THERMOCOUPLE TEMPERATURE LARGE DISPLAY

GBMT

■ FEATURES

- Accuracy: ±0.2% F.S. ±0.5 C (Cold junction compensation)
- Measuring Temperature (TC) sensors for K, J, E, R, S, B, T
- High brightness LED display range: -19999~99999
- Parameters setting by infrared remote control
- 1 Control output 1~3 Alarms (Hi or Lo programmable) output / Analog output (15 bit resolution) / RS-485 communication optional (The above options can exist together)
- Invisible wire connection, easily installation

CE

■ ORDER INFORMATION: GBMT - Code 1 - Code 2 - Code 3 - Code 4 Code 5 Code 6 Code 7

Code 1	Digits
3	3 Digits
4	4 Digits
5	5 Digits
O	Option

Code 2	Input Type
B	200~1800°C
E	-185~900°C
J	-200~200°C
K	-200~1360°C
R	0~1760°C
S	0~1750°C
T	-200~395°C

Code 3	Aux. Power
A	AC/DC 100~240V
D	AC/DC 22~60V

Code 4	Control Output
N	None
Y	1 Control

Code 5	Alarm Output
N	None
R1	1 Relay
R2	2 Relays
R3	3 Relays

Code 6	Analog Output
N	None
A	4~20mA
V	0~10V
L	LOOP POWER:15-30Vdc 4-20mA out put
O	Option

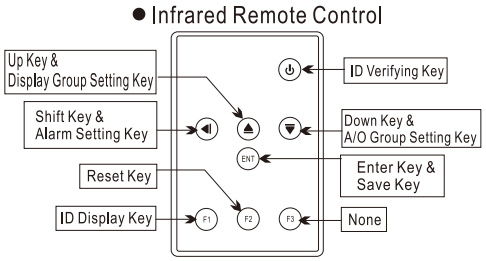
Code 7	RS-485
N	None
Y	Modbus-RTU

■ SPECIFICATION

♦ Accuracy:	±0.2% F.S., ±0.5 ℃(Cold junction compensation)
♦ Display Screen:	High brightness red LED; 10cm (4")
♦ Sampling Time:	60 cycles / sec
♦ Display Range:	-19999~99999
♦ Zero Adjustment:	-19999~99999
♦ Over Range Indication:	do / io or -do / -io
♦ Polarity Indication:	Automatic with "-" indication
♦ Parameters Setting:	Infrared Remote Control
♦ Back Up Memory:	EEPROM
♦ Alarm Action:	"≧(Hi) on" or "< (Lo) on"
♦ Alarm Run Delay Time:	0~99 sec
♦ Relay Contact:	AC 277V / 7A; DC 30V / 7A
♦ Analog Output Resolution:	15 bit
♦ Output Response Time:	<250 msec (0~90%)
♦ Output Capability:	Voltage Output: <20mA Current Output: <10V
♦ Communication:	RS-485 Modbus RTU mode
♦ Baud Rate:	19200 / 9600 / 4800 / 2400 bps
♦ Temperature Coefficient:	100ppm / ℃ (0~60℃)
♦ Operating Temperature:	0~60℃
♦ Operating Humidity:	20~90% RH (non-condensing)
♦ Storage Temperature:	-10~70℃
♦ Storage Humidity:	20~90% RH (non-condensing)
♦ Power Supply:	AC/DC 100~240V; AC/DC 22~60V
♦ Power Consumption:	<10VA (all functions output)
♦ Surge Test:	1.5KVac / 1min (Input / Power)
♦ Input Impendence:	Voltage: >2V for 20KΩ / V; ≦2V for >200MΩ Current: ≧0.2A at 100mV; <0.2A at 1V

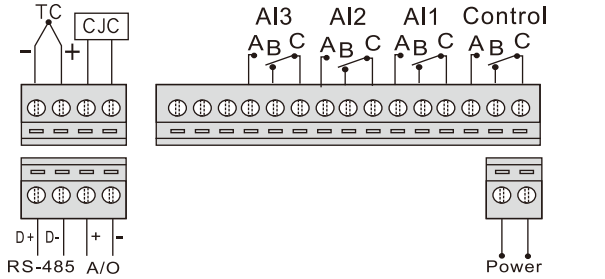
■ SIDE PANEL & KEY FUNCTIONS

● Infrared Remote Control



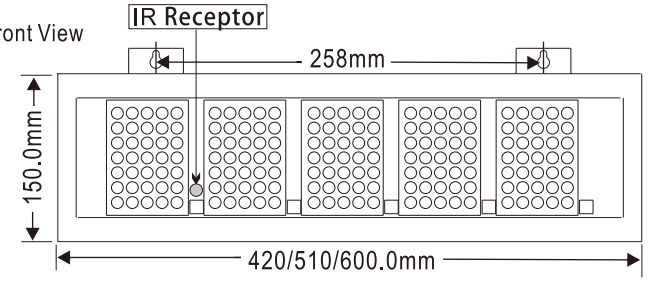
■ WIRING

Top Side

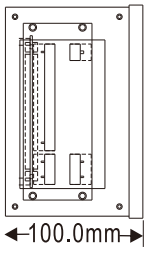


■ DIMENSION

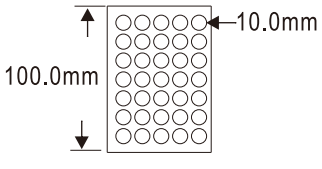
● Front View



● Side View



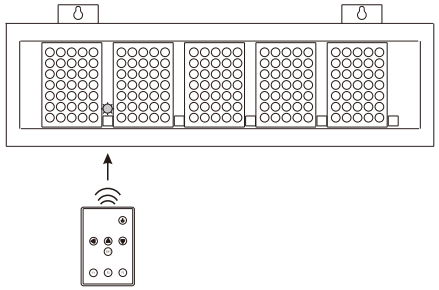
● LED Size

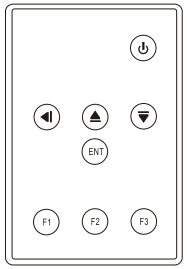


GBMT THERMOCOUPLE TEMPERATURE LARGE DISPLAY MANUAL

✻ Please understand key indicators & functions at the first operation.

FRONT PANEL & KEY FUNCTIONS





- ID Confirmed Key
- Up Key
- Shift Key
- Down Key
- Enter Key or Save Key
- ID Display Key
- Reset Key
- No Function

Key Name	Symbol	Descriptions
ID Confirmed Key	⏻	1. In the measuring status, press this key can enter to ID confirmed page. 2. In the parameter setting, press this key can back to the measuring page.
Enter Key & Save Key	ENT	1. In the measuring status, press this key can enter to parameter pages. 2. In the parameter setting, press this key can save the value & go to next parameter.
Shift Key	◀	1. In the parameter setting , press this key can move the cursor left.
Up Key	▲	1. In the parameter setting, press this key can increase the digits.
Down Key	▼	1. In the parameter setting , press this key can decrease the digits.

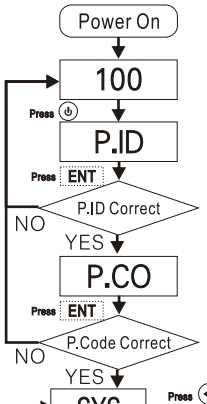
**1. The following block charts are parameters codes, parameter codes & parameters will alternate flashing if the parameters can be modified.

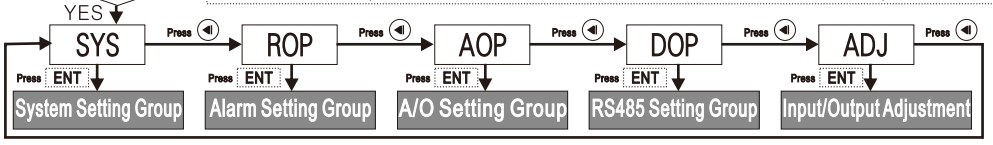
2. To modify the parameters, please press ◀/▲/▼, and press ENT to save the parameter after the modification.

3. Please don't forget the new pass code after modification.

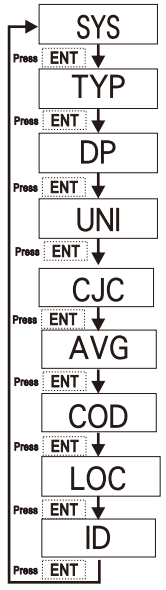
4. In any pages, press ⏻, or don't press any keys for 2 minutes that will back to measuring status.

PROGRAMMING MODE OPERATING PROCEDURES





Display	Descriptions	Default
	Parameter Group Setting Procedures	
Measuring Status	Present value for measurement	
ID Confirmation (P.ID)	Enter ID code.	000
	ID code is correct that will enter to P.CO page. ID code is wrong that will back to measuring status.	
Pass Code (P.Cod)	Enter pass code.	000
	Pass code is correct that will enter to parameter groups. Pass code is wrong that will back to measuring status.	



Display	Descriptions	Default
	System Setting Group Procedures	
Sensor Type Setting (tYPE)	Show the temperature sensor type. PS: Please don't forget the new pass code after modification.	Customers specify
Decimal Point Setting (dP)	Select decimal point (0, 1, 2, 3, 4). EX: if the value shows "0.00" that means the decimal point is 2 digits.	Customers specify
Temperature Unit Setting (unit)	Select the units (℃ or ℉).	Customers specify
Cold Junction Compensation (CJC)	Switch Cold Junction Compensation ON("no") PS: If setting "YES" ,the display value would not include the terminal's temperature.	NO
Display Average Setting (AvG)	Modify display average number (1~99). PS: Please use this function for stable display value when input signal is unstable.	005
Pass Code Setting (Cod)	Modify pass code (0~19999). PS: Please don't forget the new pass code after modification.	000
Key Lock Setting (LoC)	Lock the keys only can view the setting but not modify any values. PS: no (unlock) ,YES ("ENT" unlock , others lock).	NO
Identification Setting (id)	Modify identification (00~99). PS: If the ID is 00; Meter can received any Infrared Control.	000

	Display		Descriptions	Default
			Alarm Setting Group Procedures	
ROP	Alarm Setting Page (roP)		**The following steps are only available for alarm output.**	
SP	Control Setpoint (SP)		Modify temperature control setpoint.	000
AL1	Alarm 1 (Al1)	Action Setpoint Setting	Modify alarm action setpoint.	000
AL2	Alarm 2 (Al2)			
AL3	Alarm 3 (Al3)			
ACT	Control Action (ACT)		Modify Control action how temperature value is ≧(Hi) or <(Lo) the control setpoint	HI
AC1	Alarm 1 (Act1)	Alarm Action Setting	Modify alarm action how temperature value is ≧(Hi) or <(Lo) or (Go) the alarm setpoint	HI
AC2	Alarm 2 (Act2)			
AC3	Alarm 3 (Act3)			
P.B	Proportion Control Percentage (P.b)		Modify proportion control percentage(0~999).	000
HY1	Hysteresis 1 (HYS1)	Alarm Hysteresis Setting	Modify the value, when alarm runs lower or higher display value (depends on alarm action). Alarm setpoint ± this range (0~999) will turn off the alarm.	000
HY2	Hysteresis 2 (HYS2)			
HY3	Hysteresis 3 (HYS3)			
CTI	Proportion Time (C.time)		Modify proportion time (0~99 sec).	00
DE1	Delay Time 1 (dEL1)	Alarm Run Delay Setting	Modify the value, when the display value reach the alarm value that need to wait for this time (0~99 sec) for alarm action.	00
DE2	Delay Time 2 (dEL2)			
DE3	Delay Time 3 (dEL3)			
			A/O Setting Group Procedures	
AOP	A/O Setting Page (AoP)		**The following steps are only available for analog output.**	
POL	A/O Polarity Setting (PoLAr)		Select output for positive or negative pole. PS : Voltage output ,NO: positive pole output (0~+10V) YES: positive & negative pole output (-10~+10V)	NO
ANL	A/O Low Scale Setting (AnLo)		Adjust A/O low scale to correspond to the display value EX : A/O is 0~10V, the display is 10.0 to output 0V, this value must be set for 10.0.	000
ANH	A/O Hi Scale Setting (AnHi)		Adjust A/O hi scale to correspond to the display value EX : A/O is 0~10V, the display is 90.0 to output1 0V, this value must be set for 90.0.	999

	Display	Descriptions	Default
		RS485 Setting Group Procedures	
DOP	RS485 Setting Page (doP)	**The following steps are only available for RS-485.**	
ADD	Address Setting (Addr)	Modify address (0~255).	000
BAU	Baud Rate Setting (bAUd)	Select baud rate (38400/19200/9600/4800).	384
PAR	Parity Setting (PAri)	Select parity (n.8.2/n.8.1/even/odd).	n.8.2.
		Input / Output Adjustment Procedures	
ADJ	Adjustment Setting Page (ADJ)	**Adjustment setting page**	
C.OF	CJC Offset Setting (COF)	Modify the CJC offset value (-199~999).	000
R.OF	Control Offset Setting (ROF)	Modify the control offset value (-199~999).	000
DOF	Display Offset Setting (DOF)	Modify the display offset value (-199~999).	000
D.GA	Display Gain Setting (dGA)	Modify thedisplay gain value (-199~999).	000
A.OF	A/O Offset Setting (AoF)	Modify the analog output offset value (-999~999).	000
A.GA	A/O Gain Setting (AGA)	Modify the analog output gain value (-999~999).	000

Error Code of Self-Diagnosis

Display	Descriptions
IO	Input signal is over 120% of input range.
-IO	Input signal is under -20% of input range.
DO	Input signal is over 180% of input range or meter error.
-DO	Input signal is over display range (99999)
ADE	Input signal is under display range (-19999)
E00	EEPROM reading/writing suffers the interference (about 1 million times).

**Please check the wiring connection is correct first, if the problem still exist, please return the meter to the factory.