

The **BA358C** is a loop-powered, intrinsically safe, panel mounting rate totaliser with separate rate and total displays. When connected in series with a 4/20mA flow transmitter, the BA358C will display the rate of flow in engineering units and total flow in the same or different units. The BA358C only introduces a 1V drop which allows it to be installed into almost any 4/20mA loop. If the 4/20mA loop is disconnected, the displayed total and all programme parameters are stored in permanent memory and are automatically recovered when the 4/20mA current is restored.

Main application of the BA358C is to integrate the 4/20mA output from a flow transmitter and to display the total flow in engineering units. The flow rate is shown on a smaller display, although the function of the two displays may be reversed. A selectable root extractor enables the output from a differential flow transmitter to be displayed in linear units. When fitted with optional alarms, the BA358C can detect low or high flow rates and can perform simple flow batching operations.

Intrinsic safety certification to the ATEX Directive allows installation throughout Europe. The 4/20mA input terminals comply with the requirements for *simple apparatus* enabling the BA358C to be connected in series with most certified intrinsically safe circuits without the need for an additional system certificate. This, together with the low voltage drop makes the BA358C very easy to apply.

Control and programming is performed via the front panel tactile push-buttons which 'click' when operated. All the programme functions are contained in easy to understand menus which may be protected by a user definable security code. Display scaling factors employ floating decimal points to simplify calibration.

The front panel is a robust, easy to clean Noryl moulding sealed with a non-reflective, scratch resistant polyester membrane. A captive neoprene gasket provides an IP65 seal between the enclosure and the panel.

An internal calibrator simulates 4 and 20mA input currents so that the instrument may be quickly calibrated without the need for test equipment or disconnection from the 4/20mA loop.

Optional alarms provide two galvanically isolated solid state outputs which may be independently programmed for high or low operation on either the rate or total displays. Each output is certified as a separate intrinsically safe circuit and complies with the requirements for *simple apparatus*. Almost any certified intrinsically safe load such as a solenoid valve or sounder may be controlled by these outputs.

Backlighting is available as an option to improve readability when the BA358C is installed in a poorly illuminated area. High efficiency amber LEDs provide an even glow to enhance display contrast. The backlight is powered by a separate Zener barrier or galvanic isolator and does not affect certification of the 4/20mA loop.

BA358C

2-wire 4/20mA rate totaliser

Intrinsically safe for use with 4/20mA flowmeters in all gas hazardous areas

- ◆ Loop powered only 1V drop
- ◆ Separate rate and total displays
- ◆ Intrinsically safe ATEX certification
- ◆ 144 x 72mm DIN enclosure with IP65 front
- ◆ Root extractor
- ◆ Optional: Alarms Backlight
- ◆ 3 year guarantee



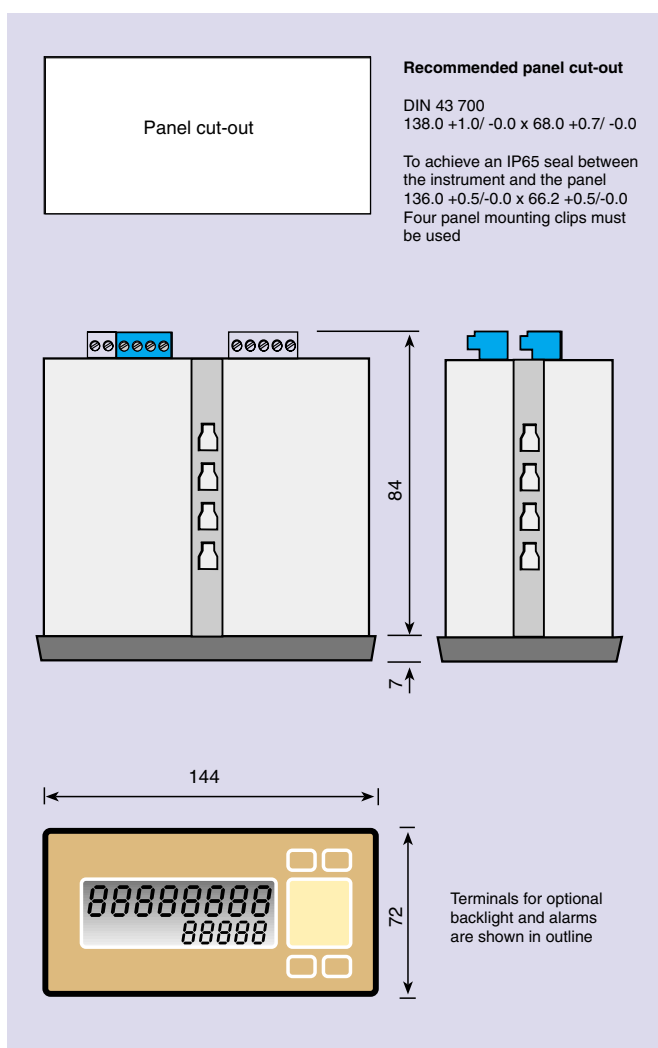
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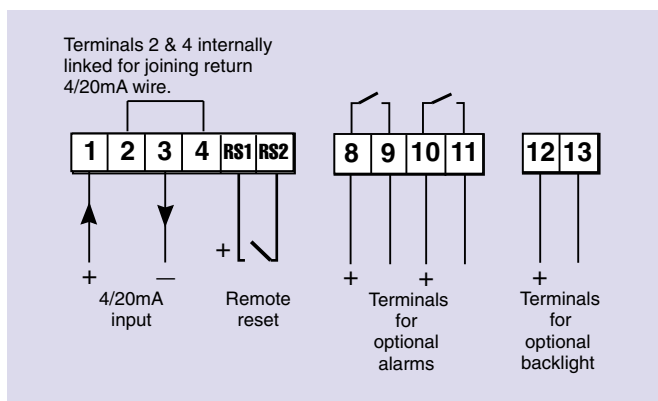
SPECIFICATION

Input							
Current	4 to 20mA						
Voltage	Less than 1V at 20°C						
Overrange	±200mA will not cause damage.						
Display							
Type	Liquid crystal						
Rate~	5 digits 9.5mm high						
Span	Adjustable between 0 & 20000 for a 4 to 20mA input.						
Zero	Adjustable between 0 & 20000 with 4mA input.						
Decimal point	1 of 4 positions or absent						
Timebase	Per second, minute or hour						
Overrange	4 least significant digits are blanked.						
Total~	8 digits 14mm high						
Scaling factor	Adjustable between 0.0001 & 65535						
Decimal point	1 of 7 positions or absent						
Grand total	Max count 10 ¹⁶						
~Rate and total can be shown on either display							
Accuracy							
Rate display at 20°C							
Linear	±0.02% of span ±1 digit						
Root extracting	±16µA at input ±1 digit						
Temperature effect							
Zero	Less than 25ppm/°C						
Span	Less than 50ppm/°C						
Series mode rejection	Less than 0.05% of span error for 1mA pk to pk 50Hz or 60Hz signal.						
Total display	Updated every second						
Remote total reset							
	Contact closure with resistance less than 1kΩ						
Intrinsic safety							
Europe ATEX							
Standard	EN50020:1994						
Code	Group II Category 1G EEx ia IIC T5						
Certificate number	ITS00ATEX2010						
Output parameters							
Uo	1.1V						
Io	70mA dc						
Po	22mW						
Ceq	20nF						
Leq	10µH						
Installation	The BA358C may be connected to any certified intrinsically safe circuit whose output parameters do not exceed: <table border="0" style="margin-left: 20px;"> <tr> <td>Uo</td> <td>30V</td> </tr> <tr> <td>Io</td> <td>200mA</td> </tr> <tr> <td>Po</td> <td>0.85W</td> </tr> </table>	Uo	30V	Io	200mA	Po	0.85W
Uo	30V						
Io	200mA						
Po	0.85W						
Environmental							
Operating temperature	-20 to 60°C (Certified for use at -40°C)						
Storage temp	-40° to 85°C						
Enclosure	Front IP65; rear IP20						
EMC	In accordance with EU Directive 89/336/EEC.						
Immunity	Less than 1% of rate span error for 10V/m.						
Emissions	Undetectable above background noise. Class B equipment						
Mechanical							
Terminals	Screw clamp for 0.5 to 1.5mm ² cables. Terminal blocks removable.						
Weight	0.5kg						
Accessories							
Separately powered backlight	Orange: powered from 28V 300Ω Zener barrier or galvanic isolator.						
Alarms	Two independent alarms each of which may be programmed for high or low operation on either the rate or total display with a NC or NO output.						
Outputs	Isolated solid state switch						
On	Less than 5Ω +0.6V						
Off	Greater than 180kΩ						
	Certified as <i>simple apparatus</i>						
Typeset scale card	Blank scale card fitted to each instrument, can be supplied typeset with units of measurement. *						
Tag number	Thermally printed number or applicational information on rear of instrument. *						

DIMENSIONS (mm)



TERMINAL CONNECTIONS



HOW TO ORDER

Model number	BA358C
Rate display at 4mA	XXXXX
Rate display at 20mA	XXXXX
Rate timebase	Seconds, minutes or hours
Total scale factor	(Units of rate display)÷(Units of total display)#
please specify	
BA358C	
XXXXX } Include position	
XXXXX } of decimal point #	
Seconds, minutes or hours	
(Units of rate display)÷(Units of total display)#	
Accessories	
Display backlight	Separately powered backlight
Alarms	Alarms
Scale card	Legend required
Tag number	Legend required

* See accessory datasheet for details

If calibration information is not supplied, instrument will be set to display rate of 0.00 to 100.00 with a timebase of seconds and a total scale factor of 1