

**CUSTOMER  
100% GUARANTEE  
SATISFACTION**

**PETRO CHEMICAL**



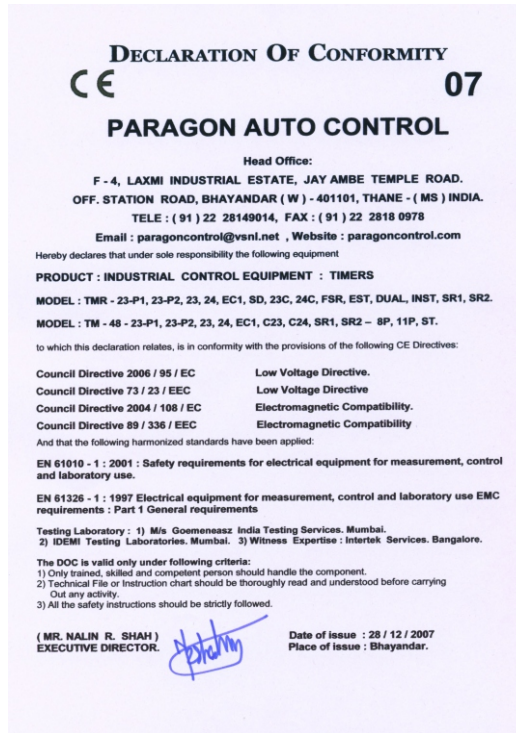
**AUTOMATION  
PRODUCT GUIDE**

**PARAGON**™  
*Quality Perfected Experiences Elevated*



**CE**  
Mark Product

**ELECTRONIC INSTRUMENTS FOR PROCESS CONTROL & AUTOMATION**



TEAM OF PARAGON



First of all, pray to Arihant for peace, non-violence and wealth of everybody. At Paragon, we're at the forefront of revolutionizing process control instrumentation solutions. With a commitment to precision, reliability, and efficiency, we empower industries worldwide to optimize their operations and achieve peak performance.

Since our inception in 1996, we have been dedicated to pushing the boundaries of innovation in process control technology. Our team of seasoned engineers, technicians, and experts collaborate relentlessly to develop cutting-edge solutions tailored to meet the unique needs of each industry we serve. With a comprehensive range of products and services, we cater to diverse sectors like electrical control panel and automation for oil and gas, chemical, pharmaceuticals, plastic, rubber, cement, food industries etc.

Our dedication to quality, backed by rigorous testing and certifications, ensures that our products consistently deliver superior performance even in the most demanding environments. We are proud to be **CE certified** and adhere to the **ISO 9001:2015 Quality Management System**, demonstrating our commitment to meeting international standards for excellence. Some of our prestigious clients / vendors are like **Cement corp. of india ltd, NSL sugar ltd, Devashree Ispat (P) ltd, Bajaj steel ind. ltd, Fluid control research institute, Air India, HAL, ONGC, BARC, IOCL, POWER GRID, Defense vehicle factory, MSEB, SOUTH CENTRAL RAILWAY, GODREJ, MAHINDRA & MAHINDRA, ISPAT, CIPLA, JINDAL ALUMINIUM LTD., THE SOUTH INDIA PAPER MILLS LTD., etc.**

DIGITAL PRESET TIMER - PROGRAMMABLE



Model / Function	Timex 932	Timex 732	Timex 432
<b>Size</b>	(96 x 96 x 74) mm Refer Size (1) table	(72 x 72 x 74) mm Refer Size (2) table	(48 x 48 x 92) mm Refer Size (3) table
<b>LED Display</b>	3 Digit, 0.5" Height	3 Digit, 0.5" Height	3 Digit, 0.39" Height
<b>Delay Mode</b>	On delay , Off delay (interval) - Selectable.		
<b>Time Range</b>	9.99 , 99.9 , 999 Sec / 99.9 , 999 Min / 99.9 Hrs. - Selectable		
<b>Start Input</b>	Gate / Pulse start - Selectable		
<b>Reset Input</b>	Front panel key / Rear terminal for remote reset / At power on. ( Front panel reset key - enable / disable facility.)		
<b>Relay Output</b>	Two change over , with 5A @ 230VAC / 24 VDC contact ratings.		
<b>Accuracy</b>	0.05 % or 50 msec, whichever is greater.		
<b>Power Supply</b>	90 to 250 VAC/DC @ 50/60 Hz.( 24 VAC/DC provided on request)		
<b>General Features</b>	<b>Set Point : Single</b> set point , <b>Count Direction : Down</b> , Time Setting by key pad , Reset recovery time : < 100 msec Led indication for Relay status, Mounting : Panel mounting type		
<b>Memory Retention</b>	-----	10 year, available in Model: <b>Timex 732 MR</b>	10 year, available in Model: <b>Timex 432 MR</b>

DIGITAL PRESET TIMER - PROGRAMMABLE DUAL DISPLAY



Model / Function	Timex 962	Timex 762	Timex 462
<b>Size</b>	(96 x 96 x 74) mm Refer Size (1) table	(72 x 72 x 74) mm Refer Size (2) table	(48 x 48 x 92) mm Refer Size (3) table
<b>LED Display</b>	3+3 Digit,0.5" Height	3+3 Digit,0.5" Height	3+3 Digit,0.39" Height
	3 Digit Process time + 3 Digit Set time		
<b>Delay Mode</b>	On delay, Off delay (interval), Cyclic on / off time first with single / multi cycle - Selectable.		
<b>Time Range</b>	9.99 , 99.9 , 999 Sec / 99.9 , 999 Min / 99.9 Hrs. - Selectable		
<b>Start Input</b>	Gate / Pulse start - Selectable		
<b>Reset Input</b>	Front panel key / Rear terminal for remote reset / At power on. ( Front panel reset key - enable / disable facility.)		
<b>Relay Output</b>	Two change over , with 5A @ 230VAC / 24 VDC contact ratings.		
<b>Accuracy</b>	0.05 % or 50 msec, whichever is greater.		
<b>Power Supply</b>	90 to 250 VAC/DC @ 50/60 Hz.( 24 VAC/DC provided on request)		
<b>General Features</b>	<b>Set Point : Single</b> set point , <b>Count Direction : UP</b> , Time Setting by key pad , Reset recovery time : < 100 msec Led indication for Relay status, Mounting : Panel mounting type		
<b>Memory Retention</b>	-----	10 year, available in Model: <b>Timex 762 MR</b>	10 year, available in Model: <b>Timex 462 MR</b>

DIGITAL PRESET TIMER - PUSH WHEEL TYPE



Model / Function	Timer-920-2D-P1 Timer-920-3D-P2	Timer-01-2D-P1 Timer-01-3D-P2	Timer-25-2D-P1 Timer-25-3D-P2
<b>Size</b>	(96 x 96 x 74) mm Refer Size (1) table	(72 x 72 x 74) mm Refer Size (2) table	(48 x 48 x 92) mm Refer Size (3) table
<b>LED Display</b>	2 / 3 Digit,0.5" Height	2 / 3 Digit,0.5" Height	2 / 3 Digit,0.39" Height
<b>Time Setting</b>	By <b>Push wheel</b> type switches, 2 / 3 no.		
<b>Time Range ( Selectable )</b>	A) for <b>2D</b> : 2 Digit ; 0.99, 9.9, 99 Sec / 9.9, 99 Min / 9.9 Hrs. & B) for <b>3D</b> : 3 Digit ; 9.99, 99.9, 999 Sec / 99.9, 999 Min / 99.9 Hrs.		
<b>Relay Output</b>	A) for <b>P1</b> : One change over &, B) for <b>P2</b> : Two change over , with 5A @ 230VAC / 24 VDC contact ratings.		
<b>Delay Mode</b>	On delay, Off delay (interval) - Selectable.		
<b>Count Direction</b>	Up / Down Counting direction - Selectable.		
<b>Start Input</b>	Pulse start input from rear terminal.		
<b>Reset Input</b>	Front panel key / Rear terminal for remote reset / At power on.		
<b>Accuracy</b>	0.05 % or 50 msec, whichever is greater, Quartz crystal base.		
<b>Power Supply</b>	90 to 250 VAC/DC @ 50/60 Hz.( 24 VAC/DC provided on request)		
<b>General Features</b>	<b>Set Point : Single</b> set point , Reset recovery time : < 100 msec Led indication for Relay status, Mounting : Panel mounting type		
<b>Memory Retention</b>	-----	10 year, available in <b>Timer-01-3D-P2-MR</b>	10 year, available in <b>Timer-25-3D-P2-MR</b>

DIGITAL CYCLIC TIMER - PUSH WHEEL TYPE



- **Model : Timer - 03 - 3D** ● **Size** : (72 x 72 x 74) mm, Refer Size (2) table.
- **LED Display** : 3 Digit,0.5" Height, ● **Time Setting** : By Push wheel switch, 3+3 no.
- **On-Off Time Range**: 3+3 Digit; 9.99, 99.9, 999 Sec / 99.9, 999 Min / 99.9 Hrs - Selectable.
- **Relay Output** : Two change over ,with 5A @ 230VAC / 24 VDC contact ratings.
- **Cyclic Mode** : Cyclic On / off time first with single / multi cycle - Selectable.
- **Start Input** : Pulse start input from rear terminal.
- **Reset Input** : Front panel key / Rear terminal for remote reset / At power on.
- **Accuracy** : 0.05 % or 50 msec, whichever is greater, Quartz crystal base.
- **Power Supply** : 90 to 250 VAC/DC @ 50/60 Hz.( 24 VAC/DC provided on request)
- **General Features** ; Counting Direction : UP , Reset recovery time : < 100 msec  
Led indication for Relay status, Mounting : Panel mounting type



MODEL	RELAY OUTPUT	SUPPLY VOLTAGE	TIME RANGE (Selectable)	FUNCTION
TMR-23-P1	One change Over (1CO)	1) 230 VAC 2) 110 VAC 3) 24 VAC/DC	1.5/6/15/60 SEC.	On Delay / Off Delay (Interval) (Selectable) (Refer Fig.- 1)
TMR-23-P2	Two Change Over (2CO)			
TMR-23	Two Change Over (2CO)	1) 230 VAC 2) 110 VAC 3) 24 VAC/DC 4) 12 VDC	1.5/6/15/60 SEC./MIN./HRS.	
TMR-24	Two Change Over (2CO)			
TMR-EC1	One Change Over (1CO.)	100-230VAC & 24VAC/DC	15/60 SEC/MIN.	
TMR-SD (Star - Delta timer)	Separate NO Contacts for Star & Delta	1) 230 / 415 VAC 2) 110 VAC	Set Time : 15/60 SEC. Pause time : 40/100 mSEC.	Star - Delta Change over (Refer Fig.- 4)
TMR-23C (Cyclic Timer)	Two Change Over (2 CO)	1) 230 VAC 2) 110 VAC 3) 24 VAC/DC 4) 12 VDC	3/30 SEC/MIN/HRS.	Asymmetrical Cyclic On Time/Off Time First, Single / Multi Cycle (Selectable) (Refer Fig.-5)
TMR-24 C (Cyclic Timer)	Two Change Over (2 CO)			
TMR-FSR [Forward (T1) Stop (T3) Reverse (T2) Timer]	Separate one change over for Forward and Reverse	1) 230 VAC 2) 110 VAC 3) 24 VAC/DC 4) 415 VAC	Forward Time(T1) : 6/60 SEC/MIN Reverse Time (T2) : 6/60 SEC/MIN Stop Time (T3) :- 30 SEC / 3 MIN	Forward-Stop-Reverse Timer, Single Cycle/ Repeat Cycle (Selectable) (Refer Fig.-6)
TMR-EST [Engine Multi Attempt Starting Timer]	Two set of one change over	1) 12/24 VDC 2) 230 VAC	Time - 1 (ON) : 0 - 30 SEC, Time - 2 (OFF) : 0 - 30 SEC. No. of Start Attempt: 0 to 15 (Selectable)	Relay 1 : Engine Start attempt Relay 2 : Engine Fails to Start alarm (Refer Fig. - 19)
TMR - DUAL (Two Set Point Timer)	Separate One Change over For each set Point	1) 230 VAC 2) 24 VAC/DC	Time- 1: 6/60 SEC/MIN Time-2 : 6/60 SEC/MIN	Two Set Point Timer with individual On Delay / Off Delay (Interval) Selectable for both (Refer Fig.- 1)
TMR-INST (Delay Timer with Instant Contact)	One Change Over Instant Contact & One change over delayed contact.	1) 230 VAC 2) 24 VAC/DC	1.5/6/15/60 SEC/MIN/HRS	On Delay / Off Delay (Interval) Selectable with Instant Contact (Refer Fig.- 8)
TMR-SR1 (Single Range)	One Change Over (1CO)	1) 230 VAC 2) 110 VAC 3) 24 VAC/DC 4) 12 VDC	15 SEC 30 SEC 60 SEC (Factory Set)	On Delay, Off Delay, Equal Cyclic (Factory Set) (Refer Fig.- 1,9)
TMR-SR2 (Single Range)	Two Change Over (2CO)			

- Relay Contact 5A, 230 VAC / 24VDC resistive load. ● Repeat Accuracy : 0.5%, setting accuracy : 5%
- Size : [22.5 (w) x 75(H) x 105 (D)] mm. (Refer Fig. - 13) ● 35 mm. Rail Mounting or Screw Mounting
- Order Code : MODEL-SUPPLY Ex. : TMR 23-230V. ● Relay Life Expectancy : Min 10<sup>5</sup> operation at full load.
- Wire Size : 1 x 2.5 mm<sup>2</sup> without lug & 2 x 1.5 mm<sup>2</sup> with lug. ● Housing Material : Polycarbonate flame retardant (FR-V0).
- Temperature : Operating :-10 to 55' C. Storage :- 20 to 70' C. ● Humidity : 90 % RH.

**CERTIFICATION : CE Products conformity declare as per following CE directives :**

- Council Directive 2006/95/EC & 73/23/EEC - Low voltage, ● Council Directive 2004/108/EC & 89/336/EEC - EMC,
- IEC/EN 61010-1: 2001 : Safety requirements for electrical equipment for measurement, control and laboratory use.
- IEC/EN 61326-1: 1997 : Electrical equipment for control measurement & laboratory use, EMC requirements : Part-1.

TM - 48, Plug In / Panel Mounting Timer, 1/16 DIN, CE Compliance



MODEL	RELAY OUTPUT	SUPPLY VOLTAGE	TIME RANGE (Selectable)	MOUNTING BASE	FUNCTION (Selectable)		
TM-4823-P1	One Change Over (1CO)	1)230 VAC 2)110 VAC 3)24 VAC/DC	1.5/6/15/60 SEC.	1) 8P-8 Pin Plug 2) ST-Screw Terminal.	ON Delay / Off Delay (Interval) (Refer Fig.- 1)		
TM-4823	Two Change Over (2CO)					1)230 VAC 2)110 VAC 3)24 VAC/DC 4)12 VDC	
TM-4824	Two Change Over (2CO)	24 to 230 V AC/DC	1.5/6/15/60 SEC/MIN/HRS			1) 8P-8Pin Plug 2) 11P-11 Pin Plug 3) ST-Screw Terminal	
TM48 EC1	One Change Over (1CO)	100-230VAC & 24 VAC/DC	15/60 SEC / MIN			1) 8P-8 Pin Plug 2) ST-Screw Terminal	On Delay / Off Delay / Equal Cyclic (on/off time first) - Selectable (Refer Fig.1,9)
TM-48C23 Cyclic Timer	Two Change Over (2CO)	230 V AC	3/30 SEC/MIN/HRS			1) 8P-8Pin Plug 2) 11P-11 Pin Plug 3) ST-Screw Terminal	Asymmetrical Cyclic. On Time/Off Time First, Single/ /Multi Cycle (selectable) (Refer Fig.- 5)
TM-48C24 Cyclic Timer	Two Change Over (2CO)	24 to 230 V AC/DC					
TM - 48 SR1 (Single Range)	One Change Over (1CO)	1) 230 VAC 2) 110 VAC 3) 24VAC/DC 4) 12 VDC	15 SEC, 30 SEC, 60 SEC, (Factory Set)	1) 8P - 8 Pin. Plug 2) 11P - 11 Pin Plug 3) ST - Screw Terminal	On Delay, Off Delay, Equal Cyclic (Factory Set) (Refer Fig.-1,9)		
TM - 48 SR2 (Single Range)	Two Change Over (2 CO)						

- Relay Contact 5A, 230 VAC/24VDC resistive load. ● Repeat Accuracy:0.5%, setting accuracy:5%
- Size : [48(H) x 48(W) x 87 (D)] mm (Refer Fig.- 14). ● Order Code : MODEL-MOUNTING-SUPPLY, Ex. : TM - 4823 - 8P - 230V



- Daily / Weekly program ● Total 28 (On-Off) Program cycles per day or week
- Battery operated Real time clock ● Minimum switching time - 1 Minute.
- Clock Accuracy : 1.5 sec / day maximum. ● Working Reserve - 1 Year ● 0.39" LED Display.
- Auto / Manual Switching ● Supply Voltage : 90 to 250VAC/DC. (24VAC/DC provided on request.)
- Relay Contact : One change over, rated for 10 A, 230 VAC / 24VDC resistive load.
- Mounting : 1) ST-Screw Terminal [for Front Panel Mounting]
- 2) 8P-8 Pin Plug [For 35 mm Rail or wall mounting] ● Size : [48(H)X48(W)X87(D)]mm,(Refer fig. 14)
- Order Code : RTS 29 - Mounting. Ex. : RTS 29 - 8P.

**HOUR METER ( TIME TOTALISER )**



- 1) MODEL : TIMER - 0249. Size : (48 x 96 x 75)mm, Refer Size (4) table.
  - 2) MODEL : TIMER - 0277. Size : (72 x 72 x 74)mm, Refer Size (2) table.
- TIME RANGE : 1) 99. Min 59.99 Sec, 2) 99. Hrs 59. Min 59 Sec, 3) 9999. Hrs 59 Min, 4) 99999.9 Hrs. - Selectable. ● LED display height 0.5" in Timer-0249 & 0.39" in Timer-0277.
  - Time retention in memory at power failure.
  - Reset : Front panel reset key (enable / disable facility) & rear terminal for remote reset.
  - Time RUN / HOLD by rear terminal. ● Accuracy : 0.05 % ● Panel mounting type.
  - Supply : 90 to 250 VAC/DC @ 50/60 Hz. ( 24 VAC/DC provided on request )

**DIGITAL PRESET COUNTER / LENGTH COUNTER**



MODEL	RANGE	MODE ( Selectable )	RELAY OUTPUT
Counter-01-4D-P1-MR	4 Digit : 9999 Counts	On Delay / Interval (Refer fig. 2)	One Change Over ( 1CO )
Counter-01-4D-P2-MR	4 Digit : 9999 Counts	1) On Delay / Interval 2) Auto Reset (Time: 000.1 to 999.9 Sec)	Two Change Over ( 2CO )
Counter-01-6D-P2-MR	6 Digit : 999999 Counts	3) Scale Factor : a) in 4 Digit : 0.001 to 999.9 b) in 6 Digit : 0.00001 to 999.999 (Refer fig. 2,3)	

- 0.5" LED display in 4 Digit Counter
- 0.39" LED display in 6 Digit Counter
- Pushwheel Setting.

- Count retention in memory at power failure. ● Input Speed : 200 or more counts per second.
- Input Sensor : PNP/NPN Proximity / Photo sensor / Encoder / Potential free contact - Selectable.
- Over run / Non-over run - Selectable ● Reset : Front panel key & rear terminal for remote reset.
- Auto Reset : In this, when actual counts reach to the preset counts, relay change the contact position for preset time 000.1 to 999.9 sec and display will automatically reset to zero, & start new cycle of counting.
- Scale factor for length counting. ● Relay Contact 5A @ 230VAC / 24 VDC resistive load.
- Supply Voltage : 90 - 250 VAC/DC @ 50/60 Hz. ( 24 VAC/DC provided on request.)
- Size : ( 72 x 72 x 74 ) mm, Refer Size (2) table.

**DIGITAL COUNTER ( TOTALISER )**



- 1) MODEL : COUNTER - 0249. Size : ( 48 x 96 x 75 ) mm, Refer Size (4) table.
  - 2) MODEL : COUNTER - 0277. Size : ( 72 x 72 x 74 ) mm, Refer Size (2) table.
- LED display height 0.5" in Counter - 0249 & 0.39" in Counter - 0277.
  - Range : 6 Digit, 999999 Counts. ● Count retention in memory at power failure.
  - Input Frequency : 30 Hz / 4 KHz – Selectable.
  - Input Sensor : PNP / NPN Proximity / Photo sensor, encoders, solid state devices, potential free contact - Selectable. ● Accuracy : 0.05 %
  - Reset : Front panel reset key (enable / disable facility) & rear terminal for remote reset.
  - Supply : 90 to 250 VAC/DC @ 50/60 Hz. ( 24 VAC/DC provided on request )

**DIGITAL COUNTER (Totaliser with Scale Factor)**



- 1) MODEL : COUNTER - 0349 SC. Size : (48 x 96 x 75) mm, Refer Size (4) table.
  - 2) MODEL : COUNTER - 0377 SC. Size : (72 x 72 x 74) mm, Refer Size (2) table.
- RANGE : 6 Digit , 99999.9 Counts. ● Scale Factor : 6 digit : 0.00001 to 999.999
  - LED display height 0.5" in Counter-0349 SC, and 0.39" in Counter-0377 SC height.
  - Input Frequency : 30 Hz / 4 KHz – Selectable. ● Count retention in memory at power failure.
  - Input Sensor : PNP / NPN Proximity / Photo sensor, encoders, solid state devices, potential free contact - Selectable. ● Accuracy : 0.05 %
  - Reset : Front panel reset key (enable / disable facility) & rear terminal for remote reset.
  - Supply : 90 to 250 VAC/DC @ 50/60 Hz. (24 VAC/DC provided on request)

**RPM INDICATOR**



- 1) MODEL : RPM - 0249. Size : ( 48 x 96 x 75 ) mm, Refer Size (4) table.
  - 2) MODEL : RPM - 0277. Size : ( 72 x 72 x 74 ) mm, Refer Size (2) table.
  - 3) MODEL : RPM - 0244. Size : ( 48 x 48 x 92 ) mm, Refer Size (3) table.
- RANGE : 04.00 to 9999, Auto Range.
  - Accuracy : 0.05 %
  - Panel mounting type.
  - LED display 0.5" height in RPM - 0249 / 0277 and 0.39" height in RPM - 0244.
  - Input sensor : PNP / NPN Proximity / Photo sensor, encoders, solid state devices - Selectable.
  - Supply : 90 to 250 VAC/DC @ 50/60 Hz. ( 24 VAC/DC provided on request )



MODEL	FUNCTION - Mode	SUPPLY VOLTAGE
PRX-11 (Rev.1)	Selectable Relay output Mode :- A) Pulse Output B) Latch Output C) Cyclic Output D) Timer-15/60 - Second/Minute range, with Signal Off / On Delay Output (Refer Fig. : 17)	1) 24VAC / DC 2) 110VAC 3) 230VAC 4) 415VAC
PRX-22	Pulse Output Mode (Refer Fig. : 16)	

- Input Sensor : (10-30VDC) PNP/NPN - proximity / photo sensor, Potential Free Contact, solid state device.
- Input Pulse Speed : 2 Pulse per second maximum
- Relay Output : One change over (1CO), 5 A @ 230 VAC / 28 VDC Resistive load.
- Size : {(22.5(W) X 75 (H) x 105 (D))} mm (Refer Fig. - 13) ● 35 mm. Rail mounting or Screw Mounting
- Order Code : MODEL - SUPPLY. Ex. : PRX - 11 - 230 V.

PID - TEMPERATURE CONTROLLER (4+4 Digit, 2 Output)



Function	Model	PID 9802	PID 7802	PID 4802
Size		(96 x 96 x 74) mm Refer Size (1) table	(72 x 72 x 74) mm Refer Size (2) table	(48 x 48 x 92) mm Refer Size (3) table
LED Display		4 + 4 Digit, 0.5" Height		4+4 Digit, 0.39" Height
		4 Digit Process Value + 4 Digit Set Value		
Setpoint		Single / Two set point temperature controller.		
Input Sensor & Range		1) RTD, Pt 100 : -99.9 to 199.9 , 0 to 500 °C 2) J ( Fe - K ) Thermocouple : -100 to 750 °C 3) K ( Cr - Al ) Thermocouple : 0 to 1350 °C - Selectable		
Control Mode		Set 1 : P, PI, PD, PID, Auto Tune, On - Off, Time Proportional - Selectable. Set 2 : On - Off / Time Proportional - Selectable.		
Control Action		1) Heating Action, 2) Cooling Action - Selectable for set 1 & 2 . (In set 2, delay time for compressor start in cooling action)		
Output 1 & 2		1) Relay, 2) SSR - Selectable for set 1 & 2. (Relay :1CO,5A @ 230VAC / 24 VDC & SSR : 12VDC,20ma O/P)		
Accuracy		+/- 0.25 % of full scale or 1 °C, whichever is greater.		
Power Supply		90 to 250 VAC/DC @ 50/60 Hz.( 24 VAC/DC provided on request)		
General Features		Temp. Setting by key pad , Led indication for Relay status , Mounting : Panel mounting type. IPC : Input process value correction upto +/- 10 count		

PID - TEMPERATURE CONTROLLER (4+4 Digit, 1 Output)



Function	Model	PID 9801	PID 7801	PID 4801
Size		(96 x 96 x 74) mm Refer Size (1) table	(72 x 72 x 74) mm Refer Size (2) table	(48 x 48 x 92) mm Refer Size (3) table
LED Display		4 + 4 Digit, 0.5" Height		4+4 Digit, 0.39" Height
		4 Digit Process Value + 4 Digit Set Value		
Setpoint		Single set point temperature controller.		
Input Sensor & Range		1) RTD, Pt 100 : -99.9 to 199.9 , 0 to 500 °C 2) J ( Fe - K ) Thermocouple : -100 to 750 °C 3) K ( Cr - Al ) Thermocouple : 0 to 1350 °C - Selectable		
Control Mode		P, PI, PD, PID, Auto Tune, On - Off, Time Proportional - Selectable.		
Control Action		1) Heating Action, 2) Cooling Action - Selectable .		
Output		1) Relay, 2) SSR - Selectable. (Relay :1CO,5A @ 230VAC / 24 VDC & SSR : 12VDC,20ma O/P)		
Accuracy		+/- 0.25 % of full scale or 1 °C, whichever is greater.		
Power Supply		90 to 250 VAC/DC @ 50/60 Hz.( 24 VAC/DC provided on request)		
General Features		Temp. Setting by key pad , Led indication for Relay status , Mounting : Panel mounting type. IPC : Input process value correction upto +/- 10 count		

TEMPERATURE CONTROLLER - PROGRAMMABLE (4 Digit, 1 Output)



Function	Model	Tempx 911	Tempx 711	Tempx 411
Size		(96 x 96 x 74) mm Refer Size (1) table	(72 x 72 x 74) mm Refer Size (2) table	(48 x 48 x 92) mm Refer Size (3) table
LED Display		4 Digit, 0.5" Height	4 Digit, 0.5" Height	4 Digit, 0.39" Height
Setpoint		Single set point temperature controller.		
Input Sensor & Range		1) RTD, Pt 100 : -99.9 to 199.9 , 0 to 500 °C 2) J ( Fe - K ) Thermocouple : -100 to 750 °C 3) K ( Cr - Al ) Thermocouple : 0 to 1350 °C - Selectable		
Control Mode		1) On - Off, 2) Time Proportional - Selectable, with programmable on - off band / proportional band / cycle time / reset (offset) value.		
Control Action		1) Heating Action, 2) Cooling Action - Selectable , with delay time for compressor - start .		
Accuracy		+/- 0.25 % of full scale or 1 °C, whichever is greater.		
Power Supply		90 to 250 VAC/DC @ 50/60 Hz.( 24 VAC/DC provided on request)		
Output		1CO Relay (NO-C-NC) , with 5A @ 230VAC / 24 VDC ratings. For SSR 12VDC,20ma output provided on request.		
General Features		Temp. Setting by key pad , Led indication for Relay status , Mounting : Panel mounting type. IPC : Input process value correction upto +/- 10 count		



Model	Tempx 922	Tempx 722	Tempx 422
<b>Function</b>			
<b>Size</b>	(96 x 96 x 74) mm Refer Size (1) table	(72 x 72 x 74) mm Refer Size (2) table	(48 x 48 x 92) mm Refer Size (3) table
<b>LED Display</b>	4+4 Digit, 0.5" Height		4+4 Digit, 0.39" Height
	4 Digit Process Value + 4 Digit Set Value		
<b>Setpoint</b>	Single / Two set point temperature controller.		
<b>Input Sensor &amp; Range</b>	1) RTD, Pt 100 : -99.9 to 199.9, 0 to 500 °C 2) J ( Fe - K ) Thermocouple : -100 to 750 °C 3) K ( Cr - Al ) Thermocouple : 0 to 1350 °C - Selectable		
<b>Control Mode</b>	1) On - Off, 2) Time Proportional - Selectable, with programmable on - off band / proportional band / cycle time / reset (offset) value.		
<b>Control Action</b>	1) Heating Action, 2) Cooling Action - Selectable, with delay time for compressor - start.		
<b>Accuracy</b>	+/- 0.25 % of full scale or 1 °C, whichever is greater.		
<b>Power Supply</b>	90 to 250 VAC/DC @ 50/60 Hz.( 24 VAC/DC provided on request)		
<b>Output 1 &amp; 2</b>	1CO Relay (NO-C-NC) , with 5A @ 230VAC / 24 VDC ratings. For SSR 12VDC, 20ma output provided on request.		
<b>General Features</b>	Temp. Setting by key pad , Led indication for Relay status, Mounting : Panel mounting type. IPC : Input process value correction upto +/- 10 count		

TEMPERATURE CONTROLLER (Potentiometer Type)



MODEL (Size)	FUNCTION	SENSOR - RANGE	SUPPLY VOLTAGE
<b>PTC - 1</b> (96X96X74) mm	Digital 1-Set Point Control	• J (Fe-K) : 1) 0 to 200°C 2) 0 to 400°C 3) 0 to 600°C • K (Cr-Al) : 1) 0 to 400°C 2) 0 to 800°C 3) 0 to 1200°C • RTD (PT100) : 1) - 50.0 to 50.0°C 2) 0 to 199.9°C 3) 0 to 200°C 4) 0 to 400°C 5) 0 to 600°C	1) 230 VAC 2) 110 VAC 3) 24 VAC / DC
<b>PTC - 3</b> (72X72X74) mm	Digital 1 - Set Point Control	• R,S : 1) 1600°C	
<b>PTC - 25</b> (48X48X92) mm	Digital 1 - Set Point Control	• Linear Input : 1) 4 to 20 mA 2) 0 to 10VDC Output : 1) - 1999 to 1999 EU 2) - 199.9 to 199.9 EU	
<b>BTC - 1</b> (96X96X74) mm	Blind 1 - Set Point Control	• J(Fe-K) : 1) 0 to 200°C 2) 0 to 400°C	
<b>BTC - 28</b> (48X48X100) mm	Blind 1 - Set Point Control	• K (Cr-Al) : 1) 0 to 400°C	

- Control Action : On-Off type • Time proportional (TP) (Optional) • Control Logic : Heat Control
- Cooling Control (CC) (Optional) • Relay Output : 1) One change over 1CO
- Two change over (2CO) (Optional) (In 1-Set Point Control)
- Relay Contact 5A, 230 VAC / 24VDC resistive load. • Accuracy : 1) 1% For J,K,R,S, Sensor and 0.5% for PT 100 in PTC-1, PTC-3, PTC-25 2) 2% for J & K Sensor in BTC-1 & BTC-28 model.
- BTC-28 available in 1) ST - Screw Terminal Type. 2) 8P- 8 Pin Plug in type.
- Order Code : MODEL - SENSOR-RANGE-OPTIONAL - SUPPLY. • For Size(48 x 48 x 92) mm Refer Size 3) table.
- For Size(72 x 72 x 74) mm Refer Size (2) table. • For Size(96 x 96 x 74) mm Refer Size (1) table.

- 0.5" LED display
- 0.39" LED display in PTC-25-K-1200 & PTC-25-RTD-199.9
- Potentiometer setting

MULTI CHANNEL TEMPERATURE INDICATOR



• 0.5" LED display

MODEL (Size)	SENSOR - RANGE	SUPPLY VOLTAGE
<b>MPI-01</b> • 6 - Channel-RTD (PT-100) • 6/12 - Channel J & K.	• J (Fe-K) : 0 to 600°C • K (Cr-Al) : 0 to 1200°C • RTD (PT100) : 1) -50 to 199.9°C, 2) -50 to 600°C	1) 230 VAC 2) 110 VAC

- Accuracy : 1% For J & K Sensor and 0.5% For PT 100. • Ex. : MPI-01-RTD-600-6 CH- 230V
- Order Code : MODEL- SENSOR- RANGE- SUPPLY • Size : (96x96x74) mm Ref. Size (1) Table

TEMPERATURE INDICATOR - PROGRAMMABLE



Model	PI 4901	PI 901	PI 701	PI 401
<b>Function</b>				
<b>Size</b>	(48 x 96 x 74) mm, Refer Size (4) table	(96 x 96 x 74) mm, Refer Size (1) table	(72 x 72 x 74) mm, Refer Size (2) table	(48 x 48 x 92) mm, Refer Size (3) table
<b>LED Display</b>	4 Digit, 0.5" Height			4 Digit, 0.39" Height
<b>Input Sensor &amp; Range</b>	1) RTD, Pt 100 : -99.9 to 199.9, 0 to 500 °C 2) J ( Fe - K ) Thermocouple : -100 to 750 °C 3) K ( Cr - Al ) Thermocouple : 0 to 1350 °C - Selectable			
<b>Accuracy</b>	+/- 0.25 % of full scale or 1 °C, whichever is greater.			
<b>Power Supply</b>	90 to 250 VAC/DC @ 50/60 Hz.( 24 VAC/DC provided on request)			
<b>General Features</b>	Mounting : Panel mounting type. IPC : Input process value correction upto +/- 10 count			

PROCESS INDICATOR - PROGRAMMABLE



Model	PI 4955	PI 955	PI 755	PI 455
<b>Function</b>				
<b>Size</b>	(48 x 96 x 74) mm, Refer Size (4) table	(96 x 96 x 74) mm, Refer Size (1) table	(72 x 72 x 74) mm, Refer Size (2) table	(48 x 48 x 92) mm, Refer Size (3) table
<b>LED Display</b>	4 Digit, 0.5" Height			4 Digit, 0.39" Height
<b>Multiple Input Sensor</b>	Analog Input : A) Current : 1) 0 - 20 ma , 2) 4 - 20 ma B) Voltage : 1) 0 - 05 VDC, 2) 0 - 10 VDC, 3) 0 - 56 mVDC			
<b>Display Range</b>	- 1999 to 9999 : Scalable, in Forward / Reverse direction with programmable Bias - offset value.			
<b>Resolution</b>	0.001 / 00.01 / 000.1 / 0001 : Programmable.			
<b>Accuracy</b>	+/- 0.25 % of full scale or +/- 1 digit, whichever is greater.			
<b>Sensor Supply</b>	24 VDC / 30 ma output source ( Inbuilt ).			
<b>Power Supply</b>	90 to 250 VAC/DC @ 50/60 Hz.( 24 VAC/DC provided on request)			
<b>General Features</b>	Setting by key pad , Mounting : Panel mounting type.			
<b>Application</b>	It is use to display following parameters, corresponds to the linear current / voltage input. RPM, MPM, AMP, HZ, % RH, °C, °F, KG/CM <sup>2</sup> , mBAR, BAR, KG, RATE etc.			



MODEL	FUNCTION	SUPPLY VOLTAGE
LLC-11	Single / Double Level Control-Adjustable Sensitivity of liquid	1) 24 V AC    2) 110 V AC
LLC-22	Single / Double Level Control-Fixed Sensitivity of liquid	3) 230 V AC    4) 415 V AC

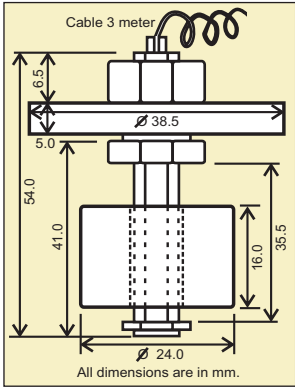
- Model : LLC-11 & LLC-22, Output Logic : Filling (Suction) of tank.
- Model : LLC-11 (EMPTY) & LLC-22 (EMPTY), Output Logic : Emptying (Delivery) of tank. (Refer Fig. : 18)
- Applicable for (1) Electrically Conductive (Sensitive) liquid like water and (2) Electrically Non-Conductive liquid like diesel, Oil etc. ● Input Sensor (1) For conductive liquid, use a three sensing electrode [High (H), Low (L), Ground (G)] of suitable electrically Conductive metal (like stainless steel) and (2) For Non-Conductive liquid, use a two set [High (H) & Low (L)] of float type magnetic reed switch sensor.
- Liquid Sensing to relay tripping time delay is less than 1 sec. ● Electrode Maximum Voltage : 24VAC & Current : 1 mA (50/60 Hz) ● Galvanic isolation via transformer. ● Relay Output : One change over (1CO), 5A@230VAC/28VDC resistive load. ● Size : [22.5(W)x75(H) x 105(D)] mm. (Refer Fig.13)
- 35 mm. Rail Mounting or Screw Mounting. ● Order Code : MODEL-SUPPLY, Ex.: LLC-11-230V.

LIQUID LEVEL SENSOR 1. LLC PROBE / ELECTRODE



- For electrically conductive liquid, three sensing probes for High (H), Low (L) & Ground (G) levels, suspended type mounting.
- Probe material of contact / connection : SS316 ● Probe outer insulation : Engineering grade plastic - Delrain.
- Probe Dimensions : 70 mm Height x 18 mm O.D., Cylinder. ● Working Temperature Range :- 20°c to +80°c.

LIQUID LEVEL SENSOR 2. MAGNETIC FLOAT TYPE



Working Principle :

- It is hanged in liquid tank through its wire or fixed by its plastic nuts. With the liquid level, the magnetic float goes up / down approx.19 mm, which turns on / off the internal reed switch.
- It is applicable for electrically non conductive liquid like diesel, oil etc and for electrically conductive liquid like water, milk etc, also.

Specification :

- External body / housing material : PP (Poly proplene) plastic.
- Output Switching Capacity : 1.2 amp @ 230vac / 24 vdc, resistive load.
- Working temperature range :- 20° c to +80° c. ● Shockproof plastic molded body.
- It is air tight sensor, there is no contact of conducting element with the liquid, air, moisturizer, dust etc,- no salt formation, rusting or scaling.

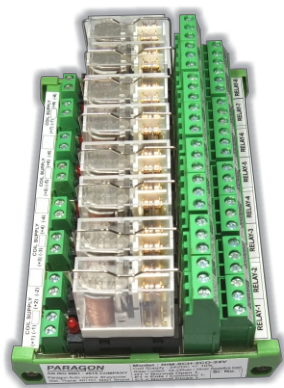


PHASE FAILURE RELAY



- Model : PCON - PF - 5
- It monitors 3 phase supply voltage. Relay remains ON under healthy voltage conditon, and during phase failure or phase unbalance (50V +/- 5V, Fixed) relay becomes OFF (Refer Fig. 20) ● Trip time delay : 2 - 3 Sec, Auto Resetting Mode.
- Supply / Monitoring voltage : 440 VAC, 50/60 Hz. ● Relay Output : One change over (1CO), 5A @ 230 VAC / 28 VDC resistive load.
- Size : [70(W) x 89 (H) x 50 (D)] mm, 35 mm Din Rail or Screw mounting, (Refer Fig. 21) ● Order Code : PCON - PF - 5

RELAY MODULE



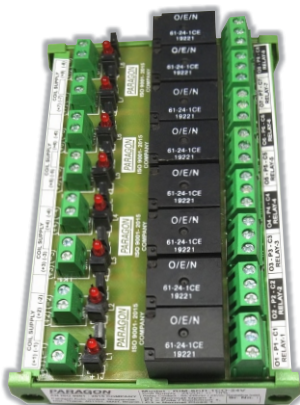
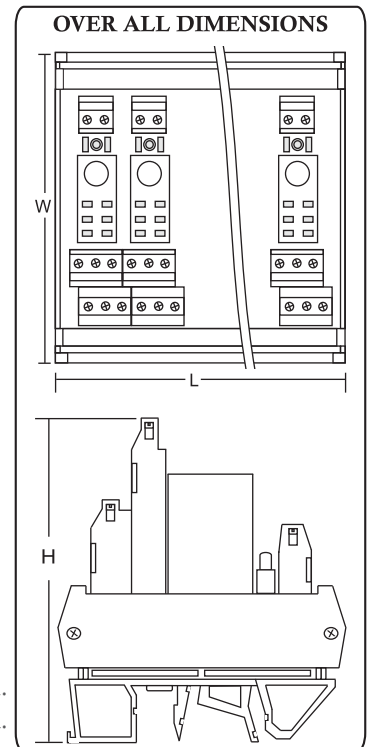
MODEL CODE	NO. OF CHANNEL	NO. OF CONTACT	SUPPLY VOLT	SIZE MM (L x W x H)
RIM-8CH-2CO-24V	8	2CO	24VDC	135 x 88 x 71
RIM-4CH-2CO-24V	4	2CO	24VDC	72 x 88 x 71
RIM-2CH-2CO-24V	2	2CO	24VDC	40 x 88 x 71
RIM-8CH-1CO-24V	8	1CO	24VDC	143 x 88 x 52
RIM-4CH-1CO-24V	4	1CO	24VDC	76 x 88 x 52
RIM-2CH-1CO-24V	2	1CO	24VDC	40 x 88 x 52

**SPECIFICATION :** ● Coil Supply Voltage : 24VDC +/- 10 %  
(Other coil supply voltages are provided on request.)

- Relay Contact capacity : 1CO / 2CO, 5A @ 230vac / 24 vdc resistive load.
- Life Electrical / Mechanical: Min 100,000 operation at full load.
- Maximum operating frequency : 1800 operation / hour.
- Delay time to make 'ON' : 15ms , and Delay time to make 'OFF' : 20 ms max.
- Wire Size : 1 x 2.5 mm<sup>2</sup> without lug & 2 x 1.5 mm<sup>2</sup> with lug.
- Mounting : 35 mm DIN Rail / Screw mounting.
- Housing Material : PVC - flame retardant (FR-V0). ● Humidity : 90 % RH.
- Temperature : Operating :- 20 to 55° C. Storage :- 20 to 70° C.
- Weight : 8CH-2CO : 435 Gram, 4CH-2CO : 235 Gram, 2CH-2CO : 135 Gram.  
8CH-1CO : 295 Gram, 4CH-1CO : 165 Gram, 2CH-1CO : 100 Gram.

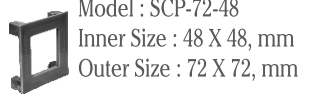
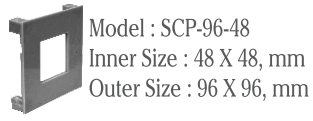
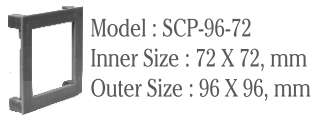
**FEATURES :** ● Diode used for protection against reverse polarity of coil supply.

- Free wheeling diode used across relay coil to release, over shut of relay coil current.
- Looping of more than one Positive coils are done by jumpers +1J,+2J,+3J,+4J,+5J,+6J,+7J,+8J for common relay drive.
- Looping of more than one Negative coils are done by jumpers -1J, -2J, -3J, -4J, -5J, -6J, -7J, -8J for common relay drive.
- Jumpers are not require to run Relay's individually. ● LED indication to show Relay 'ON' or 'OFF' status.

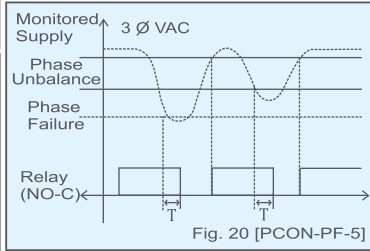
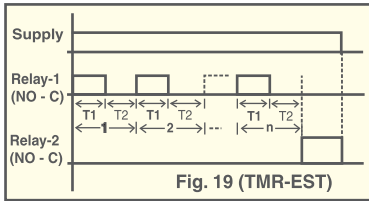
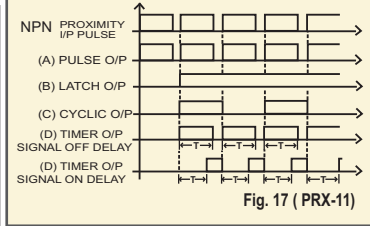
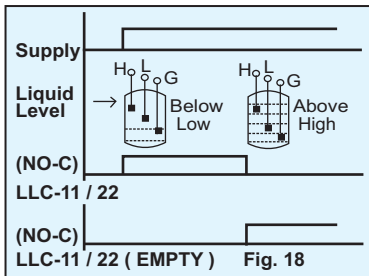
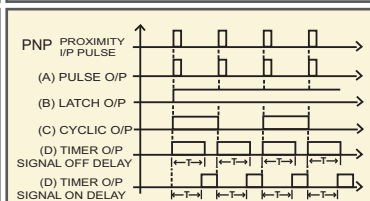
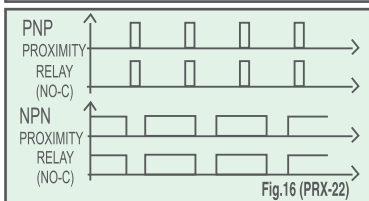
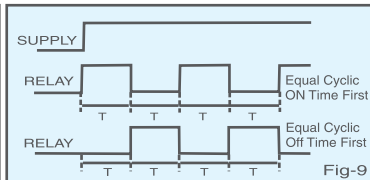
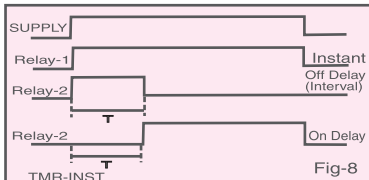
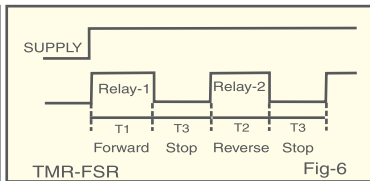
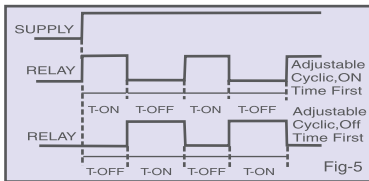
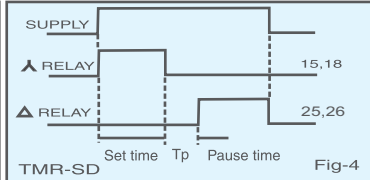
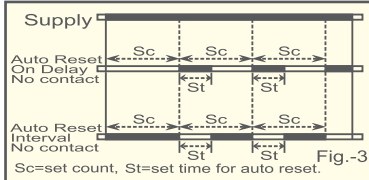
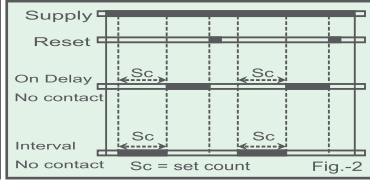
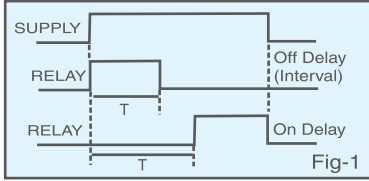




It helps to mount a small size instrument in to the big cut-out of panel.



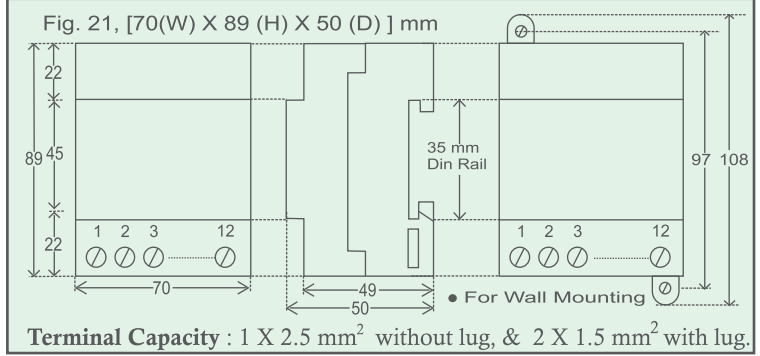
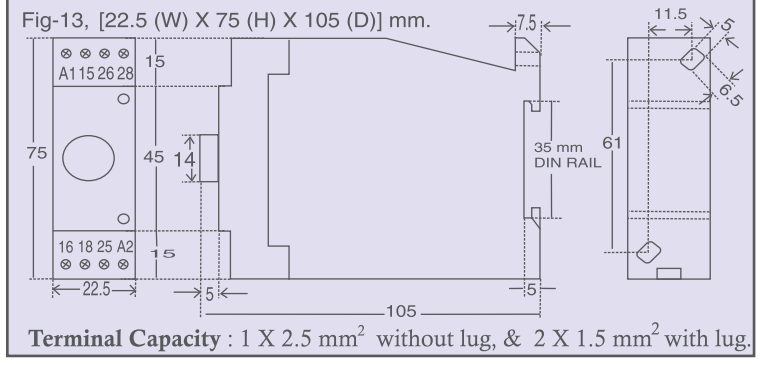
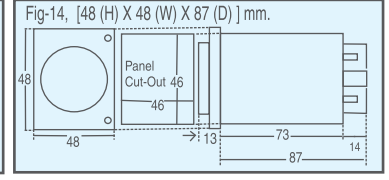
TIMING DIAGRAM



OVER ALL / MOUNTING DIMENSIONS (All Dimensions in mm.)

SIZE	DIM	A	B	C	D	E	F
SIZE - (1)		96	96	74	10	92	92
SIZE - (2)		72	72	74	10	69	69
SIZE - (3)		48	48	92	4	46	46

SIZE	DIM	A	B	C	D	E	F
SIZE - (4)		48	96	75	10	46	92





Sensor type	Temperature Range	Fitting & Dimensions
<b>Thermocouple :</b> ● J (Fe/K) ● K (Cr/Al)	● -100 to 400 °C, ● 0 to 750 °C	● Pencil type with cable having, # Sheath Length : 3"/ 6"/12"...etc... , # Sheath O.D. : 3/4/6/8/12 mm...etc... ● Bayonet type with cable ● Weather proof head, / Flame proof head, ● fixed / Adjustable fitting : 1/4", 1/2", 3/4", 1" BSP threading gland. ● Simplex / Duplex type in RTD, ● Ceramic tube type, in K type ● Washer type, ● With Thermo well
● R (PT - {PT +13 % RH}) ● S (PT - {PT +10 % RH})	● 0 to 600 °C, ● 0 to 900 °C, ● 0 to 1150 °C, ● 0 to 1350 °C	
● RTD PT - 100,	● -50 to 1760 °C, ● -50 to 1760 °C, ● -100 to 400 °C, ● -100 to 600 °C,	

PROXIMITY SENSOR



- Inductive Proximity Sensor, 12 mm / 18 mm / 30 mm, 10 – 30 Vdc, PNP / NPN, NO / NC type with 1 meter / 3 meter cable.
- Inductive Proximity Sensor, 18 mm, 20 - 250 vac, NO. 2 wire type,
- Photo Proximity Sensor 18 mm, 10 – 30 Vdc, NO+NC, Difuse beam. (300 mm sensing distance)
- Photo Proximity Sensor 18 mm, 10 – 30 Vdc, Through beam. (more than 300 mm sensing distance)
- Magnetic Proximity sensor, 12 mm, PNP / NPN – NO,

OPTICAL INCREMENTAL ROTARY ENCODER



- Optical Rotary Encoder : PPR : 100 / 360 / 400 / 600 / 1000, 2-Phase Incremental
- Optical Rotary Encoder : PPR : 600 / 1024 / 2500, ABZ 3-Phase Incremental
- Working voltage : 5 - 24 v.
- Maximum mechanical speed : 5000 Rev / minute
- Encoder body size : 38 mm ● Shaft : Ø 6 x 13 mm
- Axis platform : High - 5 mm Ø 20 mm
- Output : NPN open collector type
- Operating temperature : 25 - 105° c

SOLID STATE RELAY (SSR)



- Single phase DC to AC, Range : 10 amp to 100 amp.
- Single phase AC to AC, Range : 10 amp to 100 amp.
- Single phase DC to DC, Range : 10 amp to 80 amp.
- Three phase DC to AC, Range : 10 amp to 100 amp.
- Three phase AC to AC, Range : 10 amp to 100 amp.

WORLDWIDE PRESENCE



**PARAGON**™

PARAGON AUTO CONTROL

BHAYANDAR, THANE - 401 101. (MH.) BHARAT

www.paragoncontrol.com

AUTHORISED DISTRIBUTOR / DEALER :