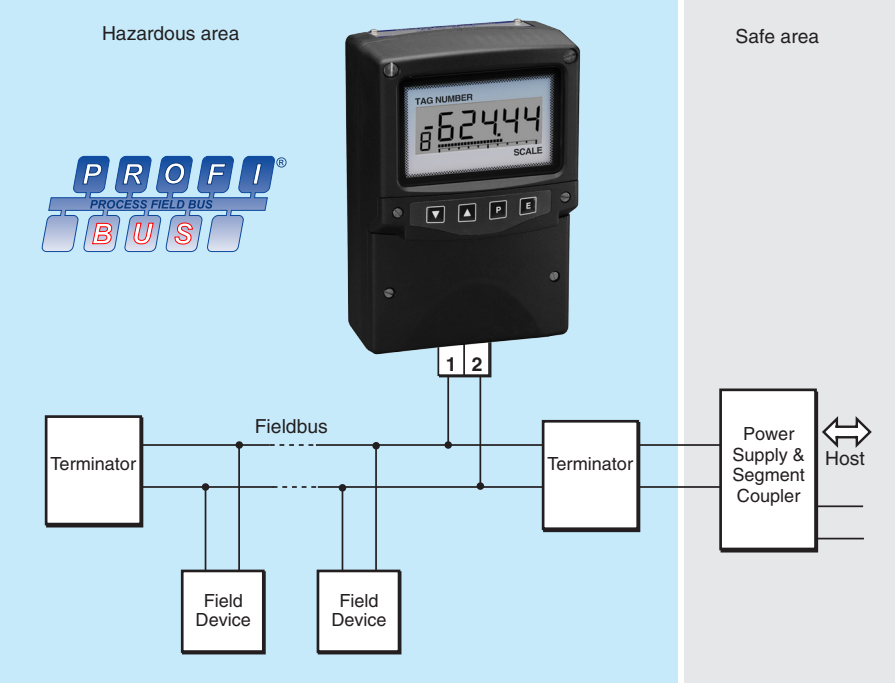

BA444DF-P
PROFIBUS PA Fieldbus Indicator 8 variables

Intrinsically safe for use in gas and dust hazardous areas

- **Large 5 digit display with bargraph.**
- **PROFIBUS PA protocol**
- **Displays up to 8 fieldbus variables.**
- **Selectable Node or Listener modes.**
- **Intrinsically safe**
  ATEX gas
  ***or* ATEX gas & dust**
  ***or* FM, cFM & ATEX gas**
  ***or* INMETRO**
  All models have IECEx certification.
- **Entity Ex ia & Ex ic parameters, FISCO compliant.**
- **IP66 field mounting GRP enclosure.**
- **3 year guarantee**

www.beka.co.uk/ba444df-p

The BA444DF-P PROFIBUS Indicator is an intrinsically safe instrument that can display up to eight fieldbus process variables within a hazardous area. A numeric annunciator on the left hand side of the screen shows which variable is being displayed. This version of the indicator supports PROFIBUS PA protocol; for FOUNDATION™ fieldbus systems an alternative version is available - please see BA444DF-F FOUNDATION™ fieldbus datasheet.

Configuration as a fieldbus Node or Listener using the indicator's front panel push buttons allows the instrument to be tailored to suit local requirements. When configured as a Listener the BA444DF-P is not visible to the fieldbus host; may not be subject to a Node Licence Fee and is configured and controlled via the instrument's front panel push buttons. As a fieldbus Node, the indicator is configured by the fieldbus host and the displayed variable is selected from the eight pre-configured fieldbus variables using the indicator's front panel up and down buttons.

Powered by the fieldbus the BA444DF-P only requires a 2-wire connection to the fieldbus segment, no additional power supply is required. Compatibility with most PROFIBUS hosts is assured by the use of eight Analogue Output and six Digital Input function blocks.

The liquid crystal display has large 20mm high digits providing maximum contrast and a wide viewing angle, allowing the BA444DF-P PROFIBUS indicator to be read easily in most lighting conditions. The five digits, with four decimal points and a negative sign, may be configured to display any variable between -99999 and 99999. The 31 segment bargraph, which provides a bold analogue indication of the fieldbus variable may be conditioned to any starting or finishing values within the fieldbus variable's range.

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 Intertek Testing Services. A separate terminal compartment allows the instrument to be installed and terminated without exposing the indicator electronics. To further simplify wiring and subsequent inspection, the terminal cable entries and clamping screws are forward facing. The indicator may also be mounted onto a vertical or horizontal pipe using one of the accessory kits.

ATEX intrinsic safety certification allows the BA444DF-P to be installed in all gas hazardous areas. The two fieldbus terminals comply with the Fieldbus Intrinsic Safety Concept FISCO simplifying system design and documentation. Separate Ex ia and Ex ic entity input safety parameters also allow connection to most non-FISCO intrinsically safe systems. A BA444DF-P may therefore be connected to almost any intrinsically safe fieldbus segment that can supply an additional 13mA to power the instrument.

FM, cFM and IECEx approvals allow installation in the USA, Canada plus the many countries accepting international IECEx certificates. All approvals incorporate FISCO certification. Details of the versions available are shown in the How to Order section on the reverse of this datasheet.

Operator acknowledgements may be returned to the fieldbus host when the BA444DF-P is configured as a fieldbus Node. Six digital Input function blocks in the indicator which are supported by most PROFIBUS hosts enable the status of the four front panel push buttons to be read.

A Comprehensive PROFIBUS interface guide contains commissioning information for the BA444DF-P. Copies may be requested from the BEKA sales office or downloaded from www.beka.co.uk

Units of measurement and the instrument's 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 a stainless steel label, the indicator can be supplied with a removable blank or custom etched stainless steel plate mounted on the front of the enclosure.

For panel mounting applications see the BA448CF-P PROFIBUS datasheet. This instrument has a similar electrical specification but is housed in a 144 x 72 panel mounting enclosure.

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SPECIFICATION

Display

Type	Liquid crystal 5 digit plus sign, 20mm high (-99999 to 99999). 31 segment bargraph
Variables	8

Controls

Front panel	Four push buttons for selecting displayed variable and configuration. May be used for returning operator acknowledgements when configured as a fieldbus node.

Fieldbus communication

Voltage	9 to 32V (Limited by intrinsic safety input safety parameters)
Current	13mA
Compliant with	IEC61158-2 31.25kbits/s Voltage Mode
Protocol	PROFIBUS PA
Profibus User Organisation.	Approval certificate Z01505
Function	Fieldbus Node or Listener selected via front panel push buttons.
Function blocks	
Profibus-PA node	8 x AO; 6 x DI
Listener	Captures data in DS-33 format

Intrinsic safety

Europe ATEX

Code	Group II Cat. 1G Ex ia IIC T4 Ga FISCO field device Ex ia IIC T4 Ga Group II Cat. 3G Ex ic IIC T4 Gc Ta = -40°C to 70°C
or	Group II Cat. 1G Ex ia IIC T4 Ga FISCO field device Ex ia IIC T4 Ga Group II Cat. 3G Ex ic IIC T4 Gc Group II Cat. 1D Ex ia IIIC T100°C IP66 Da Group II Cat. 3D Ex ic IIIC T100°C IP66 Dc Ta = -20°C to 60°C

Dust option, see How to order

Input parameters	FISCO	Ex ia entity	Ex ic entity
Ui	17.5V	22.0V	32V
Ii	380mA	250mA	125mA
Pi	5.32W	1.2W	1W

Location	
Gas	Zone 0, 1 or 2
Dust	Zone 20, 21 or 22
Cert. No.	ITS06ATEX25313X

USA FM

Standard	3610 Entity
Code	CL I, II, III: Div 1 GP A, B, C, D, E, F & G T4 at 70°C
Standard	3611 Nonincendive
Code	CL I, II, III: Div 2 GP A, B, C, D, E, F & G T4 at 70°C
File	3027031

Canada cFM

File	3027031C

International IECEx

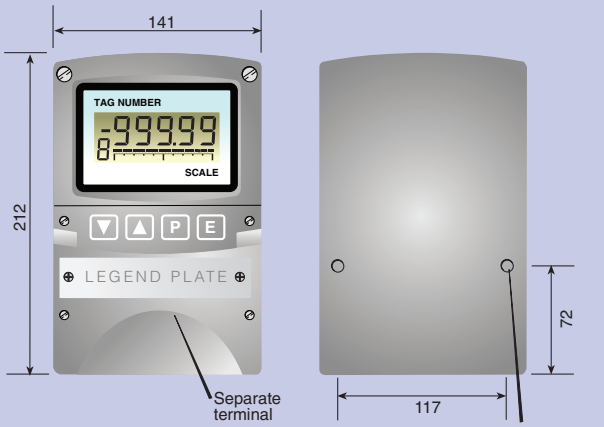
Code	As ATEX codes shown above
Cert. No.	IECEx ITS 06.0012X

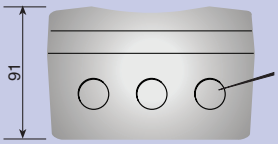
Brazil INMETRO NCC 12.0868

Environmental

Operating temp	-20 to 60°C ATEX & IECEx certification Gas -40 to 70°C Dust -20 to 60°C
Storage temp	-40 to 85°C
Humidity	To 95% @ 40°C
Enclosure	IP66
EMC	In accordance with EU Directive 2004/108/EC.

DIMENSIONS (mm)

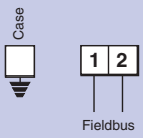




Three cable entries
ATEX certification M20 x 1.5 tapped. Supplied with two IP66 stopping plugs and one temporary hole plug.
FM certification 22.25 Ø plain holes

Shown with optional legend plate

TERMINAL CONNECTIONS



Non polarised

Mechanical

Terminals	Screw clamp for 0.5 to 1.5mm^2 cable.
Weight	1.6kg

Accessories

Scale legend	Units of measurement marked onto display escutcheon.
Tag legend	Tag number or application marked onto display escutcheon.
Stainless legend Plate.	Stainless steel plate etched with tag number or application attached to front of the instrument.
Pipe mounting kit	BA392D or BA393
PROFIBUS interface guide.	May be downloaded from www.beka.co.uk

HOW TO ORDER

		Please specify
Model number		BA444DF-P PROFIBUS
Certification		ATEX gas
	or	ATEX gas and dust
	or	FM, cFM and ATEX gas
	or	INMETRO gas
	or	INMETRO gas and dust

All versions have IECEx certification. ***Note:*** *Cable entries differ for FM & ATEX versions*

Accessories	**Please specify if required**
Escutcheon markings	
Scale	Scale legend
Tag	Tag legend
Stainless legend plate	Legend
Pipe mounting kit	BA392D or BA393