BA544D

Battery powered pulse input rate totaliser

General purpose for use with pulse output flowmeters

Magnetic pick-off, voltage pulse, switch contact or open collector

Optional alarm outputs

Optional remote reset

Shown with optional external keypad

◆ **Internal battery lasts for up to 5 years**

◆ **Magnetic pick-off, switch contact, open collector or voltage pulse input**

◆ **Separate rate and total displays**

◆ **IP66 enclosure for surface or pipe mounting**

◆ **Optional:**
   Alarms
   External keypad

◆ **3 year guarantee**

The BA544D is a battery powered rate totaliser with separate rate and total displays. An accumulated grand total may also be displayed. The instrument will count switch contact closures, voltage pulses and the low level output from magnetic pick-offs.

Main application of the BA544D is to process the pulse output from a flowmeter, and to display the rate of flow and the total flow in the same or different engineering units. The instrument may be used with any flowmeter having a pulse output proportional to flow rate, such as a turbine flow meter. The instrument is battery powered and requires no external supply, it is therefore ideal for use in remote areas where cable installation would be difficult or expensive. When fitted with optional alarms, the BA544D will perform simple flow batching operations.
The BA544D may also be used as a tachometer to measure the speed of rotating machinery.

Control and programming of the BA544D is performed via four pushbuttons which are protected from damage and tampering behind a sealed cover. For applications requiring frequent adjustment, the instrument can be supplied with a robust external membrane keypad. All the programme functions are contained in easy to understand menus which may be protected by a user definable security code. To simplify calibration the rate and total scaling factors employ floating decimal points.

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, and a separate terminal compartment allows the BA544D 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.

Battery life can be up to five years, but depends upon the type and frequency of the input signal and the instrument function. To maximise battery life, the BA544D may be programmed to only update the display every twenty seconds, this does not degrade readability as operating any pushbutton will temporarily increase the display update rate to twice per second for thirty seconds. The display includes a low battery warning annunciator which will be activated a few months before the battery is exhausted. If the battery is not replaced, the displayed total and all programme parameters will be automatically stored in the permanent internal memory before the BA544D stops functioning. These parameters will be recovered when a new battery is installed.
Replacement batteries are available from BEKA associates and may be installed without removing the instrument from the process area. When stored at 20°C less than 1% of battery charge is lost per year, allowing spare batteries to be stored on-site.

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.

BEKA associates

SPECIFICATION

Input
Switch contact~	
Closed	Less than 100Ω
Open	Greater than 1kΩ
Magnetic pick-off	40mV peak to peak typical
Voltage pulse	
Low	Less than 1V
High	Greater than 3V; 30V max
Open collector~	
Closed	Less than 2kΩ
Open	Greater than 10kΩ
Frequency	
Switch contact	0.01Hz to 100Hz
Other inputs	0.01Hz to 5kHz max

Note ~For maximum battery life use a normally open contact or a normally off transistor.

Display
Type	Liquid crystal
Rate †	6 digits 9.5mm high
Decimal point	1 of 5 positions or absent
Total †	8 digits 14mm high
Decimal point	1 of 7 positions or absent
Grand total	Max count 10^{16}

† Rate or total can be shown on either display

Internal battery
Life	
Continuous totalising	Up to 5 years; depends upon input type and frequency, display update rate and whether optional alarms are fitted and activated.

Remote total reset   Contact closure with resistance less than 1kΩ

Programmable functions
Total dividing scale factor	Adjustable between 0.001 & 99999999
Rate dividing scale factor	Adjustable between 0.001 & 99999999
Rate timebase	Rate may be displayed per second, minute or hour.
Rate display filter	Adjustable digital filter
Security	Two levels of security are selectable

Environmental
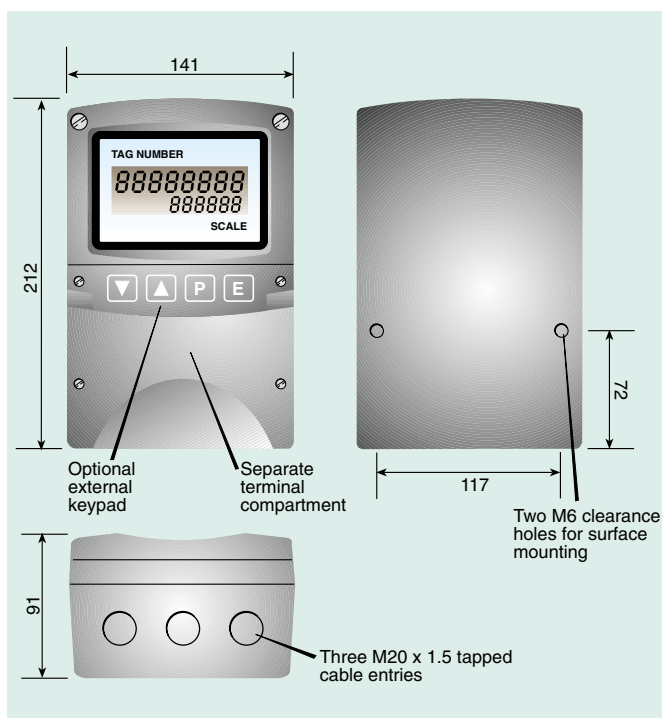|	
Operating temp	-20 to 60˚C
Storage temp	-40˚ to 85˚C
Enclosure	IP66 see ITS test report C87IV0383A
EMC	In accordance with EU Directive 89/336/EEC.
Immunity	Less than 1% of rate span error at 10V/m
Emissions	Undetectable above background noise. Class B equipment

Mechanical
Terminals	Screw clamp for 0.5 to 2.5mm² cables.
Weight	1.7kg

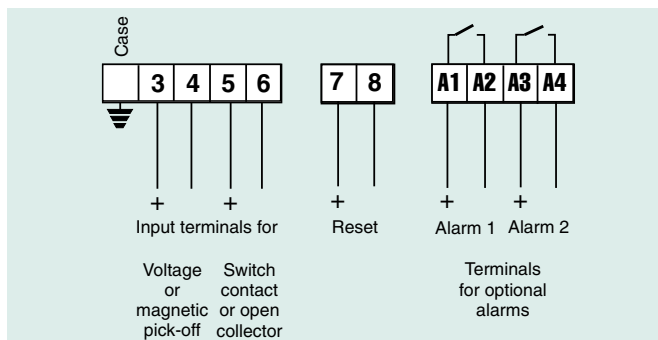### Accessories
Alarms	Two independent alarms each of which may be programmed for high or low operation with NC or NO output.
Outputs	Isolated solid state switch
On	Less than 5Ω +0.6V
Off	Greater than 180kΩ
Rating	30V dc: 250mA
External keypad	Membrane keypad enables instrument to be adjusted without removing the 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 front of instrument, etched with tagging or applicational information. *
Pipe mounting kit	2 kits are available BA392D and BA393.*

* See accessory datasheet for details

DIMENSIONS (mm)

Optional external keypad
Separate terminal compartment
Two M6 clearance holes for surface mounting
Three M20 x 1.5 tapped cable entries

141
212
72
117
91

TERMINAL CONNECTIONS

Case

| 3 | 4 | 5 | 6 | | 7 | 8 | | A1 | A2 | A3 | A4 |

+   +   +   +   +
Input terminals for   Reset   Alarm 1   Alarm 2

Voltage or magnetic pick-off
Switch contact or open collector
Terminals for optional alarms

HOW TO ORDER

	please specify
Model number	BA544D
Input	Type
Rate scaling factor	XXXXXXX #
Total scaling factor	XXXXXXX #
Rate timebase	Seconds, minutes or hours #

Accessories	**please specify**
Alarms	Alarms
External keypad	External keypad
Escutcheon marking	
Scale	Scale legend required
Tag	Tag legend required
Stainless legend plate	Legend required
Pipe mounting kit	BA392D or BA393
Replacement battery	BA491 battery unit

 # If calibration information is not supplied, instrument will be set for open collector input, with rate timebase of seconds, rate scaling factor of 1 and total scaling factor of 1.

08