1. DESCRIPTION

The BA504G-SS-PM and the BA524G-SS-PM are panel mounting general purpose digital indicators that display the current flowing in a 4/20mA loop in engineering units. They are loop powered, but only introduce a 1.2V drop into the loop.

Both models are electrically similar, but have different size displays.

BA504G-SS-PM   4 digits 34mm high
316 stainless steel enclosure

BA524G-SS-PM   5 digits 29mm high + 31 segment bargraph
316 stainless steel enclosure

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

2. INSTALLATION

BA504G-SS-PM and BA524G-SS-PM indicators have a 316 stainless steel enclosure. Both have IP66 front of panel ingress protection after a 7J impact and have a thick toughened glass window which will withstand a 4J impact. They are suitable for exterior mounting in most industrial and marine environments.

The indicators should be positioned where the display is not in continuous direct sunlight.

Panel wiring terminals are located on the rear of the indicator which has IP20 protection as shown in Fig 3. Terminals 2 and 4 are internally joined and may be used for linking the return 4/20mA wire - see Fig 4.

If the instrument panel has a non-conductive finish, an earthed ring tag should be fitted under one of the screw heads to ensure that the indicator front panel is earthed.
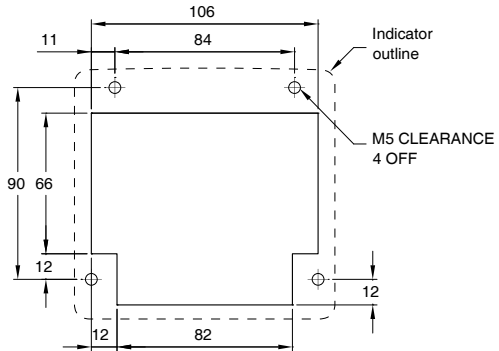

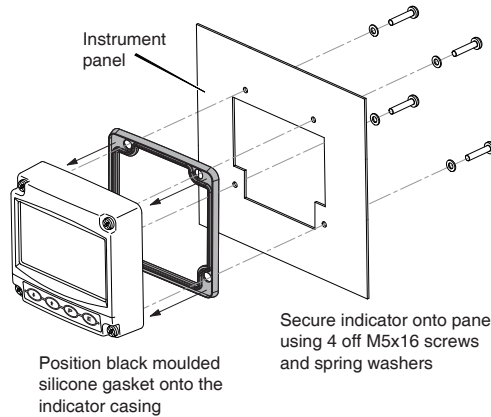Fig 1 Recommended panel cut-out dimensions

Instrument panel

Position black moulded silicone gasket onto the indicator casing

Secure indicator onto panel using 4 off M5x16 screws and spring washers

Fig 2 Installation procedure

**Abbreviated Instruction for
BA504G-SS-PM & BA524G-SS-PM
general purpose panel mounting
loop powered indicators**

Terminals for optional alarms

Terminals for optional backlight

Terminals 2 & 4 internally linked for joining return 4/20mA wire.

4/20mA input

Separately powered
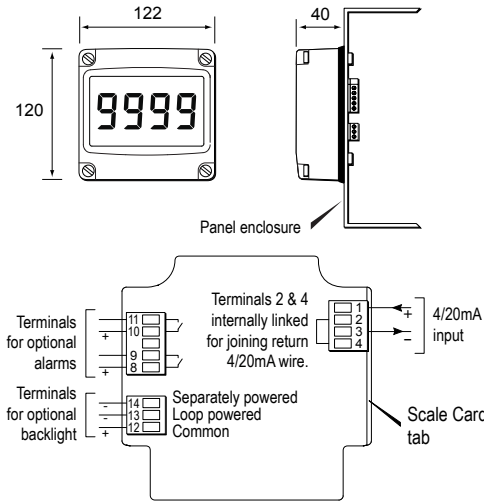Loop powered
Common

Scale Card tab

Fig 3 Terminals and overall dimensions

EMC

For specified immunity all wiring should be in screened twisted pairs, with the screens earthed at a common point.

4/20mA
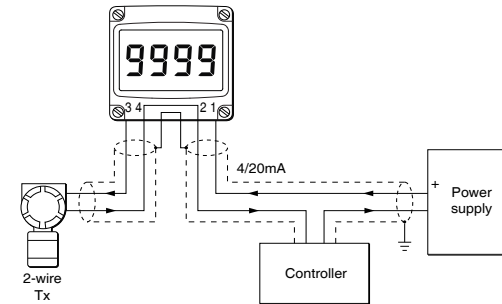
Power supply

2-wire Tx

Controller

Fig 4 Typical measurement loop

Scale card

The indicator'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 requested when the instrument was ordered, if this is 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 rear of the indicator assembly. See Fig 3 for the location of the scale card tab.

To replace the scale card carefully insert it into the slot on the right hand side of the input terminals which is shown in Fig 3. 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.
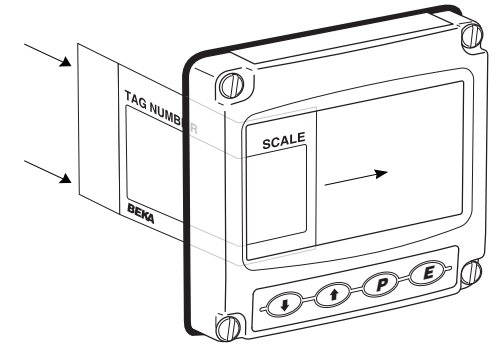

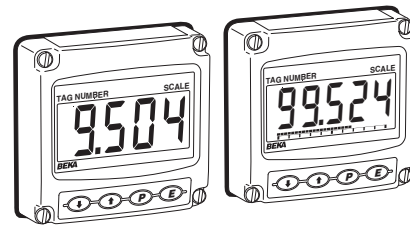Fig 5 Inserting scale card into the instrument assembly.

3. OPERATION

All models are controlled and calibrated via four front panel push buttons. In the display mode i.e. when the indicator is displaying a process variable, these push buttons have the following functions:

P   While this button is pushed the indicator will display the input current in mA, or as a percentage of the instrument span depending upon how the indicator has been configured. When the button is released the normal display in engineering units will return. The function of this push button is modified when optional alarms are fitted to the indicator.

▼   While this button is pushed the indicator will display the numerical value and analogue bargraph* the indicator has been calibrated to display with a 4mAΦ input. When released the normal display in engineering units will return.

▲   While this button is pushed the indicator will display the numerical value and analogue bargraph* the indicator has been calibrated to display with a 20mAΦ input. When released the normal display in engineering units will return.

E   No function in the display mode unless the tare function is being used.

P + **▼**   Indicator displays firmware number followed by version.

P + **▲**   Provides direct access to the alarm setpoints when the indicator is fitted with optional alarms and the $AC5P$ access setpoints function has been enabled.

P + **E**   Provides access to the configuration menu via optional security code.

Note   * BA524G-SS-PM only
Φ If the indicator has been calibrated using the CAL function, calibration points may not be 4 and 20mA.

4. CONFIGURATION

Indicators are supplied calibrated as requested when ordered, 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 a description of the lineariser and the optional dual alarms.

Access to the configuration menu is obtained by pressing the P and E buttons simultaneously. If the indicator security code is set to the default 0000 the first parameter FunC will be displayed. If the indicator is protected by a security code, CodE will be displayed and the code must be entered to obtain access to the menu.

Display mode

9999

Security Code

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

CodE

0000

When fitted alarm functions appear here

Only in BA524G-SS-PM menu

FunC — Std
rESn — 10
dP — 0000.0
CAL — ZEro / SPAn — 99999 / 99999
SEt — ZEro / SPAn — 99999 / 99999
bAr — tYPE / bArLo / bArHi — LEFt / 99999 / 99999
C--P — 4-20
tArE — oFF
CodE — 0000
rSEt — ConF — 0000

Function

▲ or ▼ to select

Std for standard function.

root for root extractor.

Lin for lineariser

Resolution

▲ or ▼ to select resolution of least significant digit

Decimal point

▲ or ▼ to select position of dummy decimal point

Calibration using external current source
(Preferred method)

With accurate 4mA input current set required zero display by pressing ▲ or ▼ and P to move to the next digit

Similarly, using accurate 20mA input current set required full scale display

Any current between 4 and 20mA may be used providing difference is > 4mA

Calibration using internal references
(Input current may be any value)

Using ZEro function set required display at 4mA by pressing ▲ or ▼ and P to move to the next digit

Similarly, using SPAn function set required display at 20mA

Select type of bargraph display and define start and finish relative to digital display

Using the tYPE function select required bargraph justification by pressing ▲ or ▼

Using the bArLo function set the digital display at which the bargraph is required to start by pressing ▲ or ▼ and P to move to the next digit. Similarly using the bArHi function set digital display at which the bargraph is required to finish

Function of P button in display mode

Press ▲ or ▼ to toggle between 4-20mA and % of span

Tare Function

Press ▲ or ▼ to turn tArE on or oFF

Define Security Code

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

Reset indicator configuration

Press ▲ or ▼ to select ConF to reset indicator or LtAb to reset lineariser to default configuration.

Confirm selection by entering SurE by pressing ▲ or ▼ and P to move to next digit

Fig 6 Configuration menu