

**Pageant** is an intrinsically safe combined PLC and local operator display with provision for plug-in input and output modules. It may be safely installed in Zones 0, 1, 2, 20, 21 or 22 hazardous areas and can economically monitor and control hazardous area equipment such as mud pumps, pharmaceutical coating machines and flammable liquor stills. Pageant can operate alone or as part of an integrated control system.

**Designed with the help of users** the Pageant system comprises a BA3101 Operator display into which can be plugged CPU and I/O modules to form an IEC 61131 compliant CODESYS PLC. Up to seven plug-in analogue or digital input and output interface modules can be accommodated plus a CPU module with optional external communications. Operator inputs are made via eight touch buttons each with a programmable tricolour annunciator.

**Intrinsic safety** provides users with the safest hazardous area protection which is usable worldwide. This new BEKA low power technology eliminates the need for heavy protective enclosures and allows the backlit operator display and plug-in interface modules to be powered from a single BEKA Power Isolator.

The display assembly and each of the plug-in interface modules are individually certified, allowing users to only purchase the modules required for their application. If circumstances change, additional modules can be fitted and configured on-site. Unlike operator panels with other forms of hazardous area protection, Pageant consumes very little power and therefore does not significantly raise the temperature of the enclosure in which it is mounted.

**Communication** with the Pageant operator panel is via an isolated RS485-IS port which can be connected to other equipment in the hazardous area, or to the safe area via a proprietary isolator. The operator panel can be configured as a Modbus RTU master or as a slave.

**The IP66 toughened glass and stainless steel** flat front panel is easy to clean and ideal for pharmaceutical and brewing applications. For field mounting the BA3101 panel easily mounts into the hinged door of a proprietary IP66 stainless steel enclosure.

**Documentation and support** are extensive including instruction manuals for the display, CODESYS software and each of the plug-in modules, plus videos and application guides. CODESYS runtime is a well known industry standard software package. Demonstration systems can be viewed at the BEKA sales office and at some BEKA agents. Loan systems are available for evaluation and programme development.



Up to 7 plug-in input and output interface modules      Plug-in CPU module

Rear of BA3101

# BA3101

## Pageant

### Intrinsically Safe Operator Display

*HMI, PLC and modular I/O for installation in Zone 0, 1, 2, 20, 21 or 22*

- ◆ IECEx, ATEX & UKEX Ex ia certification.
- ◆ Economical solution for Zone 1 applications.
- ◆ 7 inch backlit operator screen.
- ◆ Accommodates up to 7 plug-in input and output modules.
- ◆ CODESYS® runtime industry standard PLC.
- ◆ 8 touch buttons with tricolour annunciators.
- ◆ IP66 toughened glass and stainless steel front panel.
- ◆ 3 year guarantee

[www.beka.co.uk/ba3101](http://www.beka.co.uk/ba3101)



# BEKA

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## SPECIFICATION

### Power supply

Via plug-in CPU module from BEKA power isolator.  
See datasheets for specifications.  
Dissipation Less than 4.4W in the hazardous area

### Display

Type FSTN Liquid crystal transreflective  
Size diagonal 178mm (7inch)  
Resolution 320 x 240 pixels ¼VGA  
Greyscale 4 levels  
Backlight White - brilliance adjustable

### Touch buttons

Type Projected capacitance  
Number 8  
Backlight annunciator Programmable red, amber or green

*Button operation can be transferred to remote industrial push buttons using a BA3401 plug-in module. Recommended if buttons are exposed to salt water.*

### Firmware

CODESYS V3 complies with IEC 61131 PLC programming specification.  
Resident in plug-in CPU module.

### PLC Cycle time

Less than 100ms irrespective of the number of plug-in modules fitted.

### Safety certification

#### International IECEx

Code Ex ia IIC T4 Ga  
Ex ia IIIC T135°C Da  
-40°C ≤ Ta ≤ 65°C  
Cert. No. [IECEx CML 20.0150X](#)

#### Europe ATEX and UKEX

Code II 1G Ex ia IIC T4 Ga  
II 1D Ex ia IIIC T135°C Da  
-40°C ≤ Ta ≤ 65°C  
Cert. Nos. [CML 20ATEX2252X](#)  
[CML 21UKEX2003X](#)

### Plug-in modules

**CPU**  
BA3201 1 CPU module must be installed  
BA3202 CPU without external communication  
CPU with isolated RS485-IS port  
Modbus RTU master or slave protocol.

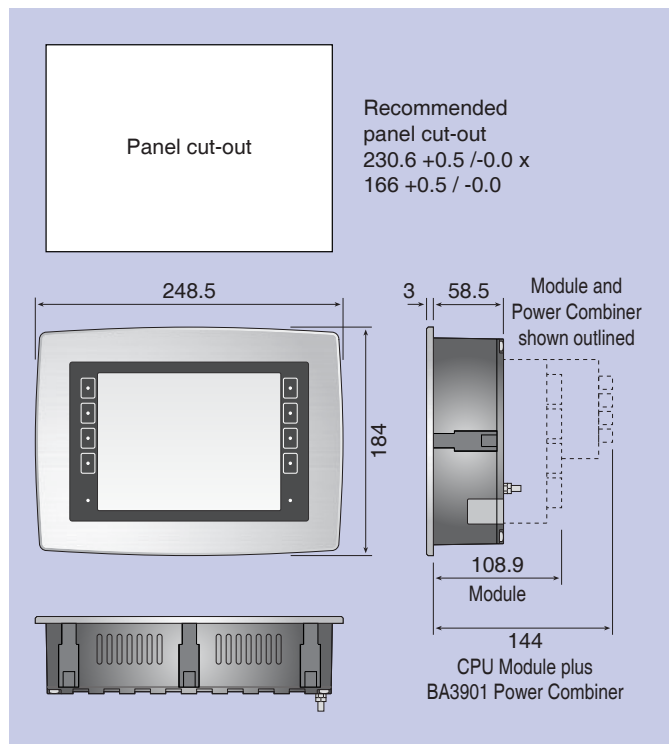
### Input and output

Up to 7 plug-in I/O modules can be accommodated. All are separately certified and any combination may be fitted providing that their total power consumption is not greater than 100% of available power.  
All field inputs and outputs are certified Ex ia IIC T4.

### Environmental

Operating temp Electronics and Modules. -40 to +65°C  
Display -20 to +65°C  
Storage temp -40 to +85°C  
Humidity to 95% at 40°C non-condensing  
EMC Complies with UK & European EMC Directives.

## DIMENSIONS (mm)



### Mechanical

Enclosure  
Front 316 stainless steel surrounding  
4mm thick toughened glass  
display window.  
Sides & rear Noryl UL94V-1 flame class rating  
Ingress protection  
Front IP66  
Rear IP20  
Weight 1.8kg without plug-in modules

## HOW TO ORDER

Pageant operator display **Please specify** BA3101

### Minimum system components

Display plus a plug-in CPU module  
BA3201 CPU without external communication  
or BA3202 CPU with Modbus RTU via  
RS485-IS port

### Plug-in I/O modules

Up to 7 plug-in input or output modules can be accommodated. All are separately certified allowing any combination to be fitted providing that the total power consumption of all the modules does not exceed 100% of the available power.

Model	Module consumption	Function
BA3301	4%	Analogue Input Module 4 x 4/20mA
BA3401	4%	Digital Input Module 8 x Contact
BA3402	40%	Digital Input Module 8 x Proximity Detector
BA3501	4%	Analogue Output Module 4 x 4/20mA
BA3601	4%	Digital Output Module 4 x Contact
BA3701	24%	Digital Input Module 2 x Totaliser or Counter.
	8%	When the inputs are not energised i.e. for voltage pulse inputs.

Popular Pageant modules - others are being certified, please contact BEKA sales office for availability.