

The BA504C is a general purpose field mounting indicator which displays the current flowing in a 4/20mA loop in meaningful engineering units. The instrument is loop powered, but only introduces a 1V drop allowing it to be used in series with almost any 4/20mA loop. The instrument has a 25mm high, easy to read liquid crystal display, and is housed in a robust IP66 enclosure. Modular accessories enable only the required features to be incorporated thus reducing cost while retaining interchangeability between instruments.

Main application of the BA504C is to display a measured variable or control signal in a process area. The zero and span of the display are independently adjustable so that the indicator can be calibrated to display any variable represented by a 4/20mA current, such as temperature, pressure, level or actuator position. When used with a differential flow transmitter an optional square root extractor allows the BA504C to display flow in linear engineering units.

Backlighting is available as an option to improve readability when the BA504C is installed in a poorly illuminated area. High efficiency LED's provide an even glow enhancing the display contrast.

An optional internal calibrator simulates a 4 and 20mA input current so that the indicator may be recalibrated without the need for test equipment or disconnection from the 4/20mA loop. Although not providing independent verification, it is an effective way to

quickly check performance or to recalibrate.

Two types of enclosure are available, each has stainless steel fittings and a toughened glass window and is sealed with a neoprene gasket. The sturdy glass reinforced polyester (GRP) enclosure is suitable for most industrial applications including off-shore and water treatment. For installation where solvents may be encountered, the epoxy painted aluminium enclosure provides maximum protection. Both the GRP and aluminium enclosures, which have been tested by ERA, provide IP66 protection as specified in BS5490. To simplify installation, the BA504C is fitted with additional terminals which may be used to link the return 4/20mA conductor and the cable screen. The indicator assembly can be removed from the enclosure without disconnecting the field wiring or disturbing the 4/20mA loop, continuity being maintained by a diode within the terminal assembly.

Reliability is ensured by an ISO9001 approved quality control system supported by a three year guarantee. The indicator is protected from reverse connection and overrange input current, and incorporates extensive radio frequency filtering to comply with the European EMC Directive.

If flammable atmospheres are present either the BA304C or BA304NC should be used. They have the same features as the BA504C, but have been certified for use in hazardous areas.

BA504C

Loop powered
4/20mA
3 $\frac{1}{2}$ digit indicator

- ± 1999 display
25.4mm high
- No additional power supply required
- **Optional:**
Backlight
Root extractor
Calibrator
- **IP66 GRP or aluminium enclosure**
- **3 year guarantee**

BEKA

associates

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SPECIFICATION

Input

Current	4 to 20mA
Voltage	Less than 1V at 20°C Less than 1.1V at -20°C
Overrange	±200mA will not cause damage

Display

Type	3½ digit (-1999 to 1999) Liquid crystal 25mm high
Span	Adjustable between 000 & 1999 for a 4 to 20mA input.
Zero	Adjustable between ±1000 with 4mA input.
Decimal point	1 of 3 positions or absent
Polarity	Automatic minus sign
Direction	Display may increase or decrease with increasing current.
Reading rate	2.5 per second
Overrange	3 least significant digits are blanked

Accuracy

At 20°C	±1 digit
Temperature affect on:	
Zero	Typ ±0.05 digit ±100ppm/°C Max ±0.1 digit ±200ppm/°C
Span	Typ ±50ppm; max ±100ppm/°C
Series mode rejection	Typ 1 digit error for 1mA pk to pk 50Hz signal.

Environmental

Operating temperature	-20 to +60°C
Humidity	To 95% at 40°C
Enclosure	IP66 see ERA test report 5046/228
EMC	In accordance with EU Directive 89/336/EEC, full report available.
Immunity	Less than 2% of span error for 10V/m field strength between 27MHz & 1 GHz.
Emissions	Undetectable above background noise. Class B equipment

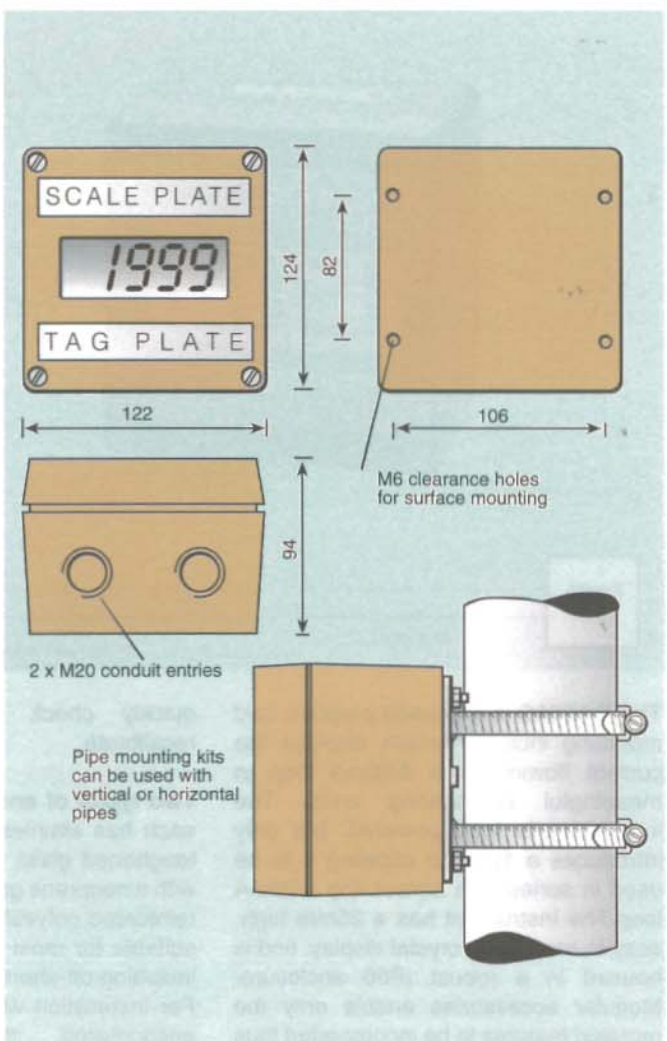
Mechanical

Terminals	Screw clamp for 0.5 to 2.5mm ² cables
Weight	GRP enclosure 1kg Aluminium enclosure 1.3kg

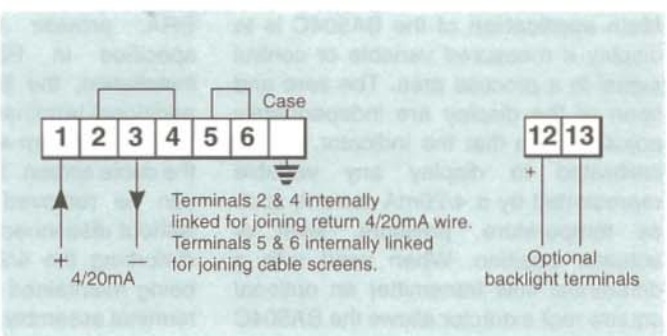
Accessories

Display backlight	LED backlight
Vin	18 to 30V dc, may be dimmed by reducing voltage below 18V.
Iin	40mA typical
Root extractor	
Accuracy	±16µA at input ±1 digit for inputs between 4.16 and 20mA (10 to 100% of flow)
Clip-off	Selectable by internal plug-in link, operates at 4.04mA input (5% of flow) <i>Not available with calibrator</i>
Calibrator	Simulates 4 and 20mA input, selected by plug-in link accessible when enclosure cover is removed. <i>Not available with root extractor</i>
Engraved scale plate	Removable blank stainless steel plate fitted to each indicator, can be supplied engraved with units of measurement. See accessory datasheet for details of legend size.
Engraved tag plate	Removable blank stainless steel plate fitted to each indicator, can be supplied engraved with tagging information. See accessory datasheet for details of legend size.
Pipe mounting kit	3 kits are available BA391, BA392 and BA393, see accessory datasheet for details.
Panel mounting kit	BA394 mounts BA504C into a panel aper- ture, see accessory datasheet for details.

DIMENSIONS (mm)



TERMINAL CONNECTIONS



HOW TO ORDER

Model number	Please specify	BA504C
Enclosure		GRP or aluminium
Display at 4mA	XXXX] Include position of decimal point and sign if display is negative*
at 20mA	XXXX	
Accessories	Please specify if required	
Display backlight		Backlight
Root extractor		Root extractor
Calibrator		Calibrator
Scale plate		Legend
Tag plate		Legend
Pipe mounting kit		BA391, BA392 or BA393
Panel mounting kit		BA394

**Only one can be fitted*

*Will be set to display 00.0 at 4mA and 100.0 at 20mA if calibration information is not supplied.