

# PID Temperature Controller Series PR 69

- Universal Input
- Configurable Output combination
- Configurable: Band, Deviation, Sensor break & Loop break alarms
- Single/Dual acting PID controllers with 5 Control modes
- Auto-tuning PID with provision for Soft-Start
- 6 Segment Ramp & Soak profile with Power Failure resumption modes
- Rapid Set Point change feature
- RS 485 Communication
- Bumpless Auto-Manual transfer
- IP 20 (for Terminal & Enclosure) IP 40 (for for Front Panel only)



Cat. No.	151A13B1	151B13B1	151C13B1	151D13B1
<b>Parameters</b>				
Supply Voltage (Φ)	110 - 240 VAC			
Supply Variation	-20% to +10% (of Φ)			
Frequency	50/60 Hz			
Control Action	ON/OFF (Symmetric / Asymmetric), PID (Single / Dual Acting)			
Tuning Method	Auto Tuning / Manual Tuning			
Temperature sensors / Inputs	Thermocouple: J, K, E, S, B, R; RTD: PT100 - 3 wire compensation; Analog Signal: (0-50 mV, 0-60 mV, 12-60 mV)			
Measurement Range	Sensor J: 0 to 700°C/32 to 1292°F, Sensor K: 0 to 1300°C/32 to 2372°F, Sensor E: 0 to 600°C/32 to 1112°F, Sensor R: 0 to 1750°C/32 to 3182°F, Sensor S: 0 to 1750°C/32 to 3182°F, Sensor B: 250 to 1820°C/482 to 3308°F, Sensor PT100 3 wire: - 200 to 700°C/-328 to 1292°F			
Measurement Accuracy	+/-0.5% of full scale of PT100, +/-1% of full scale for TC & mV signals			
Resolution	0.1°C for RTD, J,E & 1° for S,B,K & 0.001°C for mV signals			
Configurable Set Points	4			
Display	Dual row 7 segment display with LED indications, 4-digit process value, 4 digit set value			
Keypad	4-Keys:  - Exit / Configurable Key,  - Down,  - Up,  - Enter / Select			
Output 1	Relay: SPST 8A @ 240 VAC / 28 VDC	Analog: 0 - 10V / 4 - 20 mA Configurable Retransmission Output		Relay: SPST 8A @ 240 VAC / 28 VDC
Output 2	Relay: SPST 5A @ 240 VAC / 28 VDC			
Output 3	SSR: 12 VDC, 24 mA Short Circuit Protection		Relay: SPST 5A @ 240 VAC / 28 VDC	
Analog Output Update Rate	N A	150ms to 5s		N A
Alarm Types	Absolute (High/Low/Band), Deviation (High/Low/Band), Sensor Break, Loop Break,			
Soft Start Feature	Yes			
Ramp Soak Feature	6 Segment Ramp Soak Profile			
RS 485 Communication	RS 485 Communication			
Transmission Speed & Type	300 to 19200 BPS (Half Duplex)			
Transmission Protocol	Modbus RTU			
Operating Temperature	0°C to +50°C			
Storage Temperature	-20°C to +60°C			
Humidity (Non Condensing)	80% (Rh)			
Enclosure	Flame Retardant UL94V0			
Dimensions (W x H x D) (in mm)	48 x 48 x 91.5			
Weight (unpacked)	130 g			
Mounting	Flush			
Certification				
Degree of Protection	IP 20 Terminal & Enclosure, IP 40 (For Front Panel only)			
<b>EMI / EMC</b>				
Harmonic Current Emissions	IEC 61000-3-2	Ed. 3.2 (2009-04) Class A		
ESD	IEC 61000-4-2	Ed. 2.0 (2008-12) Level II		
Radiated Susceptibility	IEC 61000-4-3	Ed. 3.2 (2010-04) Level III		
Electrical Fast Transients	IEC 61000-4-4	Ed. 3.0 (2012-04) Level IV		
Surges	IEC 61000-4-5	Ed. 2.0 (2005-11) Level IV		
Conducted Susceptibility	IEC 61000-4-6	Ed. 3.0 (2008-10) Level III		
Voltage Dips & Interruptions (AC)	IEC 61000-4-11	Ed. 2.0 (2004-03) All 7 Levels		
Conducted Emission	CISPR 14-1	Ed. 5.2 (20011-11) Class A		
Radiated Emission	CISPR 14-1	Ed. 5.2 (20011-11) Class B		
<b>Environmental</b>				
Cold Heat	IEC 60068-2-1	Ed. 6.0 (2007-03)		
Dry Heat	IEC 60068-2-2	Ed. 5.0 (2007-07)		
Vibration	IEC 60068-2-6	Ed. 7.0 (2007-12) 5g		
Repetitive Shock	IEC 60068-2-27	Ed. 4.0 (2008-02) 40g, 6ms		
Non-Repetitive Shock	IEC 60068-2-27	Ed. 4.0 (2008-02) 30g, 15ms		

## ORDERING INFORMATION

### Dual Acting PID Controller

Cat. No.	Description
151A13B1*	2 Relays (SPST 8A & 5A, 240 VAC / 28 VDC), SSR driving output (12 VDC, 24mA)
151B13B1*	1 Relay (SPST 5A, 240 VAC / 28 VDC), Analog output (0-10V, 4-20mA), SSR driving output (12 VDC, 24mA)
151C13B1*	2 Relays (SPST 5A each, 240V AC/28V DC), Analog output (0-10V, 4-20mA)
151D13B1*	3 Relays (SPST One 8A & Two 5A, 240V AC / 28V DC)

\*Note: With RS485 Modbus Communication

# PID Temperature Controller Series PR 69



Cat. No.	151A12B	151B12B	151C12B	151D12B
<b>Parameters</b>				
Supply Voltage (Φ)	110 - 240 VAC			
Supply Variation	-20% to +10% (of Φ)			
Frequency	50/60 Hz			
Control Action	ON/OFF (Symmetric / Asymmetric), PID (Single Acting)			
Tuning Method	Auto Tuning / Manual Tuning			
Temperature sensors / Inputs	Thermocouple: J, K, E, S, B, R; RTD: PT100 - 3 wire compensation; Analog Signal: (0-50 mV, 0-60 mV, 12-60 mV)			
Measurement Range	Sensor J: 0 to 700°C/32 to 1292°F, Sensor K: 0 to 1300°C/32 to 2372°F, Sensor E: 0 to 600°C/32 to 1112°F, Sensor R: 0 to 1750°C/32 to 3182°F, Sensor S: 0 to 1750°C/32 to 3182°F, Sensor B: 250 to 1820°C/482 to 3308°F, Sensor PT100 3 wire: - 200 to 700°C/-328 to 1292°F			
Measurement Accuracy	± 0.5% of full scale of PT100, ± 1% of full scale for TC & mV signals			
Resolution	0.1°C for RTD, J,E & 1° for S,B,K & 0.001°C for mV signals			
Configurable Set Points	2			
Display	Dual row 7 segment display with LED indications, 4-digit process value, 4 digit set value			
Keypad	4-Keys: (◻) - Exit / Configurable Key, (▼) - Down, (▲) - Up, (◻) - Enter / Select			
Output 1	Relay: SPST 8A @ 240 VAC / 28 VDC	Analog: 0 - 10V / 4 - 20 mA Configurable Retransmission Output		Relay: SPST 8A @ 240 VAC / 28 VDC
Output 2	Relay: SPST 5A @ 240 VAC / 28 VDC			
Output 3	SSR: 12 VDC, 24 mA Short Circuit Protection		Relay: SPST 5A @ 240 VAC / 28 VDC	
Analog Output Update Rate	N A	150ms to 5s		N A
Alarm Types	Absolute (High/Low/Band), Deviation (High/Low/Band), Sensor Break, Loop Break,			
Soft Start Feature	Yes			
Ramp Soak Feature	No			
Operating Temperature	0°C to +50°C			
Storage Temperature	-20°C to +60°C			
Humidity (Non Condensing)	80% (Rh)			
Enclosure	Flame Retardant UL94V0			
Dimensions (W x H x D) (in mm)	48 x 48 x 91.5			
Weight (unpacked)	130 g			
Mounting	Flush			
Certification				
Degree of Protection	IP 20 Terminal & Enclosure, IP 40 (For Front Panel only)			
<b>EMI / EMC</b>				
Harmonic Current Emissions	IEC 61000-3-2	Ed. 3.2 (2009-04) Class A		
ESD	IEC 61000-4-2	Ed. 2.0 (2008-12) Level II		
Radiated Susceptibility	IEC 61000-4-3	Ed. 3.2 (2010-04) Level III		
Electrical Fast Transients	IEC 61000-4-4	Ed. 3.0 (2012-04) Level IV		
Surges	IEC 61000-4-5	Ed. 2.0 (2005-11) Level IV		
Conducted Susceptibility	IEC 61000-4-6	Ed. 3.0 (2008-10) Level III		
Voltage Dips & Interruptions (AC)	IEC 61000-4-11	Ed. 2.0 (2004-03) All 7 Levels		
Conducted Emission	CISPR 14-1	Ed. 5.2 (20011-11) Class A		
Radiated Emission	CISPR 14-1	Ed. 5.2 (20011-11) Class B		
<b>Environmental</b>				
Cold Heat	IEC 60068-2-1	Ed. 6.0 (2007-03)		
Dry Heat	IEC 60068-2-2	Ed. 5.0 (2007-07)		
Vibration	IEC 60068-2-6	Ed. 7.0 (2007-12) 5g		
Repetitive Shock	IEC 60068-2-27	Ed. 4.0 (2008-02) 40g, 6ms		
Non-Repetitive Shock	IEC 60068-2-27	Ed. 4.0 (2008-02) 30g, 15ms		

## ORDERING INFORMATION

### Single Acting PID Controller

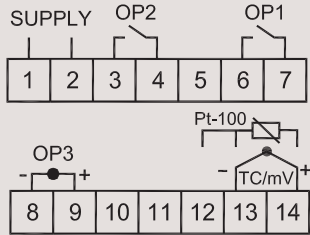
Cat. No.	Description
151A12B	2 Relays (SPST 8A & 5A, 240 VAC / 28 VDC), SSR driving output (12 VDC, 24mA)
151B12B	1 Relay (SPST 5A, 240 VAC / 28 VDC), Analog output (0-10V, 4-20mA), SSR driving output (12 VDC, 24mA)
151C12B	2 Relays (SPST 5A each, 240V AC/28V DC), Analog output (0-10V, 4-20mA)
151D12B	3 Relays (SPST One 8A & Two 5A, 240V AC / 28V DC)

# PID Temperature Controller Series PR 69

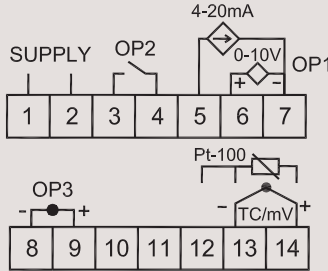


## CONNECTION DIAGRAM

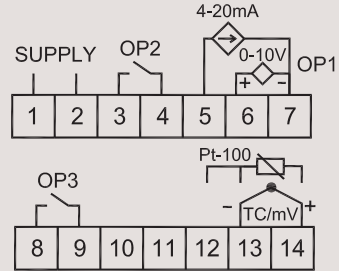
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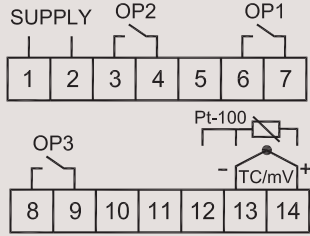
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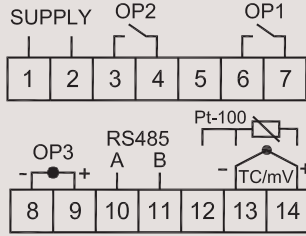
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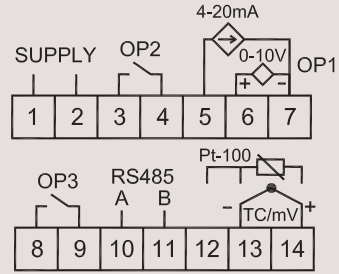
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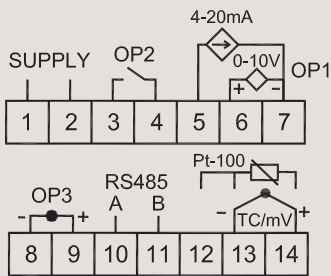
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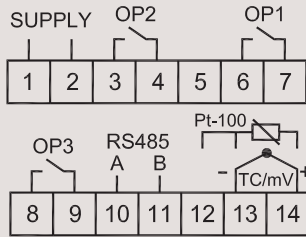
**151C13B1**



**151B13B1**



**151D13B1**



## TERMINAL TORQUE & CAPACITY

	Torque - 0.54 N.m (4.5 Lb.in) Terminal screw - M3
	Solid Wire - 1 X 0.12...2 mm <sup>2</sup>
AWG	1 X 26 to 14

## MOUNTING DIMENSION (mm)

