

The **BA414DF-F Fieldbus Indicator** is a cost-effective intrinsically safe field mounting instrument that displays a single fieldbus process variable in a hazardous area. Housed in a robust IP66 GRP enclosure, the instrument has a large, high contrast five digit display, plus a horizontal bargraph. The BA414DF-F indicator uses the same technology and compliments the well established BEKA eight variable fieldbus displays that are now in worldwide use.

Powered by the fieldbus the BA414DF-F only requires a 2-wire connection to the intrinsically safe fieldbus segment, no additional power supply is required. Compatibility with most FOUNDATION™ fieldbus hosts is ensured by the use of a single *Input Selector* function block, which is supported by nearly all systems. Please contact the BEKA sales office for the latest compatibility information. The instrument has ITK 6.3 Fieldbus Foundation registration and device description files may be downloaded from their website or from www.beka.co.uk

The **liquid crystal display** has large characters and is designed to provide maximum contrast and a wide viewing angle which enables the BA414DF-F indicator to be easily read in most lighting conditions. Five digits, with four decimal points and a negative sign, may be configured to display any value between -99999 and 99999. The 31 segment horizontal bargraph, which provides a bold analogue indication of the fieldbus variable, may be conditioned to any starting and 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 - report available. A separate terminal compartment allows the instrument to be installed and terminated

without exposing the indicator electronics. To further simplify field wiring and subsequent inspection, the terminal cable entries and clamping screws are both forward facing. The indicator may also be mounted onto a vertical or horizontal pipe using one of the accessory kits.

ATEX & UKEX intrinsic safety certification allows the BA414DF-F 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 BA414DF-F indicator may therefore be connected to almost any intrinsically safe fieldbus segment, provided the segment can supply 13mA to power the instrument.

International approvals allow installation in the USA, Canada, India, plus the growing number of countries accepting IECEx certificates. All approvals incorporate FISCO certification. Details of the versions available are shown in the How to Order section on the reverse side of this datasheet.

The **FOUNDATION™ fieldbus Interface Guide** contains commissioning information for the BA414DF-F indicator. A copy may be requested from the BEKA sales office or from the BEKA web site at www.beka.co.uk

Units of measurement, tag or application information specified by the customer can be printed onto the instrument escutcheon that surrounds the display for no additional charge. For users who require a stainless steel identification label, the indicator can be supplied with a laser engraved stainless steel legend plate mounted on the front of the instrument.

For panel mounting applications see the BA418CF-F datasheet. This instrument has a similar electrical specification but is housed in a 144 x 72 panel mounting enclosure.

BA414DF-F FOUNDATION™ fieldbus Fieldbus indicator Single variable

*Intrinsically safe for use
in gas and dust
hazardous areas*

- ◆ 20mm high easy to read 5 digit display.
- ◆ 31 segment bargraph
- ◆ FOUNDATION™ fieldbus protocol, ITK 6.3 compliant.
- ◆ Compatible with most system hosts.
- ◆ Intrinsically safe
- ◆ Entity Ex ia & Ex ic parameters, FISCO compliant.
- ◆ IP66 field mounting GRP enclosure.
- ◆ 3 year guarantee

www.beka.co.uk/ba414df-f



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SPECIFICATION

Display

Type	Liquid crystal 5 digits plus sign, 20mm high (-99999 to 99999)
Variables	31 segment bargraph Single

Fieldbus communication

Voltage	9 to 32V (Limited by intrinsic safety parameters)
Current	13mA
Compliant with	IEC61158-2 31.25kbits/s Voltage Mode Clauses 11 and 22
Protocol	FOUNDATION™ fieldbus, ITK 6.3 compliant
Function block	1 x IS (input selector)

Intrinsic safety

International IECEx

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

Europe ATEX & UKEX

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. 2D Ex ia IIIC T100°C IP66 Db 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](#) & [ITS21UKEX0084X](#)

USA FM

Code	CL I, II, III: Div 1 GP A, B, C, D, E, F & G T4 @ 70°C
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Standard Code	3611 Nonincendive CL I, II, III: Div 2 GP A, B, C, D, E, F & G T4 @ 70°C
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File [3027031](#)

Canada cFM

File [3027031C](#)

China CCC

As IECEx (gas only) - [see certificate](#)

India CCOE/PESO

As ATEX - [see certificate](#)

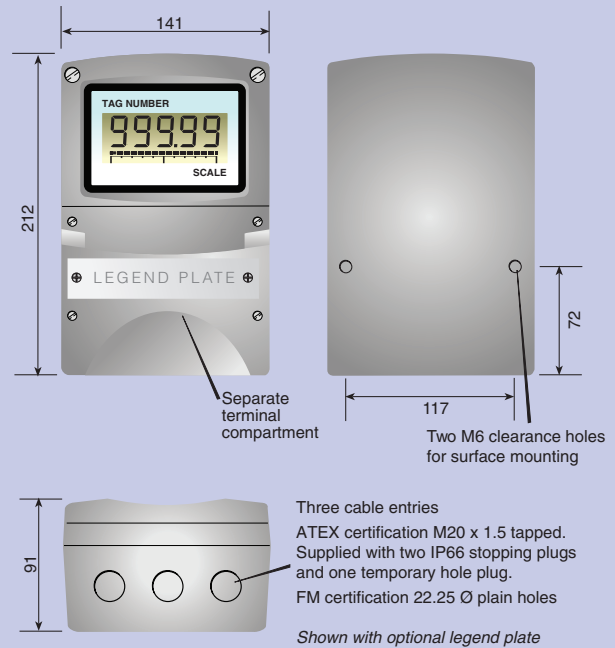
Environmental

Operating temp	-20 to 70°C ATEX & IECEx certification gas -40°C to 70°C dust -20°C to 60°C
Storage temp	-40 to 85°C
Humidity	To 95% @ 40°C
Enclosure	IP66
EMC	Complies with EU & UK EMC Directives

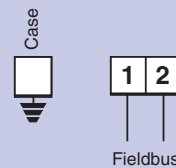
Mechanical

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

DIMENSIONS (mm)



TERMINAL CONNECTIONS



Accessories

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 etched with tagging or applicational information secured to the front of the instrument.
Pipe mounting kit	BA392D or BA393
Interface guide	May be downloaded from www.beka.co.uk

HOW TO ORDER

Model number	Please specify BA414DF-F	All versions have IECEx certification. Note: Cable entries differ for FM & ATEX versions.
Certification	ATEX & UKEX gas or ATEX & UKEX gas & dust or ATEX, UKEX & FM & cFM gas	
Accessories	Please specify if required	
Escutcheon markings	Scale legend Tag legend Legend BA392D or BA393	