

The **BA554E loop powered 4/20mA rate totaliser** is a third generation, general purpose, field mounting instrument that is electrically and mechanically compatible with the earlier BA554D, but it has a larger display, extended operating temperature and additional features such as a lineariser and bi-directional flow capabilities. Like its predecessor the BA554E is housed in a robust IP66 GRP enclosure with a separate terminal compartment

**Main application** of the BA554E is to integrate the 4/20mA output from a flow transmitter and display the rate and total flow in engineering units. A selectable square root extractor enables the output from differential flowmeters to be displayed in linear engineering units and a sixteen segment fully adjustable lineariser provides compensation for nonlinear flowmeters. When fitted with optional alarms the BA554E can detect high and low rates of flow and may be used for simple batching applications.

**The large display** provides maximum contrast and has a very wide viewing angle, allowing the BA554E totaliser to be easily read in most lighting conditions over a wide temperature range. An optional factory fitted backlight is available for applications in poorly illuminated areas. The 18mm high eight digit total display may be configured to show total flow in any units of measurement. The display may be reset to zero using a front panel push button or an external contact closure. The rate display may be calibrated to show flow in the same or in different engineering units to those used for the total display.

**The robust GRP enclosure** has stainless steel fittings, silicone gaskets and an armoured glass window providing IP66 protection. Ingress and impact protection have been independently assessed by Intertek. 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 clamping screws are forward facing. Additional terminals are provided which may be used for linking the return 4/20mA conductor and the cable screens.

**A backlight** which may be loop or separately powered is available as a factory fitted option. It provides green background illumination allowing the display to be read at night or in poorly illuminated areas. When powered from the 4/20mA loop no additional field wiring is required but the totalisers voltage drop is increased. Powering from a separate supply produces a brighter backlight but requires additional field wiring.

**Optional dual alarms** which can switch low power loads, such as sounders, beacons or solenoid valves, are available as a factory fitted option. The two galvanically isolated solid state outputs may be independently conditioned as total or rate alarms with normally open or closed outputs. Annunciators on the display show the status of both alarm outputs.

**Reliability is ensured** by component conformal coating, protection from incorrect connection and radio frequency interference. The totaliser has been subjected to extensive vibration testing and is supported by a three year guarantee.

**For panel mounting applications** the BA558E has a similar specification but is housed in a 144 x 72 DIN panel mounting enclosure with an IP66 front panel.

**If flammable atmospheres are present** either the BA354E or the BA354NE should be used. Both have the same features as the BA554E but have been certified for use in hazardous areas.

# BA554E

## 2-wire 4/20mA rate totaliser

*General purpose*

- ◆ Loop powered only  
1.2V drop
- ◆ Total display  
8 digit 18mm high  
Rate display  
5 digit 12mm high
- ◆ IP66 GRP enclosure  
with separate terminal  
compartment
- ◆ Uni-directional &  
bi-directional operation
- ◆ Root extractor and  
16 segment lineariser
- ◆ Optional backlight &  
alarms
- ◆ 3 year guarantee

**BEKA**  
associates

BEKA associates Ltd. Old Charlton Rd.  
Hitchin, Hertfordshire, SG5 2DA, U.K.  
Tel. (01462) 438301 Fax (01462) 453971  
e-mail sales@beka.co.uk www.beka.co.uk

## SPECIFICATION

<b>Input</b>	
Current	4 to 20mA
Voltage	Less than 1.2V at 20°C Less than 1.3V at -20°C Less than 5V with optional loop powered backlight.
<b>Overrange</b>	±200mA or ±30V will not damage the instrument..
<b>Display</b>	
Type	Liquid crystal, multiplexed 2:1
Zero blanking	Blanked apart from 0 in front of decimal point.
<b>Rate~</b>	5 digits 12mm high.
Span	Adjustable between 0 & ±99999 for a 4/20mA input.
Zero	Adjustable between 0 & ±99999 with 4mA input.
Decimal point	1 of 4 positions or absent
Timebase	Per second, minute or hour
<b>Total~</b>	8 digits 18mm high
Scaling factor	Adjustable between 0.0001 & 99999
Decimal point	1 of 5 positions or absent
<b>Grand total</b>	Maximum count 10 <sup>16</sup>

~ Rate & Total can be shown on either display

<b>Push buttons</b>	(Function in display mode)
▼	Shows rate display with 4mA input
▲	Shows rate display with 20mA input
'P'	Displays input in mA or a % of when alarms are fitted.
'E'	Time since total display was reset

<b>Accuracy</b>	
Rate display at 20°C	
Linear	±0.02% of span ±1digit
Root extracting	±16µA at input ±1 digit
Temperature effect on:	
Zero	Less than 25ppm of span/°C
Span	Less than 50ppm of span/°C
Series mode rejection.	Less than 0.05% of span error for 1mA pk to pk 50 or 60Hz interference.
Total display	Updated every second

<b>Remote total reset</b>	Contact closure with resistance less than 1kΩ.
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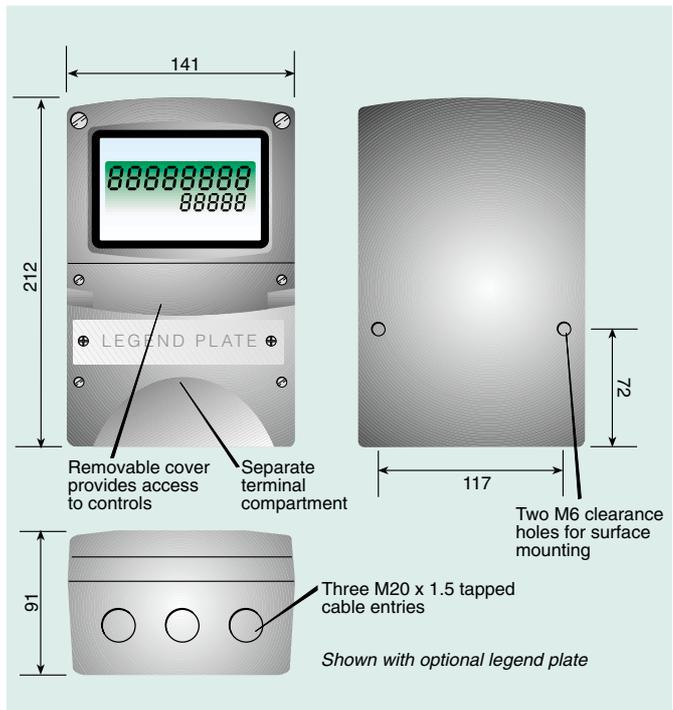
<b>Environmental</b>	
Operating temperature	-40 to +70°C
Display	-20 to +70°C
Storage temperature	-40 to +85°C
Humidity	to 95% at 40°C noncondensing
Vibration	Report available
Enclosure	IP66
EMC	Complies with EMC Directive

<b>Mechanical</b>	
Terminals	Screw clamp for 0.5 to 1.5mm <sup>2</sup> cable
Weight	1.7kg

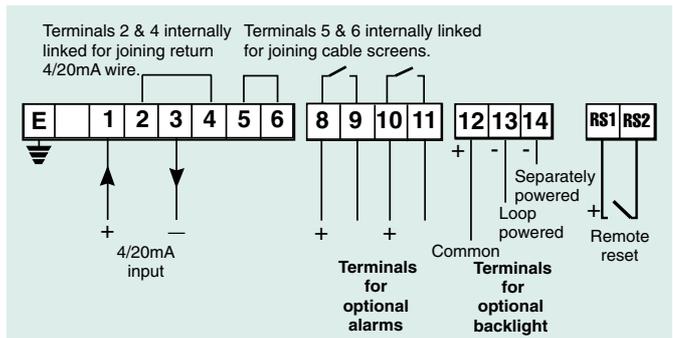
<b>Accessories</b>	
Backlight	Green, may be loop or separately powered
Loop powered	Totaliser voltage 5V
Separately powered.	10.5V at 35mA
Alarms	Two alarms each of which may be independently configured as a rate or total, high or low alarm with a NO or NC output.
Output	Isolated solid state switch
Vmax	40V dc
Imax	200mA
Ron	5Ω + 0.7V max
Roff	1MΩ min
External keypad	Membrane keypad enables totaliser to be controlled without removing cover.
Scale legend	Units of measurement marked onto display escutcheon.
Tag legend	Tag number or application marked onto display escutcheon.
Stainless steel legend plate.	Stainless steel plate etched with tag number or application attached to front of the instrument. #
Pipe mounting kit	BA392D or BA393 #

# See accessory datasheet for details

## DIMENSIONS (mm)



## TERMINAL CONNECTIONS



## HOW TO ORDER

Model number	BA554E
Display mode	Linear, root or lineariser*
Rate display at:	XXXXX ] Include position of decimal point & sign if negative, plus intermediate points if linearisation is required.*
4.000mA	
20.000mA	
Rate timebase	Seconds, minutes or hours*
Total scale factor	(Units of rate display)÷(Units of total display)*
<b>Accessories</b>	<b>Please specify if required</b>
External keypad	External keypad
Display backlight	Backlight
Dual alarms	Alarms
Escutcheon marking	
Scale	Legend required
Tag	Legend required
Stainless legend plate	Legend required
Pipe mounting kit	BA393D or BA393

\* If calibration information is not supplied the totaliser will be set to display a rate of 0.00 at 4mA and 100.00 at 20mA with a linear display, a timebase of seconds and a total scale factor of 1. Can easily be recalibrated on-site.