

The BA414DF-F Fieldbus Indicator is a new 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 been registered by The Fieldbus Foundation and Device Description Files may be downloaded from their web site 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 –9999 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 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 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. For applications in combustible dusts a separate version is available.

FM, cFM and IECEx approvals allow installation in the USA, Canada, 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 and the instrument 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 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
- Compatible with most system hosts
- Intrinsically safe
 ATEX gas
 or ATEX gas & dust
 or FM, cFM &
 ATEX gas

All models have IECEx certification

- Entity parameters & FISCO compliant
- ◆ IP66 field mounting GRP enclosure
- 3 year guarantee



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SPECIFICATION

Display

Type Liquid crystal

5 digits plus sign, 20mm high

(-99999 to 99999) 31 segment bargraph

Variables

Fieldbus communication

9 to 32V (Limited by intrinsic safety Voltage

> parameters) 13mA

Compliant with IEC61158-2 Clauses 11 and 22

Protocol FOUNDATION™ fieldbus Function block 1 x IS (input selector)

Intrinsic safety **Europe ATEX**

Current

Group II Category 1G Code

Ga Ex ia IIC T4

FISCO Field Device Ex ia IIC T4

Tamb = -40 to 70° C

Group II Category 1GD

Ga Ex ia IIC T4

FISCO Field Device Ex ia IIC T4 Ex iaD 20 T100°C IP66

Tamb = -20 to 60° C

Dust option. see How to order

Input parameters

Entity Ui 22V

li 250mA = Ρi 1.2W

FISCO Ui 17.5V = li = 380mA

Ρi 5.32W

Location

Gas Zone 0, 1 or 2 Dust Zone 20, 21 or 22

Cert. No. ITS06ATEX25313

USA FM

CL I, II, III: Div 1 Code

GP A, B, C, D, E, F & G

T4 @ 70°C

Standard 3611 Nonincendive Code

CL I, II, III: Div 2

GP A, B, C, D, E, F & G

T4 @ 70°C

File 3027031

Canada cFM

3027031C File

International IECEx

Ex ia IIC T4 Ga Code

FISCO Field Device Ex ia IIC T4

 $Ta = -40 \text{ to } 70^{\circ}\text{C}$

Ex ia IIC T4 Ga

FISCO Field Device Ex ia IIC T4

Ex ia IIIC T100°C Da IP66

 $Ta = -20 \text{ to } 60^{\circ}\text{C}$

Dust option. see How to order

Cert. No IECEx ITS 06.0012

Environmental

Storage temp

Operating temp -20 to 70°C

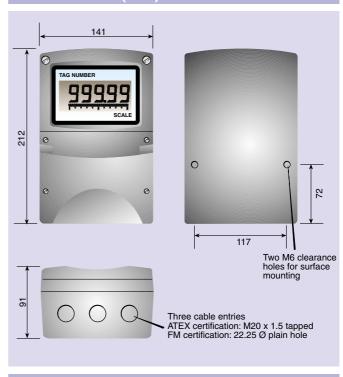
> ATEX & IECEx certification gas -40°C to 70°C

dust -20°C to 60°C -40 to 85°C

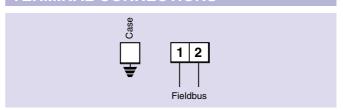
Humidity To 95% @ 40°C Enclosure IP66

EMC In accordance with EU Directive 2004/108/EC

DIMENSIONS (mm



FERMINAL CONNECTIONS



BS EN 61326:1998 Immunity

Operates normally with conducted 3Vrms between 0.15kHz and 80MHz radiated 10V/m between 80MHz and 1GHz.

Emissions CISPR16-1/2 Class A

Mechanical

Terminals Screw clamp for 0.5 to 1.5mm² cable. Weight

1.6kg

Accessories

Units of measurement marked onto display Scale legend

escutcheon.

Tag number or applicational information Tag legend

marked onto display escutcheon.

Stainless legend Stainless steel plate etched with tagging plate

or applicational information secured to the

front of the instrument.

Pipe mounting kit BA392D or BA393

Fieldbus interface May be downloaded from www.beka.co.uk

guide

OW TO ORDER

Please specify Model number BA414DF-F ATEX gas Certification or ATEX gas & dust

All versions have IECEx certification. Note: Cable entries differ

FM, CFM & ATEX gas for FM & ATEX versions

Accessories Please specify if required

Escutcheon markings Scale

Tag Stainless legend plate Pipe mounting kit

Scale legend Tag legend Legend

BA392D or BA393