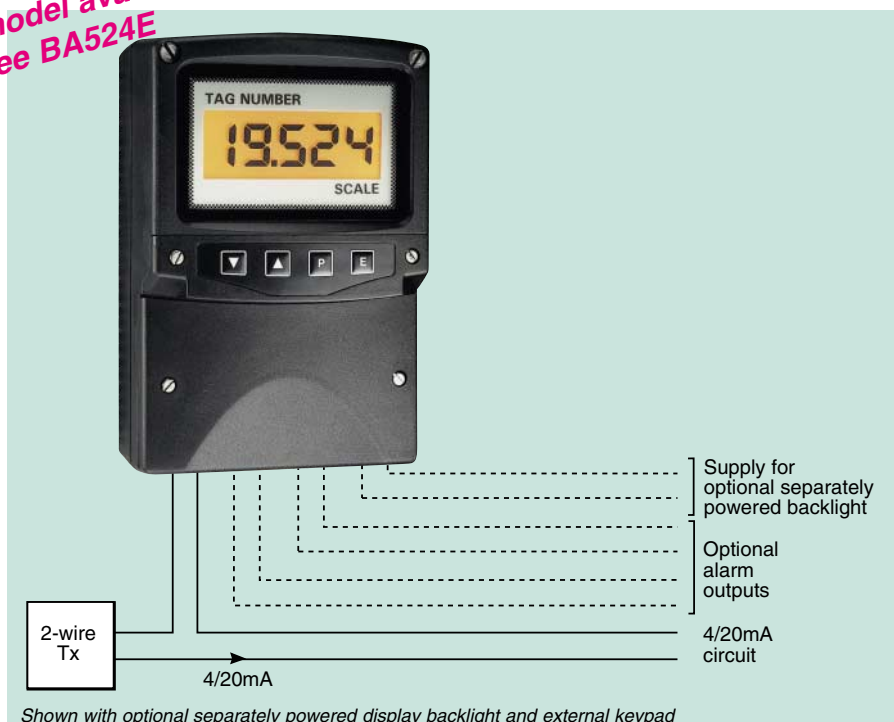


New model available  
see BA524E



The new **BA524D** is a third generation, general purpose field mounting indicator housed in a robust IP66 GRP enclosure incorporating a separate terminal compartment and dedicated access to the instrument controls. Retaining all the features of the popular BA524C, this new indicator provides improved display visibility, plus simplified installation, calibration and routine inspection facilities.

Like its predecessor, the BA524D displays the current flowing in a 4/20mA loop in accurate engineering units. The instrument is loop powered but only introduces a 1V drop allowing it to be installed in series with almost any 4/20mA loop.

**Main application** of the BA524D 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 may be calibrated to display any variable represented by a 4/20mA current, such as temperature, pressure or level. When used with a differential flow transmitter a square root extractor enables the BA524D to display flow in linear engineering units.

**The enclosure**, which is moulded in glass reinforced polyester (GRP), has stainless steel fittings, silicone gaskets and an armoured glass window. Its robust construction provides IP66 protection which has been independently assessed by ITS - report available. A separate terminal compartment allows the instrument to be installed and terminated without exposing the display electronics. To further simplify field wiring and subsequent inspection, the terminal cable entries and the clamping screws are both forward facing. Additional terminals are provided which may be used to link the return 4/20mA conductor and the cable screen.

**Calibration** and programming of the instrument is performed via four push-buttons protected from damage and tampering behind a sealed cover. For applications requiring frequent adjustment, the indicator can be supplied with a robust external membrane key-pad. All the calibration functions are

contained in easy to understand menus which may be protected by a user definable security code.

**An internal calibrator** simulates 4 and 20mA input currents so that the instrument may be calibrated 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.

**Separately powered backlighting** is available as an option. The orange output enhances daylight contrast and enables the display to be read when the instrument is installed in a poorly illuminated area.

**Optional alarms** provide two galvanically isolated solid state outputs which may be independently programmed for high or low operation with normally open or closed outputs.

**Units of measurement** and the instrument application or tag number can be economically marked onto the display escutcheon prior to despatch or after installation on-site. Alternatively, for customers who prefer an etched stainless steel label, the indicator can be supplied with a custom etched stainless steel legend plate mounted onto the terminal cover.

**Reliability is ensured** by an ISO9001 approved quality control system supported by a three year guarantee. The BA524D is protected from reverse connection and overrange input currents and incorporates extensive radio frequency filtering to comply with the European EMC Directive. The indicator assembly may 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.

**If flammable atmospheres are present** either the BA324D or the BA324ND should be used. Both have the same features as the BA524D, and have been certified for use in hazardous areas.

# BA524D

2-wire 4/20mA  
4½ digit indicator

*General purpose*

- ◆ **Loop powered only 1V drop**
- ◆ **±19999 display 20mm high**
- ◆ **IP66 GRP enclosure with separate terminal compartment**
- ◆ **Optional:**
  - Display backlight**
  - Alarms**
  - Lineariser**
  - Tare function**
  - External push-buttons**
- ◆ **3 year guarantee**

**BEKA**  
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## SPECIFICATION

### Input

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

### Display

|                   |   |
|-------------------|---|
| Type              | Liquid crystal 20mm high<br>4½ digit (-19999 to 19999)    |
| Zero              | Adjustable between ±19999 with 4mA input.                 |
| Span              | Adjustable between ±19999 for a 4 to 20mA input.          |
| Decimal point     | 1 of 4 positions or absent                                |
| Polarity          | Automatic minus sign                                      |
| Direction         | Display may increase or decrease with increasing current. |
| Reading rate      | 2 per second  |
| Over & underrange | 4 least significant digits are blanked                    |

### Push-buttons

|                     |   |
|---------------------|---|
| (In operating mode) |   |
| Down button         | Shows display with 4mA input  |
| Up button           | Shows display with 20mA input   |
| 'P' button          | Displays input current in mA, or as a percentage of span. Has modified function when optional alarms or Tare function are fitted. |

### Accuracy

|              |   |
|--------------|---|
| At 20°C      | Linear: ±0.02% of span ±1 digit<br>Root extracting: ±16µA at input ±1 digit |
| Temp. effect |   |
| Zero         | Less than 25ppm/°C  |
| Span         | Less than 50ppm/°C  |
| Series mode  | Less than 0.05% of span error for 1mA pk to pk 50Hz or 60Hz signal.         |

### Environmental

|                |   |
|----------------|---|
| Operating temp | -20 to +60°C  |
| Storage temp   | -40 to +85°C  |
| Humidity       | To 95% at 40°C  |
| Enclosure      | IP66 see ITS test report 87IV0383A  |
| EMC            | In accordance with EU Directive 89/336/EEC, full report available.          |
| Immunity       | Less than 1% of span error for 10V/m field strength between 27MHz and 1GHz. |
| Emissions      | Undetectable above background noise Class B equipment.                      |

### Mechanical

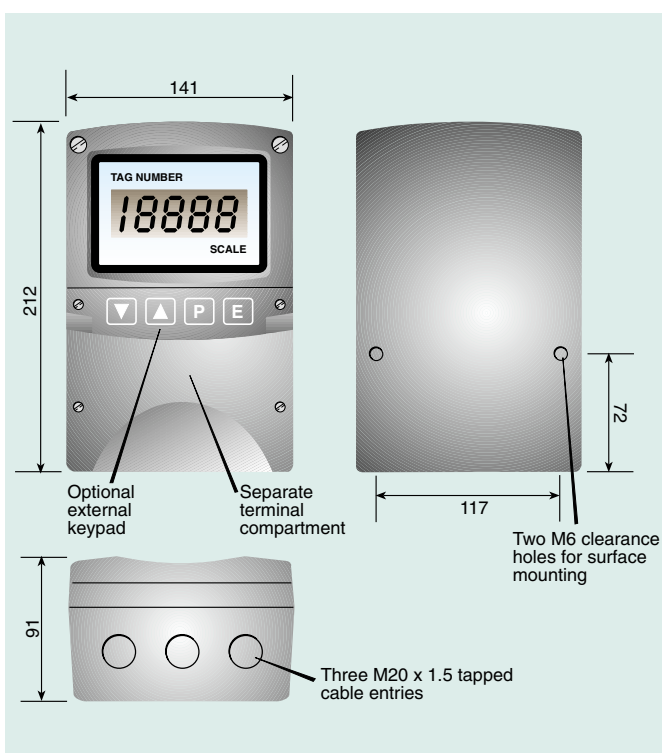
|           |                                       |
|-----------|---------------------------------------|
| Terminals | Screw clamps for 0.5 to 1.5mm² cables |
| Weight    | 1.6kg                                 |

### Accessories

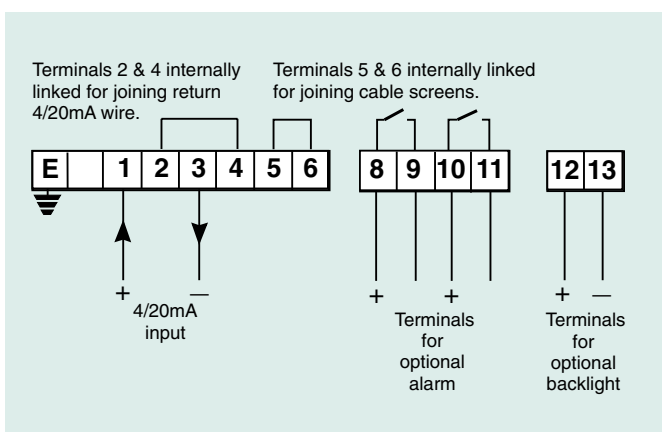
|                              |   |
|------------------------------|---|
| Separately powered backlight | LED backlight   |
| Vin                          | 18 to 30V dc, may be dimmed by reducing voltage below 18V.  |
| Iin                          | 40mA typical  |
| Alarms                       | Two independent alarms each of which may be programmed for high or low operation with NC or NO output.                |
| Outputs                      | Isolated single pole solid state switch<br>Ron less than 5Ω + 0.6V<br>Roff greater than 180k                          |
| Lineariser                   | Provides 16 fully adjustable straight lines which may be positioned to compensate for almost any non-linear variable. |
| Tare function                | Primarily intended for weighing applications. Sets indicator display to zero when 'P' push-button is operated.        |
| External keypad              | Robust membrane keypad enables indicator to be controlled without removing control cover.                             |
| Scale legend                 | Units of measurement marked onto display escutcheon. *  |
| Tag legend                   | Tag number or applicational information marked onto display escutcheon. *   |
| Stainless legend plate       | Stainless steel plate secured to terminal cover, etched with tagging or applicational information. *                  |
| Pipe mounting kit            | 2 kits are available BA392D and BA393*  |

\* See accessory datasheet for details

## DIMENSIONS (mm)



## TERMINAL CONNECTIONS



## HOW TO ORDER

|                 |  |
|-----------------|--|
|                 | <b>please specify</b>                                  |
| Model number    | BA524D   |
| Display at 4mA  | XXXX   |
| Display at 20mA | XXXX   |
|                 | Include position of decimal point & sign if negative # |

|                    |                                   |
|--------------------|-----------------------------------|
| <b>Accessories</b> | <b>please specify if required</b> |
| Display backlight  | Separately powered backlight      |
| Alarms             | Alarms                            |
| Tare function      | Tare                              |
| Lineariser         | Lineariser                        |
| External keypad    | External keypad                   |

|                           |                 |
|---------------------------|-----------------|
| <b>Escutcheon marking</b> |                 |
| Scale                     | Scale legend    |
| Tag                       | Tag legend      |
| Stainless legend plate    | Legend          |
| Pipe mounting kit         | BA392D or BA393 |

# Will be set to display 0.00 at 4mA and 100.00 with linear display and resolution of 1 digit if calibration information is not supplied