

The **BA414NDF Fieldbus Display** is a new cost-effective Type nL field mounting instrument that can display a single fieldbus process variables in a Zone 2 or Zone 22 hazardous area. Housed in a robust IP66 GRP enclosure, the instrument has a large, high contrast five digit display, plus a horizontal bargraph. The BA414NDF 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 BA414NDF only requires a 2-wire connection to the Type nL 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](http://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 BA414NDF 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 Type nL certification** allows the BA414NDF to be installed in Zone 2 gas hazardous areas. The two fieldbus terminals comply with the Fieldbus Non-incendive Concept (FNICO) simplifying system design and documentation. Separate entity input safety parameters also allow connection to most non-FNICO Type nL systems. A BA414NDF indicator may therefore be connected to almost any Type nL fieldbus segment, provided the segment can supply 13mA to power the instrument. For applications in combustible dusts a separate version is available, see How to Order on the reverse side of this datasheet.

**IECEx approvals** allow installation in the growing number of countries accepting IECEx certificates which already includes Australia and New Zealand. The approval includes FNICO certification.

**The FOUNDATION fieldbus™ Interface Guide** contains commissioning information for the BA414NDF indicator. A copy may be requested from the BEKA sales office or from the BEKA web site at [www.beka.co.uk](http://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 engraved stainless steel plate mounted on the front of the enclosure.

**For nonincendive applications in the USA & Canada** please see datasheets for the BA414DF and BA418CF. These field and panel mounting fieldbus indicators have FM and CFM nonincendive approval.

# BA414NDF

## Fieldbus indicator Single variable

*Type nL certified for use  
in Zones 2 and 22*

- ◆ 20mm high easy to read 5 digit display
- ◆ 31 segment bargraph
- ◆ FOUNDATION fieldbus™ protocol
- ◆ Type nL certification  
ATEX & IECEx gas  
or ATEX & IECEx dust
- ◆ Entity parameters &  
FNICO compliant
- ◆ IP66 field mounting  
GRP enclosure
- ◆ 3 year guarantee



# BEKA

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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
Current	13mA
Compliant with	IEC61158—2 Clauses 11 and 22
Protocol	Foundation fieldbus™
Function block	1 x IS (input selector)

### Type nL certification

#### Europe ATEX

Standard	EN60079-15:2005
Code	Group II Category 3G EEx nL T4 Tamb = -20 to 70°C

or	Group II Category 3GD, T100°C IP66 EEx nL T4 Tamb = -20 to 60°C
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*Dust option, see How to order*

### Input parameters

Entity	U <sub>i</sub> = 36V
	I <sub>i</sub> = 250mA
	P <sub>i</sub> = 1.2W

FNICO	U <sub>i</sub> = 17.5V
	I <sub>i</sub> = 380mA
	P <sub>i</sub> = 5.32W

### Location

Gas	Zone 2
Dust	Zone 22

Type Examination Certificate	ITS06ATEX45315
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### International IECEx

Standard	IEC60079-15:2001
Code	Ex nL IIC T4 Ta = -20 to 70°C

or	Ex nL IIC T4 DIP A22 TA 100°C IP66 Ta = -20 to 60°C
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*Dust option, see How to order*

Cert. No.	IECEx ITS 06.0015
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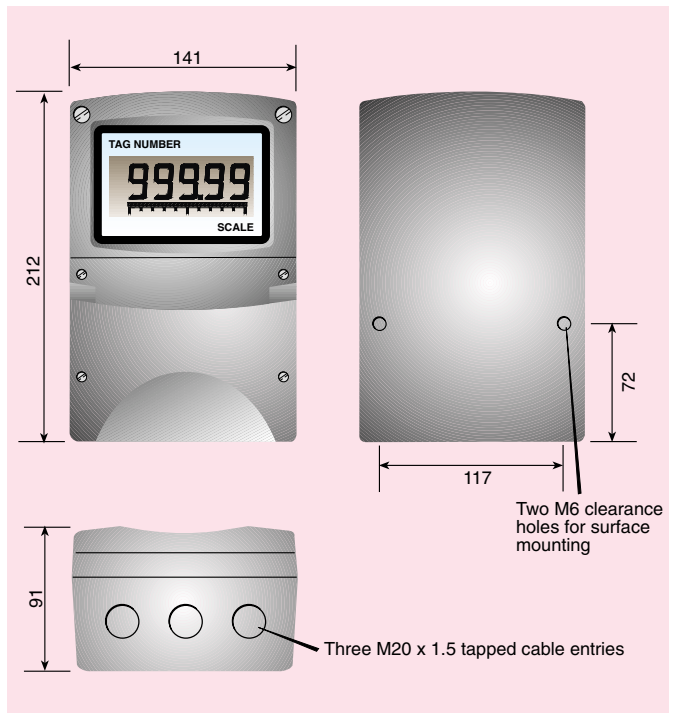
### Environmental

Operating temp	
In flammable gas	-20 to 70°C
In combustible dust	-20 to 60°C
Storage temp	-40 to 85°C
Humidity	To 95% @ 40°C
Enclosure	IP66
EMC	In accordance with EU Directive 89/336/EEC
Immunity	BS EN 61326:1998 Operates normally with conducted 3V <sub>rms</sub> between 0.15kHz and 80MHz. radiated 10V/m between 80MHz and 1GHz.
Emissions	CISPR16-1/2 Class A

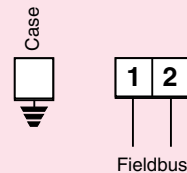
### Mechanical

Terminals	Screw clamp for 0.5 to 1.5mm <sup>2</sup> 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 engraved with tagging or applicational information secured to the front of the instrument.
Pipe mounting kit	BA392D or BA393
Fieldbus interface guide	May be downloaded from <a href="http://www.beka.co.uk">www.beka.co.uk</a>

## HOW TO ORDER

Model number	BA414NDF
Certification	ATEX & IECEx gas
or	ATEX & IECEx gas & dust

<b>Accessories</b>	<b>Please specify if required</b>
Escutcheon markings	
Scale	Scale legend
Tag	Tag legend
Stainless legend plate	Legend
Pipe mounting kit	BA392D or BA393