

# masibus®

A Sonepar Company



## TC596 TC548 TC548E ON/OFF - PID Temperature Controller

Masibus TC596 / TC548 / TC548E On/Off - PID temperature controller is a cost effective model designed to offer outstanding control performance in a compact package providing a comprehensive solution for a wide variety of applications: such as plastic manufacturing, packaging machinery and food processing applications requiring precise control

TC596 / TC548 / TC548E On/Off - PID temperature controller accepts process input suitable for Thermocouple, RTD. It also has average energy demand parameter used for diagnosing the process healthiness

TC596 controller has one 0.56", 4 digit LED display for process value whereas TC548 controller has one 0.4", 4 digit LED display for process value. TC548E controller has one 0.4", 4 digit white LED display for process value and 0.31", 4-digit Green LED display for set point value. Configuration is done with three front tactile keys that ensures easy programming

Model TC596 / TC548 / TC548E has one 10A relay output for On/Off, Control function auto-tuning adjusts the PID parameters for desired set-point according to the current process dynamics so it has no harmful effect on the current operation. Model TC596 / TC548 controller has SSR (control o/p) whereas model TC548E has 2<sup>nd</sup> 5A relay (alarm output) or SSR (control o/p)

### Features

- Thermocouple/RTD input
- Average energy demand parameter for process diagnosis
- 10A relay for On/Off or PID controlling
- PV display: TC596: 0.56" 7-segment red LED 4-digit  
TC548 / TC548E: 0.4" 7-segment white LED 4-digit
- SV display in TC548E: 0.31" 7-segment green LED 4-digit
- Fail-safe design protecting the process in case of system malfunctioning
- Three years calibration with auto zero and auto span
- PV bias for input correction
- Settable digital filter
- Settable manual reset to prevent overshoot
- Relay / SSR control output option
- Selectable ramp and 1 soak

### Applications

- Food and beverages
- Industrial ovens
- Plastic industry
- Hot stamping machines
- Injection molding machines

# TECHNICAL SPECIFICATIONS

Input		Power Supply	
Input Type	Thermocouple, RTD (Pt100)	Standard	85-265VAC/ 100-300VDC
Display Range	Refer table-1.1	Power Consumption	<3 VA
Accuracy	±0.25% of full span ±1 count	<b>Isolation (Withstanding voltage)</b>	
ADC Resolution	16 bits	Between primary terminals* and secondary terminals**: At least 1500 V AC for 1 minute	
Display Resolution	0.1°C / 1 °C	Between primary terminals*: At least 1500 V AC for 1 minute	
Sampling Rate	5 samples/sec	* Primary terminals indicate power terminals and Relay output terminals.	
CJC Error	±3.0 °C max	** Secondary terminals indicate analog I/O signal	
Sensor Burnout Current	0.25uA	Insulation resistance: 20MΩ or more at 500 V DC between terminals	
RTD Excitation Current	0.166mA (Approx)	Physical	
Allowable Wiring Resistance for RTD	Maximum 15 Ω/wire (Resistance between three wires should be equal)	Models	
NMRR	> 40 dB	TC596	TC548/TC548E
CMRR	> 120 dB	Mounting Type	Panel mount
Temp-co	< 100ppm/°C	Size H x W x D (in mm)	100 x 100 x 55      50 x 50 x 74
Input Impedance	> 1MΩ	Front Bezel (in mm)	100 x 100      50 x 50
Max Voltage	20V DC	Panel Cutout (in mm)	92 x 92      45 x 45
Display & Keys		Depth Behind the Panel	52 mm      70 mm (Including terminal)
PV Display	TC596 : 0.56" 7-segment red LED 4-digit TC548 / TC548E : 0.4" 7-segment white LED 4-digit	Weight	160g Approx.      110g Approx.
SV Display TC548E	0.31" 7-segment green LED 4-digit	Enclosure Material	Front: Polycarbonate, Base: ABS      Polycarbonate
Status Indication	Individual red led for relay/SSR and alarm status	Enclosure Protection	IP20
Keys	Enter, Increment, Decrement	Terminal & Cable Size	Barrier type terminal, cable 2.5 mm <sup>2</sup>
Output		Environmental	
Output type	TC596	TC548	TC548E
Relay-1 (PID or ON/OFF Controlling)*	10A @ 230VAC / 28VDC		
Relay-2 (Alarm)	NA	NA	5A @ 230VAC / 28VDC
SSR (Control o/p)*	Yes	Yes	Yes
Relay Type	Single change over, 3 terminals (C, NO, NC)		
SSR Rating	11VDC or more / 2VDC or less		
SSR Resolution	10mSec		
*If SSR is selected as a Control o/p then Relay-1 will function as an Alarm o/p			
Table-1.1		Temperature Range °C	
Input type	Temperature Range °C		
Pt100 (0.1°C)	-199.9 to 850.0		
Pt100 (1°C)	-200 to 850		
E	-200 to 1000		
J	-200 to 1200		
K	-200 to 1372		
T	-200 to 400		
B	450 to 1800		
R	0 to 1768		
S	0 to 1768		

## Ordering Code

Model	Input Type	Auxillary Power Supply	Control o/p
TC596	X	XX	X
TC548	1	E	U1 85-265 VAC/ 100-300 VDC 1 Relay-1 + SSR
	2	J	
	3	K	
	4	T	
	5	B	
	6	R	
	7	S	
	9	Pt100	

## Ordering Code

Model	Input Type	Auxillary Power Supply	Output
TC548E	X	XX	X
	1	E	U1 85-265 VAC/ 125-300 VDC 1 Relay-1
	2	J	2 Relay-1 + Relay-2
	3	K	
	4	T	
	5	B	
	6	R	
	7	S	
	9	Pt100	