

BC 1100 Controller

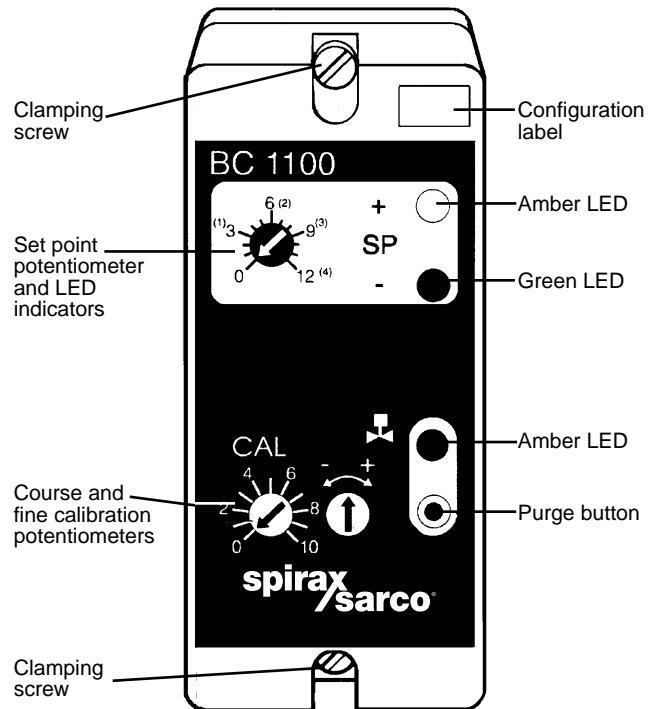
- Compact conductivity/blowdown controller
- DIN rail or chassis mounted
- Wide conductivity range
- 110V or 240V supply

Description

The Spirax Sarco BC1100 controller is part of an integrated range of boiler house equipment, designed for DIN rail or chassis mounting. The controller is used in conjunction with a Spirax Sarco conductivity sensor and blowdown valve to monitor and control the concentration of total dissolved solids (TDS) in steam boilers. This is achieved by opening the blowdown valve periodically to purge the system and allow a sample of boiler water to pass the sensor. The electrical conductivity of this sample is compared with the set point selected on the controller front panel. If the conductivity is lower than the set point, the controller allows the blowdown valve to close. If the conductivity is higher than the set point, the valve remains open, allowing the contaminated boiler water to be replaced by clean make-up water. The valve closes when the conductivity of the boiler water drops below the set point. The BC 1100 has a set point potentiometer, and coarse and fine calibration potentiometers on the front panel. A green LED indicates that the controller is operating, and that the conductivity is below the set point. An amber LED indicates that the conductivity is above the set point. A purge button is provided to open the blowdown valve manually, and a second amber LED indicates that the blowdown valve is open. Voltage, range, and output parameters are set on installation using internal switches. A pulsed or continuous output to the blowdown valve may be selected. The pulsed output is suitable for smaller boilers, where continuous valve operation may cause the boiler water level to fall excessively. As well as the relay output, the BC 1100 has a 4-20mA (or 0-20mA) output. If required, this output signal can be held low (4 or 0mA) when the blowdown valve is closed. This switch-selectable feature is useful for in-line sensor installations to prevent a slowly falling signal being transmitted when the blowdown valve is closed and the blowdown line is cooling.

Limiting conditions

- Enclosure protection rating: IP40
- Indoor use only.
- Altitude: up to 2000 m.
- Maximum relative humidity 80% for temperatures up to 31°C decreasing linearly to 50% relative humidity at 40°C.
- Pollution degree: 2
- Installation category (overvoltage category): II
- Enclosure protection rating.
- Ambient temperature range: 32 - 130°F (0 -55°C)
- Sensor operating temperature range: 212°F to 462°F (100°C to 239°C)
- Minimum conductivity: 40 uS/cm or ppm
- Maximum resistance of 0/4-20mA (Negative is grounded to the boiler at the probe): 1KΩ



Technical data

Mains supply voltage

230V setting 198-264V

115V setting 99-132V

Frequency 50-60Hz

Fuse type 20mm cartridge 100mA anti-surge (T)*

Relay Load	Rating
Lamp or Resistive @ 240V	3A
Tungsten Filament @ 240Vac	1A
AC Motor @ 240Vac	1/4HP (2.9A)
AC Motor @ 120Vac	1/10HP (3A)
Control circuits & Coils (Pilot Duty)	C300 (2.5A)

Relays and supply voltage must be protected with 3 Amp quick blow fuses. The burner input must be protected with a 1 Amp quick blow fuse.

Maximum power consumption 6VA

Flying leads: 18AWG, 105°C, 600V Copper conductor

Switching hysteresis 5% of set point

Purge time: 10, 20, 60, or 120 seconds

Time between purges Every 30 min or every 30 min of boiler firing

Blowdown Continuous or intermittent (10 seconds open, 20 seconds closed)

Signal current output: 0-20 or 4-20mA representing controller range.

Blanking feature mA continuous or mA blanked (does not operate when valve closed)

*Replacement fuses to be UL recognized Components to retain the integrity of the Approval

BC1100 Controller

Dimensions (approximate) in inches and millimeters

Ranges

Ranges at 77°F (25°C) (μS/cm or ppm, switch selectable)

40 -	400
120 -	1200
400 -	4000
1200 -	12000

Installation

WARNING:-

Isolate the mains supply before unplugging the controller as live terminals at mains voltage will be exposed in the controller base.

The controller must be installed in an enclosure or control panel to provide environmental protection. The controller may be mounted on a 'top hat' DIN rail using the mounting clip provided or the clip may be removed and the controller base screwed direct to a chassis plate.

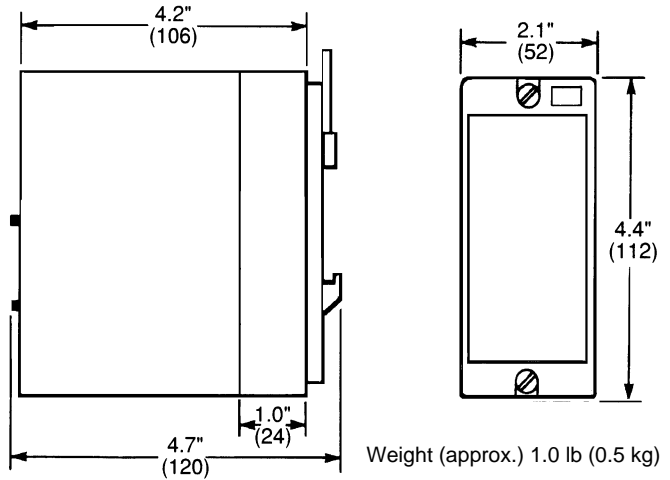
The controller is supplied with flying leads attached. A proprietary terminal block is required to connect the controller to the field wiring." Full installation and Maintenance Instructions are supplied with the controller.

Materials

Enclosure base and connector	Noryl SE1 GFN 2
Enclosure cover and intermediate plate	R-ABS 90.00

How to order

Spirax Sarco BC1100 UL blowdown controller.



How to specify

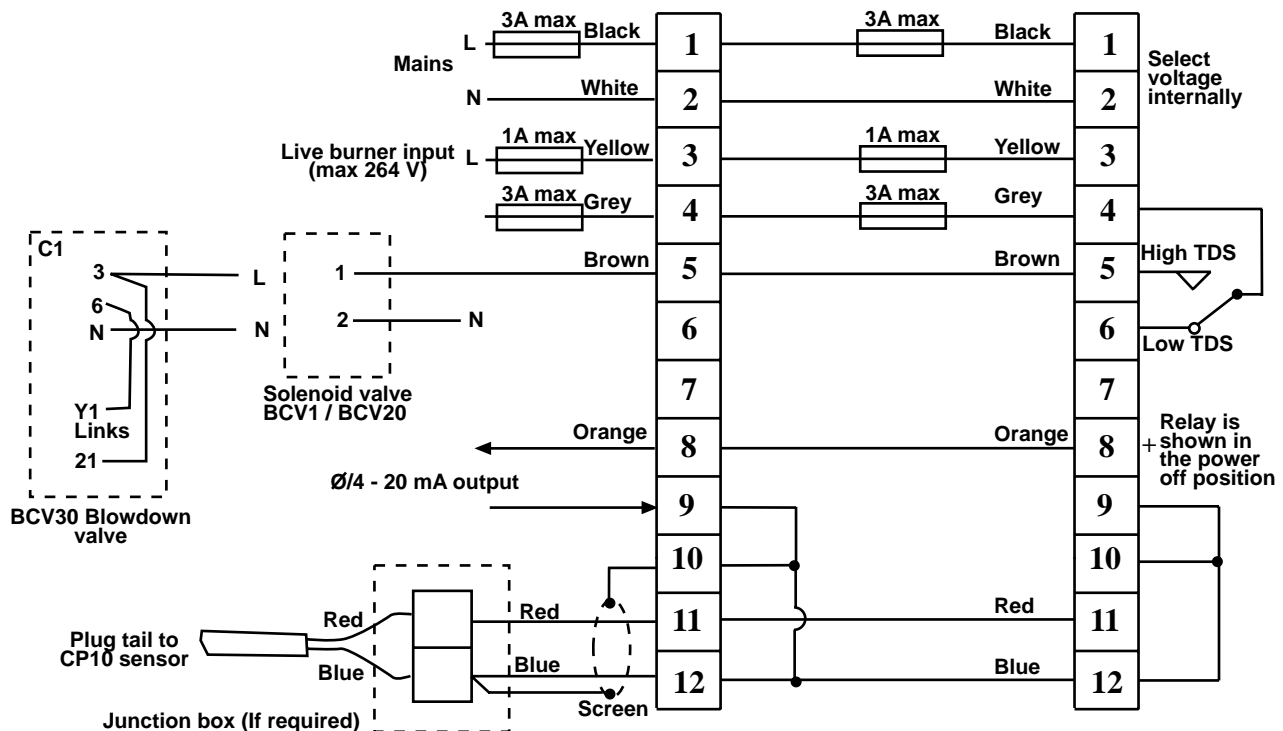
DIN rail mounting conductivity/blowdown controller for on/off valve operation. Suitable for use with the sensor in the blowdown line, and having adjustable range and purge settings. Controller to be approved by Underwriters Laboratory as a Listed product.

Approvals

UL	UL 3121-1
United States Standard	Process Control Equipment, Electrical E209497
ULC	C22.2 No. 1010.1
Canadian Standard	Process Control Equipment, Electrical E209497

Field Wiring Terminal Block

BC1100



TIS 9.106 US 01.01