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ISO 9001

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ST Issue 1

CHRYSSAFIDIS

BT1050
Boiler Blowdown Timer

Description

The BT1050 is a timer for the control of a bottom blowdown valve. It allows the bottom blowdown valve to open, removing precipitated solids that could otherwise build up and eventually cause damage.

The BT1050 has three timers. These allow different blowdown cycle times and durations to be set, for example, MON - FRI. Up to three blowdown cycles can be selected in one day. The timers can also be used to prioritise boiler blowdown cycles.

The product can be panel, DIN rail or chassis mounted and is powered by a 99 to 264 Vac mains supply.

The front panel has an LCD graphic display and five-button keypad.

A test function provides the operator with a diagnostic tool.

The BT1050 can communicate via an infrared link between adjacent units. It can be designated as either a slave or a master unit, and connected to a two or four wire EIA/TIA-485 multi-drop network.

Up to nine BT1050 (or BT1000) units can be installed and linked for multi-boiler installations.

Approvals

The BT1050 complies with Electromagnetic Compatibility Directive 2004/108/EC and all its requirements.

This product is suitable for Class A environments (e.g. industrial). A fully detailed EMC assessment has been made and has the reference number UK Supply BH BT1050 2008.

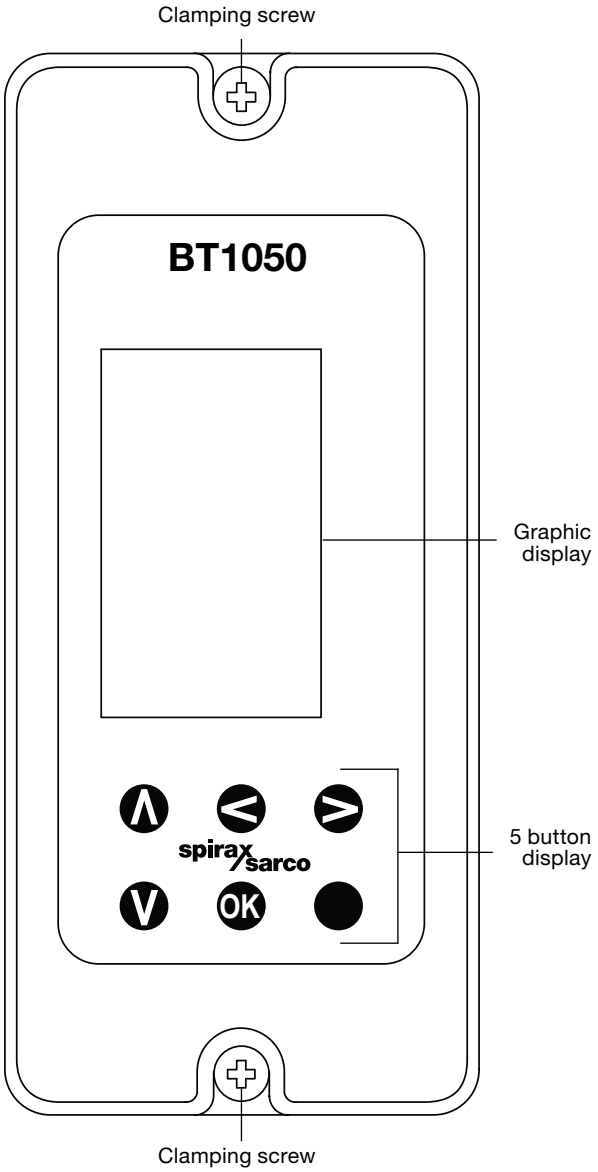
The BT1050 complies with the Low Voltage Directive (2006/95/EC) by meeting the standards of:

- EN 61010-1:2001 safety requirements for electrical equipment for measurement, control, and laboratory use.

The BT1050 is UL listed (open).

Principal features:

- Purpose designed for bottom blowdown duties.
- Three separately adjustable timers.
- Straightforward to commission – quick set-up option.
- Universal power supply - 99 Vac to 264 Vac.
- Timers prevent boilers from blowing down in rapid succession.
- Warns if valve fails to open or close.



Technical data BT1050

Power supply		Mains voltage range	99 Vac to 264 Vac at 50/60 Hz	
		Power consumption	7.5 W (maximum)	
Environmental		General	Indoor use only	
		Maximum altitude	2 000 m (6 562 ft) above sea level	
		Ambient temperature limits	0 - 55°C	
		Maximum relative humidity	80% up to 31°C decreasing linearly to 50% at 40°C	
		Overvoltage category	III	
		Pollution degree	2 (as supplied)	
			3 (when installed in an enclosure) - Minimum of IP54 or UL50 / NEMA Type 3, 3S, 4, 4X, 6, 6P or 13.	
		Enclosure rating (front panel only)	NEMA type 4 hose down only (UL approval) and IP65 (verified by TRAC Global)	
		LVD (safety)	Electrical safety EN 61010-1	
			UL61010-1	
			CAN/CSA C22.2 No. 61010-1	
		EMC	Immunity	EN 61326: A1 + A2 Annex A Table 1 for industrial locations
			Emissions	EN 61326: A1 + A2 Class A Table 4
		Enclosure	Material	Polycarbonate
		Front panel	Material	Silicone rubber, 60 shore.
		Solder	Tin/lead (60/40%)	
Mains and signal connector		Termination	Rising clamp plug-in terminal blocks with screw connectors. **Caution:** Use only the connectors supplied by Spirax Sarco Ltd. Safety and Approvals may be compromised otherwise.	
		Cable size	0.2 mm² (24 AWG) to 2.5 mm² (12 AWG).	
		Stripping length	5 - 6 mm	
Cable/wire and connector data	**Switch box and Lockout (link) circuit**	Type	High temperature	
		Shield type	Screened	
		Number of cores	2	
		Gauge	1 – 1.5 mm² (18 - 16 AWG)	
		Maximum length	100 m (328 ft)	
		Recommended type	Prysmian (Pirelli) FP200, Delta Crompton Firetuf OHLS	
	RS485 communication	Type	EIA RS485 twisted pair	Please note that LAN Cat 5 or Cat 5E ScTP (screened), FTP (foil) or STP (shielded) cable can be used, but limited to 600 m.
		Shield type	Screened	
		Number of pairs	2 or 3	
		Gauge	0.23 mm² (24 AWG)	
		Maximum length	1200 m (4000 ft)	
		Recommended type	Alpha wire 6413 or 6414	

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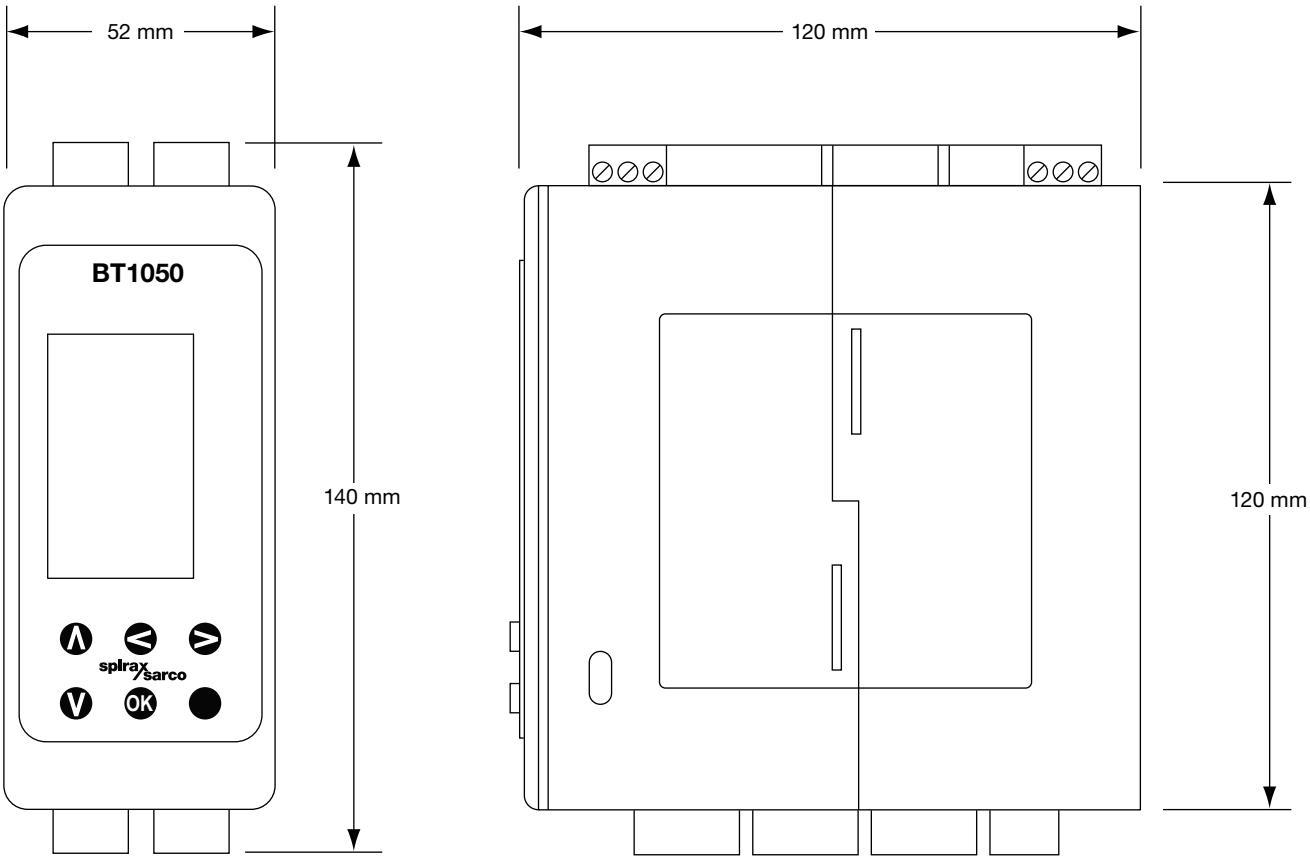
Technical data BT1050 (continued)

Input	**Switch box**	Maximum voltage	32 Vdc (no load, open circuit)	
		Maximum current	3 mAdc (short circuit)	
	Lockout (link)	Maximum voltage	32 Vdc (no load, open circuit)	
		Maximum pulldown voltage	0.25 Vdc	
		Maximum current	1.5 mAdc	
RS485		Physical layer	RS485 4-wire full or 2-wire half duplex	
		Protocol	Modbus RTU format	
		Isolation	60 Vac/dc	
		Receiver unit load	⅛ (256 devices - maximum)	
		Output rate	Up to 10 frames / second	
Clock calendar battery		Type	AA (PCB tagged) Lithium Thionyl Chloride (Lithium content 0.65g)	
		Shelf life	10 year – with battery switch off @ TAMB: 25°C	
		Working life	10 year – Mains power on 35 hours/week @ TAMB: 55°C	
Infrared		Physical layer	IrDA	
		Baud	38400	
		Range	10 cm	
		Working angle	15°	
		Eye safety information	Exempt from EN 60825-12: 2007 Safety of laser products ~ does not exceed the accessible emission limits (AEL) of class 1	
Output	**Relays**	Contacts	2 x single pole changeover relays (SPCO)	
		Voltage ratings (maximum)	250 Vac	
		Load	Resistive	3 amp @ 250 Vac
			Inductive	1 amp @ 250 Vac
		ac motor load	¼ HP (2.9 amp) @ 250 Vac	
			$^{1}/_{10}$ HP (3 amp) @ 120 Vac	
		Pilot duty load	C300 (2.5 amp) - control circuit/coils	
		Electrical life (operations)	3 x 10^5 or greater depending on load	
		Mechanical life (operations)	30 x 10^6	

Dimensions/weights

Weight (approximate) 400 g



Safety information, installation and maintenance

This document does not contain sufficient information to install the product safely. See the Installation and Maintenance Instructions supplied with the product, which gives full wiring, commissioning and operating instructions.
Attention is drawn to Safety Information Leaflet IM-GCM-10, as well as to any national regulations concerning blowdown. In the UK, guidance is given in HSE Guidance Note PM60. In particular, your attention is drawn to the danger of working on a shut down boiler whilst other boilers are operating.

Warnings:

- Isolate the mains supply before installing the controller as live terminals at mains voltage are exposed.
- Only use the screws provided with the product.
- Do not install the product outdoors without additional weather protection.
- Do not drill the product case or use self-tapping screws.

Caution:

- A 15 mm gap is required between multiple controllers for cooling.

Installation / environmental conditions:
Install the product in an environment that minimises the effects of heat, vibration, shock and electrical interference.
The product must be installed in a suitable industrial control panel or fireproof enclosure to provide impact and environmental protection.
A minimum of IP54 (EN 60529) or Type 3, 3S, 4, 4X, 6, 6P and 13 (UL50/NEMA 250) is required.
The product may be installed on a DIN rail, chassis plate, or in a panel cutout. A bezel is provided.

How to specify

Blowdown timer with; three integral timers, LCD display, valve malfunction alarm and infrared communications.

How to order

Example: 1 off Spirax Sarco BT1050 blowdown timer.

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