



*i-therm*

TEMP  
CONTROLLERS



TIMERS



COUNTERS



precision  
unrivalled



***Innovative Instruments &  
Controls LLP***

Innovative Instruments & Controls LLP *i-therm* is manufacturer of Process Control & Measuring Instruments since its inception in 1996. Our product range includes Temperature controllers, Timers, Counters, Humidity controllers etc. Our ideology is to satisfy the stringent requirements of the customers by providing them competitive solutions and services by our persistent efforts. We strive hard to meet the constant requirements of our clientele by providing them exceptional support and services by creating a niche of its own. We are committed in meeting the critical challenges of our customers by upgrading our existing products. We strongly emphasize in the design and development of new products with the emerging technologies and the convenience of our customers. I-Therm products continue to excel in the national domain and intend to excel in the international terrain, sustaining the same quality and service for which we are renowned.

Our drive for excellence is backed by a resonating focus on developing our employees' potential to the fullest extent and creating an inclusive environment where the unique combination of the diverse backgrounds, experiences and perspectives of each employee makes our business success possible.

"Innovative Instruments & Controls LLP" is ambitious, enthusiastic and determined to the given opportunity & will rise to the expectations of all customers!

Innovative Instruments joined the clarion call of Prime Minister's 'Make in India' campaign.

#### MISSION

Drawing on our strengths of collaborative innovation and state-of-the-art manufacturing processes and technologies, we are committed to pursuing a continual research and development program to emerge as a specialist provider.

#### VISION

To be a world class organisation, which excels in an enduring and trusting customer relationship, relentless technological innovation, people development, all delivered with passion and entrepreneurial spirit.



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# AI Series Digital Temperature Controllers





## Features

- Universal Sensor Input (All Thermocouple & Pt-100 Input)
- Time Delay for Compressor
- Selectable Relay and SSR control Output
- Selectable Heat/ Cool Mode
- Program lock function to prevent tampering of parameters

## Specifications

DESCRIPTION		AI-5X41	AI-5X42	AI-5X81	AI-5X82
Display	Type	7 Segment LED (White Display for PV and Pure Green Display for SV)			
	No. of Digits	4 Digits Single Row		4 Digits Dual Row	
	LED Indication	Output Status	Output Status	Output Status	Output Status   Soak time

### INPUT SPECIFICATION

Measurement	Input	T/C : J, K, R, S   RTD : Pt-100			
	Accuracy	0.3% FS			
	Resolution	J, K, R, S : 1 °C   Pt-100 : 1 °C / 0.1 °C			

### OUTPUT SPECIFICATION

Set Point	No. of Set Point	1	2	1	2
Output	Relay	5A @ 250 VAC/30 VDC			
	SSR Drive	12 VDC @ 30mA			
Output 1	Relay / SSR	User Selectable	Factory Set	User Selectable	Factory Set
Output 2	Relay / SSR	N.A	Factory Set	N.A	Factory Set

### FUNCTIONAL SPECIFICATION

Control Parameter	Action	T.P or ON/OFF			
	Hysteresis	0.1 to 100.0 °C/ 1 to 100 °C			
	Delay	0 to 500 Sec			
	Proportional Band	0.5 to 999.9°C			
	Cycle Time	1.0 to 100.0 Sec			
Output 2 Function	Aux. Control	N.A	Absolute / Deviation	N.A	Absolute / Deviation
	Alarm	N.A	Absolute Low / High Deviation Low / High Band	N.A	Absolute Low / High Deviation Low / High Band
	Soak Timer	N.A			1-9999 mins

### GENERAL SPECIFICATION

Supply Voltage	90 - 270 VAC / DC (24 VDC Available on Request)									
Temperature And Humidity	Operating : 0-50°C   Storage : -20° to 75°C   95 % RH (Non-condensing)									
Dimensions in mm (H x W x D)	Model No.	Display Height	Model No.	Display Height	Model No.	Display Height		Model No.	Display Height	
						PV	SV		PV	SV
48 x 48 x 78	AI-5441	0.36"	AI-5442	0.36"	N.A	N.A	N.A	N.A	N.A	N.A
72 x 72 x 65	AI-5741	0.56"	AI-5742	0.56"	N.A	N.A	N.A	N.A	N.A	N.A
48 x 96 x 53	AI-5841	0.56"	N.A	N.A	N.A	N.A	N.A	N.A	N.A	N.A
96 x 96 x 53	AI-5941	0.56"	AI-5942	0.56"	AI-5981	0.56"	0.56"	AI-5982	0.56"	0.56"

### I-THERM ORDER CODE GUIDE :

AI-5	X	X	X	X	X	X
AI - 5XXX-X-X-X	SIZE	DISPLAY	NO. OF OUTPUT	OP1 TYPE *	OP2 TYPE *	SUPPLY
4 ---->>	48 x 48	4 >> 4 Digits x 1 Row	1 #	R ---->> Relay	R ---->> Relay	A -->> 230 VAC
7 ---->>	72 x 72	8 >> 4 Digits x 2 Row	2	S ---->> SSR	S ---->> SSR	B -->> 24 VDC
8 ---->>	48 x 96				N ---->> None	
9 ---->>	96 x 96					

\* Not applicable for Single Output Models

# Output Type User Selectable B/W Relay and SSR

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# AI Series PID Temperature Controllers



## Features

- Universal Sensor Input ( All Thermocouple and RTD Input)
- Programmable Single Step Ramp and Soak function
- In-built Overshoot Control Protection Algorithm
- Alarm Acknowledge and Inhibit function

## Specifications

DESCRIPTION		AI-7X41	AI-7X81	AI-7X82	AI-7X83
Display	Type	7 Segment LED (White Display for PV and Pure Green Display for SV)			
	No. of Digits	4 Digits Single Row	4 Digits Dual Row		
	LED Indication	Output Status	Output Status	Output Status   Soak Time	Output Status

### INPUT SPECIFICATION

Measurement	Input	T/C : J, K, R, S, N, T, B   RTD : Pt-100			
	Accuracy	0.3% FS			
	Resolution	J, K, R, S, N, T, B : 1 °C   Pt-100 : 1 °C/ 0.1 °C			

### OUTPUT SPECIFICATION

Set Point	No. of Set Point	1	1	2	3
Output	Relay	5A @ 250VAC/ 30VDC			
	SSR Drive	12 VDC @ 30mA			
Output 1	Relay / SSR	User Selectable			Factory Set
Output 2	Relay / SSR	N.A	N.A	User Selectable \$	Factory Set
Output 3	Relay / SSR	N.A	N.A	N.A	Factory Set

### FUNCTIONAL SPECIFICATION

Control Parameter	Action	PID or ON/OFF			
	Hysteresis	0.1 to 100.0 °C/ 1 to 100 °C			
	Delay	0 to 500 Sec			
	P, I & D Values	User Programmable			
	Output Power	0 to 100 %			
	Cycle Time	1.0 to 100.0 Sec			
Output 2 / 3 Function	Aux. Control	N.A	N.A	Absolute / Deviation	
	Alarm	N.A	N.A	Low/ High/ Low Deviation/ High Deviation/ Band	
	Soak Timer	N.A	N.A	0.01 Sec to 9999 Hrs (with backup function)	

### OPTIONAL SPECIFICATION

Digital Input	N.A	N.A	Available on request	Available
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### GENERAL SPECIFICATION

Supply Voltage	90 - 270 VAC/ DC (24 VDC Available on Request)										
Temperature And Humidity	Operating : 0 - 50°C   Storage : -20° to 75°C   95 % RH (Non-condensing)										
Dimensions in mm (H x W x D)	Model No.	Display Height	Model No.	Display Height		Model No.	Display Height		Model No.	Display Height	
				PV	SV		PV	SV		PV	SV
48 x 48 x 78	AI-7441	0.36"	AI-7481	0.36"	0.24"	AI-7482	0.36"	0.24"	AI-7483	0.36"	0.24"
96 x 48 x 53	AI-7641	0.36"	AI-7681	0.36"	0.36"	AI-7682	0.36"	0.36"	AI-7683	0.36"	0.36"
72 x 72 x 65	AI-7741	0.56"	AI-7781	0.56"	0.39"	AI-7782	0.56"	0.39"	AI-7783	0.56"	0.39"
48 x 96 x 53	AI-7841	0.56"	AI-7881	0.36"	0.36"	AI-7882	0.36"	0.36"	AI-7883	0.36"	0.36"
96 x 96 x 53	AI-7941	0.56"	AI-7981	0.80"	0.56"	AI-7982	0.80"	0.56"	AI-7983	0.80"	0.56"

### I-THERM ORDER CODE GUIDE :

AI-7	X	X	X	X	X	X	X
AI - 7XXX-X-X-X-X	SIZE	DISPLAY	NO. OF O/P	OP1 TYPE *	OP2 TYPE *	OP3 TYPE *	SUPPLY
4 ---->>	48 x 48	4 >> 4 Digits x 1 Row	1 #	R ---->> Relay	R ---->> Relay	R ---->> Relay	A -->> 230 VAC
6 ---->>	96 x 48	8 >> 4 Digits x 2 Row	2 #	S ---->> SSR	S ---->> SSR	S ---->> SSR	B -->> 24 VDC
7 ---->>	72 x 72		3		N ---->> None	N ---->> None	
8 ---->>	48 x 96						
9 ---->>	96 x 96						

\* Not applicable for Single Output Models

# Output Type User Selectable B/W Relay and SSR

\$ Except AI-7482

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Nx Series Economy

PID Temperature Controllers



## Features

- Programmable Sensor Input (Thermocouple J & K type and RTD Input)
- Selectable Relay and SSR control Output
- Programmable Single Step Ramp function
- In-built Overshoot Control Protection Algorithm
- Alarm Acknowledge and Inhibit function
- Program lock function to prevent tampering of parameters

## Specifications

DESCRIPTION		Nx-X61	Nx-X62
Display	Type	7 Segment LED (White Display for PV and Pure Green Display for SV)	
	No. of Digits	3 Digits Dual Row	
	LED Indication	Output Status   Tune Status	Output Status   Alarm Status   Tune Status

### INPUT SPECIFICATION

Measurement	Input	T/C : J, K   RTD : Pt-100	
	Accuracy	0.3% FS	
	Resolution	J, K, Pt-100 : 1 °C	

### OUTPUT SPECIFICATION

Set Point	No. of Set Point	1	2
Output	Relay	5 A @ 250VAC/ 30VDC	
	SSR Drive	12 VDC @ 30mA	
Output 1	Relay / SSR	User Selectable	Factory Set
Output 2	Relay / SSR	N.A	Factory Set

### FUNCTIONAL SPECIFICATION

Control Parameter	Action	PID or ON/OFF	
	Hysteresis	1 to 25 °C	
	Delay	0 to 500 Sec	
	P, I & D Values	User Programmable	
	Output Power	0 to 100 %	
	Cycle Time	1.0 to 99.9 Sec	
Output 2 Function	Aux. Control	N.A	Absolute/ Deviation
	Alarm	N.A	Low/ High/ Low Deviation/ High Deviation/ Band

### GENERAL SPECIFICATION

Supply Voltage	90 - 270 VAC/ DC (24 VDC Available on Request)					
Temperature And Humidity	Operating : 0 - 50°C   Storage : -20° to 75°C   95 % RH (Non-condensing)					
Dimensions in mm (H x W x D)	Model No.	Display Height		Model No.	Display Height	
		PV	SV		PV	SV
48 x 48 x 87	Nx-461	0.39"	0.36"	Nx-462	0.39"	0.36"
72 x 72 x 82	Nx-761	0.56"	0.39"	Nx-762	0.56"	0.39 "
96 x 96 x 80	Nx-961	0.80"	0.56"	Nx-962	0.80"	0.56"

### I-THERM ORDER CODE GUIDE

Nx	X	X	X	X	X	X
Nx -XXX-X-X-X	SIZE	DISPLAY	NO. OF OUTPUT	OP1 TYPE *	OP2 TYPE *	SUPPLY
4 ---->>	48 x 48	6 >> 3 Digits x 2 Row	1 #	R ---->> Relay	R ---->> Relay	A -->> 230 VAC
7 ---->>	72 x 72		2	S ---->> SSR	S ---->> SSR	B -->> 24 VDC
9 ---->>	96 x 96				N ---->> None	

\* Not applicable for Single Setpoint Controllers

# Output Type User Selectable B/W Relay and SSR



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# Nx Series Universal Process Controllers



## Features

- Universal sensor input (All Thermocouple, RTD and Linear Input)
- Provision for Transmitter Supply
- Programmable Single Step Ramp and Soak function
- In-built Overshoot Control Protection Algorithm

## Specifications

DESCRIPTION		Nx-X81	Nx-X82	Nx-X83
Display	Type	7 Segment LED (White Display for PV and Pure Green Display for SV)		
	No. of Digits	4 Digits Dual Row		
	LED Indication	Output Status   Tune Status	Output Status   Tune Status Soak Time Status	Output Status   Tune Status RTX Status   Soak Time Status

### INPUT SPECIFICATION

Measurement	Input	T/C : J, K, R, S, N, T, B   RTD : Pt-100   Analog : 0-1 VDC, 0-3.3 VDC, 0-5 VDC, 0-10 VDC, 0-20 mA, 4-20 mA
	Accuracy	0.3% FS
	Resolution	T/C : 1 °C   Pt-100 : 1 °C/ 0.1 °C   Analog : 1 / 0.1 / 0.01 / 0.001 EU

### OUTPUT SPECIFICATION

Set Point	No. of Set Point	1	2	3
Output	Relay	5A @ 250VAC/ 30VDC		
	SSR Drive	12 VDC @ 30mA		
	mA (4~20/0~20)	N.A		500Ω Max.
	Volt (0-10)	N.A		1 KΩ Max.
Output 1	Relay / SSR	User Selectable		Factory Set
	mA / Volt	N.A		
Output 2	Relay / SSR	N.A	Factory Set	Factory Set
Output 3	Relay / SSR	N.A	N.A	Factory Set

### FUNCTIONAL SPECIFICATION

Control Parameter	Action	PID or ON/OFF		
	Hysteresis	0.1 to 100.0 °C/ 1 to 100 °C		
	Delay	0 to 500 Sec		
	P, I & D Values	User Programmable		
	Output Power	0 to 100 %		
	Cycle Time	1.0 to 100.0 Sec		
Output 2 / 3 Function	Aux. Control	N.A	Absolute/ Deviation	
	Alarm	N.A	Low/ High/ Low Deviation/ High Deviation/ Band	
	Soak Timer	N.A	0.01 Sec to 9999 Hrs (with backup function)	
Transmitter Supply	5 VDC/ 10 VDC/ 12 VDC/ 24 VDC			

### GENERAL SPECIFICATION

Supply Voltage	90 - 270 VAC/ DC (24 VDC Available on Request)								
Temperature And Humidity	Operating : 0 - 50°C   Storage : -20° to 75°C   95 % RH (Non-condensing)								
Dimensions in mm (H x W x D)	Model No.	Display Height		Model No.	Display Height		Model No.	Display Height	
		PV	SV		PV	SV		PV	SV
48 x 48 x 87	Nx-481	0.36"	0.36"	Nx-482	0.36"	0.36"	Nx-483	0.36"	0.36"
72 x 72 x 82	Nx-781	0.56"	0.39"	Nx-782	0.56"	0.39 "	Nx-783	0.56"	0.39 "
96 x 96 x 80	Nx-981	0.80"	0.56"	Nx-982	0.80"	0.56"	Nx-983	0.80"	0.56"

### I-THERM ORDER CODE GUIDE :

Nx	X	X	X	X	X	X	X
Nx -XXX-X-X-X-X	SIZE	DISPLAY	NO. OF O/P	OP1 TYPE *	OP2 TYPE *	OP3 TYPE *	SUPPLY
4 ---->>	48 x 48	8 >> 4 Digits x 2 Row	1 #	R ---->> Relay	R ---->> Relay	R ---->> Relay	A -->> 230 VAC
7 ---->>	72 x 72		2 #	S ---->> SSR	S ---->> SSR	S ---->> SSR	B -->> 24 VDC
9 ---->>	96 x 96		3	C ---->> Current	N ---->> None	N ---->> None	

\* Not applicable for Single Setpoint Controllers # Output Type User Selectable B/W Relay and SSR

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# PI Series Process Indicators



## Features

- Universal Sensor Input (All Thermocouple , Pt-100 and Linear Input)
- Provision for transmitter supply
- Provision for Inverse Scaling
- Provision for Retransmission output
- Optional RS-485 Modbus Protocol

## Specifications

DESCRIPTION		PI-XX	PI-XXU	PI-XX2	PI-XXX
Display	Type	7 Segment LED (White Display for PV)			
	No. of Digits	4 Digits Single Row			
	LED Indication	N.A.	N.A.	Alarm Status	Alarm Status

### INPUT SPECIFICATION

Measurement	Input Type	Analog	Universal	Universal	Universal
	Input	T/C : J, K, R, S, N, T, B   RTD : Pt-100			
		Analog : 0-1 VDC, 0-3.3 VDC, 0-5 VDC, 0-10 VDC, 0-20 mA, 4-20 mA			
	Accuracy	0.3% FS			
	Resolution	T/C : J, K, R, S, N, T, B : 1 °C   Pt-100 : 1 °C/ 0.1 °C			
		1/ 0.1/ 0.01/ 0.001			

### OUTPUT SPECIFICATION

Alarm Output	Relay	N.A.	N.A.	5A @ 250VAC / 30VDC	5A @ 250VAC / 30VDC
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### FUNCTIONAL SPECIFICATION

Alarm 1 Function	N.A.	N.A.	Low/ High/ Band	
Alarm 2 Function	N.A.	N.A.	Low/ High/ Band	
Serial Communication	N.A.	N.A.	N.A.	RS-485 Half Duplex
Retransmission	N.A.	N.A.	N.A.	0-20 mA, 4-20 mA (500Ω Max) 0-10 Volt (1KΩ Max)
Transmitter Supply	N.A.	5 VDC / 10 VDC / 12 VDC / 24 VDC @ 30 mA		

### GENERAL SPECIFICATION

Supply Voltage	90 - 270 VAC/ DC (24 VDC Available on Request)							
Temperature And Humidity	Operating : 0-50°C   Storage : -20° to 75°C   95 % RH (Non-condensing)							
Dimensions in mm (H x W x D)	Model No.	Display Height	Model No.	Display Height	Model No.	Display Height	Model No.	Display Height
48 x 48 x 85	PI-44	0.36"	PI-44U	0.36"	PI-442	0.36"	PI-44X	0.36"
72 x 72 x 65	PI-77	0.56"	PI-77U	0.56"	PI-772	0.56"	PI-77X	0.56"
48 x 96 x 53	PI-88	0.56"	PI-88U	0.56"	PI-882	0.56"	PI-88X	0.56"
96 x 96 x 53	PI-99	0.56"	PI-99U	0.56"	PI-992	0.56"	PI-99X	0.56"

### I-THERM ORDER CODE GUIDE :

PI	XX	X	X	X	
PI-XX-X-X-X	SIZE	CONFIGURATION		COMMUNICATION	SUPPLY
	4 --->> 48 x 48	N : Only Linear Input		N	A -->> 230 VAC
	7 --->> 72 x 72	U : Universal Input With X'ter Supply		N	B -->> 24 VDC
	8 --->> 48 x 96	2 : Universal Input + 2 * Alarm + X'ter Supply		N	
	9 --->> 96 x 96	X : Universal Input + 2 * Alarm + X'ter Supply + RTS Output		C	

### ORDERING EXAMPLE : PI-88-X-C-A

SIZE	CONFIGURATION	COMMUNICATION	SUPPLY
PI-88	X	C	A
48 x 96	Universal Input + 2 * Alarm + X'ter Supply + Re-Transmission Output	RS-485	230 VAC



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# Digital Timers





# Specifications

DESCRIPTION		KTM-XX3	KTM-XX6	XT-X3	XT-X6	XTM-XX3
		KEYBOARD BASED				PUSH WHEEL BASED
Display	Type	7 Segment LED (White Display for Elapsed Time and Pure Green Display for Set Time)				
	No. of Digits	3 Digits Single Row	3 Digits Dual Row	3 Digits Single Row	3 Digits Dual Row	3 Digits Single Row
	LED Ind.	Output Status   Hold Time Status   Time Base		Output Status   Time Base		Output Status   Auto Reset Time   Time Base
Time Base	Through Keyboard			Through Keyboard		Through DIP Switch
Timing Accuracy	Set	0.05 % of Full Scale				
	Repeat	0.01%				

## INPUT SPECIFICATION

Input	Start	Proximity S/W (PNP/NPN)   Potential Free Contact   3 to 30 VDC Pulse				
	Reset	Front Key   Rear Terminals   Power On				
Sensor Excitation	12 VDC @ 30 mA (Short Circuit Protected)					

## OUTPUT SPECIFICATION

No. Of Outputs	2	2	2	2	2
Relay	5A @ 250 VAC/ 30 VDC				
SSR Drive	12 VDC @ 30mA				
Relay / SSR Drive	Factory Set				

## CONFIGURATION PARAMETERS

Delay Mode	On Delay   Off Delay   Cycle-On Time First   Cycle-Off Time First   For-Rev With Hold Time				On Delay   Off Delay
Time Range	9.99 Sec to 999 Hrs				
Timer Start Modes	Power On Start	Power On Start	Power On Start	Power On Start	Power On Start
	Front Start	Front Start	Front Start	Front Start	Front Start
	Remote Pulse High to Low	Remote Pulse High to Low	Remote Pulse High to Low	Remote Pulse High to Low	Remote Pulse High to Low
	Remote Pulse + Level Close	Remote Pulse + Level Close	Remote Pulse Low to High	Remote Pulse Low to High	Remote Pulse + Level Close
			Remote Pulse + Level Open	Remote Pulse + Level Open	
		Remote Pulse + Level Close	Remote Pulse + Level Close		
Count Direction	Up/ Down				
Front Panel Reset	Enable/ Disable				
Memory Backup	Enable/ Disable				N.A
Output 2 Configurable	Auxiliary Contact	Auxiliary Contact	Auxiliary Contact	Auxiliary Contact	Auxiliary Contact
	Instant Contact	Instant Contact	Invert	Invert	End Of Cycle (EOC)
	End Of Cycle (EOC)	End Of Cycle (EOC)	End Of Cycle (EOC)	End Of Cycle (EOC)	Off
	Off	Off	Off	Off	
Timer Start Delay	N.A	N.A	Enable/ Disable	Enable/ Disable	N.A
Timer Start Delay Range	N.A	N.A	0.01 to 99.9 seconds	0.01 to 99.9 seconds	N.A

## GENERAL SPECIFICATION

Supply Voltage	90 - 270 VAC/ DC (24 VDC Available on Request)											
Temperature And Humidity	Operating : 0-50°C   Storage : -20° to 75°C   95 % RH (Non-condensing)											
Dimensions in mm (H x W x D)	Model No.	Disp Height	Model No.	Disp Height		Model No.	Disp Height	Model No.	Disp Height		Model No.	Disp Height
				ET	ST				ET	ST		
48 x 48 x 78	KTM-443	0.39"	KTM-446	0.39"	0.24"	XT-43	0.39"	XT-46	0.39"	0.36"	XTM-443	0.39"
96 x 48 x 53	N.A	N.A	KTM-666	0.39"	0.39"	N.A	N.A	N.A	N.A	N.A	N.A	N.A
72 x 72 x 65	KTM-773	0.56"	KTM-776	0.56"	0.39 "	XT-73	0.56"	XT-76	0.56"	0.39"	XTM-773	0.56"
96 x 96 x 53	KTM-993	0.56"	KTM-996	0.80"	0.56"	XT-93	0.56"	XT-96	0.80"	0.56"	XTM-993	0.56"

\*For XT Series & XTM Series dimensional details, please refer to our website

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# Multi function Timer/Counter



# Specifications

DESCRIPTION		KTC-XX Keyboard Based Timer / Counter	XTC-XX4 Push Wheel Based Timer / Counter	CTR-XX Event Counter / Time Totalizer / RPM Indicator					
Display	Type	7 Segment LED (White Display for Elapsed Time and Pure Green Display for Set Time)							
	No. of Digits	4 Digits Dual Row	4 Digits Single Row	6 Digits Single Row					
	LED Indication	Output   Mode C/ T   Time Base (Only for timer mode)	Output   Auto Reset Time   Time Base (Only for timer mode)	Mode (EC/ TT/ RI)   Time Base (For Time Totalizer)					
Count/ Time Setting		Through Keyboard	Through Push wheel	N.A					
<b>INPUT SPECIFICATION</b>									
Control Input	Count	Proximity S/W (NPN/PNP)   Potential Free Contact   3 to 30 VDC Pulse   230 VAC (On request)							
	Reset	Front Switch   Remote Terminal	Front Switch   Remote Terminal   Power On	Front Switch   Remote Terminal					
Sensor Supply		12 VDC @ 30 mA (Short Circuit Protected)							
<b>OUTPUT SPECIFICATION</b>									
No. Of Outputs		2	2	N.A					
Relay		5A @ 250 VAC/ 30 VDC		N.A					
SSR Drive		12 VDC @ 30 mA		N.A					
<b>CONFIGURATION PARAMETERS FOR COUNTER MODE</b>									
Scale Factor		Settable 0.001 to 9999	Settable 0.001 to 9999	Settable from 1 to 99					
Count Range		0 to 9999 Counts	0 to 9999 Counts	0 to 999999 Counts					
Count Speed		Upto 2.5 KHz	Upto 2.5 KHz	Upto 2.5 KHz					
Count Direction		Up/ Down	Up/ Down	Up					
Delay Modes		On Delay/ Off Delay	On Delay/ Off Delay	N.A					
Counter Function		Latched Output   Auto-Reset   Time-Pulse Repeat (TPR)			N.A				
Memory Backup		Enable/ Disable	N.A	Enable/ Disable					
Output 2 Function		Auxiliary Contact   Batch Mode   Invert   Off	Auxiliary Contact   Batch Mode   Off	N.A					
<b>CONFIGURATION PARAMETERS FOR TIMER MODE</b>									
Delay Mode	On Delay	On Delay	On Delay	N.A					
	Off Delay	Off Delay	Off Delay						
	Cycle-On Time First								
	Cycle-Off Time First								
	For-Rev with Hold Time								
Timer Start Modes	Power On Start	Power On Start	Power On Start	N.A					
	Front Start	Front Start	Front Start						
	Remote Pulse High to Low	Remote Pulse High to Low	Remote Pulse High to Low						
	Remote Pulse Low to High	Remote Pulse + Level (Close)	Remote Pulse + Level (Close)						
	Remote Pulse + Level (Open)								
Output 2 Function	Auxiliary Contact   End of Cycle   Invert   Off	Auxiliary Contact   End of Cycle   Off	Auxiliary Contact   End of Cycle   Off	N.A					
<b>CONFIGURATION PARAMETERS FOR RPM MODE</b>									
RPM Time Out		N.A	N.A	Auto Flexible As per last RPM Value					
Resolution		N.A	N.A	0.01, 0.1, 1 (Selectable)					
Ratio		N.A	N.A	Settable From 1 to 100					
<b>GENERAL SPECIFICATION</b>									
Supply voltage		90 - 270 VAC/ DC (24 VDC Available on Request)							
Temp & Humidity		Operating : 0-50°C   Storage : -20° to 75°C   95 % RH (Non-condensing)							
Dimensions in mm (H x W x D)	Model No.	Display Height		Dim. in mm (H x W x D)	Model No.	Display Height	Dim. in mm (H x W x D)	Model No.	Display Height
		ET	ST						
36 x 72 x 79	-	-	-	36 x 72 x 79	-	-	36 x 72 x 79	CTR-33	0.39"
48 x 48 x 87	KTC-44	0.36"	0.36"	48 x 48 x 85	N.A	N.A	48 x 48 x 78	CTR-44	0.30"
72 x 72 x 82	KTC-77	0.56"	0.39"	72 x 72 x 65	XTC-774	0.56"	72 x 72 x 65	CTR-77	0.39"
48 x 96 x 53	-	-	-	48 x 96 x 53	-	-	48 x 96 x 53	CTR-88	0.56"
96 x 96 x 80	KTC-99	0.80"	0.56"	96 x 96 x 65	XTC-994	0.56"	96 x 96 x 53	CTR-99	0.56"



***i-therm***

# Digital Batch and Length Counters



## Specifications

DESCRIPTION		BL-44	BL-77	BL-88	BL-99
<b>BATCH/ LENGTH/ PRESET COUNTER</b>					
Display	Type	7 Segment LED (White Display for Upper Row and Pure Green Display for Lower Row)			
	No. of Digits	6 Digits Upper Row   4 Digits Lower Row			
	LED Indication	Mode (Batch Counter/ Length Counter/ Preset Counter)   Output (RL1/ RL2)   Status (Batch/ RT)			
Count Setting		Through Keyboard			
<b>INPUT SPECIFICATION</b>					
Control Input	Count	Proximity S/W (NPN/PNP)   Potential Free Contact   3 to 30 VDC Pulse   230 VAC (On request)			
	Reset	Front Switch   Remote Terminal			
Accuracy		0.05% FS			
Sensor Supply		12 VDC @ 30 mA (Short Circuit Protected)			
<b>OUTPUT SPECIFICATION</b>					
No. Of Outputs		2	3 (2 x Relay output + 12VDC Output)		
Relay		5A @ 250 VAC/30 VDC			
SSR Drive		12 VDC @ 30mA			
<b>GENERAL SPECIFICATION</b>					
Supply Voltage		90 - 270 VAC/ DC (24 VDC Available on Request)			
Temperature And Humidity		Operating : 0-50°C   Storage : -20° to 75°C   95 % RH (Non-condensing)			
Dimensions in mm (H x W x D)		Model No.	Display Height		
			Upper	Lower	
48 x 48 x 78		BL-44	0.30"	0.24"	
72 x 72 x 65		BL-77	0.39"	0.39"	
48 x 96 x 53		BL-88	0.39"	0.39"	
96 x 96 x 53		BL-99	0.56"	0.56"	

## Functional Specifications

OPERATING MODE	BATCH	LENGTH	PRESET
Upper Display (6 Digits)	Total Counts	Current Length	Current Count
Lower Display (4 Digits)	Current Count	Meter/ Min	RPM
Resolution	1	0.1	0.00001 to 1
Input	Count Input	Count Input	Count Input
Count Range	0 to 999999 Counts	0 to 999999 Counts	0 to 999999 Counts
Count Speed	3 Hz to 2.5KHz	3 Hz to 2.5KHz	3 Hz to 2.5KHz
Count Direction	Up	Up	Up
Scaler	N.A	N.A	Programmable
Scale Factor	N.A	N.A	0.00001 to 999999
Diameter	N.A	Programmable	N.A
Length Diameter	N.A	0.01 to 9999.99 mm	N.A
Memory	Yes	Yes	Yes
Front Reset	Programmable	Programmable	Programmable
Back Reset	Reset time (20 ms)	Reset time (20 ms)	Reset time (20 ms)
Delay Modes	On Delay	On Delay	On Delay
Output 1 Modes	Latch Output   Auto Reset   Offset Count		
Output 2 Function	Auxiliary Contact   Batch Mode   Independent Set point   Off		
Output 3 Type	Buzzer Output	Buzzer Output	Buzzer Output





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