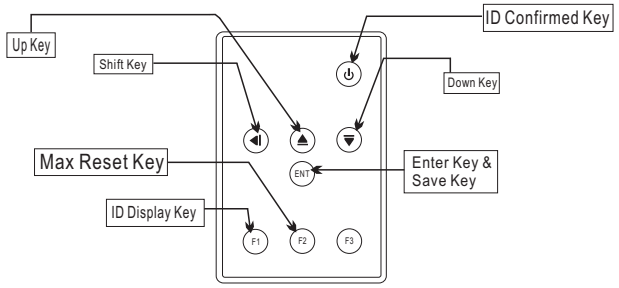
GBMR 10 CM LARGE DISPLAY RPM / LINE-SPEED / FREQUENCY METER with 2~4 ALARMS / ANALOG OUTPUT / RS-485 MANUAL

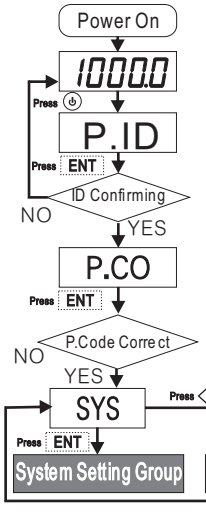
✻ Please understand key indicators & functions at the first operation.

FRONT PANEL & KEY FUNCTIONS

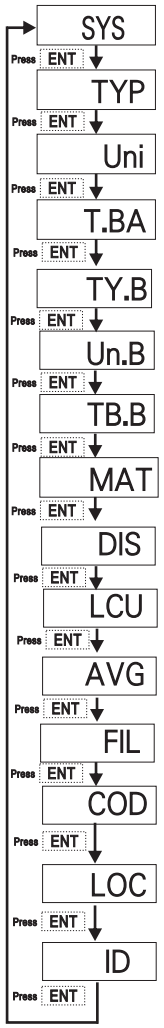


Key Name	Symbol	Descriptions
ID Confirmed Key	⏻	1. In the measuring status, press this key can enter to ID confirmed page. 2. In the parameter setting, press this key can back to the measuring page.
Enter Key & Save Key	ENT	1. In the measuring status, press this key can enter to parameter pages. 2. In 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.

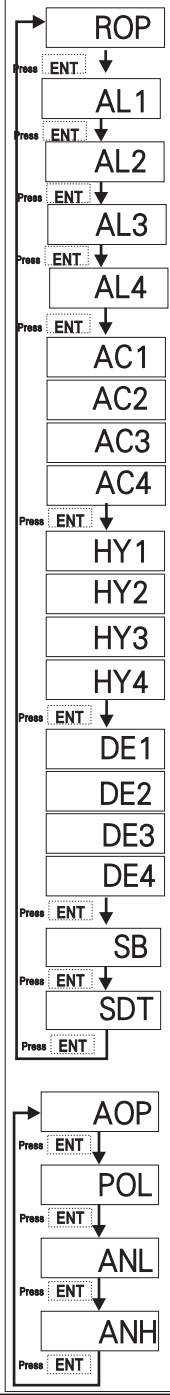
PROGRAMMING MODE OPERATING PROCEDURES



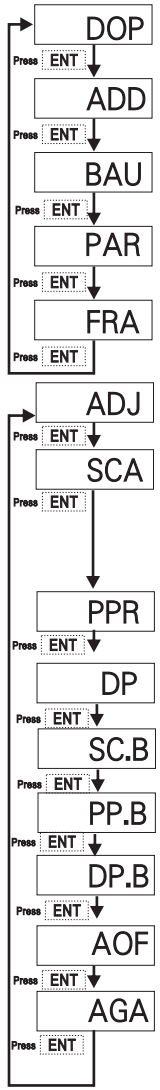
Display	Descriptions	Default
	Parameter Group Setting Procedures	
Measuring Status	Present value for measurement	
ID Code (P.ID)	Press ◁ △ ▽ to enter ID code.	0000
	ID code is correct that will enter to pass code page. ID code is wrong that will back to measuring status.	
Pass Code (P.Cod)	Press ◁ △ ▽ to enter pass code.	0000
	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	
Input Type A Setting (tYP)	Press △ ▽ to modify the input type A. (RPM/Linear-Speed/Frequency)	RPM
Line-Speed Unit Setting (Uni)	Press △ ▽ to modify the unit of line-speed (Meter/Foot/Yard). **PS: Line-Speed type available**	M
Input A Sampling Time Base (T.BA)	Press ◁ △ ▽ to modify sampling time base (0.1~999.9 sec).	2.0
Input Type B Setting (tY.B)	Press △ ▽ to modify the input type B. (RPM/Linear-Speed/Frequency)	RPM
Input B Line-Speed Unit Setting (Un.B)	Press △ ▽ to modify the unit of line-speed (Meter/Foot/Yard). **PS: Line-Speed type available**	M
Input B Sampling Time Base (T.BB)	Press ◁ △ ▽ to modify sampling time base (0.1~999.9 sec).	2.0
Math function Setting (MAT)	Press △ ▽ to modify math function Off, B+A, B-A, B/A, ER%[B/A-1], RA%[B/(B+A)]	OFF
Display Selection Setting (diS)	Press △ ▽ to modify display selection (DUL, MAT, MAX, FR, V)	DUAL
Display Low Cut Setting (LCU)	Press ◁ △ ▽ to modify display low cut to 0 (0~99).	0000
Display Average Setting (AvG)	Press ◁ △ ▽ to modify display average (1~99). PS: Please use this function for stable display value when input signal is unstable.	0005
Display Filter Setting (FiL)	Press △ ▽ to modify display filter setting (0, 1, 2, 5).	0000
Pass Code Setting (Cod)	Press ◁ △ ▽ to modify pass code (0~19999). PS: Please don't forget the new pass code after modification.	0000
Key Lock Setting (LoC)	Press △ ▽ to lock the keys, using key lock function only can view the parameters, but cannot modify any values. PS: no (unlock) ,YES ("ENT" unlock , others lock).	NO
Identification Setting (id)	Press ◁ △ ▽ to modify identification (00~99). PS: If the ID is 00; Meter can received any Infrared Control.	0000



Display	Descriptions	Default
	Alarm Setting Group Procedures	
Alarm Setting Page (roP)	**The following steps are only available for alarm output.**	
Alarm 1 Setpoint (AL1)	Press◁ △ ▽ to modify alarm 1 setpoint.	0000
Alarm 2 Setpoint (AL2)	Press◁ △ ▽ to modify alarm 2 setpoint.	0000
Alarm 3 Setpoint (AL3)	Press◁ △ ▽ to modify alarm 3 setpoint.	0000
Alarm 4 Setpoint (AL4)	Press◁ △ ▽ to modify alarm 4 setpoint.	0000
Alarm 1 (ACt1) (Alarm Action Setting)	Press △ ▽ to modify alarm value that is ≧(Hi) or <(Lo) for alarm action.	HI
Alarm 2 (ACt2) (Alarm Action Setting)		
Alarm 3 (ACt3) (Alarm Action Setting)	Press △ ▽ to modify alarm value that is ≧(Hi) or <(Lo) or (Go) for alarm action.	HI
Alarm 4 (ACt4) (Alarm Action Setting)	Press △ ▽ to modify alarm value that is (Hi) or <(Lo) or (Err) for alarm action.	HI
Hysteresis 1 (HYS1) (Alarm Hysteresis Setting)	Press◁ △ ▽ to 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. PS: 1. There are 4 alarms output optional. 2. This page is exist without alarm output, but the function will be disabled. 3. Press **ENT** to save the value and go to the next parameter.	0000
Hysteresis 2 (HYS2) (Alarm Hysteresis Setting)		
Hysteresis 3 (HYS3) (Alarm Hysteresis Setting)		
Hysteresis 4 (HYS4) (Alarm Hysteresis Setting)		
Delay Time 1 (dEL1) (Alarm Run Delay Setting)	Press◁ △ ▽ to modify the value, when the display value reach the alarm value that need to wait for this time (0~99 sec) for alarm action. PS: 1. There are 4 alarms output optional. 2. This page is exist without alarm output, but the function will be disabled. 3. Press **ENT** to save the value and go to the next parameter.	00
Delay Time 2 (dEL2) (Alarm Run Delay Setting)		
Delay Time 3 (dEL3) (Alarm Run Delay Setting)		
Delay Time 4 (dEL4) (Alarm Run Delay Setting)		
Alarm Start Band Setting (Sb)	Press◁ △ ▽ to modify the value (-99~+99), if the display value don't over this range; the alarm will not be act.	00
Alarm Start Band Time Setting (Sdt)	Press◁ △ ▽ to modify the value (0~99 sec), if the display value reach alarm start band value; the alarm will be act after this value (sec).(The function is used with "Sb" function.)	00
	A/O Setting Group Procedures	
A/O Setting Page (AoP)	**The following steps are only available for analog output.**	
A/O Polarity Setting (PoLAr)	Press △ ▽ to select output for positive or negative pole. PS : Voltage output ,NO: positive pole output (0~+10V) YES: positive & negative pole output (-10~+10V)	NO
A/O Low Scale Setting (AnLo)	Press◁ △ ▽ to adjust A/O low scale to correspond to the display value (programmable). EX : A/O is 0~10V, the display is 10.0 to output 0V, this value must be set for 10.0.	0000
A/O Hi Scale Setting (AnHi)	Press◁ △ ▽ to adjust A/O hi scale to correspond to the display value (programmable). EX : A/O is 0~10V, the display is 90.0 to output1 0V, this value must be set for 90.0.	9999



Display	Descriptions	Default
	RS485 Setting Group Procedures	
RS485 Setting Page (doP)	**The following steps are only available for RS-485.**	
Address Setting (Addr)	Press◁ △ ▽ to modify address (0~255).	0000
Baud Rate Setting (bAUd)	Press △ ▽to select baud rate (38400/19200/9600/4800).	384
Parity Setting (PAri)	Press △ ▽ to select parity (n.8.2/n.8.1/even/odd).	n.8.2.
Frame Setting (FrAmE)	Press △ ▽ to select frame type. (NO:Hi→Lo , YES:Lo→Hi)	NO
	Input / Output Adjustment Procedures	
Scale Coefficient Adjustment (SCA)	Press◁ △ ▽to modify scale coefficient 1 (0.0001 ~9.9999). PS: 1.In Frequency & RPM types, this coefficient can be modified for display value. (Please refer to Scaling Formula) 2. In Line-Speed type, this coefficient means "diameter" of the roll, the unit will be changed by selecting display unit. EX: If the display unit is "Meter", the diameter is also showed "Meter".	1.000
PPR Setting (PPr)	Press◁ △ ▽ to modify input A ppr (1~99999).	0001
Input A Decimal Point Setting (dP)	Press △ ▽ to select input A decimal point (0, 1, 2, 3, 4). EX: if the value shows "0.00" that means the decimal point is 2 digits.	0000
Scale Coefficient Adjustment (SC.B)	Press◁ △ ▽to modify input B scale coefficient 1 (0.0001 ~9.9999).	1.000
PPR Setting (PP.B)	Press◁ △ ▽ to modify input B ppr (1~99999).	0001
Input B Decimal Point Setting (DP.B)	Press △ ▽ to select input B decimal point (0, 1, 2, 3, 4). EX: if the value shows "0.00" that means the decimal point is 2 digits.	0000
A/O Offset Setting (AoF)	Press◁ △ ▽to analog output offset value (-1999~9999).	0000
A/O Gain Setting (AGA)	Press◁ △ ▽ to analog output gain value (-1999~9999).	0000

Error Code of Self-Diagnosis

Display	Descriptions
IO	Input signal is over input range (0~100KHz).
-IO	Input signal is over display range (99999).
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.

Modbus RTU Mode Protocol Address Table

Data: 16Bit / 32Bit, +/- is 8000~7FFF (-32768~32767), 80000000~7FFFFFFF(-2147483648~2147483647)

Modbus	HEX	Name	Descriptions	Act
40001	0000	ID	Model number identification; GBMR is "35H"	R
40002	0001	STATUS	Current alarm output & external control input status display; range: (Bit7:AL4, Bit6: AL3, Bit5: AL2, Bit4: AL1)	R
40003	0002	LOCK	Key lock setting; range: 0000~0001 (0~1)Bit0: LOCK(0:NO, 1:YES)	R/W
40004	0003	FILTER	Input FILTER setting; range:0000~0004(0~4); 0:OFF, 1:4, 2:40, 3:400, 4:K	R/W
40005	0004	MATH	Math function setting, range:0000~0005(05); 0:Off, 1:Add.bA, 2:SUB.bA, 3.div.bA, 4:Error, 5:rAtio	R/W R/W
40006	0005	DISP	Display selection setting; range: 0000~0003 (0~3);0:ALArM,1:MAtH.v, 2:FrrPM, 3:dUALiP	R/W
40007	0006	POLAR	Analog output polarity setting; range: 0000~0001 (0~1)	R/W
40008	0007	ACT1	Alarm 1 act setting; range: 0000~0001 (0~1) 0:HI, 1:LO	R/W
40009	0008	ACT2	Alarm 2 act setting; range: 0000~0001 (0~1) 0:HI, 1:LO	R/W
40010	0009	ACT3	Alarm 3 act setting; range: 0000~0002 (0~2) 0:HI, 1:LO, 2:GO	R/W
40011	000A	ACT4	Alarm 4 act setting; range: 0000~0001 (0~1) 0:HI, 1:LO, 2:ERROR	R/W
40012	000B	PARI	Parity setting; range: 0000~0003 (0~3)	R/W
40013	000C	BAUD	Baud rate setting; range: 0000~0003 (0~3) 0:38400,1:19200, 2:9600, 3:4800	R/W
40014	000D	FRAME	Frame setting; range 0000~0001(0~1) 0:NO, 1:YES	R/W
40015	000E	TYPE	Input type setting; range: 0000~0002 (0~2) 0:RPM, 1:Line-Speed, 2:Frequency	R/W
40016	000F	TYPEB	Input type B setting, range: 0000~0002 (0~2) 0:RPM, 1:Line-Speed, 2:Frequency	R/W
40017	0010	UNIT	Line-Speed unit setting, range: 0000~0002 (0~2) 0:MEtEr, 1:Foot, 2:YArd	R/W
40018	0011	UNITB	Line-Speed B unit setting, range: 0000~0002 (0~2) 0:MEtEr, 1:Foot, 2:YArd	R/W
40019	0012	DP	Present Value decimal point setting; range: 0000~0005 (0~5)	R/W
40020	0013	DPB	Present Value decimal B point setting; range: 0000~0005 (0~5)	R/W
40021	0014	AVG	Display average setting, range: 0000~0063(1~99)	R/W
40022	0015	DIG	DIG setting; range: 8DF1~270F(-9999~9999)	R/W
40023	0016	IDNO	Indicator setting; range 0000~0063(0~99)	R/W
40024	0017	ADDR	Address setting; range: 0000~00FF (0~255)	R/W
40025	0018	DEL1	Alarm 1 run delay setting; range: 0001~0063 (1~99)	R/W
40026	0019	DEL2	Alarm 2 run delay setting; range: 0001~0063 (1~99)	R/W
40027	001A	DEL3	Alarm 3 run delay setting; range: 0001~0063 (1~99)	R/W
40028	001B	DEL4	Alarm 4 run delay setting; range: 0001~0063 (1~99)	R/W
40029	001C	SB	Alarm start band setting; range: 0001~0063 (0~99)	R/W
40030	001D	SDT	Alarm start delay setting; range: 0001~0063 (0~99)	R/W
40031	001E	LCUT	Display low cut setting, range:000~270F(0~9999)	R/W
40032	001F	CODE	Pass code setting; range: 0000~4E1F(0~19999)	R/W
40033	0020	TBASE	Sampling time base setting,range:0001~270F(1~9999)	R/W
40034	0021	TBASEB	Sampling time base B setting,range:0001~270F(1~9999)	R/W

Modbus	HEX	Name	Descriptions	Act
40035	0022	HYS1	Alarm 1 hystersis setting; range: 0000~0270F (0~9999)	R/W
40036	0023	HYS2	Alarm 2 hystersis setting; range: 0000~0270F (0~9999)	R/W
40037	0024	HYS3	Alarm 3 hystersis setting; range: 0000~0270F (0~9999)	R/W
40038	0025	HYS4	Alarm 4 hystersis setting; range: 0000~0270F (0~9999)	R/W
40039	0026	AOFST	Analog offset setting; range: D8F1~270F(-9999~9999)	R/W
40040	0027	AGAIN	Analog gain setting; range: D8F1~270F(-9999~9999)	R/W
40041	0028	PPR	PPR A setting, range:00000001~00F423F (1~99999) Hi Bit	R/W
40042	0029		PPR A setting, range:00000001~00F423F (1~99999) Lo Bit	R/W
40043	002A	PPR.B	PPR B setting, range:00000001~00F423F (1~99999) Hi Bit	R/W
40044	002B		PPR B setting, range:00000001~00F423F (1~99999) Lo Bit	R/W
40045	002C	SCALE	Input A scale setting; range:00000001~00F423F (1~99999) Hi Bit	R/W
40046	002D		Input A scale setting; range:00000001~00F423F (1~99999) Lo Bit	R/W
40047	002E	SCALEB	Input B scale setting; range:00000001~00F423F (1~99999) Hi Bit	R/W
40048	002F		Input B scale setting; range:00000001~00F423F (1~99999) Lo Bit	R/W
40049	0030	ANLO	Analog output low scale setting; range: 00000000~0001869F (0~99999) Hi Bit	R/W
40050	0031		Analog output low scale setting; range: 00000001~0001869F (0~99999) Lo Bit	R/W
40051	0032	ANHI	Analog output hi scale setting; range: 00000001~0001869F (0~99999) Hi Bit	R/W
40052	0033		Analog output hi scale setting; range: 00000001~0001869F (0~99999) Lo Bit	R/W
40053	0034	AL1	Present value alarm 1 setpoint setting; range: 00000001~0001869F (0~99999) Hi Bit	R/W
40054	0035		Present value alarm 1 setpoint setting; range: 00000001~0001869F (0~99999) Lo Bit	R/W
40055	0036	AL2	Present value alarm 2 setpoint setting; range: 00000001~0001869F (0~99999) Hi Bit	R/W
40056	0037		Present value alarm 2 setpoint setting; range: 00000001~0001869F (0~99999) Lo Bit	R/W
40057	0038	AL3	Present value alarm 3 setpoint setting; range: 00000001~0001869F (0~99999) Hi Bit	R/W
40058	0039		Present value alarm 3 setpoint setting; range: 00000001~0001869F (0~99999) Lo Bit	R/W
40059	003A	AL4	Present value alarm 4 setpoint setting; range: 00000001~0001869F (0~99999) Hi Bit	R/W
40060	003B		Present value alarm 4 setpoint setting; range: 00000001~0001869F (0~99999) Lo Bit	R/W
40061	003C	RATE	Current display value A, range: FFFFB1E1~0001869 (-19999~99999) Hi Bit	R
40062	003D		Current display value A, range: FFFFB1E1~0001869 (-19999~99999) Lo Bit	R
40063	003E	RATEB	Current display value B, range: FFFFB1E1~0001869 (-19999~99999) Hi Bit	R
40064	003F		Current display value B, range: FFFFB1E1~0001869 (-19999~99999) Lo Bit	R
40053	0034	CALCANS	Calcans setting range: FFFFB1E1~0001869 (-19999~99999) Hi Bit	R
40054	0035		Calcans setting range:FFFFB1E1~0001869 (-19999~99999) Lo Bit	R
40055	0036	MAX	Input A max hold value, range: FFFFB1E1~0001869 (-19999~99999) Hi Bit	R
40056	0037		Input A max hold value, range: FFFFB1E1~0001869 (-19999~99999) Hi Bit	R
40055	0036	MAX.B	Input A max hold value B, range: FFFFB1E1~0001869 (-19999~99999) Hi Bit	R
40056	0037		Input A max hold value B, range: FFFFB1E1~0001869 (-19999~99999) Lo Bit	R