

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 Terminals & Enclosure)
IP 40 (for Front Panel only)



Ordering Information

Dual Acting PID Controller

Cat. No.	Description
151A13B	2 Relays (SPST 8A & 5A), SSR driving output (12 VDC, 24mA)
151B13B	1 Relay (SPST 5A), Analog output (0-10V, 4-20mA), SSR driving output (12 VDC, 24mA)
151C13B	2 Relays (SPST 5A each), Analog output (0-10V, 4-20mA)
151D13B	3 Relays (SPST One 8A & Two 5A)
151A13B1	2 Relays (SPST 8A & 5A), SSR driving output (12 VDC, 24mA) with RS485
151B13B1	1 Relay (SPST 5A), Analog output (0-10V, 4-20mA), SSR driving output (12 VDC, 24mA) with RS485
151C13B1	2 Relays (SPST 5A each), Analog output (0-10V, 4-20mA) with RS485
151D13B1	3 Relays (SPST One 8A & Two 5A) with RS485

PID Temperature Controller

Series PR 69



Cat. No.	151A13B1	151B13B1	151C13B1	151D13B1
Parameters				
Supply Voltage (ϕ)	110 - 240 VAC/DC			
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				
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

PID Temperature Controller Series PR 69



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)
151E12B	1 Relay (1 C/O 10A, 240 VAC / 28 VDC), SSR driving output (12VDC, 24mA)

PID Temperature Controller

Series PR 69



Cat. No.	151A12B	151B12B	151C12B	151D12B
Parameters				
Supply Voltage (φ)	110 - 240 VAC/DC			
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	NA	150ms to 5s		NA
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)			

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

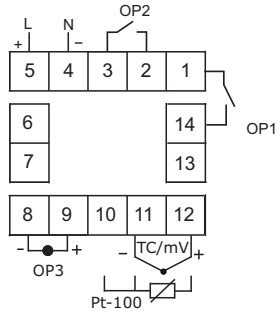
Cold Heat	IEC 60068-2-1
Dry Heat	IEC 60068-2-2
Vibration	IEC 60068-2-6
Repetitive Shock	IEC 60068-2-27
Non-Repetitive Shock	IEC 60068-2-27

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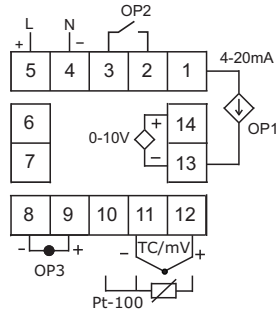


CONNECTION DIAGRAM

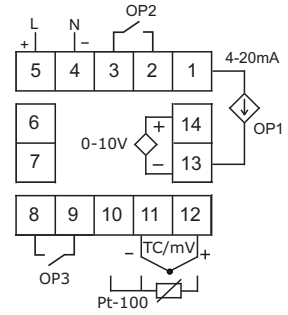
151A12B/151A13B



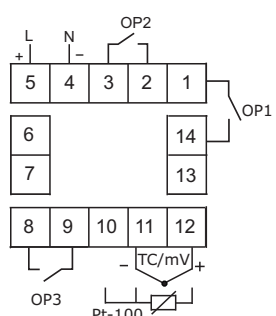
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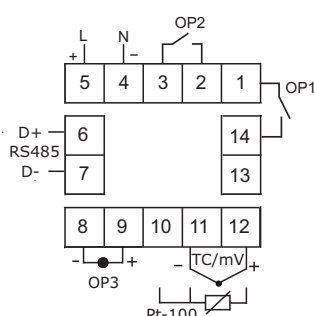
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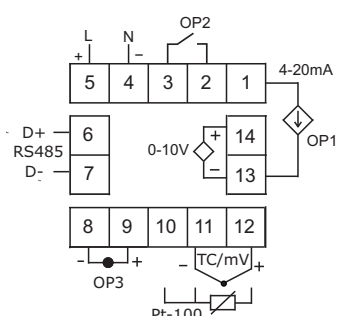
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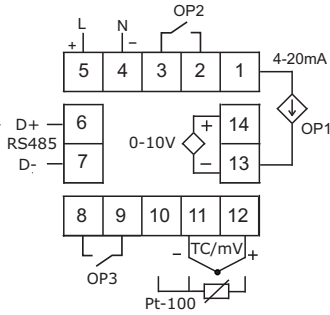
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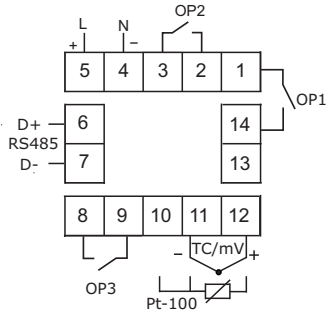
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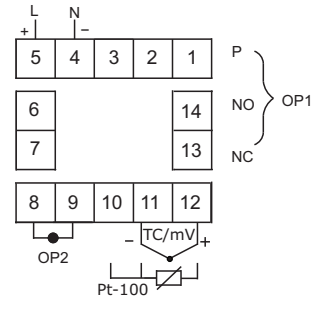
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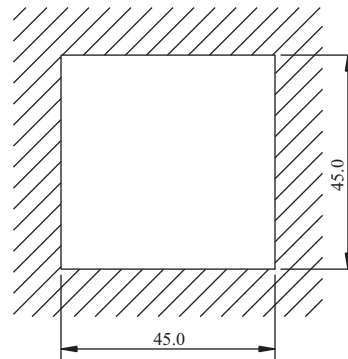
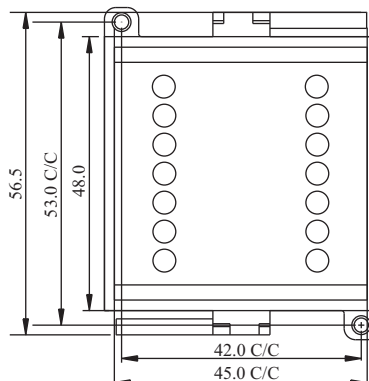
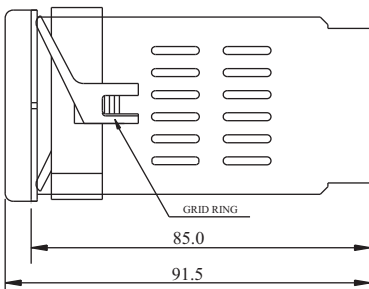
151D13B1



151E12B



MOUNTING DIMENSION (mm)



Terminal Connection: AWG 20 to 12, Ph1- 4...5.0 mm, Torque 0.5 N. m (4.4 lb.in)