1.   DESCRIPTION

The BA574G is a field mounting general purpose, instrument which can be configured as a Timer or as a Clock. As a Timer the BA574G 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 BA574G 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 system design and configuration may be downloaded from the BEKA website or may be requested from the BEKA sales office.

2.   INSTALLATION

The BA574G 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.

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.
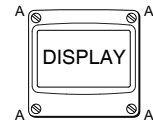
Step A
Unscrew the four captive 'A' screws and separate the indicator assembly and the back-box.
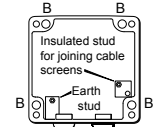
Step B
Secure the enclosure back-box to a flat surface with M6 screws through the four 'B' holes. Alternatively use a pipe mounting kit.

Insulated stud for joining cable screens
Earth stud
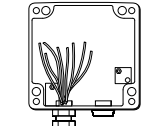
Step C
Remove the temporary hole plug and install an appropriate IP rated cable gland or conduit fitting. Feed the field wiring through the cable entry.
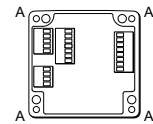
Step D
Terminate field wiring on the instrument assembly. Replace the assembly on the enclosure back-box and tighten the four 'A' screws.

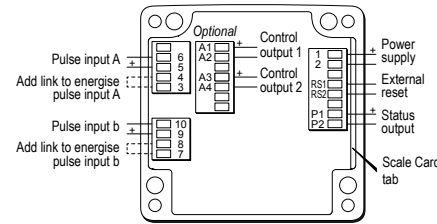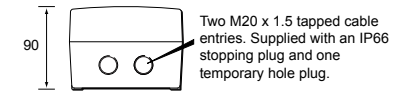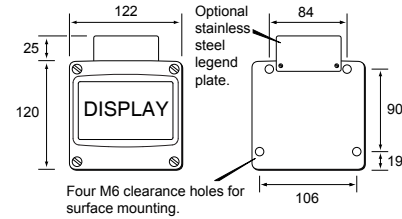Fig 1 BA574G installation procedure

Four M6 clearance holes for surface mounting.

Two M20 x 1.5 tapped cable entries. Supplied with an IP66 stopping plug and one temporary hole plug.

Fig 2 Dimensions and terminal connections

EMC

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

Sensor 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

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.
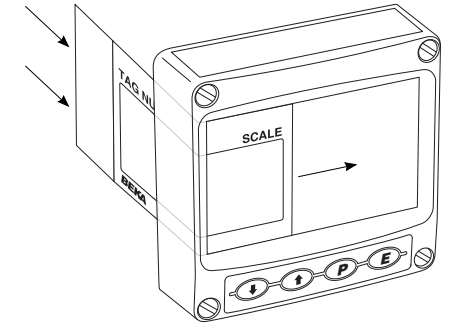

Fig 4 Inserting scale card into instrument assembly

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 BA574G 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

E + ▲   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 $EEot$ is enabled in the LoE $rSEE$ configuration function.

To reset the grand total to zero from the display mode press the E + ▲ buttons for ten seconds until $ELr.no$ is displayed. Using the ▼ or ▲ button change the display to $ELr.YES$ and press E.

▼ + ▲   Resets the Timer to zero or to the set time $5EE$ E 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.

P + ▲   When enabled in the configuration menu, operating these two buttons simultaneously provides direct access from the display mode to the set time $5EE$ E and, if the repeat timing cycle is enabled, to the restart delay $r5E$ $dELA$.

P + ▼   Shows in succession, firmware version number, instrument function $ELAP5E$ or $ELoE$ and output accessories:
  - $-A$ 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 P and E buttons simultaneously. If the Timer or Clock'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

Only included when optional Control Outputs are fitted

Display mode — DISPLAY

Security Code
Enter code by pressing ▲ or ▼ & P to move to next digit. Code 0000 allows direct access to the menu.

CodE / 0000

Function
▲ or ▼ to select
Function of instrument
ELAPSE Timer interval measurement
CLoC Clock time display
Confirm selection by entering SurE by pressing ▲ or ▼ and P to move to next digit.

Input-A
▲ or ▼ to select
Input type
oP.CoL Open Collector.
UoLtS L Pulse <1V >3V
UoLtS H Pulse <3V >10V
Coi L Magnetic pick-off.
Pr.dEt Proximity detector.
ContACt Switch contact.

Debounce input-A
▲ or ▼ to select
level of debounce.
dEFAuLt
HEAUY
Li GHt

Input-b
▲ or ▼ to select
Input type
oP.CoL Open Collector.
UoLtS L Pulse <1V >3V
UoLtS H Pulse <3V >10V
Coi L Magnetic pick-off.
Pr.dEt Proximity detector.
ContACt Switch contact.

Debounce input-b
▲ or ▼ to select
level of debounce.
dEFAuLt
HEAUY
Li GHt

Lower Display
CYCLES not enabled
▲ or ▼ to select display
LoCAL
oFF lower display disabled.

CYCLES enabled
▲ or ▼ to select display
Std Count No. & total counts with status shown at start of each operation.
LAbEL Count No. & total counts with status shown periodically.
oFF lower display disabled.

Start & stop timer
▲ or ▼ to select how timer is controlled
LoCAL Start P button Stop P button
Control 1 Start A high (open) Stop b high (open)
Control 2 Start A low (closed) Stop b low (closed)
Control 3 Start A high (open) Stop b low (closed)
Control 4 Start A low (closed) Stop b high (open)

Units of display
▲ or ▼ to select
hours minutes seconds
12:00:00
12:00
30:00
30

Set time
▲ or ▼ to adjust value and P to move control to next digit.

Enable cycle function
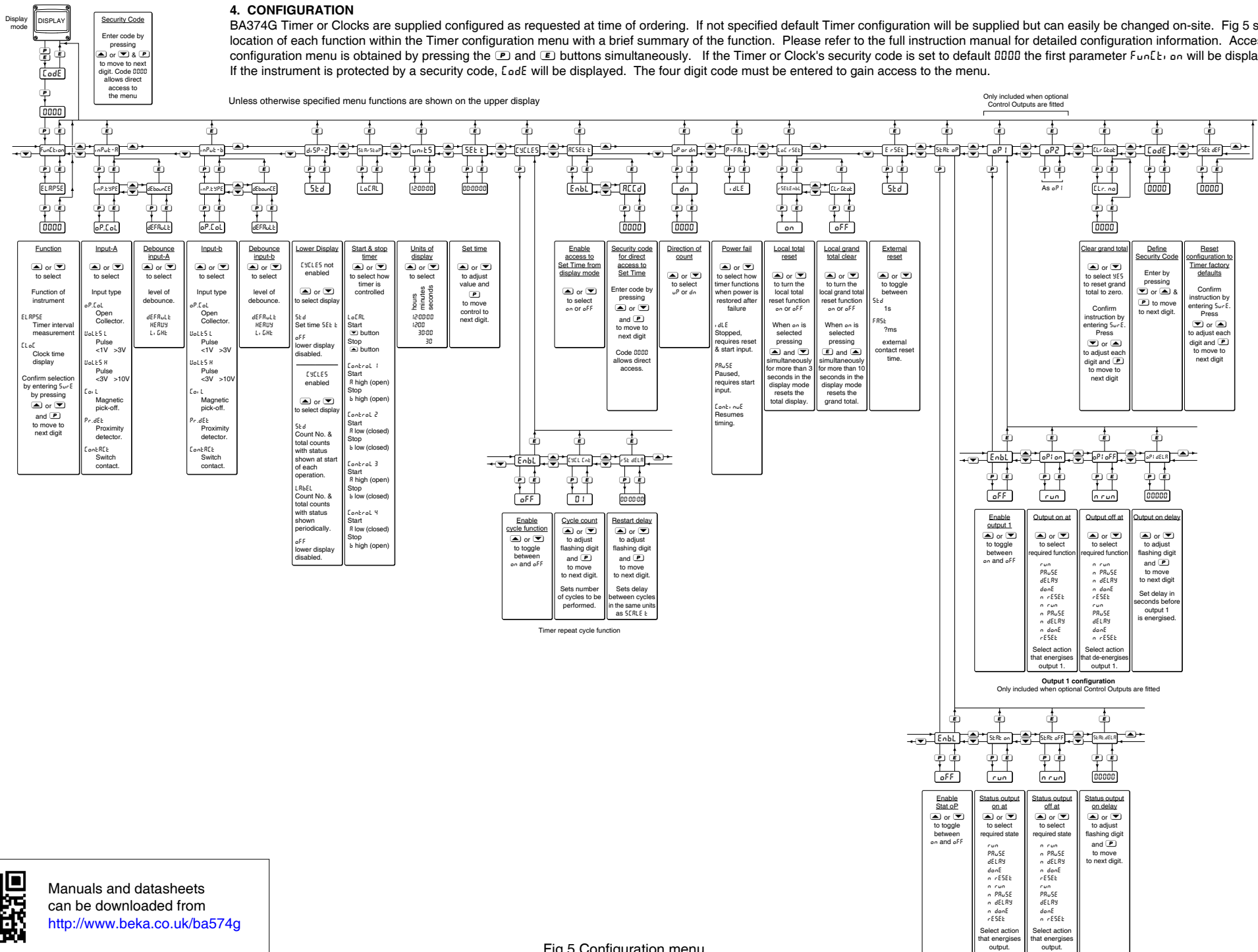▲ or ▼ to toggle between on and oFF

Cycle count
▲ or ▼ to adjust flashing digit and P to move to next digit.
Sets number of cycles to be performed.

Restart delay
▲ or ▼ to adjust flashing digit and P to move to next digit.
Sets delay between cycles in the same units as SCALE t

Timer repeat cycle function

Enable access to Set Time from display mode
▲ or ▼ to select on or oFF

Security code for direct access to Set Time
Enter code by pressing ▲ or ▼ and P to move to next digit
Code 0000 allows direct access.

Direction of count
▲ or ▼ to select
uP or dn

Power fail
▲ or ▼ to select how timer functions when power is restored after failure
i dLE Stopped, requires reset & start input.
PAuSE Paused, requires start input.
Conti nuE Resumes timing.

Local total reset
▲ or ▼ to turn the local total reset function on or oFF
When on is selected pressing ▲ and ▼ simultaneously for more than 3 seconds in the display mode resets the total display.

Local grand total clear
▲ or ▼ to turn the local grand total reset function on or oFF
When on is selected pressing ▲ and ▼ simultaneously for more than 10 seconds in the display mode resets the grand total.

External reset
▲ or ▼ to toggle between
Std 1s
FASt ?ms external contact reset time.

Clear grand total
▲ 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 ▼ & P to move to next digit.

Reset configuration to Timer factory defaults
Confirm instruction by entering SurE. Press ▼ or ▲ to adjust each digit and P to move to next digit

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Output 1 configuration
Only included when optional Control Outputs are fitted

Enable output 1
▲ or ▼ to toggle between on and oFF

Output on at
▲ or ▼ to select required function
run
PAuSE
dELAY
donE
n rESEt
n run
n PAuSE
n dELAY
n donE
rESEt
Select action that energises output 1.

Output off at
▲ or ▼ to select required function
n run
n PAuSE
n dELAY
n donE
rESEt
run
PAuSE
dELAY
donE
n rESEt
Select action that de-energises output 1.

Output on delay
▲ or ▼ to adjust flashing digit and P to move to next digit
Set delay in seconds before output 1 is energised.

Enable Stat oP
▲ or ▼ to toggle between on and oFF

Status output on at
▲ or ▼ to select required state
run
PAuSE
dELAY
donE
n rESEt
n run
n PAuSE
n dELAY
n donE
rESEt
Select action that energises output.

Status output off at
▲ or ▼ to select required state
n run
n PAuSE
n dELAY
n donE
rESEt
run
PAuSE
dELAY
donE
n rESEt
Select action that energises output.

Status output on delay
▲ or ▼ to adjust flashing digit and P to move to next digit.

Fig 5 Configuration menu