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

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.

Rear of BA3101

BEKA associates

BEKA associates Ltd. Old Charlton Rd. Hitchin, Hertfordshire, SG5 2DA, U.K.
Tel. (01462) 438301 e-mail sales@beka.co.uk
website: www.beka.co.uk

Controlin
www.controlin.com • sales@controlin.com

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

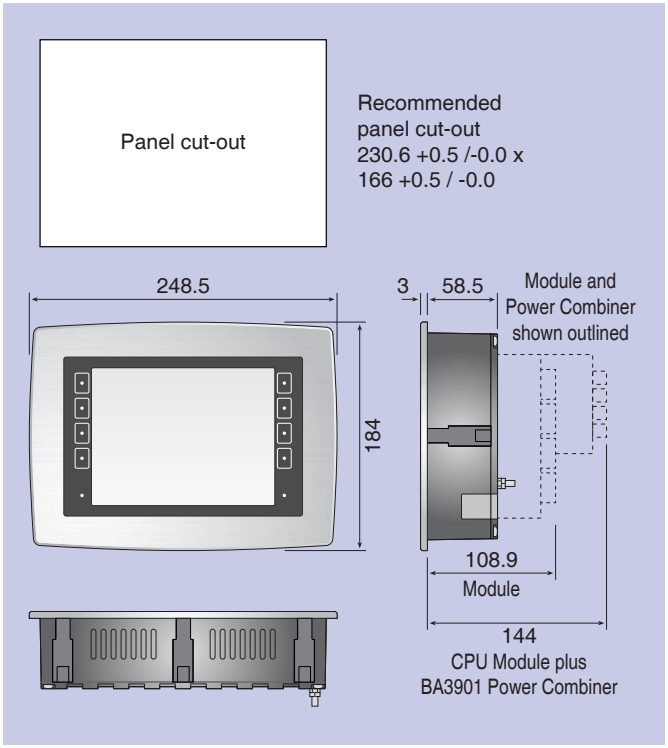
CPU — 1 CPU module must be installed
BA3201 — CPU without external communication
BA3202 — CPU with isolated RS485-IS port Modbus RTU master or slave protocol.

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

	Please specify
Pageant operator display	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.