

Instructions for BA3903  
 Pageant RS485-IS Connector

**1. INTRODUCTION**

The BA3903 enables an RS485-IS twisted pair bus cable to be easily connected to, and looped-through, a device with a standard RS485-IS port.

The BA3903 incorporates a sub D9 male connector that mates with the standard female connector on an RS485-IS device, such as a Pageant plug-in CPU module. The BA3903-IS connector contains duplicate input and output screw terminals enabling twisted pair field wiring to be easily connected to, and looped-through, the RS485-IS device.

The BA3903 connector also contains a switchable terminating resistor for use at the end of an RS485-IS line.

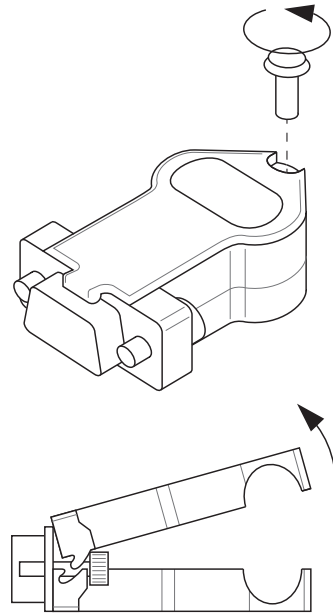
**2. RS485-IS PHYSICAL LAYER**

RS485-IS is a 2-wire intrinsically safe communications standard. The physical layer standard is summarised in the, 'Profibus RS485-IS User and Installation Guideline'. The maximum intrinsic safety input and output safety parameters for each device are defined allowing up to 32 devices to be connected to a single bus cable as shown in Fig 1. However, the maximum current output of the fieldbus isolator powering the bus cable may restrict the number of devices that can be connected.

**3. CONNECTIONS AND USE**

**Caution**  
 The cover retaining screw is not captive, neither are the two jack-screws when the cover has been removed.

**Step 1**  
 Unscrew the back cover retaining screw and carefully lift it off.



**Step 2 For connecting to a field device and looping-through the bus.**

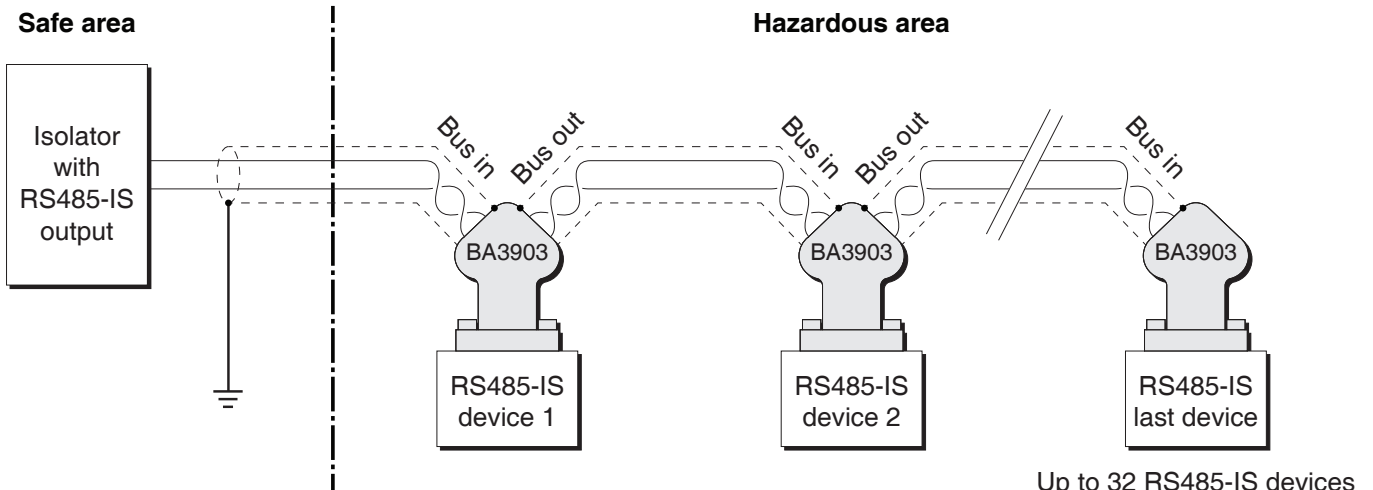
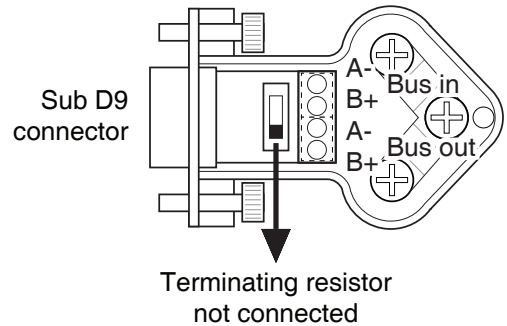
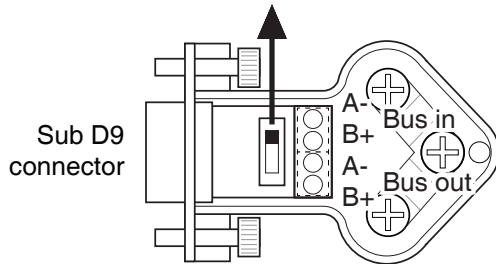


Fig 1 RS485-IS bus topography

When the BA3903 connector is used for connecting the bus to a RS485-IS field device and looping the bus through the device, discard the plate covering the bus out cable exit and slide the terminating resistor switch into the not connected position. Connect the bus cable to the appropriate *in* and *out* terminals ensuring that the two cable retention clamps are in electrical contact with the bus cable braid to maintain cable screen continuity.

#### OR For connecting to the last field device

Terminating resistor connected  
between input terminals



When a BA3903 is used to connect to the last RS485-IS field device at the end of a line, the plate covering the bus out cable exit should be retained and the terminating resistor switch slid into the connected position. The bus cable should be connected to the bus *in* terminals and secured with the cable retaining clamp.

#### Step 3 Reassemble the BA3903 connector

Ensure that the two jack-screws are correctly positioned before refitting the top cover and replacing the securing screw.

#### 3.1 Earthing

The screen of the RS485-IS twisted pair bus cable should be earthed in the safe area as shown in Fig 1. If a BA3903 connector is plugged into a socket on a hazardous area RS485-IS port which has an earthed connector shroud, care should be taken to avoid circulating currents. Ideally each intrinsically safe circuit should only have a single earth connection in the safe area. Multiple earth connections should be connected to the plant's potential equalising conductor.

#### Caution

**The bus cables attached to the BA3903 connector should be supported to prevent vibration damage to the female socket on the RS485-IS device, or the BA3903.**

#### 4. MAINTENANCE

Pageant BA3903 connectors should be regularly inspected to ensure that they have not been damaged. The frequency of inspection depends upon environmental conditions.

**No attempt should be made to repair a faulty BA3903 Connector. Suspect Connectors should be returned to BEKA associates or your local BEKA agent.**

#### 5. GUARANTEE

Connectors which fail within the guarantee period should be returned to BEKA associates or your local BEKA agent. It is helpful if a brief description of the fault symptom(s) is provided.

#### 6. CUSTOMER COMMENTS

BEKA associates are always pleased to receive comments from customers about our products and services. All communications are acknowledged and whenever possible, suggestions are implemented.

***BA3903 Pageant RS485-IS connectors are CE marked to show compliance as Simple Apparatus with the European Explosive Atmospheres Directive 2014/34/EU. The connectors are also UKCA marked to show compliance as Simple Apparatus with UK statutory requirements Equipment and Protective Systems Intended for Use in Potentially Explosive Atmospheres Regulations UKSI 2016:1107 (as amended).***



All associated manuals, certificates, and datasheets can be downloaded from [https://www.beka.co.uk/qr-ba3903\\_1](https://www.beka.co.uk/qr-ba3903_1)

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