Hazardous area

Safe area

Additional
text displays

RS232
RS485

20 to 35V dc

BA484D or BA488C
Serial Text Display

BA201

BA201
Communications isolator

Interface for BEKA intrinsically safe Serial Text Displays

◆ **Powers and communicates with BA484D & BA488C serial text displays.**

◆ **RS232 and RS485 safe area port.**

◆ **ATEX, FM, cFM and IECEx certification.**

◆ **DIN rail mounting**

◆ **3 year guarantee**

www.beka.co.uk/ba201

BEKA associates

The BA201 communications isolator is a dedicated interface for connecting intrinsically safe BEKA Serial Text Displays to a safe area computer system. The isolator provides intrinsically safe galvanic isolation between the safe and hazardous areas, plus conversion of the RS232 or RS485 safe area serial data to the dedicated communications signalling required by BEKA Serial Text Displays.

The isolator also powers the Serial Text Displays and depending upon the wiring configuration, up to four displays may be connected to each BA201. To prevent earth loops both communications ports are functionally isolated from the BA201 power supply terminals allowing an earthed or floating supply to be used.

No configuration is required it is only necessary to connect to the required RS232 or RS485 safe area port, the isolator will automatically function at any of the serial text display communication rates between 300 and 19.2k baud. The RS485 driver turn-around is automatic and optimised for the baud rate in use. Four green LEDs on the top of the isolator indicate status. One LED shows that the device is powered; the others indicate when the RS232 port is being used and when the isolator

is transmitting to, or receiving from the serial text display.

The enclosure, which is moulded in ABS and polycarbonate, is DIN rail mounting and only 22.6mm wide making it compatible with many proprietary galvanic isolators and Zener barriers. To simplify installation and commissioning the terminals are colour coded and removable.

ATEX associated apparatus certification permits the BA201 isolator, when mounted in a safe area, to power and communicate with up to four BEKA intrinsically safe serial text displays mounted in a hazardous area. Either BA484D field mounting or BA488C panel mounting models text displays may be used, or a mixture of both models may be connected to one BA201 communications isolator.

FM, cFM and IECEx approvals allow the BA201 communication isolator to be installed in the USA and Canada. International IECEx approval is already accepted in Australia, New Zealand and Singapore without the need for local certification. In countries that still require local intrinsic safety certification, this can often be quickly obtained based on the international IECEx test report and approval.

SPECIFICATION

Power supply
Voltage	20 - 35V dc
Current	100mA typical at 24V powering two Text Displays in a three wire system.

Safe area communication
Port	RS232 or RS485
	Unused port should not be connected.

Intrinsic safety
Type	Associated apparatus
Location	Safe area

Europe ATEX
Standard	EN60079-11:2007
Code	Group II Category (1) G [Ex ia] IIC
Cert. No.	ITS07ATEX25602
intrinsic safety parameters	Terminal 1 wrt Terminal 3
	U_o = 21.2V
	I_o = 96mA
	P_o = 0.51W
	Terminal 2 wrt Terminal 3
	U_o = 13.7V
	I_o = 84mA
	P_o = 0.45W

USA FM
Standard	3610 Entity
Code	IS Circuit CLI, II, III; Div 1; GP A, B, C, D, E, & G.
File	3029711

Canada cFM
Standard	CSA 22.2 No 157
Code	IS Circuit CLI, II, III; Div 1; GP A, B, C, D, E, & G.
File	3029711C

International IECEx
Standard	IEC60079-11:2006
Code	[Ex ia] IIC
Cert. No.	IECEx ITS 07.0014

Environmental
Operating temp	-20 to 60°C (ATEX & IECEx Certified for use between -40 and 70°C)
Storage temp	-40 to 85°C
Humidity	To 95% @ 40°C noncondensing
Enclosure	Polycarbonate and ABS moulding IP20
EMC	In accordance with EU Directive 2004/108/EC
Immunity	BS EN 61326:1998 Operates normally with conducted 3Vrms interference between 0.15kHz and 80MHz, or Radiated 10V/m interference between 80MHz and 1GHz.
Emissions	CISPR 16-1/2 Class A

Mechanical
Terminals	Screw clamp for 0.5 to 1.5mm^2 cable. Removable terminal blocks.
Colour	Hazardous area wiring blue
Mounting	35mm 'top hat' DIN rail
Weight	0.15kg

Accessories
Tag number	Thermally printed strip on top of instrument.

NUMBER OF TEXT DISPLAYS
The BA201 can power and communicate with multiple BA484D or BA488C Serial Text Displays, the maximum number depends upon the wiring configuration.

Two-wire connection
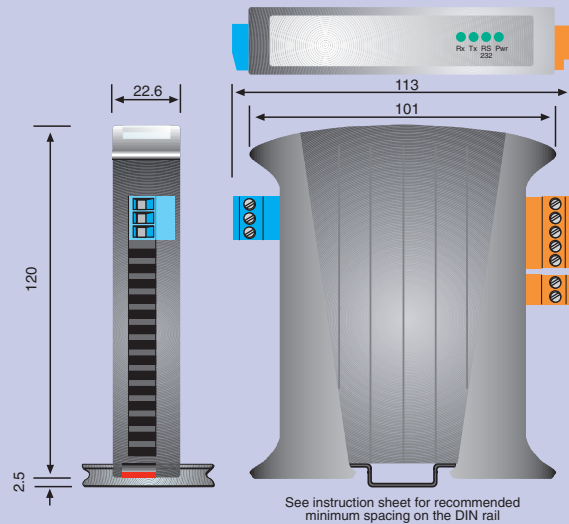
No. of Text Displays	Backlight brilliance
1	Full
2	Reduced

Three-wire connection

No. of Text Displays	Backlight brilliance
1	Full
2	Full
3	Reduced
4	Reduced

HOW TO ORDER

	Please specify
Model number	BA201
Accessories	**Please specify if required**
Tag strip	Legend

DIMENSIONS (mm)

See instruction sheet for recommended minimum spacing on the DIN rail

TERMINAL CONNECTIONS

Hazardous area terminals

0V	3	
Power + signal	2	
Power	1	

Safe area terminals

7	0V	
8	RS232 Tx	
9	RS232 Rx	
10	RS485 B	
11	RS485 A	

13	0V	Power supply
14	+	

Terms Tx & Rx are relative to the BA201

SYSTEM CONNECTIONS

2-wire system

3-wire system