected to local earthed metalwork or to the plant's potential equalising conductor.

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

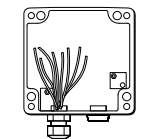
See the full instruction manual for installation information requirements for safe use in combustible dust atmospheres.



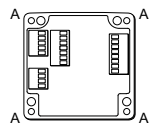
**Step A**  
Unscrew the four captive 'A' screws and separate the indicator assembly and the back-box.



**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 Ex e 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 BA374NG installation procedure

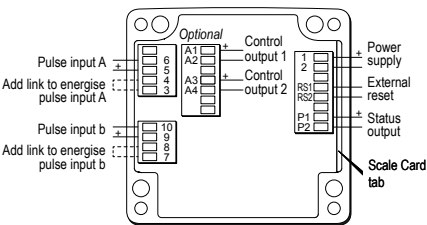
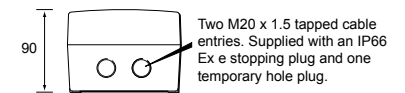
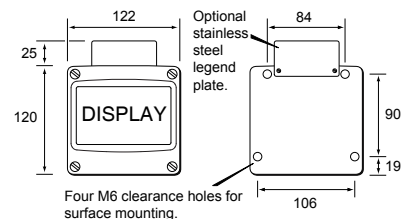


Fig 2 Dimensions and terminal connections

## EMC

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

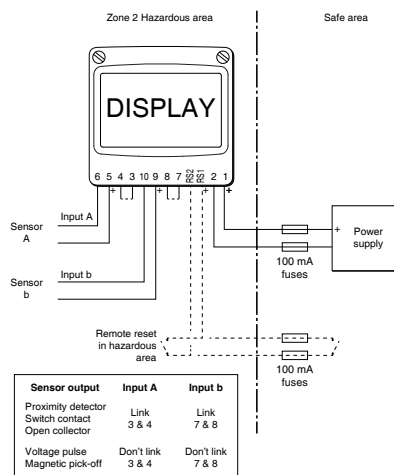


Fig 3 Typical timer system

## 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.

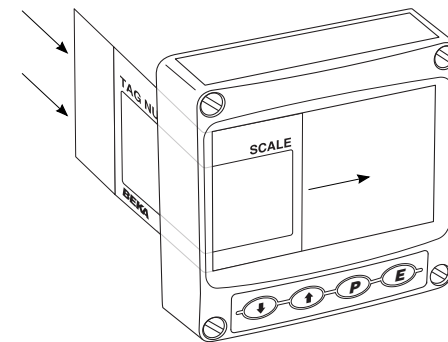


Fig 4 Inserting scale card into instrument assembly

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 BA374NG 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  $\overline{CLR}$   $\overline{GRt}$  is enabled in the  $\overline{LoE}$   $r$   $5Et$  configuration function.

To reset the grand total to zero from the display mode press the  $\overline{E}$  +  $\overline{A}$  buttons for ten seconds until  $\overline{CLR}$   $no$  is displayed. Using the  $\overline{V}$  or  $\overline{A}$  button change the display to  $\overline{CLR}$   $5Et$  and press  $\overline{E}$ .

- ☑ + ☒ Resets the Timer to zero or to the set time  $5Et$  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.

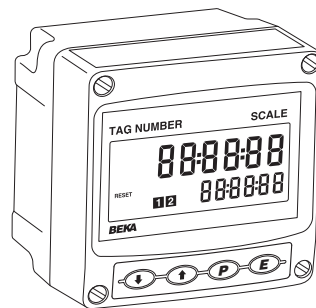
- ☒ + ☒ When enabled in the configuration menu, operating these two buttons simultaneously provides direct access from the display mode to the set time  $5Et$   $t$  and, if the repeat timing cycle is enabled, to the restart delay  $r$   $5Et$   $dELR$ .

- ☒ + ☑ Shows in succession, firmware version number, instrument function  $\overline{ELR}P5E$  or  $\overline{LoE}$  and output accessories:

- R Control outputs
- P Status output (always fitted)

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

**Abbreviated Instruction for**  
**BA374NG Ex nA and Ex tc certified**  
**two input field mounting Timer or Clock**



Issue 1  
7th March 2017

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The BA374NG is CE marked to show compliance with the ATEX Directive 2014/34/EU and the EMC Directive 2014/30/EU.

#### 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 **[P]** and **[E]** buttons simultaneously. If the Timer or Clock's security code is set to default 0000 the first parameter **FunctioN** 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

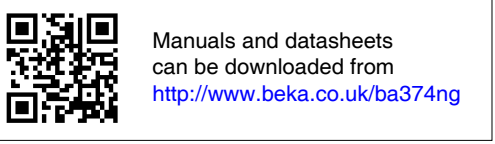
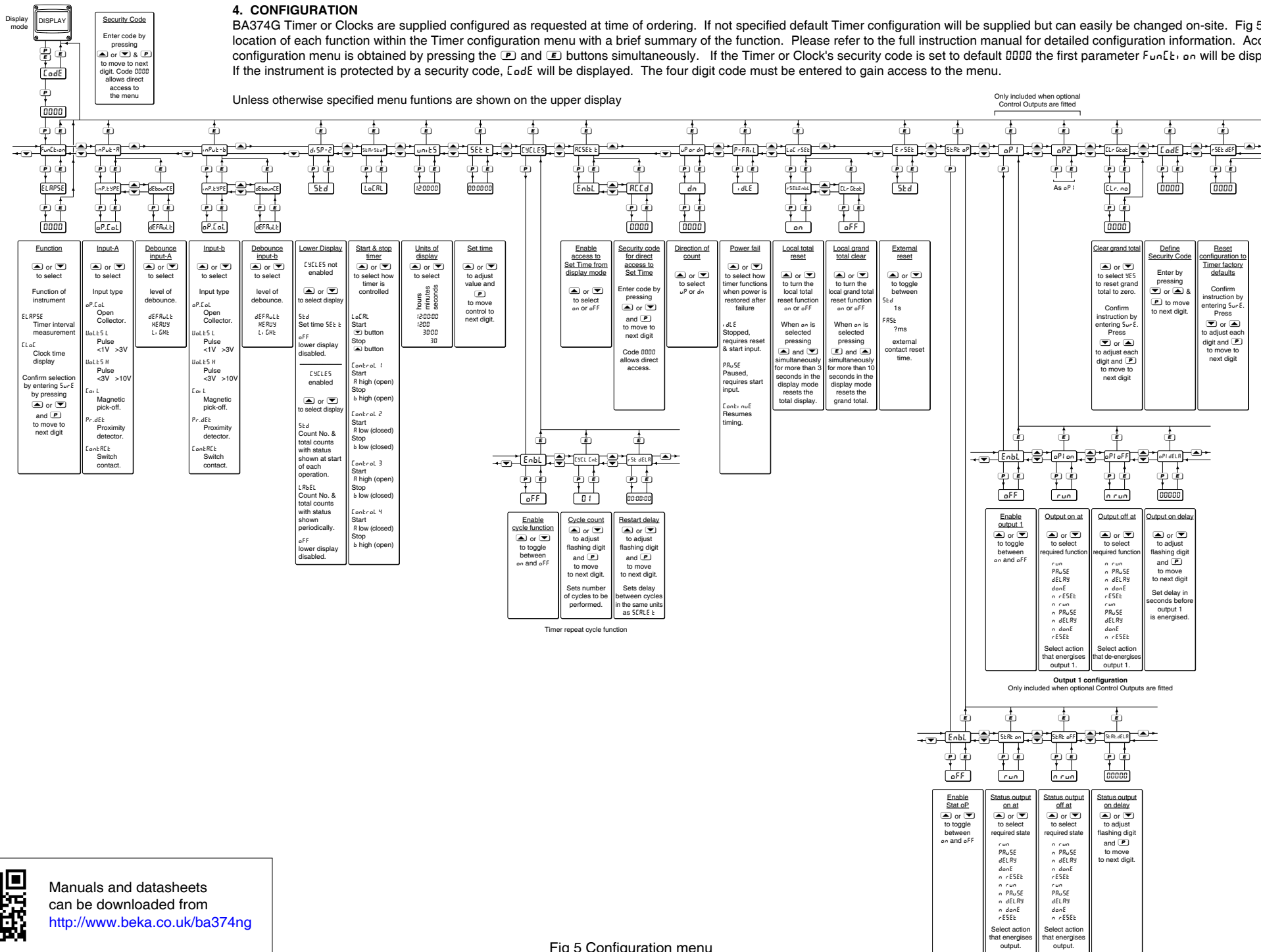


Fig 5 Configuration menu