



Cert. No. LRQ 0963008

ISO 9001

BC3100 Controller

Description

The Spirax Sarco BC3100 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 to monitor and control the concentration of total dissolved solids (TDS) in steam boilers, and for applications such as feedwater conductivity monitoring and condensate contamination detection. For blowdown purposes, control is normally achieved by means of a valve which opens when the TDS rises above the set level and closes when the TDS returns to normal.

An adjustable high TDS alarm with relay output and a 0 - 20 mA or 4 - 20 mA output are included as standard.

The BC3100 has six ranges, selected by an internal switch, and can be calibrated in ppm or $\mu\text{S}/\text{cm}$. Configuration labels are provided for the controller front panel and enclosure chassis plate.

The BC3100 has a manually switched probe cleaning circuit (UK Patent No. 2276943), which allows the system to maintain its accuracy even when some boiler scaling is taking place. It should not be regarded as a substitute for adequate water treatment.

A Pt100 temperature probe is also available to compensate the conductivity measurement for boilers where the working pressure varies, for coil boiler feedtanks, or for other water and condensate systems.

Limiting conditions

Enclosure protection rating	IP40
Maximum ambient temperature	55°C (131°F)
Minimum ambient temperature	0°C (32°F)
Accuracy for blowdown duties	±10%
Minimum conductivity	10 $\mu\text{S}/\text{cm}$ or 10 ppm

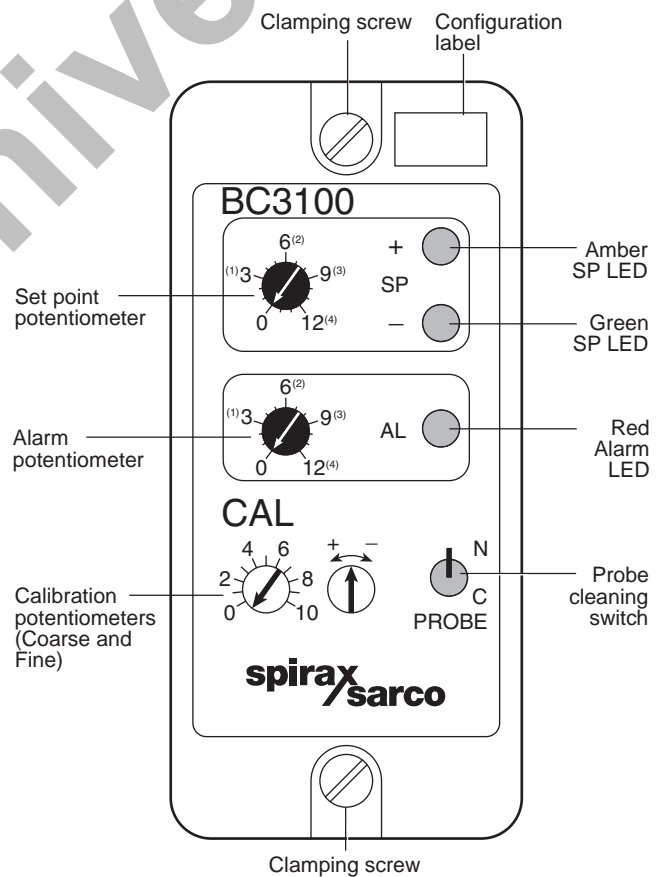
Technical data

Mains supply voltage	230 V setting	198 - 264 V
	115 V setting	99 - 132 V
	Frequency	50 - 60 Hz
Useable ranges - switch selectable	Maximum power consumption	6 VA
	10 - 40	$\mu\text{S}/\text{cm}$ or ppm
	12 - 120	$\mu\text{S}/\text{cm}$ or ppm
	40 - 400	$\mu\text{S}/\text{cm}$ or ppm
	120 - 1 200	$\mu\text{S}/\text{cm}$ or ppm
Internal fuse	400 - 4 000	$\mu\text{S}/\text{cm}$ or ppm
	1 200 - 12 000	$\mu\text{S}/\text{cm}$ or ppm
	100 mA (T)	
Relay contact rating	20 mm anti-surge	
	250 Vac	
Relay contact rating	2.5 A resistive	
	1 A inductive	

Caution: Relays must be protected by an external 3 A quick-blow fuse.

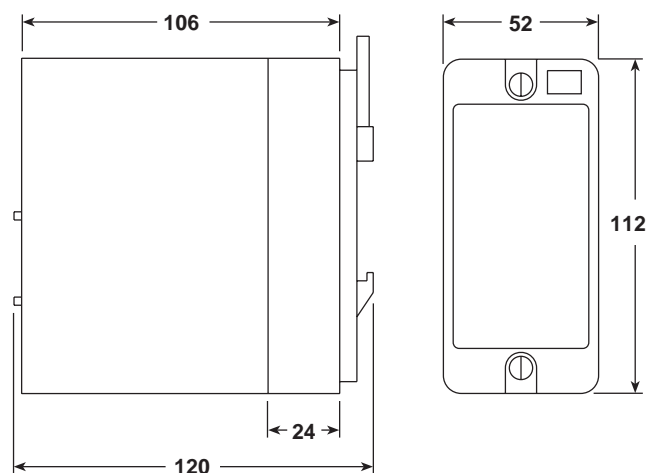
Materials

Enclosure base	ABS CYCOLAC
Connector	NORYL SE1
Enclosure cover and intermediate plate	R-ABS 90.00

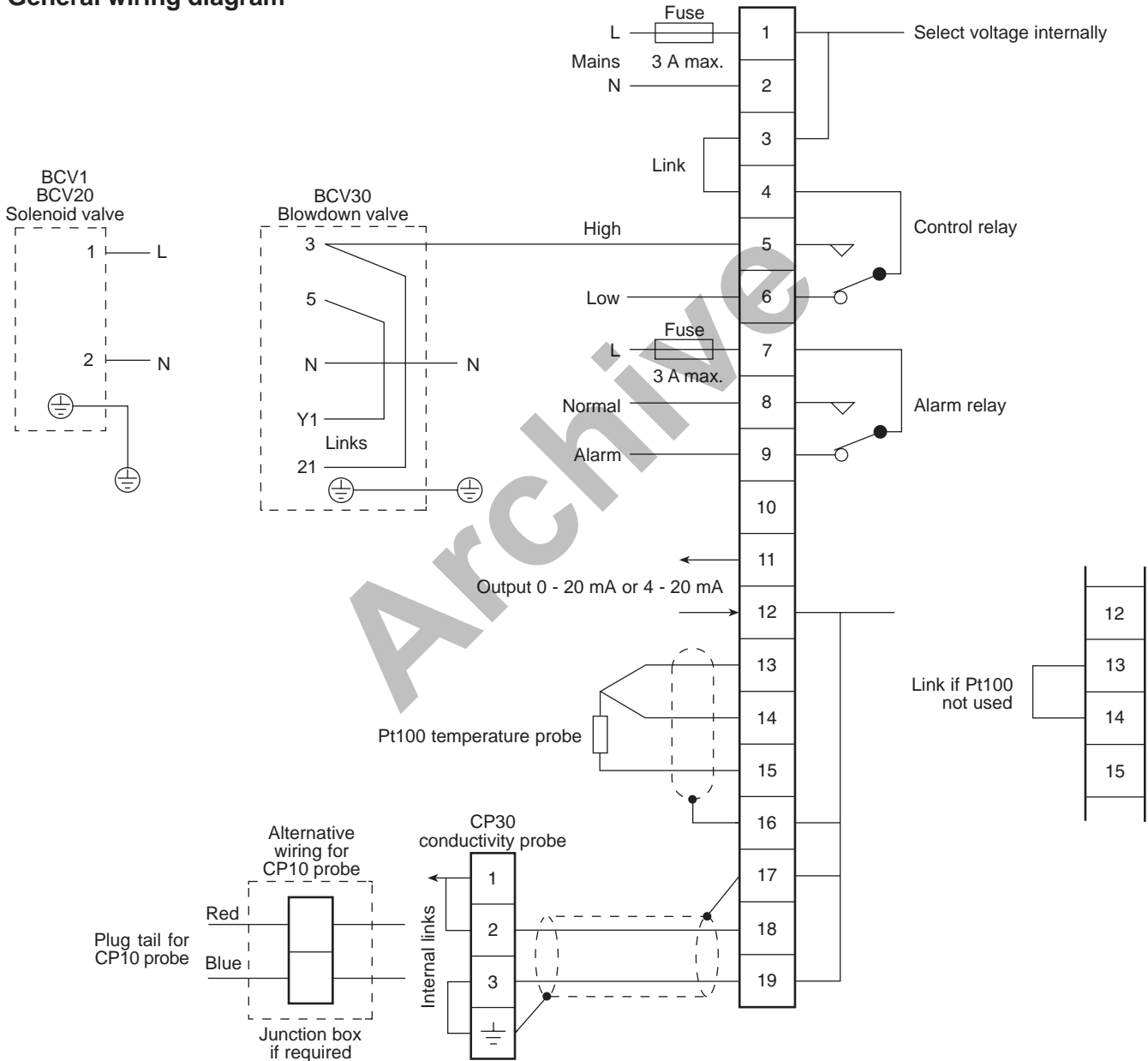


Dimensions/weights (approximate) in mm and g

Weight 430 g



General wiring diagram



Installation

Pollution degree 2

Overvoltage capacity II

Maximum probe cable length:

Maximum water conductivity at 25°C (77°F)	Maximum cable resistance	Maximum cable length (m)	
		2 core cable (Single cores)	4 core cable (2 cores in parallel)
12 000 µS/cm	0.11 Ω	6.25	12.5
8 000 µS/cm	0.17 Ω	9.5	19.0
4 000 µS/cm	0.35 Ω	19.0	38.0
1 500 µS/cm	0.90 Ω	50.0	100.0
<1 200 µS/cm	0.90 Ω	100.0	-

WARNING

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

The controller must be installed in an enclosure or control panel to provide environmental protection (IP54 minimum).

Spirax Sarco can supply suitable enclosures. 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.

Screened cable is required for the probe. A suitable cable is Pirelli FP200 or Delta Crompton Firetuf OHLS, 1 mm². The same type of cable may be used for the mains wiring. Full wiring, commissioning and operating instructions are given in the Installation and Maintenance Instructions supplied with the controller.

How to specify

TDS controllers shall be Spirax Sarco type BC3100 for the control of TDS concentration in steam boilers and other related applications. They must be DIN rail or chassis mounted and be housed in a case giving IP40 protection rating. They must incorporate adjustable set point and alarm potentiometers, main and fine calibration potentiometers, and a patented manually switched probe conditioning circuit.

How to order

Example: 1 off Spirax Sarco BC3100 controller.