DIGITAL INDICATOR

TRM-006

TOHO ELECTRONICS INC.

DIGITAL INDICATOR

TRM-006 (DIN 48×96 SIZE)

Most advance digital indicator with new function

■Main Features

●Many kind of input selectable (8 Termocouple, 2 R.T.D. Current Voltage)

●4 bright LED digits 15mm

Clearly readable from a distance even in large bright light.

●Peak and bottom holed function

Minimum value of PV(measuring value) is memorised after electric power is at "ON" condition, and functions of Peak Hold/Bottom Hold are provided for necessary confirmation to be required.

●Digital PV filter

If electric noise is come in to the input, its noise effect is reduces. And digital PV filter is provided to make the response delay for rapid change of the input.

●Optional functions ensure a wide range of applications RS-485 communication, 2 Alarm setting, Transfer output of 4 kinds, and 5V or 12VDC for sensor.

■Front panel

PV	Process value indication
Character	Character indication for display or setting
AL1	Alarm 1 for low or high limit
AL2	Alarm 2 for low or high limit
COM	Showing communication operate time
MAX	Showing of peak value
MIN	Showing of bottom value
Mode Key	Call mode key character
Shift Key	Using switchover to parameter mode
▲ / ▼	Up down key for setting of alarm value and change of selection of other functions

■Standard Specifications

PV Input	Kind of input	Thermocouple	K, J, E, T, R, S, N, W5Re/W26Re
		R.T.D	Pt100, JPt100
		Current	4~20mADC
		Voltage	0~5V, 0~10V, 0~10mV, 1~5VDC
	Sampling time	0.5Sec	
	Complement function	PV correct, Digital PV filter, PV hold	
	Input resistance	Thermocouple	1M ohm min from +side on terminal
		Current	250 ohm min from A side on terminal
		Voltage	500k ohm min(1-5V, 0-1V, 0-5VDC) 1M ohm min from + side on terminal(0-10V, 0-10mVDC)
	Baias current	Thermocouple	0.18μA
		R.T.D	0.2mA
		Current	9nA
		Voltage	±9nA max(1-5V, 0-1V, 0-5VDC) 0.18μA(0-10mV)
	External resistance	Thermocouple	100 ohm max including sensor
		R.T.D	5 ohm max for on wire
	Burnout	Thermocouple	Up scale
		R.T.D	
		Current	PV Input
		Voltage	Input "0" is 0-1V, 0-10V, 0-5VDC / Down scale is 0-5VDC / Up scale is 0-10mV
	Digital PV filter	Setting range	0 to 99 sec (Time constant filter is OFF at 0). Unit : sec
	PV holding	Selectable 4 kinds	Non holding, Peak holding, Bottom holding, Peak and bottom holding.

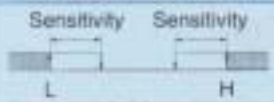
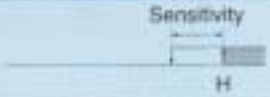
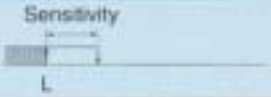
Display Setting	Indication method	4 digits, 7 segments LED, Letter 15mm height, green	
	Character	4 digits, 7 segments LED, Letter 8mm hight, red	
	AI 1	Red LED	showing for alarm operation
	AI 2	Red LED	showing for alarm 2 operations
	COM	Green LED	showing for communication operation
	Min	Red LED	showing for bottom value
	Max	Red LED	showing for peak value
	Indicating accuracy	Thermocouple	±0.3%+1 digit or ±3°C(±6°F) under indicating value
		R. T. D	±0.3%+1 digit or ±0.8°C(±1.8°F) under indicating value
		Current	±0.3%+1 digit under indicating value
		Voltage	
	Setting	Key operation for all setting	
	Lock method	3 modes (no lock, all lock, parameter display lock)	
Memory element		EEPROM	
Isolation between input and output		Isolation : Between each output and digital circuit . No isoration : Between Input and digital circuit	
Power supply		85 to 264 VAC 50/60, 24VAC/DC is special factory option	
Power consumption		10VAC max at 264VAC	
Ambient temperature & humidity		0 to 55°C, 35 to 85% RH(not dew)	
Insuration resistance		Between ground terminal and power or measure terminal 20M ohm by 500VDC	
Dielectric strength		Between ground terminal and power or measure terminal 1000VAC in 1 min	

■Optional function

Alarm AL1,AL2	Sensitivity	10%of full span max.
	Output rating	250VDC 0.5A(load resistance) or 125VAC(load resistance)
	Relay contact	1a contact, 220VDC 0.5(load resistance) or 60VDC (load resistance)
Transfer Outputs	Output voltage Current	1 to 5V, 0 to 10V, 0 to 10mVDC 4 to 20mADC
	Output resolution	Indicating and more
	Output response time	600mSec max.
	Output accuracy	±0.3%
Sensor drive voltage	Voltage 5VDC	Load resistance 500 ohm min Output sensitivity within ±5%
	Voltage 12VDC	Load resistance 1.2k ohm min Output sensitivity within ±5%

Communication method	Protocol	TOHO's specification
	Network	RS485 Multi-drop way with two lines 1 : 31 address max
	Transmission code	ASCII(without BCCdata)
	Interface method	Transmission line : Three wire (T/R : 2, signal ground : 1) Com speed : 1200, 2400, 4800, 9600, BPS selectable Com distance : 500M max
	Character	Start bit : 1 bit fixed Stop bit : Selectable 1/2 Data lengh : Selectable 7/8 Parity bit : Non, an even number Check BCC : Non or with Transmission stores : Setting between 1 to 99

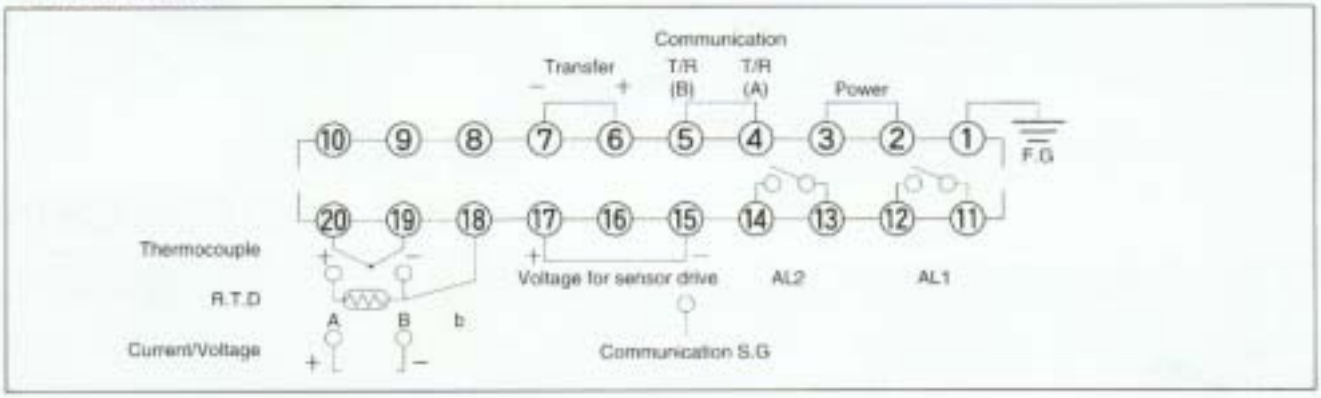
■Alarm Contact Output

1 Absolute value high and low limit	2 Absolute value high limit	3 Absolute value low limit	4 Absolute value high and low limit range
			

Selectable above 4 kinds and select 1 item following additional alarm functions

0 Non　1 Holding　2 Buzzer　3 Awaiting sequence
4 Holding & buzzer　5 Holding & awaiting sequence　6 Holding & buzzer　7 Holding & awaiting sequence plus buzzer

■Terminals

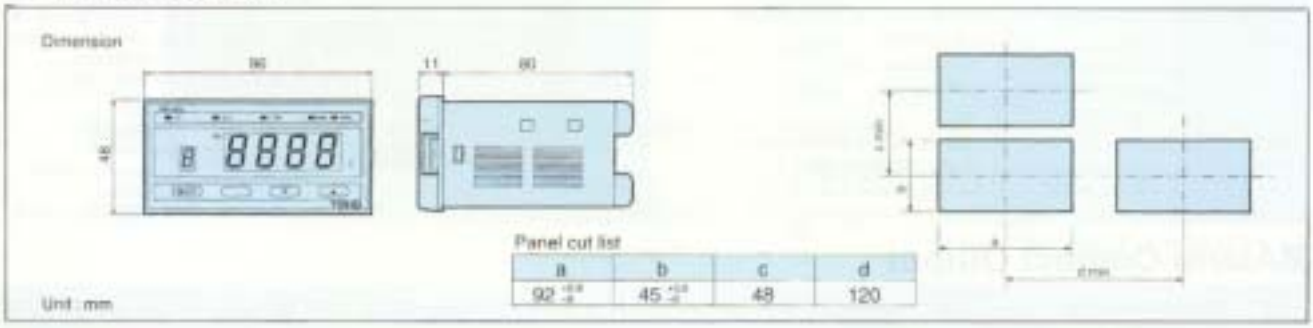


■Ordering Information

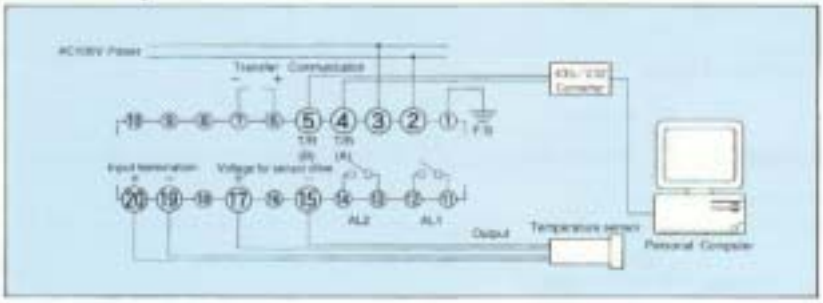
TRM - 006 - [Input] - [Options] - [Power]

Input	0	Thermocouple [K, J, E, T, R, S, N, W5Re/W26Re]			multiple input switchable
	1	R.T.D. Pt100 DIN, JPt100			multiple input switchable
	2	Voltage 1~5V			
	3	Current 4~20mA			
	4	Voltage 0~1V			
	5	Voltage 0~10V			
	6	Voltage 0~10mV			
	7	Voltage 0~5V			
Options A selection of option is maximum 5 digits but when "L" or "Q" is selected on option, you cannot select "M" or "F", "G", "H", "I".	A	AL1 Alarm relay	L	Voltage for sensor drive 5V/DC	
	B	AL2 Alarm relay	Q	Voltage for sensor drive 12V/DC	
	C	Buzzer			
	F	Transfer output : 1~5V.			
	G	Transfer output : 0~10V.			
	H	Transfer output : 0~10mV.			
	I	Transfer output : 4~20mA.			
	M	Communication RS-485.			
	24	AC / DC-24V (Special factory option)			

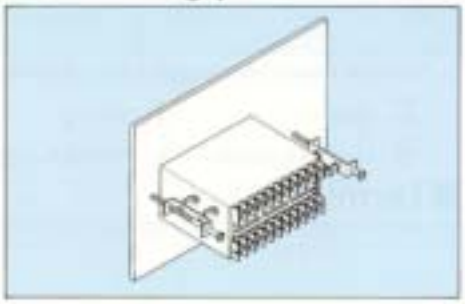
■Panel cut size



■Example



■Installing panel



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Specifications are subject to change without notice