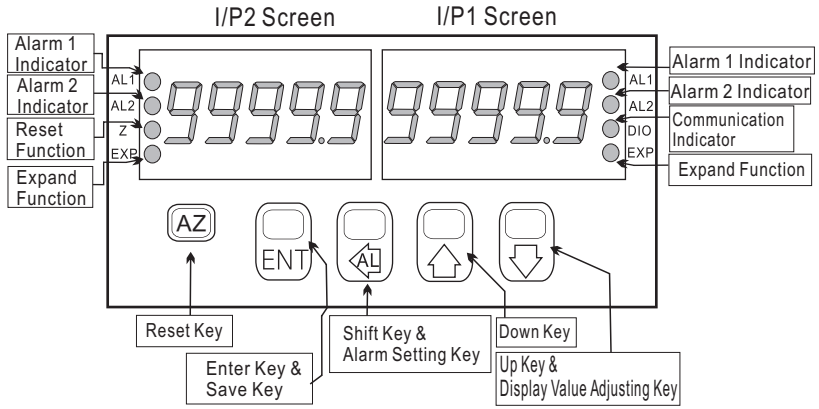
DC5H-D 5 DIGITAL DUAL INPUT & SCREEN MICRO-PROCESS METER with 1~2 ALARMS / RS-485 MANUAL

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

FRONT PANEL & KEY FUNCTIONS



Key Name	Symbol	Descriptions
Reset Key	(Z)	1. Press this key to enable the reset function & reset indicator (Z) is light; press this key again to disable the reset function & reset indicator (Z) is dark.
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 & Alarm Setting Key	AL	1. In the measuring status, press this key for 3 sec can enter to alarm setting page (The selecting digit will be flashed) 2. In the parameter setting , press this key can move the cursor left.
Up Key & Display Value Adjusting Key	△	1.In the measuring status, press this key for 3 sec can enter to display value adjustment of "ZERO" & "SPAN" 2. 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.

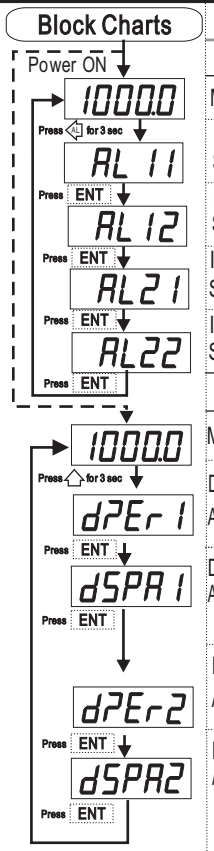
**1. The following block charts are parameters codes, parameter codes & parameters will alternate flashing if the parameters can be modified.

2. To modify the parameters, please press AL △ ▽, and press **ENT** to save the parameter after the modification.

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

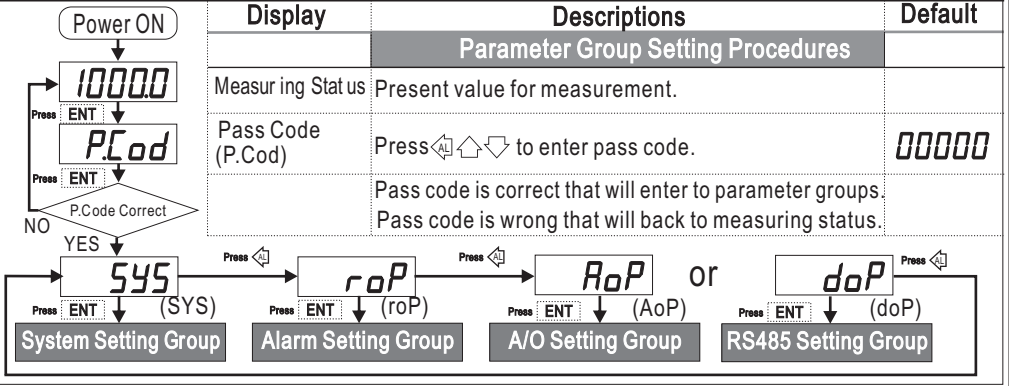
4. In any pages, press △ &▽, or don't press any keys for 2 minutes that will back to measuring status.

GENERAL MODE OPERATING PROCEDURES

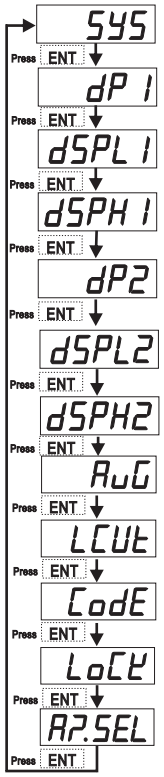


Display	Descriptions	Default
	Alarm Setpoint	
Measuring Status	Present value for measurement.	
I/P1's Alarm 1 Setpoint (AL11)	Press AL △ ▽ to modify input 1's alarm 1 setpoint.	00000
I/P1's Alarm 2 Setpoint (AL12)	Press AL △ ▽ to modify input 1's alarm 2 setpoint.	00000
I/P2's Alarm 1 Setpoint (AL21)	Press AL △ ▽ to modify input 2's alarm 1 setpoint.	00000
I/P2's Alarm 2 Setpoint (AL22)	Press AL △ ▽ to modify input 2's alarm 2 setpoint.	00000
	Display: "ZERO" & "SPAN" Adjustment	
Measu ring Status	Present value for measurement.	
Display Zero 1 Adjustment (dZEro1)	Press AL to select adjusting speed rate, press △ ▽ to modify the zero value. PS: To use this function to adjust the real zero value.	00000
Display Span 1 Adjustment (dSPAn1)	Press AL to select adjusting speed rate, press △ ▽ to modify the span value. PS: To use this function to adjust the real span value.	00000
Display Zero 2 Adjustment (dZEro2)	Press AL to select adjusting speed rate, press △ ▽ to modify the zero value. PS: To use this function to adjust the real zero value.	00000
Display Span 2 Adjustment (dSPAn2)	Press AL to select adjusting speed rate, press △ ▽ to modify the span value. PS: To use this function to adjust the real span value.	00000

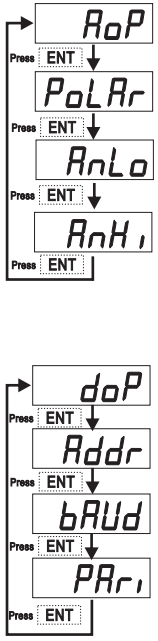
PROGRAMMING MODE OPERATING PROCEDURES



Display	Descriptions	Default
	Parameter Group Setting Procedures	
Measur ing Stat us	Present value for measurement.	
Pass Code (P.Cod)	Press AL △ ▽ to enter pass code.	00000
	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 Page (SYS)		**System Setting Group Procedures**	
Decimal Point 1 Setting (dP1)		Press ▲▼ to 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
Display Low Scale 1 Setting (dSPL1)		Press AL ▲▼ to modify display low scale for the input signal zero value. EX: If the input signal is 4~20mA; 4mA is shown display 0.00, this parameter must be set for 000.00.	Customers specify
Display Hi Scale 1 Setting (dSPH 1)		Press AL ▲▼ to modify display high scale for the input signal span value. EX: If the input signal is 4~20mA; 20mA is shown display 100.00, this parameter must be set for 100.00.	Customers specify
Decimal Point 2 Setting (dP2)		Press ▲▼ to 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
Display Low Scale 2 Setting (dSPL2)		Press AL ▲▼ to modify display low scale for the input signal zero value. EX: If the input signal is 4~20mA; 4mA is shown display 0.00, this parameter must be set for 000.00.	Customers specify
Display Hi Scale 2 Setting (dSPH 2)		Press AL ▲▼ to modify display high scale for the input signal span value. EX: If the input signal is 4~20mA; 20mA is shown display 100.00, this parameter must be set for 100.00.	Customers specify
Display Average Setting (AvG)		Press AL ▲▼ to modify display average (1~99). PS: Please use this function for stable display value when input signal is unstable.	00005
Display Low Cut Setting (LCUt)		Press AL ▲▼ to modify display low cut to 0 (0~99).	00000
Pass Code Setting (CodE)		Press AL ▲▼ to modify pass code (0~19999). PS: Please don't forget the new pass code after modification.	00000
Key Lock Setting (LoCK)		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
Auto Zeroing Selection Setting (AZ.SEL)		Press ▲▼ to zero display value 1 & display value 2. PS: IN1 (zero display value 1); IN2 (zero display value 2)	in12
		Alarm Setting Group Procedures	
Alarm Setting Page (roP)		**The following steps are only available for alarm output.**	
I/P1's Alarm 1 (ACt11)	Alarm Action Setting	Press ▲▼ to modify alarm value that is ≧(Hi) or <(Lo) 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.	Hi
I/P1's Alarm 2 (ACt12)			
I/P2's Alarm 1 (ACt21)			
I/P2's Alarm 2 (ACt22)			
I/P1's Hysteresis 1 (HYS11)	Alarm Hysteresis Setting	Press AL ▲▼ to modify the value, when alarm runs lower or higher display value (depends on alarm action). Alarm setpoint ±this value (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.	00000
I/P1's Hysteresis 2 (HYS12)			
I/P2's Hysteresis 1 (HYS21)			
I/P2's Hysteresis 2 (HYS22)			
I/P1's Delay Time 1 (dEL11)	Alarm Run Delay Setting	Press AL ▲▼ 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.	00000
I/P1's Delay Time 2 (dEL12)			
I/P2's Delay Time 1 (dEL21)			
I/P2's Delay Time 2 (dEL22)			



Display		A/O Setting Group Procedures	Default
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.	no
A/O Low Scale Setting (AnLo)		Press AL ▲▼ 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.	00000
A/O Hi Scale Setting (AnHi)		Press AL ▲▼ 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.	99999
		RS485 Setting Group Procedures	
RS485 Setting Page (doP)		**The following steps are only available for RS485 type.**	
Address Setting (Addr)		Press AL ▲▼ to modify address (0~255).	00000
Baud Rate Setting (bAUd)		Press ▲▼ to select baud rate (38400/19200/9600/4800).	19200
Parity Setting (PAri)		Press ▲▼ to select parity (n.8.2/n.8.1/even/odd).	n.8.2.

Error Code of Self-Diagnosis

Display	Descriptions
i oFL	Input signal is over 120% of input range.
-i oFL	Input signal is under -20% of input range.
AdEr	Input signal is over 180% of input range or meter error.
doFL	Input signal is over display range (99999)
-doFL	Input signal is under display range (-19999)
E-00	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.

Remark: 1. There are 3 parameter groups of "System Setting Group(SYS)", "Alarm Setting Group(roP)", "RS485 Setting Group(doP)" for modification.
2. Press AL to select each group page, and press **ENT** to enter each group or parameter page for modification or saving the parameters.
3. Some of optional functions of parameter pages still exist, but the functions are disable.

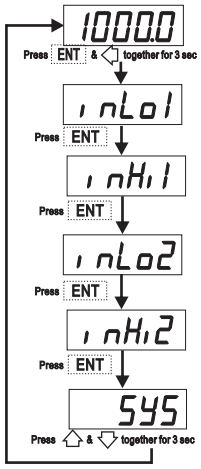
Modbus RTU Mode Protocol Address Table

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

Modbus	HEX	Name	Descriptions	Act
40001	0000	ID	Model number identification; DC5H-D is "04"	R
40002	0001	STATUS	Current alarm output & external control input status display; range:0000~00FE (0~254) (0:OFF, 1:ON) (Bit7:AL22, Bit6: AL21, Bit5: AL12, Bit4: AL11, Bit1:AZ)	R
40003	0002	FUNC	Parameters setting; range: 0000~00FF (0~255) Bit0~3: ACT11~22 (0:HI, 1:LO), Bit4:AZSEL0, Bit5:AZSEL1, Bit6:LOCK, Bit7:FRAME (0:NO, 1:YES)	R/W
40004	0003	DP1	Input 1 decimal point setting; range: 0000~0004 (0~4) $0:10^{0}$, $1:10^{-1}$, $2:10^{-2}$, $3:10^{-3}$, $4:10^{-4}$	R/W
40005	0004	DP2	Input 2 decimal point setting; range: 0000~0004 (0~4) $0:10^{0}$, $1:10^{-1}$, $2:10^{-2}$, $3:10^{-3}$, $4:10^{-4}$	R/W
40006	0005	BAUD	Baud rate setting; range: 0000~0003 (0~3) 0:38400, 1:19200, 2:9600, 3:4800	R/W
40007	0006	PARI	Parity setting; range: 0000~0003 (0~3), 0:N.8.2., 1:N.8.1., 2:EVEN, 3:ODD	R/W
40008	0007	AVG	Display average setting; range: 0001~0063 (1~99)	R/W
40009	0008	LCUT	Display low cut setting; range: 0000~0063 (0~99)	R/W
40010	0009	ADDR	Address setting; range: 0000~00FF (0~255)	R/W
40011	000A	DEL11	Input 1 alarm 1 act delay time setting; range: 0000~0063 (0~99)	R/W
40012	000B	DEL12	Input 1 alarm 2 act delay time setting; range: 0000~0063 (0~99)	R/W
40013	000C	DEL21	Input 2 alarm 1 act delay time setting; range: 0000~0063 (0~99)	R/W
40014	000D	DEL22	Input 2 alarm 2 act delay time setting; range: 0000~0063 (0~99)	R/W
40015	000E	HYS11	Input 1 alarm 1 hysteresis setting; range: 0000~0063 (0~99)	R/W
40016	000F	HYS12	Input 1 alarm 2 hysteresis setting; range: 0000~0063 (0~99)	R/W
40017	0010	HYS21	Input 2 alarm 1 hysteresis setting; range: 0000~0063 (0~99)	R/W
40018	0011	HYS22	Input 2 alarm 2 hysteresis setting; range: 0000~0063 (0~99)	R/W
40019	0012	CODE	Pass code setting; range: 0000~4E1F (0~19999)	R/W
40020	0013	DSPL1	Input 1 display low scale setting; range: FFFFB1E1~0001869F(-19999~99999) Hi Bit	R/W
40021	0014		Input 1 display low scale setting; range: FFFFB1E1~0001869F(-19999~99999) Low Bit	R/W
40022	0015	DSPH1	Input 1 display hi scale setting; range: FFFFB1E1~0001869F(-19999~99999) Hi Bit	R/W
40023	0016		Input 1 display hi scale setting; range: FFFFB1E1~0001869F(-19999~99999) Low Bit	R/W
40024	0017	DSPL2	Input 2 display low scale setting; range: FFFFB1E1~0001869F(-19999~99999) Hi Bit	R/W
40025	0018		Input 2 display low scale setting; range: FFFFB1E1~0001869F(-19999~99999) Low Bit	R/W
40026	0019	DSPH2	Input 2 display hi scale setting; range: FFFFB1E1~0001869F(-19999~99999) Hi Bit	R/W
40027	001A		Input 2 display hi scale setting; range: FFFFB1E1~0001869F(-19999~99999) Low Bit	R/W
40028	001B	AL11	Input 1 alarm 1 setpoint setting; range: FFFFB1E1~0001869F(-19999~99999) Hi Bit	R/W
40029	001C		Input 1 alarm 1 setpoint setting; range: FFFFB1E1~0001869F(-19999~99999) Low Bit	R/W
40030	001D	AL12	Input 1 alarm 2 setpoint setting; range: FFFFB1E1~0001869F(-19999~99999) Hi Bit	R/W
40031	001E		Input 1 alarm 2 setpoint setting; range: FFFFB1E1~0001869F(-19999~99999) Low Bit	R/W
40032	001F	AL21	Input 2 alarm 1 setpoint setting; range: FFFFB1E1~0001869F(-19999~99999) Hi Bit	R/W
40033	0020		Input 2 alarm 1 setpoint setting; range: FFFFB1E1~0001869F(-19999~99999) Low Bit	R/W
40034	0021	AL22	Input 2 alarm 2 setpoint setting; range: FFFFB1E1~0001869F(-19999~99999) Hi Bit	R/W

Modbus	HEX	Name	Descriptions	Act
40035	0022		Input 2 alarm 2 setpoint setting; range: FFFFB1E1~0001869F(-19999~99999) Low Bit	R/W
40036	0023	DISPLAY1	Input 1 current display; range: FFFFB1E1~0001869F (-19999~99999) Hi Bit	R
40037	0024		Input 1 current display; range: FFFFB1E1~0001869F (-19999~99999) Low Bit	R
40038	0025	DISPLAY2	Input 2 current display; range: FFFFB1E1~0001869F (-19999~99999) Hi Bit	R
40039	0026		Input 2 current display; range: FFFFB1E1~0001869F (-19999~99999) Low Bit	R
40040	0027	INLO1	Input 1 low calibrated value display; range: 00029F16~004EA4A8 (171798~5153960) Hi Bit	R
40041	0028		Input low calibrated value display; range: 00029F16~004EA4A8 (171798~5153960) Low Bit	R
40042	0029	INHI1	Input 1 hi calibrated value display; range: 00029F16~004EA4A8 (171798~5153960) Hi Bit	R
40043	002A		Input 1 hi calibrated value display; range: 00029F16~004EA4A8 (171798~5153960) Low Bit	R
40044	002B	INLO2	Input 2 low calibrated value display; range: 00029F16~004EA4A8 (171798~5153960) Hi Bit	R
40045	002C		Input 2 low calibrated value display; range: 00029F16~004EA4A8 (171798~5153960) Low Bit	R
40041	002D	INHI2	Input 2 hi calibrated value display; range: 00029F16~004EA4A8 (171798~5153960) Hi Bit	R
40042	002E		Input 2 hi calibrated value display; range: 00029F16~004EA4A8 (171798~5153960) Low Bit	R
40043	002F	AZ1	Input 1 auto zero; range: FFFFB1E1~0001869F (-19999~99999) Hi Bit	R
40044	0030		Input 1 auto zero; range: FFFFB1E1~0001869F (-19999~99999) Low Bit	R
40045	0031	AZ2	Input 2 auto zero; range: FFFFB1E1~0001869F (-19999~99999) Hi Bit	R
40046	0032		Input 2 auto zero; range: FFFFB1E1~0001869F (-19999~99999) Low Bit	R

CALIBRATION OPERATING PROCEDURES



Display	Descriptions	Default
	Calibration	
Measuring Status	Present value for measurement Press **ENT** & AL together for 3 sec will enter to calibration operating procedures.	
Input Low Scale 1 Calibration (inLo1)	1. Input standard low scale signal to input 1. 2. Press AL ⇧ ⇩ to calibrate input low scale.	
Input Hi Scale 1 Calibration (inHi1)	1. Input standard hi scale signal to input 1. 2. Press AL ⇧ ⇩ to calibrate input hi scale.	
Input Low Scale 2 Calibration (inLo2)	1. Input standard low scale signal to input 2. 2. Press AL ⇧ ⇩ to calibrate input low scale.	
Input Hi Scale 2 Calibration (inHi2)	1. Input standard hi scale signal to input 2. 2. Press AL ⇧ ⇩ to calibrate input hi scale.	
System Setting Page (SYS)	1. Finish calibration operating procedures will enter to system setting group. 2. Press ⇧ & ⇩ together to back to measuring status.	

Warning: Calibration of this meter requires a standard signal with 0.01% accuracy or better and an external meter with 0.005% accuracy or better.