

The **BA578E** is a two input general purpose instrument that may be configured as a Timer or as a Clock. As a Timer it is able to measure and display the elapsed time between external events, or control external events via the status and optional control outputs. When configured as a Clock the instrument can display time in a variety of formats. The BA578E is controlled by two inputs which may be independently configured on-site to operate with a magnetic pick-off, switch contact, proximity detector, open collector or a voltage output sensor.

**Configuration** may be performed on-site via the front panel push buttons using the easy to use and well documented menus. The Timer employs a state and event structure to simplify configuration. The BA578E can be supplied configured to customers requirements including a customer defined printed scale card for no additional charge.

**Applications as a Timer** include displaying the time interval between two events detected by one or two sensors such as 2-wire proximity detectors. The Timer can control an external event using the isolated open collector status output if only a single output is required. If it is required to switch more than one circuit, additional dual isolated control outputs are available as a factory fitted option. The Timer is able to perform common industrial timing application such as those associated with dosing or sampling where a solenoid valve is required to be regularly opened for a defined time. The Timer includes a powerful cycle function which can be configured to repeat the timing function up to 99 times or continuously, with up to 100 hours delay between timed periods.

**As a Clock** local time can be displayed in various twelve or twenty four hour formats and the display may be synchronised to a pre-set time via the external reset input.

Optional control outputs may be configured to switch loads on or off at pre-set times twice during each twenty four hour period.

**The display** has high contrast and a wide viewing angle, enabling the instrument to be read in most lighting conditions over a wide temperature range.

**Display backlighting** which is internally powered, is available as a factory fitted option. It provides green background illumination enhancing daylight viewing and allowing the display to be easily read at night or when installed in a poorly illuminated area.

**IP66 front panel protection** with a neoprene gasket to seal the joint between the instrument and the instrument panel allows the BA578E to be installed in areas that will be washed down.

**Optional control outputs** can switch process area loads such as a sounder or solenoid valve. The two galvanically isolated, solid state voltage free outputs may be independently configured with normally open or closed outputs. Annunciators on the BA578E display show the status of both control outputs.

**When panel space is limited** the BA577E single input Timer or Clock provides similar features in a smaller 96 x 48mm DIN enclosure. For installations in marine or hostile environments the BA577E-SS is functionally identical to the BA577E but has a rugged stainless steel enclosure with a 10mm thick window.

**For applications in flammable atmospheres** the BA378E, which is functionally identical to the BA578E, has international intrinsic safety certification. The one input BA377E also has intrinsic safety certification and the rugged BA377NE has Ex nA and Ex tc allowing installation in Zones 2 or 22 without Zener barriers or galvanic isolators.

# BA578E

## Two input timer or clock

### General purpose

- ◆ May be configured as a Timer or as a Clock.
- ◆ Configurable inputs: magnetic pick-off, switch contact, proximity detector, open collector or voltage pulse.
- ◆ Two Separate displays
- ◆ 144 x 72mm DIN enclosure with IP66 front protection.
- ◆ Isolated status output
- ◆ Optional: Backlight  
Dual controls outputs
- ◆ 3 year guarantee

# BEKA

## associates

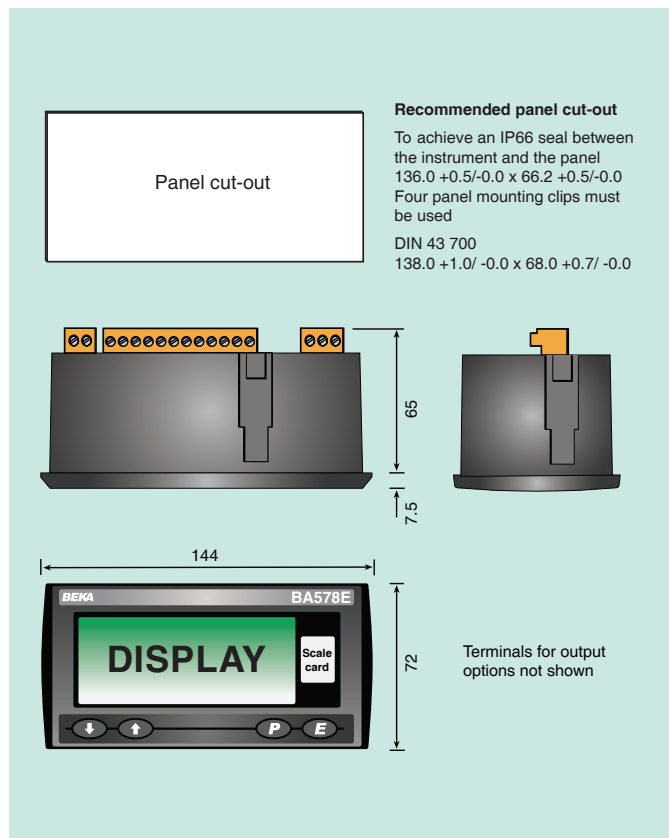
Sales & Support Distributor:-  
Stockshed Limited. Stoneycroft House,  
Mud Lane, Eversley. Hampshire.  
RG27 0QS. U.K. Tel. (0118) 9734955  
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## SPECIFICATION

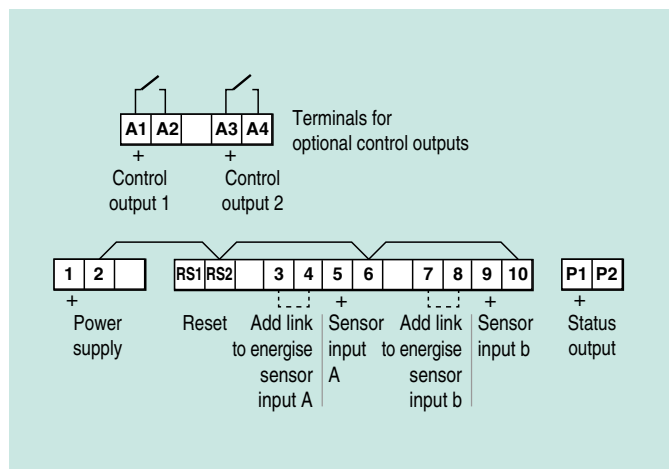
|   |  |              |                      |
|---|--|--------------|----------------------|
| <b>Power supply</b>                         |  |              |                      |
| Voltage                                     | 10 to 30V dc   |              |                      |
| Current                                     | 22mA max plus 16mA for the optional backlight.   |              |                      |
| <b>Input A &amp; b</b>                      |  |              |                      |
|   | <b>Lower</b>   | <b>Upper</b> | switching thresholds |
| Switch contact                              | 100Ω   | 1kΩ          |                      |
| Proximity detector (NAMUR)                  | 1.2mA  | 2.1mA        |                      |
| Open collector                              | 2kΩ  | 10kΩ         |                      |
| Magnetic pick-off                           | 0  | +40mV        |                      |
| Voltage pulse (low)                         | 1V   | 3V           | 30V max              |
| Voltage pulse (high)                        | 3V   | 10V          | 30V max              |
| <b>Display</b>                              |  |              |                      |
| Type  | Liquid crystal   |              |                      |
| Primary                                     | 18mm high  |              |                      |
| Secondary                                   | 12mm high  |              |                      |
| Format                                      | hh:mm:ss ; hh:mm ; mm:ss or s  |              |                      |
| <b>Remote Timer reset &amp; Clock sync.</b> |  |              |                      |
|   | Contact closure with resistance less than 10kΩ   |              |                      |
| <b>Timer</b>                                |  |              |                      |
| Status output                               | Isolated, voltage free, open collector   |              |                      |
| Ron   | 51Ω + 3V max   |              |                      |
| Roff  | 1MΩ min  |              |                      |
| I max                                       | 10mA   |              |                      |
| Maximum duration                            | 99h 59m and 59s or equivalent in any display format.   |              |                      |
| Maximum delay between cycles.               | 99h 59m and 59s or equivalent in any display format.   |              |                      |
| Grand total run-time                        | 5 x 10 <sup>6</sup> hours maximum  |              |                      |
| <b>Clock</b>                                |  |              |                      |
| Timekeeping accuracy.                       | Less than ±0.43s error per day over full operating temperature range.  |              |                      |
| <b>Environmental</b>                        |  |              |                      |
| Operating temp                              | -40 to +70°C display -20 to +70°C  |              |                      |
| Storage temp                                | -40 to +85°C   |              |                      |
| Humidity                                    | To 95% at 40°C non condensing  |              |                      |
| Vibration                                   | Report available   |              |                      |
| Enclosure                                   |  |              |                      |
| Material                                    | Noryl SE1GFN3  |              |                      |
| Ingress                                     | Front IP66, rear IP20  |              |                      |
| EMC   | Complies with EMC Directive 2014/30/EU   |              |                      |
| <b>Mechanical</b>                           |  |              |                      |
| Terminals                                   | Screw clamp for 0.5 to 1.5mm <sup>2</sup> cable, removable.  |              |                      |
| Weight                                      | 0.35kg   |              |                      |
| <b>Accessories</b>                          |  |              |                      |
| Backlight                                   | Green LED internally powered   |              |                      |
| Control outputs                             | Two outputs each of which may be independently configured as a NO or NC output.  |              |                      |
| Outputs                                     | Isolated single pole, voltage free solid state switch.   |              |                      |
| Ron   | 5Ω + 0.7V max  |              |                      |
| Roff  | 1MΩ min  |              |                      |
| V max                                       | 30V dc   |              |                      |
| I max                                       | 200mA  |              |                      |
| Scale card                                  | Blank card fitted to all instruments. Can be supplied printed with specified units of time for no additional charge at time of purchase. ~ |              |                      |
| Tag legend                                  | Specified tag number or application printed onto rear of instrument. ~   |              |                      |

~ See accessory datasheet for details

## DIMENSIONS (mm)



## TERMINAL CONNECTIONS



## HOW TO ORDER

|                    |   |
|--------------------|---|
| Model number       | <b>Please specify</b><br>BA578E                         |
| Function           | Timer or Clock  |
| Input              | Type for each input *                                   |
| <b>Accessories</b> | <b>Please specify if required</b>                       |
| Display backlight  | Backlight   |
| Control outputs    | Control outputs   |
| Scale card         | Legend required   |
| Tag                | No charge if ordered with instrument<br>Legend required |

\* BA578E can be supplied configured as required for no additional charge, see instruction manual, which can be downloaded from [www.beka.co.uk/ba578e](http://www.beka.co.uk/ba578e) for details. If configuration information is not supplied, instrument will be configured as a Timer with an open collector input. Can easily be reconfigured on-site.