

1. DESCRIPTION

The BA489 is a Modbus RTU panel mounting, intrinsically safe display. It is capable of displaying up to 8 process variables including bargraphs, units of measurements and tagging.

There are two electrically similar models:

Model	Application
BA489-GL	For intrinsic safety applications in, Zones 0, 1, 2, 20, 21 and 22. Has a toughened glass display window surrounded by a stainless steel front panel.
BA489-PC	For intrinsic safety applications when mounted in an Ex e or Ex t enclosure. The impact resistant front ensures that the enclosure's apparatus certification is not invalidated. The BA489-PC has a scratch resistant polycarbonate display window surrounded by a stainless steel front panel.

The BA489-GL and the BA489-PC displays are constructed from three IECEx, ATEX and UKEX Ex ia intrinsic safety certified modules, each with an individual intrinsic safety apparatus certificate specifying that they may be safely interconnected within a hazardous area. The Modbus RTU communication port is intrinsically safe and compliant with the Profibus RS485-IS User and Installation Guideline document. It is galvanically isolated from the power input.

2. INSTALLATION

Both models have IP66 front of panel protection, but should be shielded from continuous direct sunlight and severe weather conditions. The front panel touch buttons should not be exposed to salt water. The rear of both displays have IP20 protection.

Cut-out dimensions 230.6 +0.5 / -0.0 X 166 +0.5 / -0.0

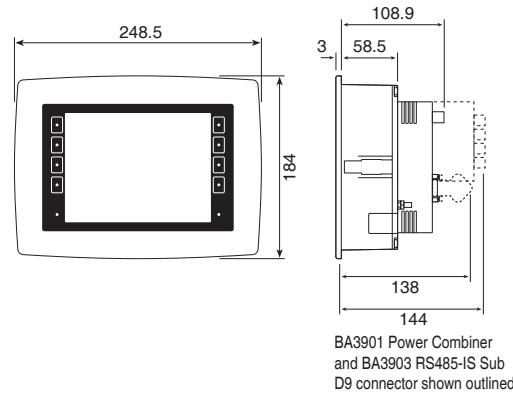
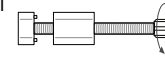


Fig 1 Cut-out dimensions and terminals

a. Align foot and body of panel mounting clamp by turning screw anticlockwise



b. Position gasket behind instrument bezel

c. Insert BA489 display into the panel from the front

d. Place a clamp in the recess on each side of the BA489 display, pulling gently to slide them onto the dovetails. Push the knurled screws slightly forward to engage the threads and tighten by turning clockwise until both are just finger tight. When both clamps are fitted, ensure that the gasket behind the front panel bezel remains correctly positioned before fitting the remaining six panel mounting clamps. Finally, fully tighten all the panel clamps to secure the instrument. The maximum recommended clamp tightening torque is 25cNm (2.2lbf in) which is approximately equivalent to finger-tight plus one half turn.

DO NOT OVERTIGHTEN.

Fig 2 Installation procedure

EMC

The BA489 display complies with the requirements of the European EMC Directive and the UK EMC statutory requirements. For specified immunity all wiring should be in screened twisted pairs, with the screens earthed at one point within the safe area.

3. OPERATION

When power is applied to a BA489 display, the power indicator shown in Fig 4, will initially be red. After 100 seconds the indicator will turn green and the screen will show the operating display. The start up sequence is shown overleaf.

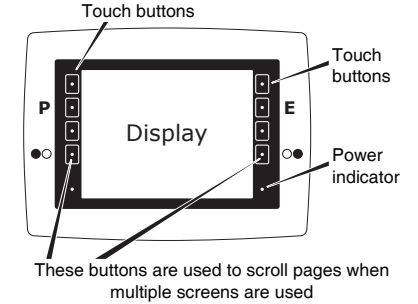
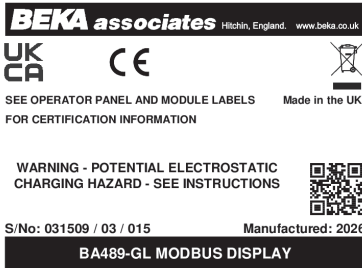


Fig 4 Front panel



BA489-GL label

Special conditions for safe use - see full manual and certificates

All the certificate numbers for the BA489 have an 'X' suffix indicating that special conditions for safe use apply.

- Non-metallic parts of the enclosure may generate an ignition-capable level of electrostatic charge, therefore such surfaces shall only be cleaned with a damp cloth.
- The metal bezel of the equipment shall be connected to earth via the integral earth stud.
- For installations requiring EPL Da, Db, or Dc, the BA489 shall be mounted to an enclosure which provides a minimum degree of protection of IP5X.

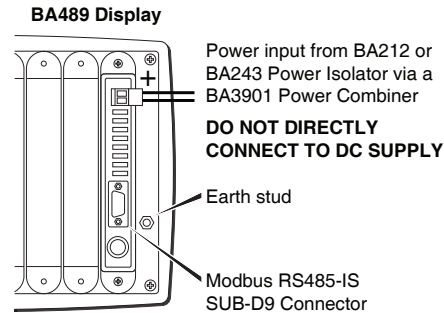
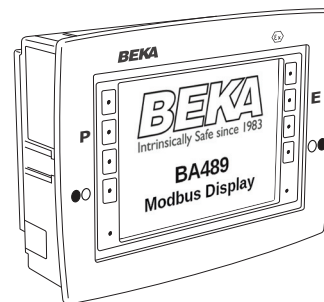
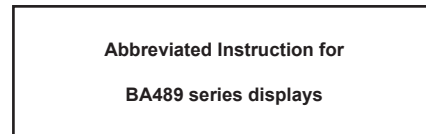


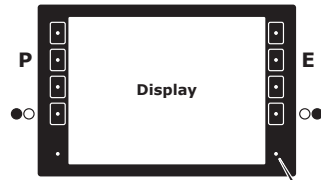
Fig 3 Terminal connections

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BEKA associates Ltd. Old Charlton Rd, Hitchin, Hertfordshire, SG5 2DA, UK Tel: +44(0)1462 438301 e-mail: sales@beka.co.uk web: www.beka.co.uk

Start-up Sequence When Power Applied

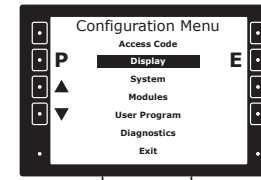
Elapsed time seconds	Power indicator lamp	P&E indicators lamps	Screen shows
0 to 40	Red	Off	Blank
40 to 50	Red	Off	Model number
50 to 60	Flashing Red	Amber	Model number
60 to 100	Red	Off	Model number
100	Green	Off	Operating display



P + E

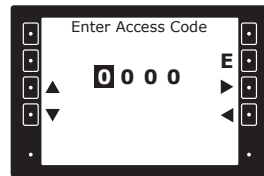
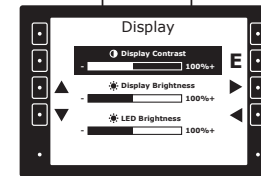
Power indicator lamp

Display Contrast and Brightness Adjustments



P

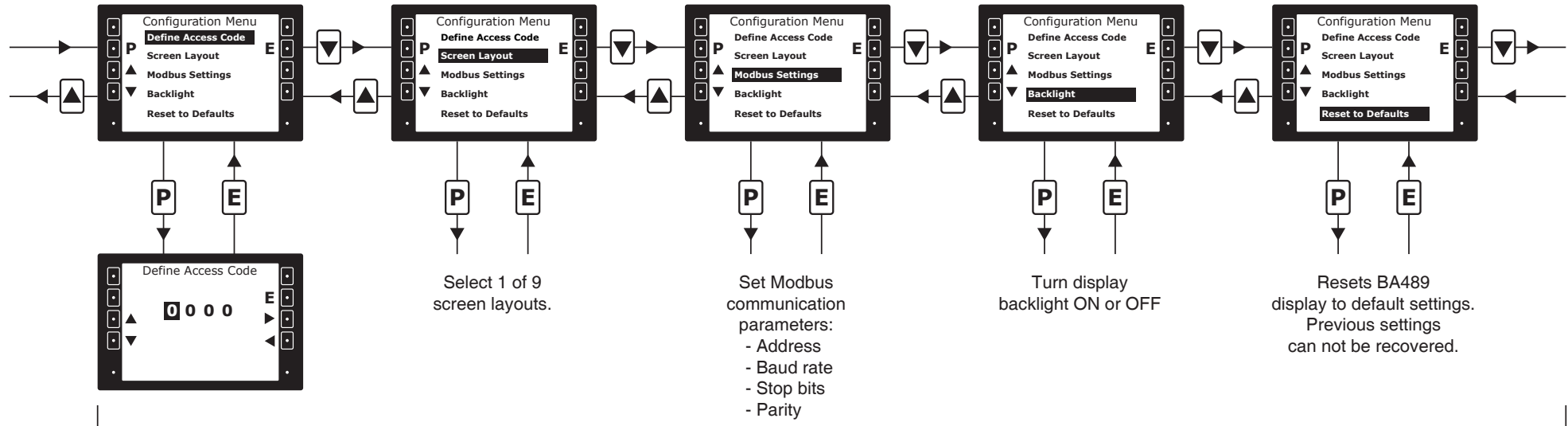
E



Access Code

Enter code by pressing ▲ or ▼ and ► or ◀ to move to next digit. Code 0000 allows direct access to the Configuration Menu.

E



Follow the Instructions in Sub-Menus to Complete Display Configuration



Manuals and datasheets can be downloaded from <http://www.beka.co.uk/ba489>

Fig 5 Configuration menu