



TEMPERATURE CONTROLLERS



Temperature Controller

Product Selection Chart - Temperature Controllers



Temperature Controller

- Universal Input
- Lower Depth of 65mm
- Dual Line Eleven Segment Display with 15mm Height
- Configurable Output: Relay or SSR Drive
- °C & °F temperature unit selectable
- Ramp & Soak profile with Power Failure resumption mode
- RS 485 Communication
- IP 65 (For Front Panel)
- Multiple device programming with SD card support
- Rapid Set Point change feature
- Alarm Functionality
- Single/Dual acting PID controllers with 4 Control modes
- Auto-tuning PID with provision for Soft-Start



Ordering Information

Cat. No.	Description
TCS1T100	3 digit single display, RTD & thermocouple input, 10A SPDT relay or SSR
TCS2T100	3 digit dual display, RTD & thermocouple input, 10A SPDT relay or SSR
TCS4T2A0	4 digit dual display, RTD & thermocouple input, 5A SPST relay or SSR & 5A SPST relay with CT
TCS4T300	4 digit dual display, RTD & thermocouple input, 10A SPDT relay, SSR & 5A SPDT relay
TCS4U4A0	4 digit dual display, RTD, thermocouple & Analog input, 3 relay output 5A SPST, Analog output with CT
TCS4U50C	4 digit dual display, RTD, thermocouple & Analog input, 2 relay output 5A SPST, SSR & Analog output with Modbus
TCS4U40C	4 digit dual display, RTD, thermocouple & Analog input, 3 relay output 5A SPST, Analog output with Modbus
TCS4U5A0	4 digit dual display, RTD, thermocouple & Analog input, 2 relay output 5A SPST, SSR & Analog output with CT

Temperature Controller



Cat. No.	TCS1T100	TCS2T100	TCS4T2A0	TCS4T300
Display				
Display	3 Digit, Single display	3 Digit, Single display	4 Digit, Dual display	4 Digit, Dual display
Display Color	RED	White + Orange	White + Green	White + Green
Display Size	15mm	Upper Display : 15mm Lower Display : 7.7mm	Upper Display : 15mm Lower Display : 7.7mm	Upper Display : 15mm Lower Display : 7.7mm
LED Indications	Output 1, Autotune, (last Segment of SSD for AT,ST)	Output 1, Autotune	Output 1,2, Autotune, Timer	Output 1,2,3, Autotune, Timer
Programming method	Front Keys	Front Keys, SD card	Front Keys, SD card	Front Keys, SD card
Default Programming	SD card	SD card	SD card	SD card
Input				
Thermocouples (TC)	J, K, T, R, S	J, K, T, R, S	J, K, T, R, S	J, K, T, R, S
RTD	PT-100	PT-100	PT-100	PT-100
mV	-	-	0 to 60 & 12 to 60	0 to 60 & 12 to 60
Output				
Output 1	10A SPDT/ SSR (12Vdc,50mA)	10A SPDT/ SSR (12Vdc,50mA)	5A SPDT/ SSR (12Vdc,50mA)	10A SPDT/ SSR (12Vdc,50mA)
Output 2	-	-	5A SPST	5A SPDT
Communication, CT input & Sensor Supply				
CT input	-	-	Applicable	
Mechanical parameters				
Dimension (WXHxD) mm	48X48X65	48X48X65	48X48X65	48X48X65
Panel cutout	45X45	45X45	45X45	45X45
Indication Accuracy				
RTD	±0.5% of PV or ±3°C (Which ever is higher one),±1 digit at room temp			
TC	±0.5% of PV or ±2°C (Which ever is higher one),±1 digit at room temp			
Mounting	±0.5% of PV or ±3°C (Which ever is higher one),±1 digit at room temp			
Resolution				
TC : J,K,T (all TC)	1°C	1°C	0.1°C/ 1°C	0.1°C/ 1°C
TC: R & S	1°C	1°C	1°C	1°C
PT-100	1°C	1°C	0.1°C/ 1°C	0.1°C/ 1°C
mV	-	-	0.001	0.001
CT input	-	-	0.1	
Operating temperature	0 to 60°C	0 to 60°C	0 to 60°C	0 to 60°C
Relative humidity	85% RH	85% RH	85% RH	85% RH

Temperature Controller



Cat. No.	TCS1T100	TCS2T100	TCS4T2A0	TCS4T300
Power Supply Characteristics				
Supply Input	90 to 270 VAC/DC			
Frequency	47 to 63Hz			
Power Consumption (Aprox)	≈ 6VA @ 240V AC		≈ 8VA @ 240V AC	
Functional features				
Alarm functionality	-	-	Applicable	Applicable
Hour Meter	-	-	Applicable	Applicable
Dwell Timer	-	-	Applicable	Applicable
Control method	ON-OFF/PID	ON-OFF/PID	ON-OFF/PID	ON-OFF/PID
Controlling action	Heat/Cool	Heat/Cool	Heat/Cool/Heat-cool	Heat/Cool/Heat-cool
Tune method	Autotune/ Selftune			
Measurement Ranges				
J type	-199 to 750°C	-199 to 750°C	-199 to 750°C	-199 to 750°C
K type	-199 to 999°C	-199 to 999°C	-199 to 1350°C	-199 to 1350°C
T type	-199 to 400°C	-199 to 400°C	-199 to 400°C	-199 to 400°C
R & S	0 to 999°C	0 to 999°C	0 to 1750°C	0 to 1750°C
PT-100	-150 to 850°C	-150 to 850°C	-200 to 850°C	-200 to 850°C
C type	-	-	-	-
E type	-	-	-	-
B type	-	-	-	-
N type	-	-	-	-
L type	-	-	-	-
U type	-	-	-	-
W type	-	-	-	-
Compliance & certification				
Product standard	IEC 61326			
Certification	 			

Temperature Controller



Cat. No.	TCS4U4A0	TCS4U50C	TCS4U40C	TCS4U5A0
Display				
Display	4 Digit, Dual display	4 Digit, Dual display	4 Digit, Dual display	4 Digit, Dual display
Display Color	White + Green	White + Green	White + Green	White + Green
Display Size	Upper Display : 15mm Lower Display : 7.7mm	Upper Display : 15mm Lower Display : 7.7mm	Upper Display : 15mm Lower Display : 7.7mm	Upper Display : 15mm Lower Display : 7.7mm
LED Indications	Output 1,2,3, Autotune, Selftune,Timer	Output 1,2,3, Autotune, Selftune, Timer	Output 1,2,3, Autotune, Selftune,Timer	Output 1,2,3, Autotune, Selftune,Timer
Programming method	Front Keys, SD card	Front Keys, SD card	Front Keys, SD card	Front Keys, SD card
Default Programming	SD card	SD card	SD card	SD card
Input				
Thermocouples (TC)	J, K, T, R, S, C, E, B, N, L, U, W			
RTD	PT-100			
mV	0 to 60 & 12 to 60			
Voltage (V)	0 to 5, 0 to 10			
Current (mA)	0 to 20, 4 to 20			
Output				
Output 1	5A SPST	5A SPST	5A SPST	5A SPST
Output 2	5A SPST	5A SPDT	5A SPST	5A SPDT
Output 3	5A SPST	SSR (12Vdc,50mA)	5A SPST	SSR (12Vdc,50mA)
Output 4 (Voltage,Current)	0 to 10/0 to 5/0 to 20/ 4 to 20	0 to 10/0 to 5/0 to 20/ 4 to 20	0 to 10/0 to 5/0 to 20/ 4 to 20	0 to 10/0 to 5/0 to 20/ 4 to 20
Communication, CT input & Sensor Supply				
RS-485	-	Applicable	Applicable	-
CT input	Applicable	-	-	Applicable
Mechanical parameters				
Dimension (WXHXD) mm	48X48X65	48X48X65	48X48X65	48X48X65
Panel cutout	45X45	45X45	45X45	45X45
Indication Accuracy				
RTD	±0.5% of PV or ±2°C (Which ever is higher one),±1 digit at room temp			
TC	±0.5% of PV or ±2°C (Which ever is higher one),±1 digit at room temp			
Mounting	±0.5% of PV or ±3°C (Which ever is higher one),±1 digit at room temp			
Resolution				
TC : J,K,T (all TC)	0.1°C/ 1°C	0.1°C/ 1°C	0.1°C/ 1°C	0.1°C/ 1°C
TC: R & S	0.1°C/ 1°C	0.1°C/ 1°C	0.1°C/ 1°C	0.1°C/ 1°C
PT-100	0.1°C/ 1°C	0.1°C/ 1°C	0.1°C/ 1°C	0.1°C/ 1°C
mV	0.001	0.001	0.001	0.001
Analog (Voltage,Current)	0.001	0.001	0.001	0.001
CT input	0.1	0.1	0.1	0.1
Operating temperature	0 to 60°C	0 to 60°C	0 to 60°C	0 to 60°C
Relative humidity	85% RH	85% RH	85% RH	85% RH

Temperature Controller



Cat. No.	TCS4U4A0	TCS4U50C	TCS4U40C	TCS4U5A0
Power Supply Characteristics				
Supply Input	90 to 270 VAC/DC			
Frequency	47 to 63Hz			
Power Consumption (Aprox)	≈ 8VA @ 240V AC			
Functional features				
Alarm functionality	Applicable			
Ramp & Soak	Applicable			
Hour Meter	Applicable			
Dwell Timer	Applicable			
Control method	ON-OFF/PID			
Controlling action	Heat/Cool/Heat-cool			
Tune method	Autotune/ Selftune/ Adaptive tune			
Measurement Ranges				
J type	-199 to 750°C			
K type	-199 to 1350°C			
T type	-199 to 400°C			
R & S	0 to 1750°C			
PT-100	-200 to 850°C			
C type	0 to 2300			
E type	-200 to 750°C			
B type	149 to 1820			
N type	-200 to 1300°C			
L type	-200 to 600°C			
U type	-200 to 900°C			
W type	0 to 2300			
Compliance & certification				
Product standard	IEC 61326			
Certification	 			

EMI / EMC

Harmonic Current Emissions	IEC 61000-3-2
Voltage Current & Fluctuations	IEC 61000-3-3
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
Power Frequency Magnetic Field	IEC 61000-4-8
Voltage Dips Immunity Test (AC)	IEC 61000-4-11
Voltage Dips Immunity Test (DC)	IEC 61000-4-29
Conducted Emission	CISPR 14-1
Radiated Emission	CISPR 14-1

Safety test

Dielectric Strength (I/P & O/P)	IEC 60255-5
Impulse Voltage between I/P & O/P	IEC 60255-5
Single Fault	IEC 61010-01
Insulation Resistance	UL 508 > 100M Ohm
Leakage Current	UL 508 < 3.5mA

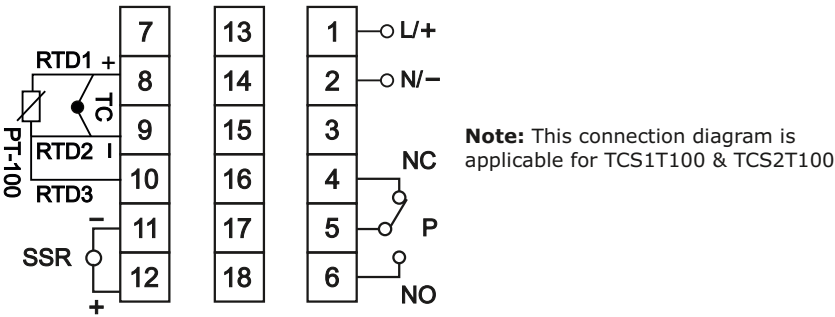
Environmental

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

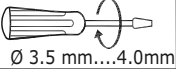
Temperature Controller



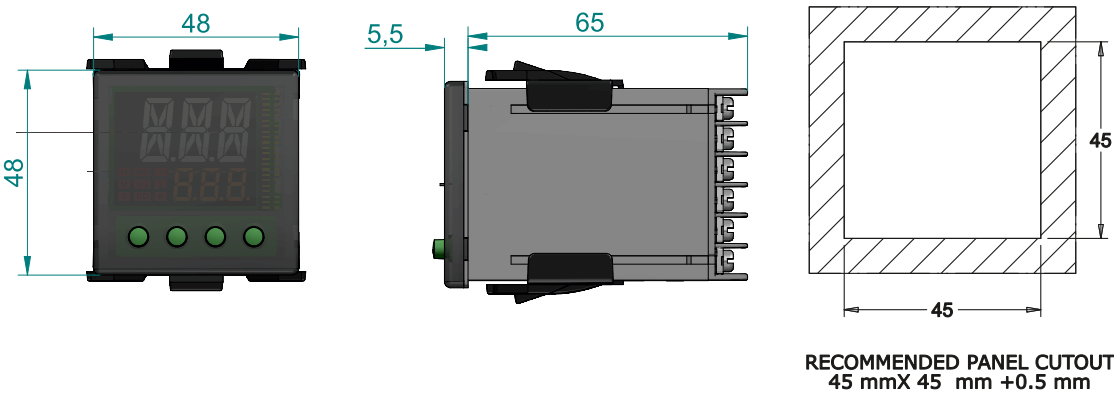
CONNECTION DIAGRAM



TERMINAL TORQUE & CAPACITY

	0.6 N.m (5.3 Lb.in)
	1 x 4.0 mm ² Solid/Stranded Wire
AWG	1 x 20 to 10

MOUNTING DIMENSION (mm)



Temperature Controller

- 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

Temperature Controller



Cat. No.	151F43B1	151G43B1	151H43B1	151J43B1
Parameters				
Supply Voltage (⎓)	110 - 240 VAC/DC			
Supply Variation	-20% to +20%(of ⎓)			
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	  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 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

Temperature Controller



Ordering Information

Single Acting PID Controller

Advanced PID Series PR 69

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

Temperature Controller



Cat. No.	151F42B	151G42B	151H42B	151J42B
Parameters				
Supply Voltage (中)	110 - 240 VAC/DC			
Supply Variation	-20% to +20% (of中)			
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	  RoHS 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

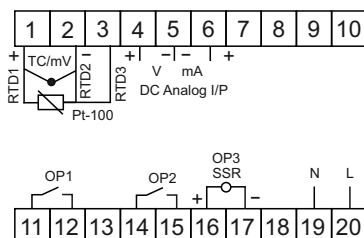
Cold Heat	IEC 60068-2-1
Dry Heat	IEC 60068-2-2
Vibration	IEC 60068-2-6

Temperature Controller

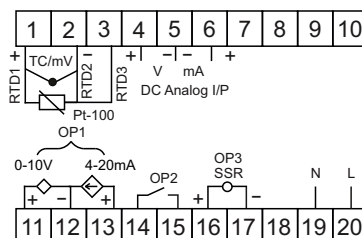


CONNECTION DIAGRAM

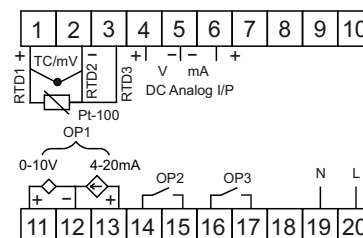
151F42B / 151F43B



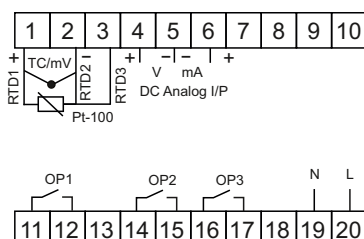
151G42B / 151G43B



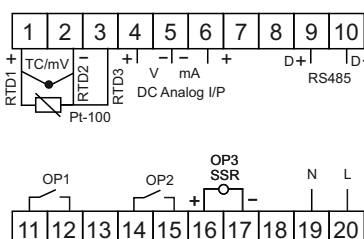
151H42B / 151H43B



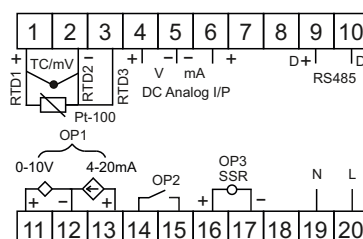
151J42B / 151J43B



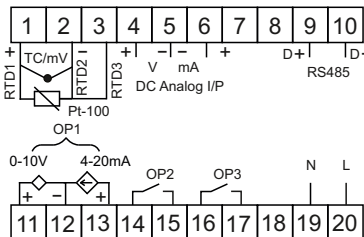
151F43B1



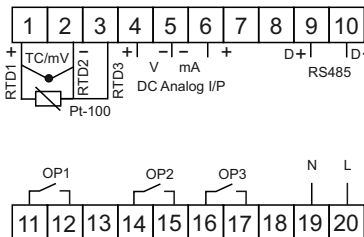
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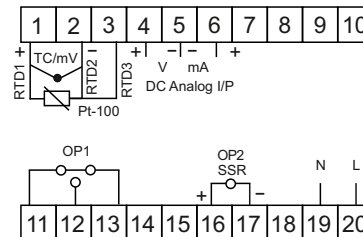
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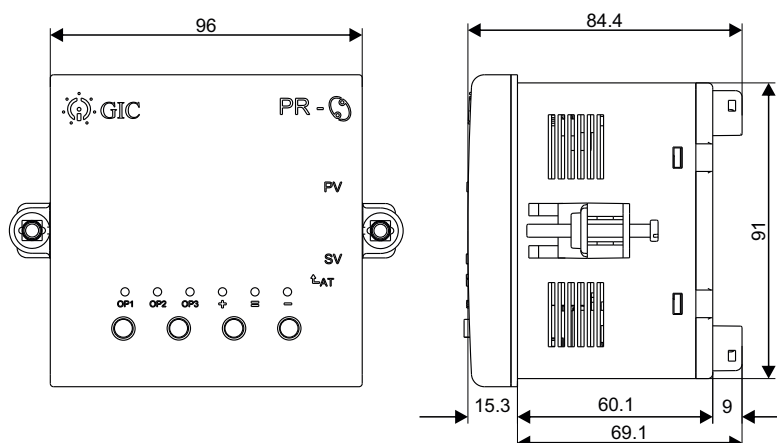
151J43B1



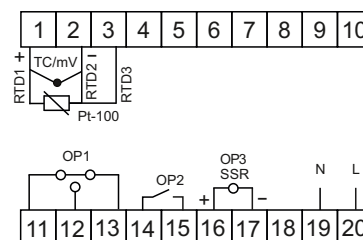
151K42B



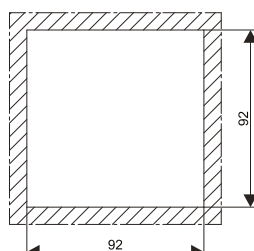
MOUNTING DIMENSION (mm)



151L42B



Panel Cutout



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)
AWG	2 x 2.5 mm² Solid/Stranded Wire 1 x 20 to 12

Temperature Controller

- Highly Accurate Performance.
- Flush Mounting Version 96x96 mm with luxurious single 4-digit LED Display.
- Wide supply range: 110-240 VAC/DC , -20 to +10% of Un.
- Front keypad with 4 keys.
- Thermocouple (J, K & T), RTD 3-wire (Pt-100) sensor inputs.
- Control Modes: Proportional, ON-OFF Asymmetric, ON-OFF Symmetric.
- °C & °F temperature unit selectable
- Selectable Output: Relay or SSR Drive
- Alarm Functionality



Ordering Information

Basic PID Temperature Controller

Cat. No.	Description
151M42B	Series PR 43, Relay Output (SPDT 10A) & SSR driving output (12 VDC, 24mA max), One Relay Output (SPDT 5A)
151N42B	Series PR 43, Relay Output (SPDT 10A) & SSR driving output (12 VDC, 24mA max)

Temperature Controller



Cat. No.	151N42B	151M42B
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) & Proportional	
Power Consumption	8 VA @ 265 VAC	
Temperature sensors / Inputs	Thermocouple: J, K ; RTD: PT100 - 3 wire compensation;	
Measurement Range	TC (J-type): -50 to 1000°C OR -58 to 1832°F TC (K-type): -50 to 1350°C OR -58 to 1350°F TC (T-type): -50 to 400°C OR -58 to 752°F RTD (Pt-100): -100 to 650°C OR -148 to 1202°F	
Measurement Accuracy	± 0.5% of full scale	
Resolution	1°C Fixed	
Configurable Set Points	1	
Display	7 segment, 4 digit LED display	
Keypad	4-Keys: [ESC] - ESC, [Down] - Down, [Up] - Up, [Enter] - Enter / Select	
Contact Arrangement	Relay: 1 C/O (SPDT)	
Contact Rating	10A RES. @ 250VAC/30VDC	5A(NO), 3A(NC), RES. @ 250VAC/30VDC
Output 1	Relay 1C/O 10A OR SSR Drive, 12 VDC 30mA (Selectable)	
Output 2	NA	Relay 1C/O 5A
Error Indications		
	SEn5	Sensor open/break error
	oUr9	Over range error
	Unr9	Under range error
	ErRt	Error in auto-tuning
	noRt	Auto-tuning not finished within 10 hour
	cbRt	Loop break interrupted
Operating Temperature	0°C to +50°C	
Storage Temperature	-20°C to +60°C	
Humidity (Non Condensing)	5 to 80% RH	
Enclosure	Flame Retardant UL 94 - V0	
Dimensions (W x H x D) (in mm)	96 x 96 x 84.4	
Weight (unpacked)	250 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 (Class A)
ESD	IEC 61000-4-2 (Level II)
Radiated Susceptibility	IEC 61000-4-3 (Level III)
Electrical Fast Transients	IEC 61000-4-4 (Level IV)
Surges	IEC 61000-4-5 (Level IV)
Conducted Susceptibility	IEC 61000-4-6 (Level III)
Voltage Dips & Interruptions (AC)	IEC 61000-4-11
Conducted Emission	CISPR 11 (Class A)
Radiated Emission	CISPR 11 (Class A)

Environmental

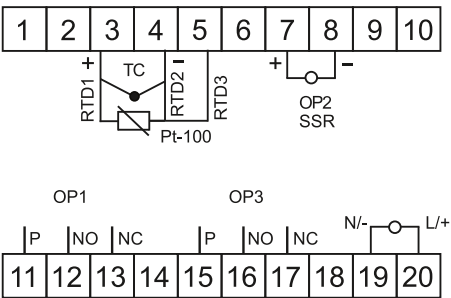
Cold Heat	IEC 60068-2-1
Dry Heat	IEC 60068-2-2
Vibration	IEC 60068-2-6 (5g)
Repetitive Shock	IEC 60068-2-27 (40g, 6ms)
Non-Repetitive Shock	IEC 60068-2-27 (30g, 15ms)

Temperature Controller

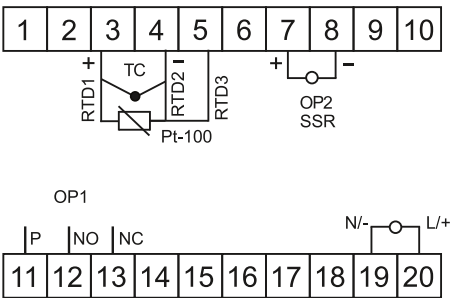


CONNECTION DIAGRAM

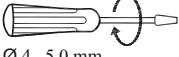
151M42B



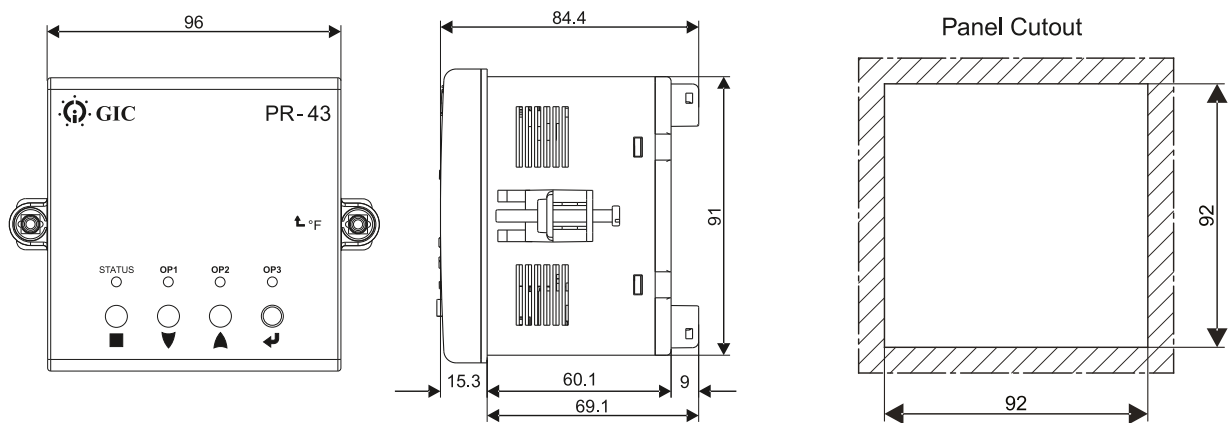
151N42B



TERMINAL TORQUE & CAPACITY

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

MOUNTING DIMENSION (mm)



Product Selection Chart - Temperature Controllers

Cat. No.	Flush Mount 96x96 mm	Dual Acting PID	Single Acting PID	PID ON/OFF	Universal Sensor Input	Timer functionality	J,K and PT100 Sensor	Analog Input (0-5 V, 1-5 V / 0-10 V / 4-20 mA)	Configurable Set Points			Output Configuration						RS 485 Comm.
									4	2	1	1 C/O	1 SPST	2 SPST	3 SPST	SSR output (12 VDC, 24 mA)	Analog output (0 -10 VDC / 4 - 20 mA)	
151F43B	●	●			●			●	●					●		●		
151G43B	●	●			●			●	●				●			●	●	
151H43B	●	●			●			●	●					●			●	
151J43B	●	●			●			●	●						●			
151F43B1	●	●			●			●	●					●		●		●
151G43B1	●	●			●			●	●				●			●	●	●
151H43B1	●	●			●			●	●					●			●	●
151J43B1	●	●			●			●	●						●			●
151F42B	●		●		●	●		●		●				●		●		
151G42B	●		●		●	●		●		●			●			●	●	
151H42B	●		●		●	●		●		●				●			●	
151J42B	●		●		●	●		●		●					●			
151K42B	●		●		●	●		●		●		●				●		
151L42B	●		●			●	●			●		●	●			●		