

# DIGITAL SETTING TEMPERATURE CONTROLLER DIGIZET MINI

DATA SHEET

P Z M

DIGIZET MINI is an economical temperature controller which is designed compact in compliance with DIN standards (48 mm x 96 mm size). It is equipped with functions optimum for temperature control in various types of equipments such as injection machine, and designed to assure high reliability as well as high operability.

## FEATURES

### 1. Economical design

Compact light-weight design minimizes required panel space.

A unique power-ratio type offset correction mechanism is added for precise control.

### 2. Abundant functions equipped

Digital setter eliminates setting errors while assuring high repeatability even for an inexperienced operator. LED display permits monitoring control condition at a glance (LED display type).

Input switching J (IC)  $\rightleftharpoons$  K (CA) is possible with a touch of a pushbutton (J, K switching type).

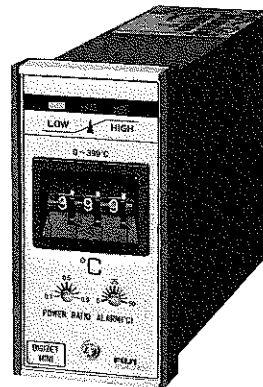
Control mode matched with controlled machine is selectable (P  $\rightleftharpoons$  PI) with a touch of a pushbutton (P, PI switching).

The temperature controller has an overshoot preventive circuit (P, PI switching type and PID type).

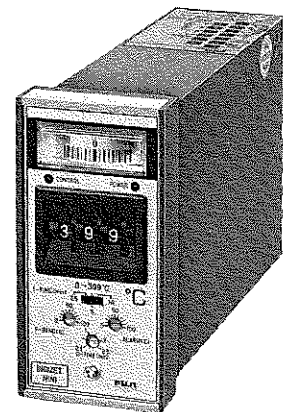
A burnout circuit is built in. Further, LED type of temperature controller flashes a red LED to notify of thermocouple wire breakage in burnout condition.

Plug-in method has been adopted for facilitating maintenance and checks.

Lower limit alarm device is equipped with a hold circuit which requires no interlock circuit for canceling alarm at rise time (but incompatible with PID action).



LED display type  
P action



Indicator type  
PID action

## SPECIFICATIONS

### Input signal, settable range and setting allowance

Code	Input signal	Note 2) Settable range (°C)	Setting allowance (°C)
1	Pt 100Ω resistance bulb	0 to 399	±2
2	J(IC) thermocouple		±3
6	Pt 100Ω resistance bulb	-99 to +99	±0.5 (0 to 99) ±0.75 (-50 to -1)
8	Note 1) J(IC)/K(CA) thermocouple	0 to 399	±3
9	K(CA) thermocouple		

Note 1) Input signals from J(IC) and K(CA) thermocouples can be received while selecting them with an internal switch (common type with a selector switch).

Note 2) A mechanical stopper makes it impossible to set temperature outside the settable range.

**Allowable external resistance:**

100Ω or less for thermocouple input

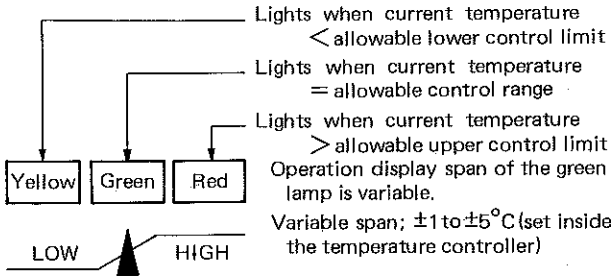
**Allowable wiring resistance:**

10Ω max. per wire for input from resistance bulb

**Deviation display system:**

LED display; Light emitting diode type indicator (incompatible with PID action)

Number of LEDs; 3



Analog indicator; Scale range

Input signal	Control action		
	2 position	P(P/PI)	PID
Pt resistance bulb	20°C	20°C	20°C
J, K thermocouple			50°C

**Output signal (in case of contact output):**

Control action code; A, B, C, D, T, W, S, R  
 Output contact; 1c contact  
 Contact capacity; AC 220V, 3A max.  
 Contact action; Non-excited action

**Output signal (in case of current output):**

Control action code; N, P  
 Output current; DC 4 to 20mA  
 Allowable load resistance; 0 to 600Ω  
 Output action; Inverse action or positive action

**Output signal (in case of SSR drive output):**

Control action code; L, M, U, V  
 Output voltage; DC 0.5V or less at OFF  
 DC 10 to 25V or less at ON (load resistance 1.2kΩ)  
 Dielectric strength; AC 500V for 1 min (between output terminal and ground)

**Control action:** 2-position action at upper or lower limit

Proportional action at upper or lower limit

P/PI action at upper or lower limit (common type with a selector switch)

PID action at upper or lower limit

PID action with inverse or positive action

	2-position	P	P/PI	
	Dead band	P band	P band	I time
Pt 0 to 399°C	2°C or less	Approx. 12°C	Approx. 12°C	4 min
Pt -99 to +99°C	1°C or less	Approx. 6°C	Approx. 6°C	
J, K 0 to 399°C	2°C or less	Approx. 12°C	Approx. 12°C	

	PID		
	P band	I time	D time
Pt 0 to 399°C	0 to 50°C	Changeable in 3 steps of 2.5, 5 and 10 min	Continuously variable from 0.1 to 2.5min
Pt -99 to +99°C			
J, K 0 to 399°C	0 to 100°C		

Proportional cycle; Approx. 40 sec (in case of contact output)  
 Approx. 1 sec (in case of SSR drive output)

In case of proportional action With power ratio type of offset corrector

In case of PI and PID action Overshoot preventive circuit built in

**Power supply:** AC 100/200V ±15%, 50/60 Hz or AC 110/220V ±15%, 50/60 Hz

**Power consumption:** Approx. 4 VA

**Ambient temperature:** -10 to +50°C (storage temperature -30 to +60°C)

**Ambient humidity:** 90% RH or less

**Housing:** Plastic housing

Attachments: Alarm device  
 Upper or lower limit alarm  
 (with hold circuit for lower limit)  
 Upper-lower non-discriminative alarm  
 (with hold circuit for lower limit)  
 Note) The lower limit hold circuit is incompatible with PID action

	Settable range	Dead band	Allowance
2-position, proportional or P/PI action	0 to 50°C	3°C or less	Within ±5°C
PID action	Thermocouple input	0 to 100°C	4°C or less Within ±10°C
	Pt input	0 to 50°C	3°C or less Within ±5°C

Output contact;  
 Non-excited ON alarm  
 Contact capacity; AC 220V, 3A  
 Reference junction compensator  
 (for thermocouple input only)  
 Burnout circuit  
 (for thermocouple input only)  
 Burnout condition display function  
 (LED display)  
 A red operation indicator lamp  
 flickers in burnout condition.

**External dimensions (HxWxD):**

96 x 48 x 149 mm

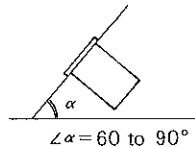
**Weight:** Approx. 680 g

**Finish color:** Munsell 7.5 BG 3.2/0.8

**Scope of delivery:**

Temperature controller and mounting bracket

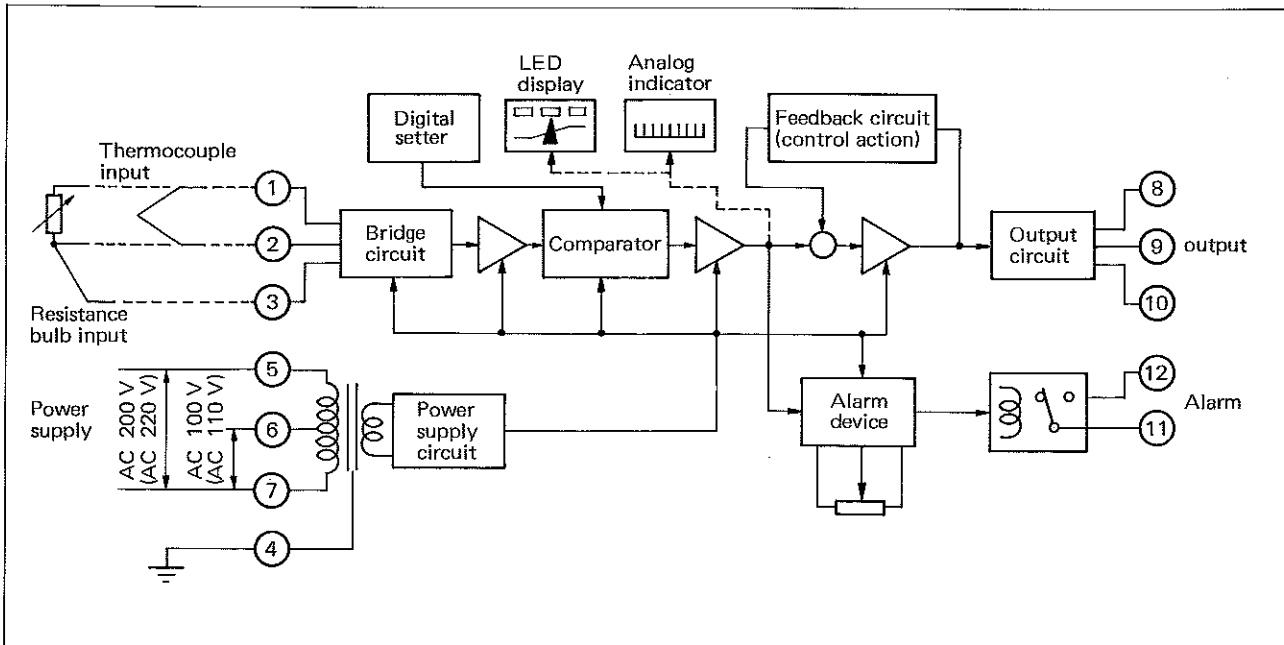
**Mounting:** Panel mount



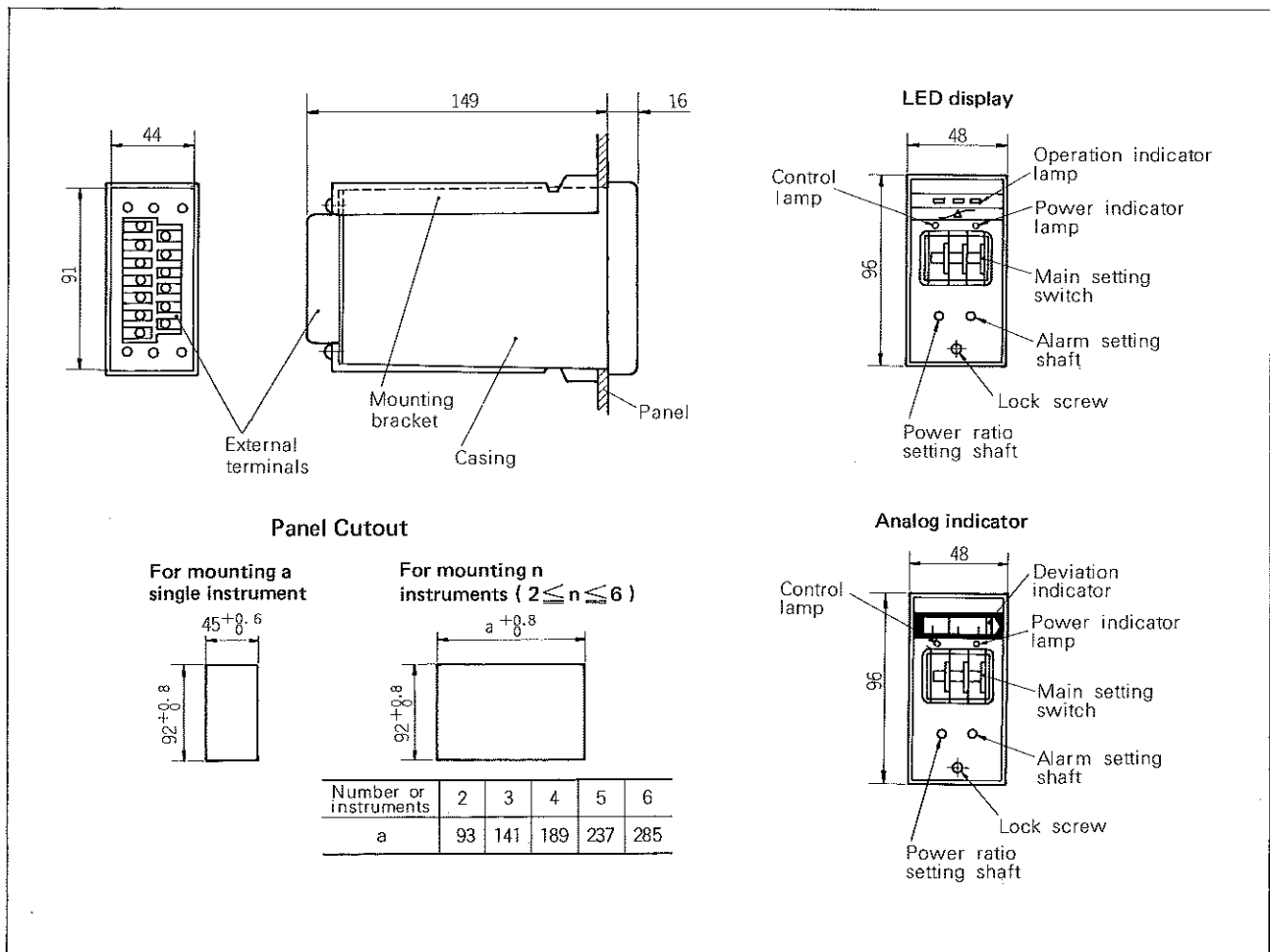
**CODE SYMBOLS**

P	Z	M								Description
						1		0		<b>Configuration</b> LED display (incompatible with PID action) Analog indicator
		L								
		M								
						1				<b>Input signal and settable range</b> Pt resistance bulb 0 to 399°C
						2				J(IC) thermocouple 0 to 399°C
						6				Pt resistance bulb -99 to +99°C
						8				J(IC)/K(CA) thermocouple 0 to 399°C
						9				K(CA) thermocouple 0 to 399°C
										<b>Control action</b>
						A				Upper limit 2-position action
						B				Lower limit 2-position action
						C				Upper limit proportional action
						D				Lower limit proportional action
						T				Upper limit P/PI action
						W				Lower limit P/PI action
						L				Upper limit SSR drive output
						M				Upper limit SSR drive output with P action
						V				Upper limit SSR drive output with P/PI action
						S				Upper limit PID action
						R				Lower limit PID action
						N				Positive action PID action (current output)
						P				Inverse action PID action (current output)
						U				Upper limit SSR drive output with PID action
										<b>Power supply</b>
						7				AC 100/200V 50/60 Hz
						8				AC 110/220V 50/60 Hz
										<b>Alarm</b>
						H				Upper limit alarm
						L				Lower limit alarm (with hold circuit)
						M				Upper-lower limit non-discriminative alarm (with hold circuit for lower limit, incompatible with PID action)

# BASIC CIRCUIT DIAGRAM



# EXTERNAL VIEW (Unit:mm)



# CONNECTION DIAGRAM

