

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 Front Panel only)



Cat. No.	151A13B1	151B13B1	151C13B1	151D13B1
Parameters				
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 DC: (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 DC / 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	  Compliant			
Degree of Protection	IP 20 Terminal & Enclosure, IP 40 (For Front Panel only)			
EMI / EMC				
Harmonic Current Emissions	IEC 61000-3-2			
ESD	IEC 61000-4-2			
Radiated Susceptibility	IEC 61000-4-3			
Electrical Fast Transients	IEC 61000-4-4			
Surges	IEC 61000-4-5			
Conducted Susceptibility	IEC 61000-4-6			
Voltage Dips & Interruptions (AC)	IEC 61000-4-11			
Conducted Emission	CISPR 14-1			
Radiated Emission	CISPR 14-1			
Environmental				
Cold Heat	IEC 60068-2-1			
Dry Heat	IEC 60068-2-2			
Vibration	IEC 60068-2-6			
Repetitive Shock	IEC 60068-2-27			
Non-Repetitive Shock	IEC 60068-2-27			

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 & PR 43



Cat. No.	151A12B	151B12B	151C12B	151D12B
Parameters				
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 DC: (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 DC / 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	Compliant			
Degree of Protection	IP 20 Terminal & Enclosure, IP 40 (For Front Panel only)			
EMI / EMC				
Harmonic Current Emissions	IEC 61000-3-2			
ESD	IEC 61000-4-2			
Radiated Susceptibility	IEC 61000-4-3			
Electrical Fast Transients	IEC 61000-4-4			
Surges	IEC 61000-4-5			
Conducted Susceptibility	IEC 61000-4-6			
Voltage Dips & Interruptions (AC)	IEC 61000-4-11			
Conducted Emission	CISPR 14-1			
Radiated Emission	CISPR 14-1			
Environmental				
Cold Heat	IEC 60068-2-1			
Dry Heat	IEC 60068-2-2			
Vibration	IEC 60068-2-6			
Repetitive Shock	IEC 60068-2-27			
Non-Repetitive Shock	IEC 60068-2-27			

ORDERING INFORMATION

Single Acting PID Controller

Advanced PID Series PR 69

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)

Economical PID Series PR 43

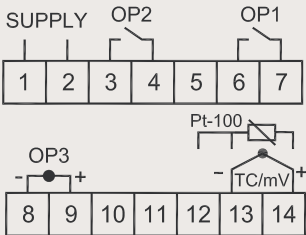
Cat. No.	Description
151G12B	1 NO Relay (SPST 5A, 240 VAC / 28VDC)
151H12B	SSR driving output (12 VDC, 24mA)

PID Temperature Controller Series PR 69

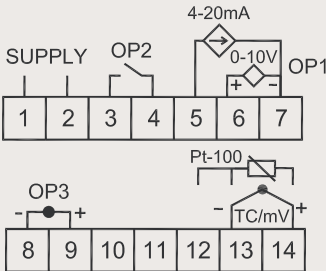


CONNECTION DIAGRAM

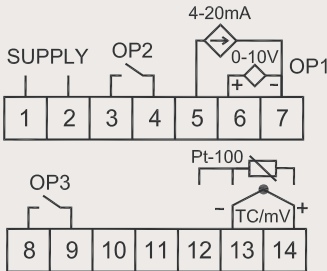
151A12B



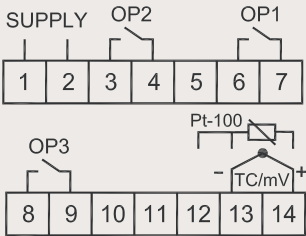
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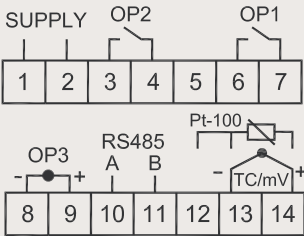
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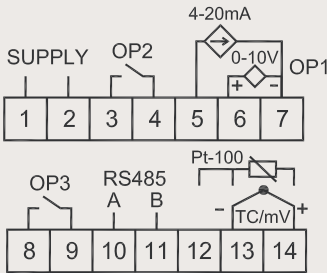
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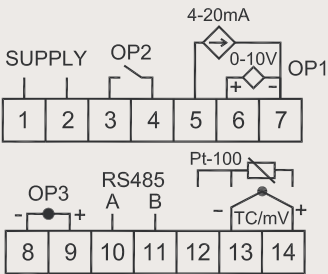
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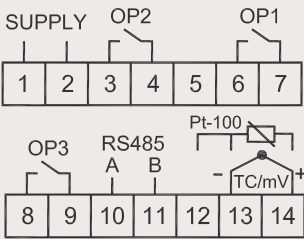
151C13B1



151B13B1



151D13B1



Note: Connection Diagram for 151G12B and 151H12B on page 126

TERMINAL TORQUE & CAPACITY

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

MOUNTING DIMENSION (mm)

