

The **BA558E loop powered 4/20mA rate totaliser** is a third generation, general purpose, panel mounting instrument that is electrically and mechanically compatible with the earlier BA558C, but it has a larger display, extended operating temperature, and an even shorter enclosure depth than its predecessor. The new model has additional features such as a lineariser, bi-directional flow capabilities and a scale card that can easily be marked to show rate and total units of measurement and can be installed on-site without dismantling the totaliser enclosure, or removing it from the panel.

The **main application** of the BA558E 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 BA558E 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 BA558E 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.

IP66 front panel protection and a neoprene gasket sealing the joint between

the totaliser and the panel make the instrument suitable for use in areas that will be washed down. To simplify installation and maintenance, the totaliser has removable terminal blocks allowing panel wiring to be completed before the BA558E is installed.

A **backlight** that 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 and the totaliser's 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 vibration testing and is supported by a three year guarantee.

For field mounting applications the BA554E has a similar specification as the BA558E, but is housed in a robust IP66 enclosure suitable for external mounting.

If flammable atmospheres are present the BA358E should be used. This has the same features as the BA558E but has been certified for use in hazardous areas.

BA558E

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
- ◆ Uni-directional & bi-directional operation
- ◆ Root extractor and 16 segment lineariser
- ◆ Optional backlight & alarms
- ◆ Easy on-site scale card installation
- ◆ IP66 front
- ◆ 144 x 72mm DIN enclosure
- ◆ 3 year guarantee

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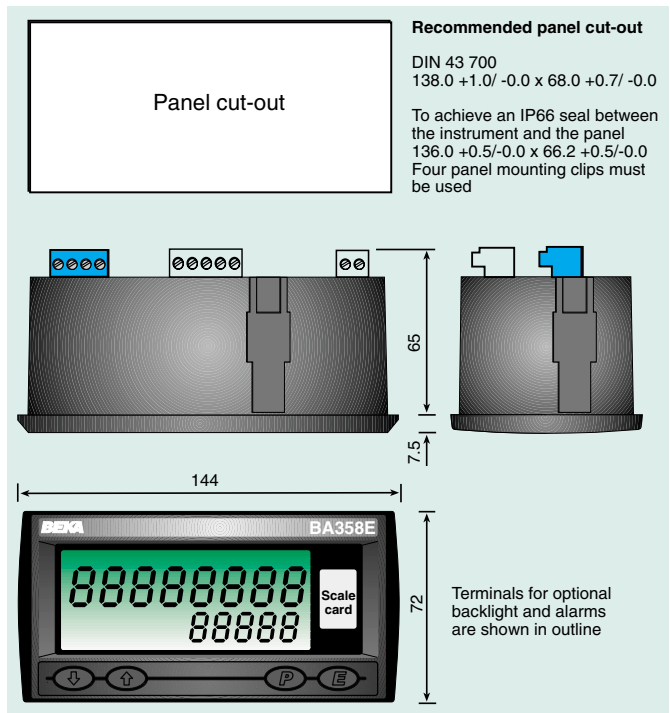
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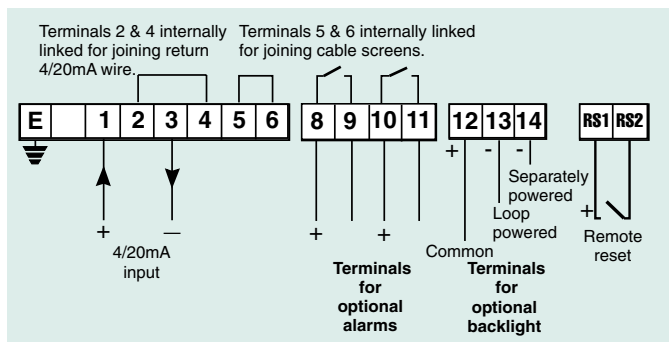
SPECIFICATION

Input	
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.
Overrange	±200mA or ±30V will not damage the instrument.
Display	
Type	Liquid crystal, multiplexed 2:1
Zero blanking	Blanked apart from 0 in front of decimal point.
Rate~	
Span	5 digits 12mm high. 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
Total~	
Scaling factor	8 digits 18mm high Adjustable between 0.0001 & 99999
Decimal point	1 of 5 positions or absent
Grand total	Maximum count 10 ¹⁶
~ Rate & Total can be shown on either display	
Push buttons	
▼	(Function in display mode) Shows rate display with 4mA input
▲	Shows rate display with 20mA input
'P'	Displays input in mA or a % of span, has a modified function when alarms are fitted.
'E'	Time since total display was reset
Accuracy	
Rate display at 20°C	
Linear	±0.02% of span ±1 digit
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. Updated every second
Total display	
Remote total reset	Contact closure with resistance less than 1kΩ.
Environmental	
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	Front IP66, rear IP20
EMC	Complies with 2004/108/EC
Mechanical	
Terminals	Screw clamp for 0.5 to 1.5mm ² cable, removable.
Weight	0.35kg
Accessories	
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	
V _{max}	Isolated solid state switch
I _{max}	40V dc
R _{on}	200mA
R _{off}	5Ω + 0.7V max 1MΩ min
Printed scale card	
Blank card fitted to each totaliser can be supplied printed with specified units of measurement.	
Pack of printed scale cards	
Contains 26 common units of measurement and four blanks.	
Tag legend	
Specified tag number or application thermally printed onto rear of the instrument.	

DIMENSIONS (mm)



TERMINAL CONNECTIONS



HOW TO ORDER

Model number
Display mode
Rate display at:
4.000mA
20.000mA

Rate timebase
Total scale factor

Accessories
Display backlight
Dual alarms
Scale card
Tag

Please specify

BA558E

Linear, root or lineariser*

XXXXX } Include position of decimal point & sign
XXXXX } if negative, plus intermediate points if
linearisation is required.*

Seconds, minutes or hours*
(Units of rate display)÷(Units of total display)*

Please specify if required

Backlight
Alarms
Legends required
Legend required

* 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.