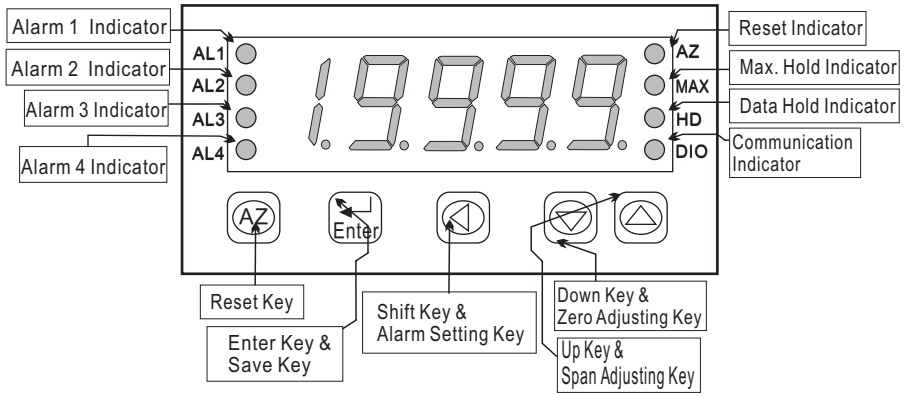
DC5L-A

4 1/2 DIGITAL MICRO-PROCESS 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
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 & A/O Adjusting Key	▽	1. In the measuring status, press this key for 3 sec can enter to analog output adjustment. 2. 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.

GENERAL MODE OPERATING PROCEDURES

Block Charts	Display	Descriptions	Default
		Alarm Setpoint	
Power ON → 1000.0	Measuring Status	Present value for measurement	
Press ◁ → AL 1	Alarm 1 Setpoint (AL1)	Display alarm 1 setpoint, press ENT to enter the setting.	AL 1
Press ENT → 00000	Alarm 1 Setpoint (AL1)	Press ◁ △ ▽ to modify alarm 1 setpoint.	00000
Press ENT → Ad 1	Alarm 1 Action Setting (Ad1)	Display alarm 1 action, press ENT to enter the setting.	Ad 1
Press ENT → H	Alarm 1 Action Setting (Ad1)	Press △ ▽ to modify alarm value that is ≧(Hi) or <(Lo) for alarm action.	H
Press ENT → AL2	Alarm 2 Setpoint (AL2)	Display alarm 2 setpoint, press ENT to enter the setting.	AL2
Press ENT → 00000	Alarm 2 Setpoint (AL2)	Press ◁ △ ▽ to modify alarm 2 setpoint.	00000
Press ENT → Ad2	Alarm 2 Action Setting (Ad2)	Display alarm 2 action, press ENT to enter the setting.	Ad2
Press ENT → H	Alarm 2 Action Setting (Ad2)	Press △ ▽ to modify alarm value that is ≧(Hi) or <(Lo) for alarm action.	H
Press ENT → AL3	Alarm 3 Setpoint (AL3)	Display alarm 3 setpoint, press ENT to enter the seeting.	AL3
Press ENT → 00000	Alarm 3 Setpoint (AL3)	Press ◁ △ ▽ to modify alarm 3 setpoint.	00000
Press ENT → Ad3	Alarm 3 Action Setting (Ad3)	Display alarm 3 action, press ENT to enter the setting.	Ad3
Press ENT → H	Alarm 3 Action Setting (Ad3)	Press △ ▽ to modify alarm value that is ≧(Hi) or <(Lo) for alarm action.	H
Press ENT → AL4	Alarm 4 Setpoint (AL4)	Display alarm 4 setpoint, press ENT to enter the setting.	AL4
Press ENT → 00000	Alarm 4 Setpoint (AL4)	Press ◁ △ ▽ to modify alarm 4 setpoint.	00000
Press ENT → Ad4	Alarm 4 Action Setting (Ad4)	Display alarm 4 action, press ENT to enter the setting.	Ad4
Press ENT → H	Alarm 4 Action Setting (Ad4)	Press △ ▽ to modify alarm value that is ≧(Hi) or <(Lo) for alarm action.	H
Press ENT			

Block Charts	Display	Descriptions	Default
		System Setting Group Procedures	
Power ON → 10000	Measuring Status	Present value for measurement	
Press ENT for 5 sec → P	Scale Coefficient Adjustment (P)	Display scale coefficient, press ENT to enter the setting.	P
Press ENT → 1000	Scale Coefficient Adjustment (P)	Press ◁ △ ▽ to modify scale coefficient.	1000
Press ENT → dP	Decimal Point Setting (dP)	Display decimal point, press ENT to enter the setting.	dP
Press ENT → PPPP	Decimal Point Setting (dP)	Press △ ▽ to select decimal point (0, 1, 2, 3, 4).	Customers specify
Press ENT → LSP	Display Low Scale Setting (LSP)	Display display low scale, press ENT to enter the setting.	LSP
Press ENT → 00000	Display Low Scale Setting (LSP)	Press ◁ △ ▽ 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
Press ENT → HSP	Display Hi Scale Setting (HSP)	Display display hi scale, press ENT to enter the setting.	HSP
Press ENT → 00000	Display Hi Scale Setting (HSP)	Press ◁ △ ▽ 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
Press ENT → FLt	Digital Filter Setting (FLt)	Display digital filter, press ENT to enter the setting.	FLt
Press ENT → 10	Digital Filter Setting (FLt)	Press ◁ △ ▽ to modify digital filter	10
Press ENT → t1	Alarm 1 Run Delay Setting (t1)	Display alarm 1 run delay, press ENT to enter the setting.	t1
Press ENT → 00000	Alarm 1 Run Delay Setting (t1)	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.	00000
Press ENT → t2	Alarm 2 Run Delay Setting (t2)	Display alarm 2 run delay, press ENT to enter the setting.	t2
Press ENT → 00000	Alarm 2 Run Delay Setting (t2)	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.	00000
Press ENT → t3	Alarm 3 Run Delay Setting (t3)	Display alarm 3 run delay, press ENT to enter the setting.	t3
Press ENT → 00000	Alarm 3 Run Delay Setting (t3)	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.	00000
Press ENT → t4	Alarm 4 Run Delay Setting (t4)	Display alarm 4 run delay, press ENT to enter the setting.	t4
Press ENT → 00000	Alarm 4 Run Delay Setting (t4)	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.	00000
Press ENT → HY	Alarm Hysteresis Setting (HY)	Display alarm hysteresis, press ENT to enter the setting.	HY
Press ENT → 00000 Press ENT	Alarm Hysteresis Setting (HY)	Press ◁ △ ▽ to modify the value, when alarm runs lower or higher display value (depends on alarm action). Alarm setpoint ± this range will turn off the alarm.	00000

	Display	Descriptions	Default
CL → Press ENT	A/O Low Scale Setting (CL)	Display A/O low scale, press ENT to enter the setting.	CL
00000 → Press ENT	A/O Low Scale Setting (CL)	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.	Customers specify
CH → Press ENT	A/O Hi Scale Setting (CH)	Display A/O hi scale, press ENT to enter the setting.	CH
00000 → Press ENT	A/O Hi Scale Setting (CH)	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.	Customers specify
bAd → Press ENT	Baud Rate Setting (bAd)	Display baud rate, press ENT to enter the setting.	bAd
9600 → Press ENT	Baud Rate Setting (bAd)	Press △ ▽ to select baud rate (38400/19200/9600).	9600
Adr → Press ENT	Address Setting (Adr)	Display address, press ENT to enter the setting.	Adr
1 → Press ENT	Address Setting (Adr)	Press ◁ △ ▽ to modify address (1~255).	00000
LCK → Press ENT	Key Lock Setting (LCK)	Display key lock, press ENT to enter the setting.	LCK
00000 → Press ENT	Key Lock Setting (LCK)	1. Press any number keys to modify key lock function, then press SET to save the parameter. 0000: all of parameters can be modified. 0001: Only LCK, AL1, AD1, AL2, AD2, AL3, AD3, AL4, AD4 can be modified. 0110: Only LCK can be modified.	00000

Modbus Mode Protocol Address Table

Parameters ADD	Parameters Type(can read and write)	Data length	Data type	Data range	Remark
BFH-C0H	T4	2	HEX	0-FFH	AL4 (time delay)
BDH-BEH	T3	2	HEX	0-FFH	AL3 (time delay)
BBH-BCH	T2	2	HEX	0-FFH	AL2 (time delay)
B9H-BAH	T1	2	HEX	0-FFH	AL1 (time delay)
A2H-A3H	HSP	2	HEX	0000-07D0H	Measurement top point set value
A4H-A5H	LSP	2	HEX	0000-07D0H	Measurement low point set value
A6H-A7H	P	2	HEX	0000-07D0H	Proportional coefficient set value
AAH-ABH	SVP	2	HEX	01/01/04/08/10	PV decimal set up
A9H-AAH	FIL	2	HEX	01-10	Measurement equal number
ACH-ADH	ALMOD	2	HEX	01/01/04/08	Alarm mode set up
AEH-AFH	HY	2	HEX	0000-07D0H	Alarm error set up value
B0H-B1H	AL1	2	HEX	0000-07D0H	SV1 alarm setup
B2H-B3H	AL2	2	HEX	0000-07D0H	SV2 alarm setup
B4H-B5H	AL3	2	HEX	0000-07D0H	SV3 alarm setup
B6H-B7H	AL4	2	HEX	0000-07D0H	SV4 alarm setup
B8H-B9H	LCK	2	HEX	0000-07D0H	Keypad code set up
C1H-C2H	PV	2	HEX	0000-07D0H	Measurement value
BCH-BDH	FLAG1	2	HEX		State remark

FLAG1(BDH) Status remark as :

Data position	Position (1) function	Re-set (0) function
D0	AL1 on	AL1 off
D1	AL2 on	AL2 off
D2	AL3 on	AL3 off
D3	AL4 on	AL4 off
D4	N/A	N/A
D5	N/A	N/A
D6	N/A	N/A
D7	N/A	N/A

ALMOD (ADH) Alarm mode as :

Data position	Position (1) function	Re-set (0) function
D0	AL1 hi on	AL1 lo on
D1	AL2 hi on	AL2 lo on
D2	AL3 hi on	AL3 lo on
D3	AL4 hi on	AL4 lo on
D4	N/A	N/A
D5	N/A	N/A
D6	N/A	N/A
D7	N/A	N/A

SVP (A9H) PV decimal as :

Number	Definition
01	Alarm no decimal
02	Alarm 1 bit decimal
04	Alarm 2 bits decimal
08	Alarm 3 bits decimal
10	Alarm 4 bits decimal