Standard display formats:
1, 2, 3 or 4 variables
some with bargraphs.

NEW

Power

RS485
or
RS232
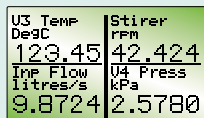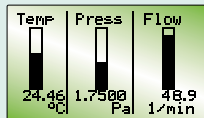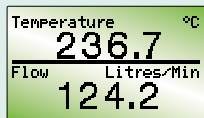
Some of the standard screens

BA688C

Serial text display

General purpose

● *High contrast display with backlight*

● *Modbus, BEKA and Legacy protocols*

● *9 standard screen formats*

● *Six operator push-buttons & two switch outputs*

● *IP66 front panel*

● *Free simulator runs on PC*

● *3 year guarantee*

The BA688C is a dc powered instrument that can display text and simple graphics in a process area. Incorporating six push-buttons and two single pole outputs, the BA688C is a low cost operator interface ideal for simple machine and process control applications.

Available with either an RS485 or RS232 port and incorporating Modbus, BEKA and Legacy protocol, the BA688C may be directly connected to many industrial networks and instruments, including new installations and upgrades to existing systems.

A high contrast liquid crystal display incorporates a green backlight allowing the display to be read in all lighting conditions from full sunlight to total darkness. The text display is therefore suitable for mounting in control panels or incorporated into measuring instruments.

Six push-buttons which may be used for operator acknowledgments or controls are included on the instrument front panel. If larger industrial switches are required, these may be connected to the text display rear terminals. When activated, the front panel push-buttons are automatically disabled.

Two single pole switch outputs, which are controlled via the serial data link, may be used to switch a small load such as a valve, actuator or sounder.

Standard screen formats contain one, two, three or four variables, together with units of measurement, tag descriptions and bargraphs on some of the screens. Use of one of these nine standard screens greatly reduces the amount of programming required and will satisfy most display requirements. If a custom display format is required, this can be developed using BEKA protocol.

Modbus protocol enables up to eight process variables together with their units of measurement and tag descriptions to be displayed. When used with one of the nine standard screen formats, no programming is required apart from setting the BA688C communication parameters and writing each Modbus variable into the BA688C Modbus

register address map. If a custom screen layout is required in a Modbus system this can be constructed using the BEKA protocol.

BEKA protocol allows custom screens using five different font sizes together, lines, boxes and bargraphs to be produced and stored in non-volatile memory. Simple bit map graphics may be downloaded and stored. Information can also be written to a hidden screen that may be displayed when required.

Legacy protocol enables the BA688C to replace an MTL644 for safe area applications without the need for a galvanic communications isolator and with the added advantage of a display backlight. No software changes are required and the BA688C will fit into the existing panel cut-out. If required, simple modifications to the host software will allow the enhanced features of the BA688C to be used i.e. five font sizes, simple graphics, additional operator buttons and a second output.

Scripts are a sequence of commands, downloaded to and stored in non-volatile memory by the BA688C text display, that can be executed by the instrument without intervention from the host. For example a routine may be written to monitor the instruments push-buttons and to change the displayed screen or variable depending upon which button has been operated.

Pattern matching is a powerful feature which allows the BA688C to capture and display data contained in a proprietary ASCII serial string, such as that from a weighing system or barcode reader primarily intended for printing.

The front panel of the BA688C has IP66 protection and a neoprene gasket seals the joint between the text display and the panel, making it suitable for use in areas that will be hosed.

To simplify system design the instruction manual is supplemented by comprehensive Modbus and programming guides plus a free instrument simulator which will run on a PC. All are available from the BEKA sales office or may be downloaded from www.beka.co.uk

Power supply
Voltage | 20 to 36V dc
Current | 95mA max

Display
Type | 120 x 64 pixel backlit liquid crystal
Size | 86.5 x 45mm
Screens
9 standard formats | 1, 2, 3 or 4 variables plus units of measure-ment & tag information, some include bargraphs.
Custom format | See Programming Guide ASCII character set, 5 font sizes
Hidden screen | May be written to at any time and displayed when required.

Controls
Front panel | Six push-buttons which can be software interrogated. Each button function may be displayed on the screen. Buttons may be disabled.

External switches | Control may be transferred to six external switches; front panel buttons are inhibited.
Switch cable length | 5m max

Outputs | Two software controlled single pole relay contacts
Rating | 250V; 5A ac
30V; 5A dc
Reactive loads must be suppressed

Data transmission
Speed | 0.3, 0.6, 1.2, 2.4, 4.8, 9.6,19.2, 38.4, 67.6 &115.2k bps

Format | 1 or 2 stop bits; odd, even or no parity bit; 7 or 8 data bits.

Protocol | Selectable Modbus, BEKA or Legacy that is compatible with the MTL643 & MTL644.

Address
Modbus protocol | 1 – 247
BEKA protocol | 0 – 247 ⎤ Zero reserved for single
Legacy protocol | 0 – 15   ⎦ instrument applications

Environmental
Operating temp | -20 to +60˚C
Humidity | To 95% @ 40˚C
Enclosure | Front IP66, rear IP20
EMC | In accordance with EU Directive 89/336/EEC full report available.
Immunity | No error for 10V/m field strength between 150kHz and 1GHz.
Emissions | Complies with the requirements for Class B equipment

Mechanical
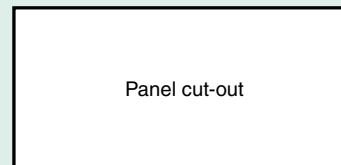Terminals | Removable with screw clamp for 0.5 to 1.5mm² cable.
Weight | 0.7kg

Accessories
Tag number | Thermally printed strip on rear of instrument.
Modbus Guide ⎤
Programming Guide ⎬ May be downloaded from www.beka.co.uk
Instrument simulator ⎦

DIMENSIONS (mm)

Panel cut-out

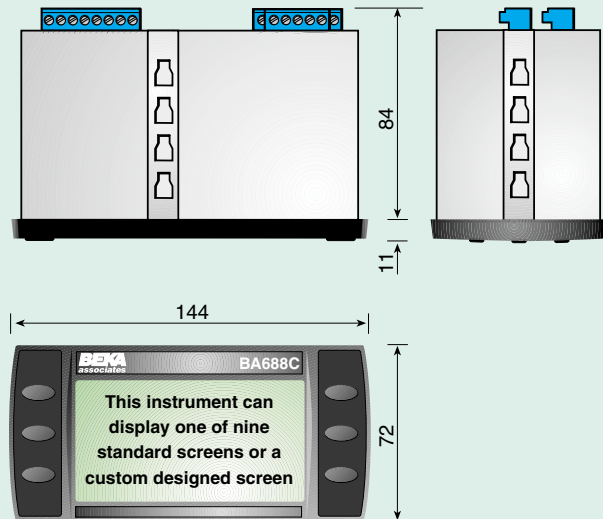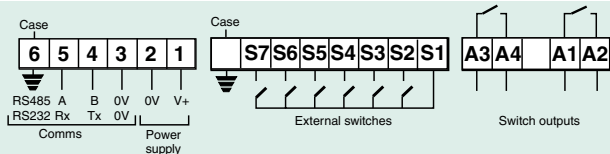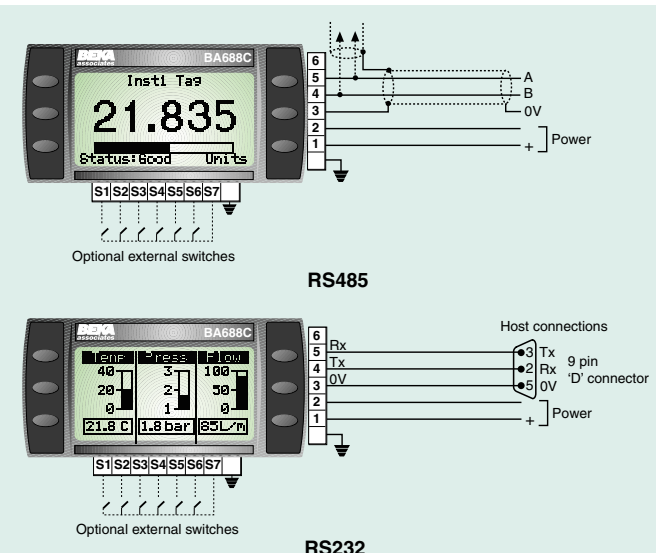**Recommended panel cut-out**

DIN 43 700
138.0 +1.0/ -0.0 x 68.0 +0.7/ -0.0

To achieve an IP65 seal between the instrument and the panel 136.0 +0.5/-0.0 x 66.2 +0.5/-0.0 Four panel mounting clips must be used

84

11

144

72

BA688C

This instrument can display one of nine standard screens or a custom designed screen

TERMINAL CONNECTIONS

| Case | | | | | | | Case |
|6|5|4|3|2|1| | S7 S6 S5 S4 S3 S2 S1 | A3 A4 | A1 A2 |

RS485 | A | B | 0V | 0V | V+
RS232 Rx | | Tx | 0V

Comms | Power supply | External switches | Switch outputs

CONNECTION for RS485 and RS232

BA688C

Insti Tag

21.835

Status:Good   Units

S1 S2 S3 S4 S5 S6 S7

Optional external switches

6
5 — A
4 — B
3 — 0V
2
1 — + ⎤ Power
  — − ⎦

RS485

BA688C

Temp Press Flow
40 3 100
20 2 50
0   1   0
21.8 C 1.8 bar 85L/m

S1 S2 S3 S4 S5 S6 S7

Optional external switches

Host connections

6
5 Rx — 3 Tx
4 Tx — 2 Rx   9 pin 'D' connector
3 0V — 5 0V
2
1 — + ⎤ Power
  — − ⎦

RS232

HOW TO ORDER

Please specify
Model number | BA688C
Communication port | RS485 or RS232
Accessories | **Please specify if required**
Tag number | Legend
Modbus Guide | Serial Text Display – Modbus Guide
Programming Guide | Serial Text Display – Programming Guide
Instrument simulator | Instrument simulator for use on personal