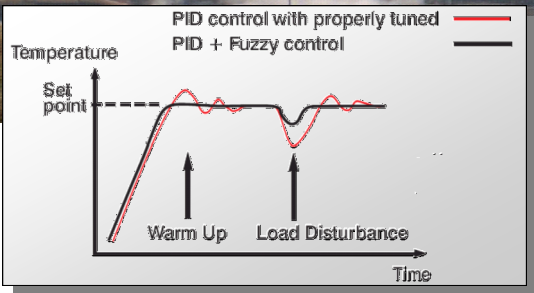


Temperature and process controllers and acquisition



al - Semiconductor - Food & Beverage - Pharmaceutical - Laboratory



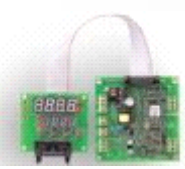
Piping controllers
The NC200 is a compact fuzzy logic plus PID temperature controller with J or K type thermocouple or RTD input. Multiple units (up to 247 units) can be networked together and logged with DL200 unit.



Low cost PID temperature controllers
The Fuzzy Logic plus PID microprocessor-based temperature controller, incorporate one or two bright, easy to read 4-digit LED display, indicating process value and set point value. Available in all DIN sizes with universal 18 bit A-D inputs and output options like RS-232/485, 15 bit D-A, alarm, SSR and PID cooling control.



Analog controllers
Reliable ON-OFF or P controllers with or without display and/or alarm. Input J,K or PT100 and output options like relay, SSR or analog.



OEM controllers
The Fuzzy Logic plus PID microprocessor-based temperature controller with universal 18 bit A-D inputs and output options like RS-232/485, 15 bit D-A, alarm, SSR and PID cooling control. Supplied for 90 - 250 VAC, 47-63 HZ or 11 - 26 V with or without 4-digit LED display.

Profiling (ramp & soak) controllers
Fuzzy Logic plus PID microprocessor-based profiling controller with a total of 9 profiles with 16, 32 or 64 segments of ramp and dwell, incorporate two bright, easy to read 4-digit LED displays. Includes 18 bit A-D with 200ms sample rate, digital filtering, 3 event outputs and many other high end options.



Self tuning PID temperature/process controllers
Beyond the fuzzy logic plus PID of this high end controller the self-tune, unlike auto-tune, will produce less disturbance to the process during tuning. Further these units include 2 programmable outputs and inputs including current transformer and a 10 function event input and an extra alarm output. Further options are programmable digital filter, dual setpoint/PID, ramp & dwell, remote set, pump/pressure control, difference control, variable period full wave SSR and networking.



Digital controller
Reliable ON-OFF or fuzzy PID controller with dual display and optional alarm. Wide range of input and output options like relay, SSR or analog.



Safety limit controllers
High or low limit safety device with a latching output. The unit is powered by 11-26 V or 90-250 VAC supply, incorporating a 3 amp. form C relay for limit control, an universal input which is fully programmable for PT100, thermocouple types J, K, T, E, B, R, S, N, L, C, P and 0~60mV. Optional port for: RS-232, RS-485 and retransmission. Alternative input/output options include SSR drive, triac, event, relay or isolated voltage.



Digital indicators
Easy and low cost display with a wide range of input and outputs.



W.i.T.D services

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Basic specifications Temperature Controllers



Piping controllers

Power	90 ~ 250 VAC, 47 ~ 63 Hz, 800VA maximum
Input	J, K and PT100 (DIN)
Output	Relay 7A @25 C, 3.5A @47.5 C. 90 ~ 250 VAC, 47 ~ 63Hz.
Control	Action reverse (heating), PID, Auto-tuning (cold start and warm start).
Communication	RS-232/RS-485 Modbus RTU, 2.4 ~ 38.4 Kbits/sec
Dimensions	50.3(W)x52.4(L)x45(H)mm, 112gr.

Low cost PID temperature controllers

TC21/91

TC4100/7100/8100/9100

Power	90 - 250 VAC, 47 - 63 Hz, <12VA or 11 - 26 VAC / VDC, SELV, Limited Energy, <12VA		
Input	Resolution: 18 bits @ 5 times/sec, CMRR: 120dB, NMRR: 55dB; J, K, T, E, B, R, S, N, L, PT100 (DIN & JIS), mV (0-60mV), mA (0-20mA), V (0-1/5/10V) with programmable digital filter.		
Output	1(+1) Relay 2A / 240 VAC, triac (1A / 240VAC), SSR (5V/30mA, 14V/40mA), Linear 15bit (0-20mA, 0-5/10V).	2x Relay 2A / 240 VAC, triac (1A / 240VAC), SSR (5V/30mA, 14V/40mA), Linear 15bit (0-20mA, 0-5/10V).	
Control	Output 1: Reverse (heating) or direct (cooling) action, Output 2: PID cooling, 50 ~ 300% of PB. ON-OFF with hysteresis, P or PD with 0 - 100.0 % offset adjustment or Fuzzy logic PID.		
Alarm	1x form A relay 2A / 240VAC	1x form C relay 2A / 240VAC	
Alarm functions	Dwell timer, deviation High / Low, deviation band High / Low, process High / Low. Normal, latching, hold, latching/hold.		
Communication	RS-232/RS-485 Modbus RTU, 2.4 ~ 38.4 Kbits/sec or 15 bits retransmit (4-20 mA, 0-20 mA, 0-1V, 0-5V, 1-5V, 0-10V)		
Dimensions	50x27x111mm (1/32")	48x48x48 (1/16")	96x96x65 / 72x72x79 / 48x96x80 / 48x48x116mm

Analog controllers

TC40X

TC70X

TC80X

TC90X

Power	90-240VAC, 50Hz/60Hz. TC404/5 also 16-48VDC / 12-36VAC			
Input	J, K, PT 100 (DIN & JIS)			
Output	Relay 5A/240VAC, pulsed voltage to drive SSR, 0/4-20mA linear, 0-10V linear.			
Control	ON-OFF or P			
Alarm	Deviation alarm relay output, rated 2A/240VAC			
Dimensions	96(W)x96(H)x53(D)mm	72(W)x72(H)x65(D)mm	48(W)x96(H)x65(D)mm	48(W)x48(H)x86(D)mm

OEM controller

General	See specifications TC4100			
Dimensions	Control board 100x100x30mm, display board 80x70x10mm			

Profiling controllers

TP41

TP91

General	See specifications TC4100			
Profiles	Profile 1,2,3,4: 16 segments, profile 5,6,7: 32 segments, profile 8,9: 64 segments, event Outputs: 3			
Dimensions	96mm(W) X 96mm(H) X 65mm(D), 250gr		48mm(W) X 48mm(H) X 116mm(D), 150gr	

Self tuning PID temperature/process controllers

PC2500/9300

PC4300/8300

Power	90 - 250 VAC, 47 - 63 Hz, 15VA or 11 - 26 VAC / VDC, SELV, Limited Energy, 15VA			
Input 1	Resolution: 18 bits @ 5 times/sec, CMRR: 120dB, NMRR: 55dB; J, K, T, E, B, R, S, N, L, PT100 (DIN), PT100 (JIS), mV (0-60mV), mA (0-20mA), V (0-1/5/10V) with programmable digital filter.			
Input 2	Resolution: 18 bits @ 5 times/sec, CMRR: 120dB, NMRR: 55dB; 4-20mA, 0-20mA, 0 - 1V, 0 - 5V, 1 - 5V, 0 - 10V (0 - 50 Amp. AC current transformer #CT94-1)			
Input 3	Digital max ±10V. Select second set point and/or PID, reset alarm 1 and/or alarm 2, disable output 1 and/or output 2, remote lockout. (for PC2500 shared with input 2).			
Output	1(+1) Relay 2A / 240 VAC, triac (1A / 240VAC), SSR (5V/30mA, 14V/40mA), Linear 15bit (0-20mA, 0-5/10V).	2x Relay 2A / 240 VAC, triac (1A / 240VAC), SSR (5V/30mA, 14V/40mA), Linear 15bit (0-20mA, 0-5/10V).		
Control	Output 1: Reverse or direct action. Output 2: PID cooling, 1~255% of PB. ON-OFF, P or PD with 0-100% offset, Fuzzy logic PID, sleep mode, power Limit : 0-100% output 1 & 2, ramping/pump/pressure/differential control, remote set point.			
Alarm	1x 5V logic output (+1 form A relay 2A/240VAC)	1x Form A/B relay 2A/240VAC (+1 frm A relay)	1x Form C relay 2A / 240VAC & 1x Form A relay 2A / 240VAC	
Alarm functions	Dwell timer (0.1 - 4553.6min), deviation High / Low, deviation band High / Low, process 1 & 2 High / Low, loop break, sensor break. Normal, latching, hold, latching/hold.			
Communication	RS-232/RS-485 Modbus RTU, 2.4 ~ 38.4 Kbits/sec or 15 bits retransmit (4-20 mA, 0-20 mA, 0-1V, 0-5V, 1-5V, 0-10V)			
Dimensions	50x26.5x110.5mm	50.7x50.7x88.5mm	96x96x66mm	48x96x80mm

Digital controller

Power	90 - 250 VAC, 47 - 63 Hz, <5VA or 11 - 26 VAC / VDC, <5VA	
Input	J, K, T, E, B, R, S, N, PT100 (DIN & JIS), 0-20mA, 0-5/10V	
Output	Relay 3A / 240VAC, SSR (5V/15mA), 0-20mA, 0-10V).	
Control	Reverse (heating) or direct (cooling) action, ON-OFF or Fuzzy logic PID	
Alarm	relay 2A/240VAC	
Dimensions	24(H)x48(W)x99(D)mm, 110gr.	

Safety limit controllers

TL41

TL91

Power	90 - 250 VAC, 47 - 63 Hz, 10VA or 11 - 26 VAC / VDC, SELV, Limited Energy, 10VA	
Input	Resolution: 18 bits @ 5 times/sec, CMRR: 120dB, NMRR: 55dB; J, K, T, E, B, R, S, N, L, PT100 (DIN & JIS), mV (0-60mV), mA (0-20mA), V (0-1/5/10V) with programmable digital filter.	
Output	2x Relay 2A/240 VAC, triac, SSR (5V/30mA, 14V/40mA)	2x Relay, triac, SSR, RS-485, event input or retransmit
Control	Programmable High Limit, Low Limit and High/Low Limit	
Communication	RS-232/RS-485 Modbus RTU or 15 bits retransmit.	See output
Dimensions	96mm(W) X 96mm(H) X 65mm(D), 260gr.	48mm(W) X 48mm(H) X 94mm(D), 150gr

Digital indicators

TD21

TD900

Power	90 - 250 VAC or 11 - 26 VAC/VDC 10VA	90-240VAC, 50Hz/60Hz.
Input	J, K, T, E, B, R, S, N, L, PT100 (DIN & JIS) and mA & mV	J, K, PT 100 (DIN & JIS)
Dimensions	50mm(W)x26.5mm(H)x110.5mm(D), 120gr.	48(W)x48(H)x86(D)mm, 140gr.

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