

Single-Loop Electronic Temperature/Process Controllers

Bulletin 900-TC

On/off status displays ensure that operators are kept aware of vital process conditions

All Bulletin 900s have an on-board wiring label, simplifying installation

Integrated function keys allow "on-board" configuration

Two¹-high visibility 4-digit LED displays for set-point process value/variable etc. indication



900-TC8



900-TC16



900-TC32

The Bulletin 900 family of single-loop temperature/process controllers provide cost effective, easy to configure solutions to on/off or continuous (analog) PID process control applications. Controller configuration is typically achieved using the front panel tactile feedback keys and 11-segment² LED displays. The controllers can interface to a variety of process transmitters that have analog² signal (e.g. 4 to 20 mA, etc.) capability, such as Bulletin 837E temperature, 839E flow, 836E pressure transmitters, etc. Direct connection to temperature sensors such as thermocouples or Resistance Temperature Detectors (RTDs) is also standard for all controllers. The 900-TC8 and -TC16 offer analog (e.g. 4 to 20 or 0 to 20 mA) output capability for more precise process control and manual control of the PID output helps makes startup and process troubleshooting easy. All controllers

also offer on/off control outputs such as an electromechanical relay or a voltage output to drive a solid-state relay, and with time-proportioning PID even an on/off output can provide tight process control.

Flexibility Saves Panel Space

These single-loop controllers are available in three form factors: 1/32, 1/16, and 1/8 DIN, offering the flexibility to choose the best size controller for temperature or process applications without compromising on functionality or power. They are NEMA type 4X³, UL/CSA/CE approved.

Easy PID Auto Tuning Improves Efficiency

The PID control mode along with analog or on/off outputs greatly reduce or eliminate process swings, helps stabilize workload, improve

control efficiency, increase component life and reduce energy costs. Using the PID control method with, auto-tuning allows for fast startup of the process application with little operator knowledge of the system's characteristics.

Network Communications

Thirty-two 900-TC controllers can be networked using cost effective, 2-wire, RS-485 hardware. All controllers support the 900-TC protocol for communications with a personal computer using 900Builder™ Lite³ configuration software or RSView® HMI software. For communications with a wide range of process devices including many A-B PLCs, drives and HMI, ModBus® RTU slave protocol is supported in the 900-TC8 and 900-TC16 lines.

¹ 900-TC8 Series B has a 3rd LED display for MV etc. indication.

² Doesn't apply to 900-TC32 line (7-segment).

³ Applies to 900-TC8 and 900-TC16.

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Bulletin 900-TCx Quick Selection

Item		Bulletin No.		
		900-TC8 (Series B)	900-TC16 (Series B)	900-TC32
Dimensions		48 mm (W) x 96 mm (H) x 78 mm (D)	48 mm (W) x 48 mm (H) x 78 mm (D)	48 mm (W) x 24 mm (H) x 100 mm (D)
Number of 4-Digit LED Displays		3 ④	2	2
Sample Rate		250 ms		500 ms
Indication Accuracy		Thermocouple ± 0.3 % ③ RTD ± 0.2 % Analog ± 0.2 %		± 0.5 % PV + 1 digit
Heating/Cooling Control Mode		Yes	Yes	Yes
Scaling to Engineering Units		Yes	Yes	Yes
Control Method		PID, (auto-tune and self-tune) ON/OFF or ON/OFF Timed Proportional PID (auto-tune and self-tune)		
Inputs	Thermocouple Input and 0...50 mV DC	Yes	Yes	Yes
	100 Ω Platinum Resistance Temperature Sensor (RTD)	Yes	Yes	Yes
	Analog Input and 0...20 mA, 4...20 mA, 1...5V DC, 0...5V DC, 0...10V DC	Yes	Yes	No
	Non-Contact Temperature Sensor	Yes	Yes	Yes
Control Output 1 Type	ON/OFF Relay Output (Electro-Mechanical)	Yes	Yes	Yes
	ON/OFF Voltage Output for Solid-State Relay	Yes	Yes	Yes
	ON/OFF Triac (AC Only)	No	Yes	No
	4...20 and 0...20 mA (DC) Analog	Yes	Yes	No
Control Output 2 Types	ON/OFF Relay	No *	No *	No *
	ON/OFF Triac (AC Only)	Yes ►	No	No
	ON/OFF Voltage SSR	Yes ►	Yes ‡	No
Maximum Number of Alarms	None	No	No	Yes †
	1 Point	No	No	Yes
	2 Points	No	Yes	No
	3 Points	Yes	Yes ‡	No
Alarm ON/OFF Delay Time ③		Yes	Yes	No
RS-232C Communications Function		Yes ❖	No	No
RS-485 Communications Function		Yes ❖	Yes ❖	Yes
ModBus Communications Protocol		Yes	Yes	No
Event Input		Yes ❖	Yes ❖	No
Run/Stop via Keypad or Interrupts		Yes	Yes	Keypad
Multiple SP Selection via Keypad or Interrupts		Yes	Yes	Keypad
Manual Output Control via Keypad		Yes	Yes	No
Transfer Output Function (Requires Analog Output)		Yes	Yes	No
Heater Burnout, Heater Short and Heater Over Current ③ Alarm (Single or 3-Phase) ⑤		Yes	Yes	No

† When RS-485 communication is required.

‡ Requires an option unit with an SSR Output. For details refer to the Selection Guide 900-SG001_EN-P.

❖ Requires an option unit. For details refer to the Selection Guide 900-SG001_EN-P.

► Determined by controller catalog number.

* One of the controller alarm relays can be used for a second control output (e.g. heating and cooling application).

③ Series B 900-TC8 and 900-TC-16.

④ Applies to Series B 900-TC8. Third display can show MV (manipulated variable).

⑤ Requires external current transformer(s).

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