

Advanced PID Temperature Controller Series PR 69

- Flush Mounting Version 96x96 mm with Dual Line Digital Seven Segment Display
- Universal Input
- Configurable Output combination
- Configurable: Band, Deviation, Sensor break & Loop break alarms
- Single/Dual acting PID controllers with 4 Control modes
- Analog Voltage / Current Inputs (0-5 V, 1-5 V, 0-10 V / 4-20 mA) and Outputs (0-10 V / 4-20 mA)
- 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)
- Timer functionality with settable time from 1min to 9999 min



Ordering Information

Dual Acting PID Controller

Cat. No.	Description
151F43B	2 Relays (SPST 5A each), SSR (12 VDC, 24mA)
151G43B	1 Relay (SPST 5A), Analog output (0-10V, 4-20mA), SSR (12 VDC, 24mA)
151H43B	2 Relays (SPST 5A each), Analog output (0-10V, 4-20mA)
151J43B	3 Relays (SPST 5A each)
151F43B1	2 Relays (SPST 5A each), SSR (12 VDC, 24mA) with RS485
151G43B1	1 Relay (SPST 5A), Analog output (0-10V, 4-20mA), SSR (12 VDC, 24mA) with RS485
151H43B1	2 Relays (SPST 5A each), Analog output (0-10V, 4-20mA) with RS485
151J43B1	3 Relays (SPST 5A each) with RS485

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Cat. No.	151F43B1	151G43B1	151H43B1	151J43B1
Parameters				
Supply Voltage (ϕ)	110 - 240 VAC/DC			
Supply Variation	-20% to +20%(of ϕ)			
Frequency	50/60 Hz			
Control Action	ON/OFF (Symmetric/ Asymmetric), PID (Single/ Dual Acting) (Neutral zone only for 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)			
Analog Input	0-5 V, 1-5 V, 0-10 V / 4-20 mA			
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, for j, K +/-1% & for other thermocouple it is +/- 3%, For Tc and mV signals +/- 0.2 % at 25°C (for DC analog input)			
Resolution	0.1°C for RTD, J,E & 1° for S,B,K,R & 0.001°C for mV signals, +/-1 Digit (For DC Analog Input)			
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 5A@240VAC/24VDC	Analog: 0 - 10V DC / 4 - 20 mA Configurable Retransmission Output		Relay: SPST 5A @ 240 VAC / 24 VDC
Output 2				Relay: SPST 5A @ 240 VAC / 24 VDC
Output 3		SSR: 12 VDC, 24 mA Short Circuit Protection		Relay: SPST 5A @ 240 VAC / 24 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	3 Ramp & 3 Soak			
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)	96 x 96 x 69.1			
Weight (unpacked)	280 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 Immunity Test (DC)	IEC 61000-4-29
Conducted Emission	CISPR 11
Radiated Emission	CISPR 11

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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Ordering Information

Single Acting PID Controller

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Cat. No.	Description
151F42B	2 Relays (SPST 5A each), SSR driving output (12 VDC, 24 mA)
151G42B	1 Relay (SPST 5A), Analog output (0-10V, 4-20 mA), SSR driving output (12 VDC, 24mA)
151H42B	2 Relays (SPST 5A each), Analog output (0-10V, 4-20 mA)
151J42B	3 Relays (SPST 5A each)
151K42B	1 Relay (1 C/O 10A), SSR driving output (12 VDC, 24 mA)
151L42B	2 Relays (1 C/O 10A & SPST 5A), SSR driving output (12 VDC, 24 mA) without Analog Input

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Cat. No.	151F42B	151G42B	151H42B	151J42B
Parameters				
Supply Voltage (φ)	110 - 240 VAC/DC			
Supply Variation	-20% to +20% (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)			
Analog Input	0-5 V, 1-5 V, 0-10 V / 4-20 mA			
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, for j, K +/-1% & for other thermocouple it is +/- 3%, For Tc and mV signals +/- 0.2 % at 25°C (for DC analog input)			
Resolution	0.1°C for RTD, J,E & 1° for S,B,K,R & 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 5A @ 240 VAC / 24 VDC	Analog: 0 - 10V DC / 4 - 20 mA Configurable Retransmission Output	Relay: SPST 5A @ 240 VAC / 24 VDC	
Output 2	Relay: SPST 5A @ 240 VAC / 24 VDC			
Output 3	SSR: 12 VDC, 24 mA Short Circuit Protection		Relay: SPST 5A @ 240 VAC / 24 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)	96 x 96 x 69.1			
Weight (unpacked)	280 g			
Mounting	Flush			
Certification	Compliant			
Degree of Protection	IP 20 Terminal & Enclosure, IP 40 (For Front Panel only)			

EMI / EMC

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 Immunity test (DC)	IEC 61000-4-29
Conducted Emission	CISPR 11
Radiated Emission	CISPR 11

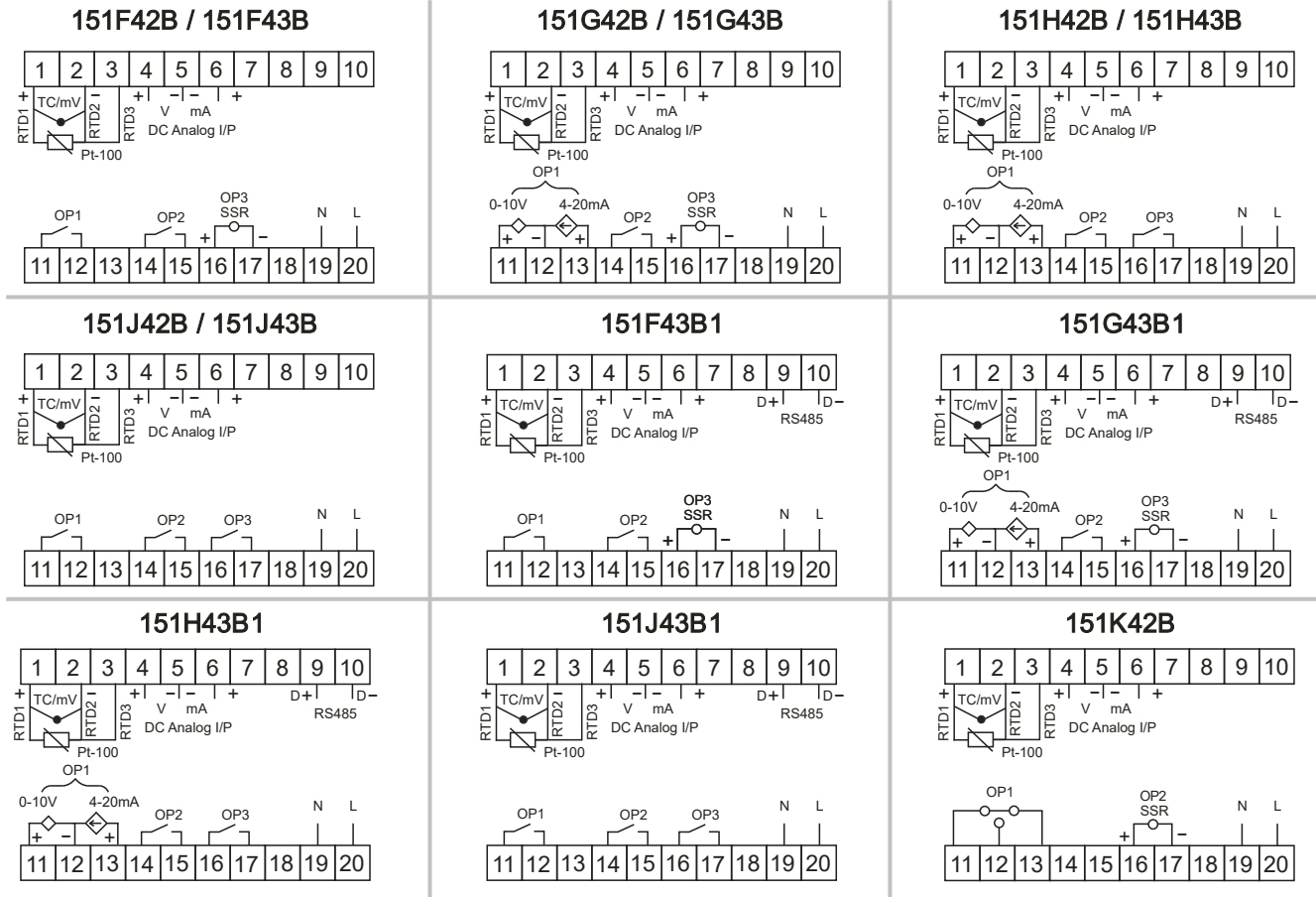
Environmental

Cold Heat	IEC 60068-2-1
Dry Heat	IEC 60068-2-2
Vibration	IEC 60068-2-6

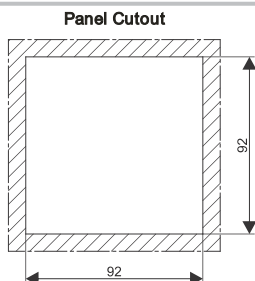
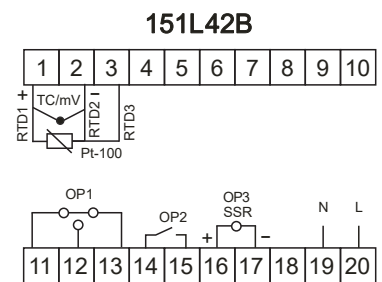
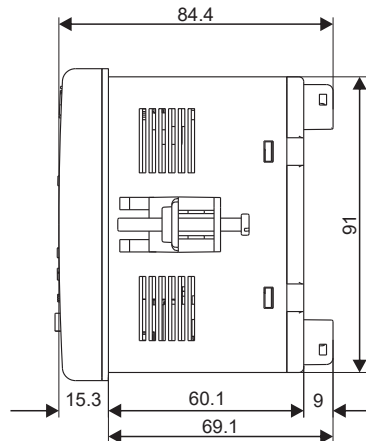
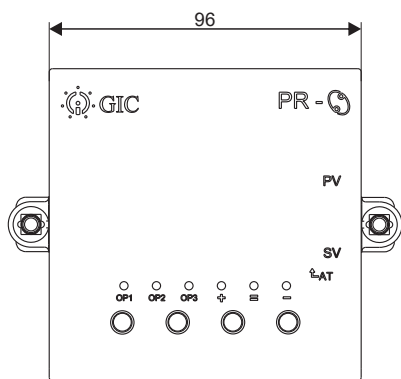
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CONNECTION DIAGRAM



MOUNTING DIMENSION (mm)



TERMINAL TORQUE & CAPACITY

 Ø 4 5.0mm Combi Head Bit./Flat	0.5 N.m (4.4 Lb.in) to 0.7 N.m (6.2 Lb. in)
	2 x 2.5 mm ² Solid/Stranded Wire
AWG	1 x 20 to 12