

Shown with optional separately powered display backlight

The **BA578C** is a totally new panel mounting indicating temperature transmitter which simplifies temperature measurement and display in process areas. It provides an accurate local digital temperature display from most common thermocouples or resistance thermometers, plus a 4/20mA analogue output current which may be scaled to represent any temperature range. The transmitter incorporates a 20mm high easy to read liquid crystal display and may be supplied with an optional LED backlight. Two adjustable alarms can also be fitted to provide over and under temperature warnings.

Main application of the BA578C is to display temperature in a process area, and to transmit a 4/20mA current to other instruments. Units of display may be °C or °F, and the linearised 4/20mA output can be scaled to represent any temperature range. The transmitter may be programmed on-site to operate with most common thermocouples and resistance thermometers, and includes facilities for differential temperature measurement. Millivoltage outputs from pressure, weighing and position transducers can also be displayed in engineering units and transmitted as a 4/20mA current.

Calibration and programming is performed via the four front panel push-buttons which 'click' when operated. The programming functions are contained in easy to understand menus which are protected by a four digit user definable security code. All the instrument functions are programmable; including type of input, display units, and the range

of the 4/20mA output. Calibration may be performed using the internal references, an external temperature calibrator or a voltage or resistive source. Loss of power does not affect calibration, as all settings are retained for at least five years after the instrument is switched off or disconnected.

Display backlighting is available as an option to improve readability when the BA578C is installed in a poorly illuminated area. High efficiency LEDs provide an even glow to enhance the display contrast.

Optional alarms provide two galvanically isolated solid state outputs which may be independently programmed as high or low trips. Each alarm can switch a 30V, 100mA dc load.

The front panel is a robust, easy to clean Noryl moulding sealed with a non-reflective, scratch resistant polyester membrane. A captive neoprene gasket provides an IP65 seal between the enclosure and the panel.

Reliability is ensured by an ISO9001 approved quality control system supported by a three year guarantee. The BA578C is protected from reverse connection and overrange inputs, and incorporates extensive radio frequency filtering to comply with the European EMC Directive.

Complementary transmitters for field mounting and use in hazardous areas are available, see BA574C, and BA378C datasheets respectively.

BA578C

Indicating temperature transmitter

General purpose

- ◆ Large display
- ◆ Loop powered
- ◆ THC, RTD or voltage input
- ◆ Optional: Display backlight Alarms
- ◆ 144 x 72mm DIN enclosure with IP 65 front
- ◆ 3 year guarantee

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associates

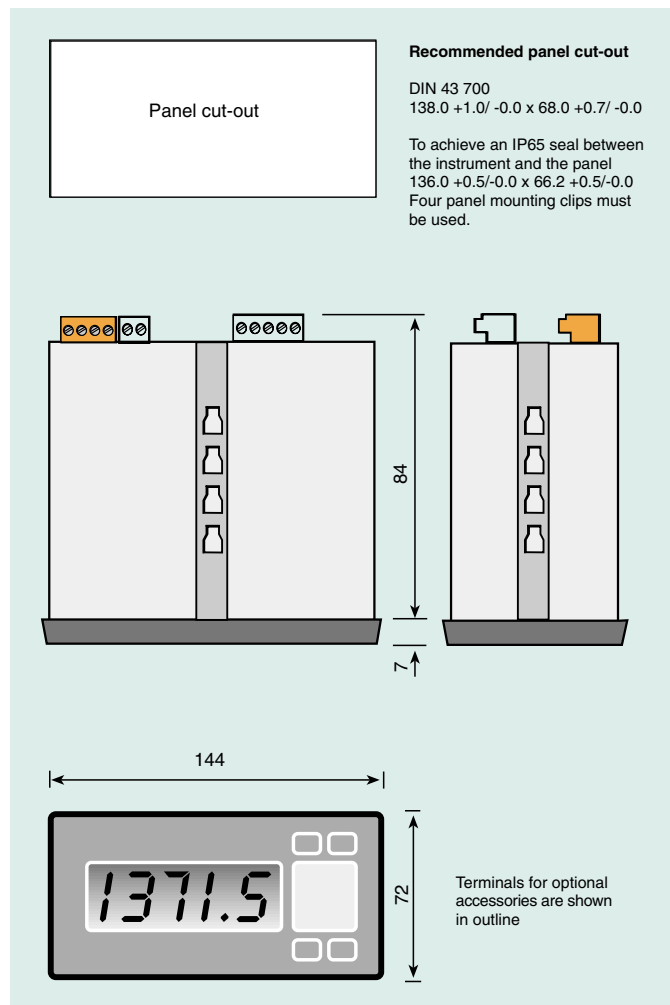
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SPECIFICATION

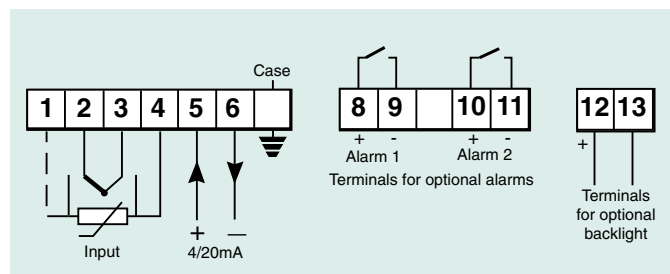
| | | | | |
|---|--|---------------------------------|-----------------------|--|
| Supply | | | | |
| Voltage | 10 to 30V | | | |
| Output | (loop power current) | | | |
| Current | 3.8 to 22mA | | | |
| Resolution | 1µA | | | |
| Resistance | 5M ohm minimum | | | |
| Display | | | | |
| Type | Liquid crystal 20mm high | | | |
| Reading rate | 2 per second | | | |
| Overrange | 4 least significant digits are blanked | | | |
| Input | Type | Display range °C | Display resolution °C | |
| Thermocouple | E | -205.0 to 1000.0 | 0.1 | |
| | J | -210.0 to 1200.0 | 0.2 | |
| | K | -205.0 to 1372.0 | 0.2 | |
| | N | 0.0 to 1300.0 | 0.1 | |
| | R | 0.0 to 1767.0 | 0.5 | |
| | T | -200.0 to 400.0 | 0.1 | |
| | Pallaplat | -100.0 to 490.0 | 0.2 | |
| | Selectable ON or OFF | | | |
| | Cold junction compensation. | Selectable UP, DOWN or OFF | | |
| | Broken THC detection. | Selectable UP, DOWN or OFF | | |
| Resistance thermometer | | | | |
| Type | Pt100 BS EN60751:1996 three or four wire connection, or differential. | | | |
| Excitation current | 175µA | | | |
| Resolution | 0.1°C | | | |
| Voltage | | | | |
| Range | ±75mV | | | |
| Resolution | 2.38µV | | | |
| Isolation | 250V rms between input and output | | | |
| Performance | | | | |
| Effect of temperature on display | | | | |
| Zero drift | Voltage input 1µV/°C | THC input 1µV/°C + 0,02°C/°C | RTD input 20ppm/°C | |
| Span drift | <30ppm/°C | <30ppm/°C | <80ppm/°C | |
| Effect of temperature on 4/20mA output (in addition to above) | | | | |
| Zero drift | 20ppm/°C | | | |
| Span drift | 50ppm/°C | | | |
| Linearity | <0.1% error for all types of input | | | |
| Series mode ac rejection | <0.1% error for 150mV rms 50 or 60Hz | | | |
| Common mode ac rejection | <0.1% error for 250V rms 50 or 60Hz | | | |
| Environmental | | | | |
| Operating temp | -20 to +60°C (Certified for use at -40°C) | | | |
| Storage temp | -40 to +85°C | | | |
| Humidity | To 95% at 40°C non-condensing | | | |
| Enclosure | Front IP65 rear IP20 | | | |
| EMC | In accordance with EU Directive 89/336/EEC, full report available. | | | |
| Mechanical | | | | |
| Terminals | Blue screw clamp for 0.5 to 1.5mm ² cables | | | |
| Weight | 0.5kg | | | |
| Accessories | | | | |
| Separately powered backlight | LED backlight powered from 18 to 30V dc supply. | | | |
| Alarms | Two independent alarms each of which may be programmed as a high or low trip with a NC or NO output. | | | |
| Outputs | Isolated solid state switch | | | |
| Ron | Less than 5Ω + 0.6V | | | |
| Roff | Greater than 180k | | | |
| Vmax | 30Vdc | | | |
| Imax | 100mA | | | |
| Typeset scale card | Blank scale card fitted to each instrument can be supplied typeset with units of measurement.* | | | |
| Tag number | Thermally printed number on rear of the instruments. * | | | |

*See accessory datasheet for details

DIMENSIONS (mm)



TERMINAL CONNECTIONS



HOW TO ORDER

| | | |
|------------------------------------|--|------------------------|
| Model number | BA578C | |
| Input | THC & type, RTD & type or voltage* | |
| CJ compensation | On or OFF |] For THC input |
| Broken THC drive | Up, Down or Off | |
| Input voltage range | mV zero and span and corresponding displays. |] For voltage input |
| Display units | °C or °F | |
| Display resolution | High or low |] For THC & RTD inputs |
| Display at which output is: | 4mA 20mA | |
| Accessories | | |
| Display backlight | Separately powered backlight | |
| Alarms | Alarms# | |
| Scale card | Legend | |
| Tag number | Legend | |

*If calibration information is not supplied, will be set for 3 wire RTD input with 4 to 20mA output corresponding to a display of 0.0 to 100.0°C.
#Contact BEKA if calibration of accessories is required.