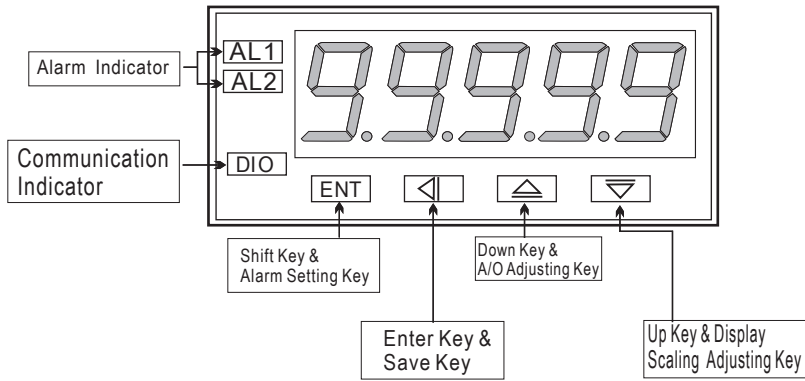


*Please understand key indicators & functions at the first operation.

FRONT PANEL & KEY FUNCTIONS



Key Name	Symbol	Descriptions
Enter Key & Save Key	⏎	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	⏪	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 Scaling Adjusting Key	⬆	1. In the measuring status, press this key for 3 sec can enter to display scaling adjustment 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.
Compound Key	⬆ + ⬇	1. In any status, press this key can back to measuring status.

- **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	12345	Measuring Status	Present value for measurement
Press ⬆ for 3 sec	AL 1	Alarm 1 Setpoint (AL1)	Press ⬆⬆⬆ to modify alarm 1 setpoint.
Press ENT	AL 2	Alarm 2 Setpoint (AL2)	Press ⬆⬆⬆ to modify alarm 2 setpoint.
Press ENT			
Scaling Adjustment			
Power ON	12345	Measuring Status	Present value for measurement.
Press ⬆ for 3 sec	SCALE	Scale Coefficient Adjustment (SCALE)	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".
Press ENT			
Analog Output: "ZERO" & "SPAN" Adjustment			
Power ON	12345	Measuring Status	Present value for measurement.
Press ⬆ for 3 sec	AZEro	A/O Zero Adjustment (AZEro)	Press ⬆ to select adjusting speed rate, press ⬆⬆⬆ to modify the A/O zero. PS: To use this function to adjust the real A/O zero.
Press ENT	ASPA n	A/O Span Adjustment (ASPA n)	Press ⬆ to select adjusting speed rate, press ⬆⬆⬆ to modify the A/O span. PS: To use this function to adjust the real A/O span.
Press ENT			

- Remark: 1. There are 4 parameter groups of "System Setting Group(SYS)", "Alarm Setting Group(roP)", "Analog Output Setting Group (AoP)" & "RS485 Setting Group(doP)" for modification.
2. Press ⬆ 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.

PROGRAMMING MODE OPERATING PROCEDURES

Block Charts	Display	Descriptions	Default
Parameter Group Setting Procedures			
Power On	12345	Measuring Status	Present value for measurement
Press ENT	P.Cod	Pass Code (P.Cod)	Press ⬆⬆⬆ to enter pass code.
Press ENT			
P.Code Correct?			Pass code is correct that will enter to parameter groups. Pass code is wrong that will back to measuring status.
NO			
YES	545 (SYS)	System Setting Group	
Press ⬆	roP	Alarm Setting Group	
Press ⬆	AoP	A/O Setting Group	
Press ⬆	doP	RS485 Setting Group	
Press ENT			

Display	Descriptions	Default
System Setting Group Procedures		
SYS System Setting Page (SYS)		
dP Decimal Point Setting (dP)	Press $\uparrow\downarrow$ to select decimal point (0, 1, 2, 3, 4). EX: if the value shows "0.00" that means the decimal point is 2 digits.	0
tYPE Input Type Setting (tYPE)	Press $\uparrow\downarrow$ to modify the input type. (RPM/Linear-Speed/Frequency)	rPñ
Unit Line-Speed Unit Setting (Unit)	Press $\uparrow\downarrow$ to modify the unit of line-speed (Meter/Foot/Yard). PS: Line-Speed type available	ñEER
PPr PPR Setting (PPr)	Press $\leftarrow\uparrow\downarrow$ to modify ppr (1~99999).	00001
mode Display Mode Setting (ModE)	Press $\uparrow\downarrow$ to modify the display mode. Input A; Input B; B-A; (B/A)x100; (B/A-1)x100; (B/(A+B))x100	A
tbASE Sampling Time Base (tbASE)	Press $\leftarrow\uparrow\downarrow$ to modify sampling time base (0.1~999.9 sec).	0000.1
AVG Display Average Setting (AVG)	Press $\leftarrow\uparrow\downarrow$ to modify display average (1~99). PS: Please use this function for stable display value when input signal is unstable.	00005
CodE Pass Code Setting (CodE)	Press $\leftarrow\uparrow\downarrow$ to modify pass code (0~19999). PS: Please don't forget the new pass code after modification.	00000
LoCK Key Lock Setting (LoCK)	Press $\uparrow\downarrow$ 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
Alarm Setting Group Procedures		
roP Alarm Setting Page (roP)	The following steps are only available for alarm output.	
Act1 Alarm 1 (Act1)	Alarm Action Setting Press $\uparrow\downarrow$ to modify alarm value that is \geq (Hi) or $<$ (Lo) for alarm action. PS: 1. There are 2 alarms output. 2. Press ENT to save the value and go to the next parameter.	Hi
Act2 Alarm 2 (Act2)		
HYS1 Hysteresis 1 (HYS1)	Alarm Hysteresis Setting Press $\leftarrow\uparrow\downarrow$ to modify the value, when alarm runs lower or higher display value (depends on alarm action). Alarm setpoint \pm this value (0~999) will turn off the alarm. PS: 1. There are 2 alarms output. 2. Press ENT to save the value and go to the next parameter.	00000
HYS2 Hysteresis 2 (HYS2)		
dEL1 Delay Time 1 (dEL1)	Alarm Run Delay Setting Press $\leftarrow\uparrow\downarrow$ 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 2 alarms output. 2. Press ENT to save the value and go to the next parameter.	00000
dEL2 Delay Time 2 (dEL2)		
Sb Alarm Start Band Setting (Sb)	Press $\leftarrow\uparrow\downarrow$ to modify the value (-99~+99), if the display value don't over this range; the alarm will not be act.	00000
Sdt Alarm Start Band Time Setting (Sdt)	Press $\leftarrow\uparrow\downarrow$ 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.)	00000

Display	Descriptions	Default
A/O Setting Group Procedures		
AoP A/O Setting Page (AoP)	The following steps are only available for analog output.	
AnLo A/O Low Scale Setting (AnLo)	Press $\leftarrow\uparrow\downarrow$ 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
AnHi A/O Hi Scale Setting (AnHi)	Press $\leftarrow\uparrow\downarrow$ 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 output 10V, this value must be set for 90.0.	99999
RS485 Setting Group Procedures		
doP RS485 Setting Page (doP)	The following steps are only available for RS-485.	
Addr Address Setting (Addr)	Press $\leftarrow\uparrow\downarrow$ to modify address (0~255).	00000
bAUd Baud Rate Setting (bAUd)	Press $\uparrow\downarrow$ to select baud rate (38400/19200/9600/4800).	19200
PARi Parity Setting (PAri)	Press $\uparrow\downarrow$ to select parity (n.8.2/n.8.1/even/odd).	n8.2

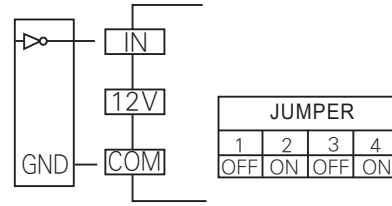
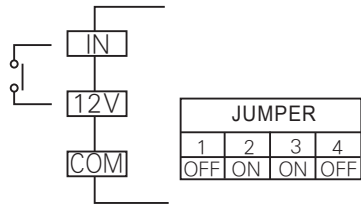
ERROR CODE OF SELF-DIAGNOSIS

Display	Descriptions
oFL	Input signal is over input range (0~100KHz).
doFL	Input signal is over display range (99999).
E-00	EEPROM reading/writing suffers the interference (about 1 million times).

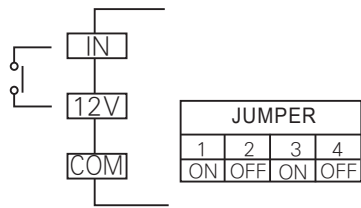
**Please check the wiring connection is correct first, if the problem still exist, please return the meter to the factory.

CONNECT DIAGRAM

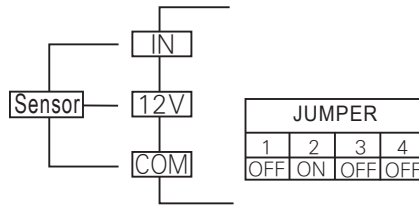
**Contact input (PNP)



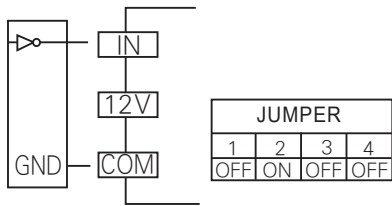
**Contact input (NPN)



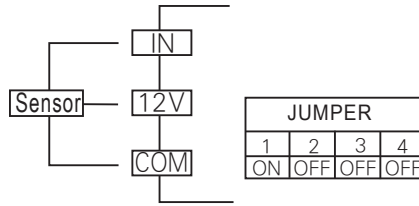
**PNP (12V)



**CMOS (12V or 15V)



**NPN (12V)



INPUT FUNCTION JUMPER TABLE

<input type="checkbox"/>	<input type="checkbox"/>	4	Jumper 4 ON: Input B 0~50Hz OFF: 0~50KHz
<input type="checkbox"/>	<input type="checkbox"/>	3	Jumper 3 ON: NPN input B
<input type="checkbox"/>	<input type="checkbox"/>	2	Jumper 2 ON: Input A 0~50Hz OFF: 0~50KHz
<input type="checkbox"/>	<input type="checkbox"/>	1	Jumper 1 ON: NPN input A

MODBUS RTU MODE PROTOCOL ADDRESS TABLE

Data: 16Bit/32Bit, +/- is 8000~7FFF (-32768~32767), 80000000~7FFFFFFF(-2147483648~2147483647)				
HEX		Name	Descriptions	Act
0000	PARI	Parity setting; bit 0~1: range: 00:N.8.2., 01:N.8.1., 10:EVEN, 11:ODD		R/W
	BAUD	Baud rate setting; bit 2~3: range: 00:19200, 01:9600, 10:4800, 11:2400		R/W
	TYPE	Input type setting; bit 4: range: 0:RPM, 1:Liner-Speed		R/W
	UNIT	Linear-Speed unit setting; bit 5~6range: 00:Meter, 01:Foot, 10:Yard		R/W
	ACT1	Alarm 1 act setting; bit 7: range: 0:Hi, 1:Lo		R/W
0001	DP	Decimal point setting; bit 0~2: range: 000:10 ⁰ , 001:10 ¹ , 010:10 ² , 011:10 ³ , 100:10 ⁴		R/W
	LOCK	Key lock setting; bit 3: range: 0:NO, 1:YES		R/W
	MODE	Display mode setting; bit 4~6: 000:A, 001:B, 010:B-A, 011:B/A, 100:B/A-1, 101:B/(A+B) 110:1-B/A		R/W
	ACT2	Alarm 2 act setting; bit 7: range: 0:Hi, 1:Lo		R/W
0002	AVG	Display average setting; range: 0001~0063 (1~99)		R/W
0004	ADDR	Address setting; range: 0000~00FF (0~255)		R/W
0006	TBASE	Sampling time base setting; range: 0001~03E7 (0~999)		R/W
0008	HYS1	Alarm 1 hysteresis setting; range: 0000~03E7 (0~999)		R/W
000A	HYS2	Alarm 2 hysteresis setting; range: 0000~03E7 (0~999)		R/W
000C	DEL1	Alarm 1 act delay time setting; range: 0000~03E7 (0~999)		R/W
000E	DEL2	Alarm 2 act delay time setting; range: 0000~03E7 (0~999)		R/W
0010	AZERO	Analog output zero setting; range: E890~1770 (-6000~6000)		R/W
0012	ASPAN	Analog output span setting; range: E890~1770 (-6000~6000)		R/W
0014	PPR	PPR setting; range: 00000001~0001869F (0~199999)		R/W
0018	CODE	Pass code setting; range 00000001~0001869F (0~99999)		R/W
001C	SCALE	Display scaling setting; range: 00000001~0001869F (0~99999)		R/W
0020	AL1	Alarm 1 setpoint setting; range: FFFF1E1~0001869F (-19999~99999)		R/W
0024	AL2	Alarm 2 setpoint setting; range: FFFF1E1~0001869F (-19999~99999)		R/W
0028	ANLO	Analog output low scale setting; range: FFFF1E1~0001869F (-19999~99999)		R/W
002C	ANHI	Analog output hi scale setting; range: FFFF1E1~0001869F (-19999~99999)		R/W
0030	DISPLAY	Current display; range: FFFF1E1~0001869F (-19999~99999)		R