Digital Counter, Batch Counter
FT48
User Manual

FT48-CONB-C1

Please read this manual carefully before gets your hands on the unit, and keep this manual in a place for further reference

◇Counting pattern: SP1 counting and output/BA1 batch counting/SU1 totalizing counting
◇Alarm: SP2 alarm output
◇PV2 display selectable between SV for SP1/BA1/SU1
◇Input signal Int: NPN single phase up(IN1) or down(IN2) counting, rising or falling count selectable, 90 degree phase angle(IN1/IN2) up and down counting
◇Counting sequence: up or down count
◇Multiplier nuL: 0.001-9.999
◇Decimal point: 0-3 decimal points
◇Batch counting modulus:1-9999
◇Input frequency: 1-5000 HZ
◇Output mode:manual N/auto R/auto reset C/alarm mode
◇Output reset delay time:0.01-99.99 seconds
◇Power interruption retention: on/off selectable
◇RS-485 modbus communication optional

1. Ordering Information

Below is the ordering information,please make sure you get the correct code for your application

Mode and suffix code

FT 48 - □ - N N - □ - □
① ② ③④ ⑤ ⑥

①. Size
48: 48mmx48mm

②. Function for terminals AU1 at the back
N: No function for AU1 terminals
A: Used as reset RST or GATE counting holding
2: Used as SP2 alarm(OP2)
3: Used as BA1 batch output (OP3)
4: Used as SU1 total counting output(OP4)
Remark: SP1(OP1) output is a standard feature

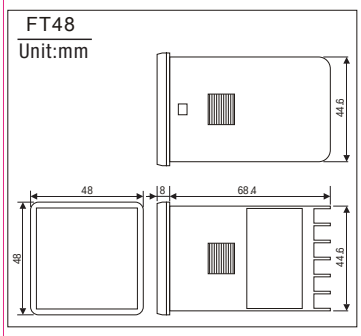
③. Features for AU2 terminals
N: no addtional function on AU2 terminals

④. Features for AU3 terminals
N: no addtional function on AU3 terminals

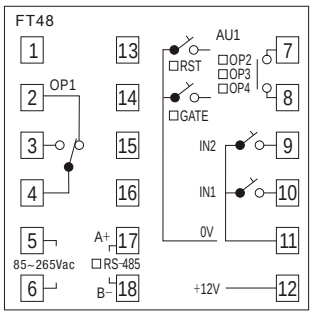
⑤. Power supply
B: AC85-265V D: DC 24Vdc/Vac

⑥. Communication
N: No communication M: With RS-485 function

2. Size



3. Wiring diagram

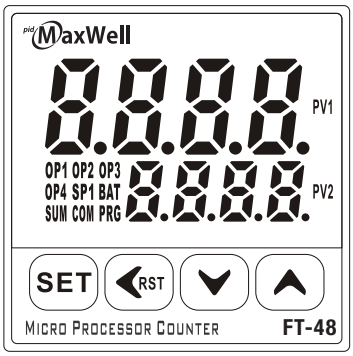


OP1 relay 5A/250Vac(resistive load)
AU1 relay 3A/250Vac(resistive load)

■RST and GATE terminals and its functions

RST: reset function, when RST terminal and 0V terminal connected, the counting and output will be reset
Up count (Ud=U), PV1 display goes to "0"
Down count(ud=d),PV1 value goes to SP1 preset value
GATE:when GATE and 0V terminal connected, the counting will enter into a holding pattern, the counting will not change

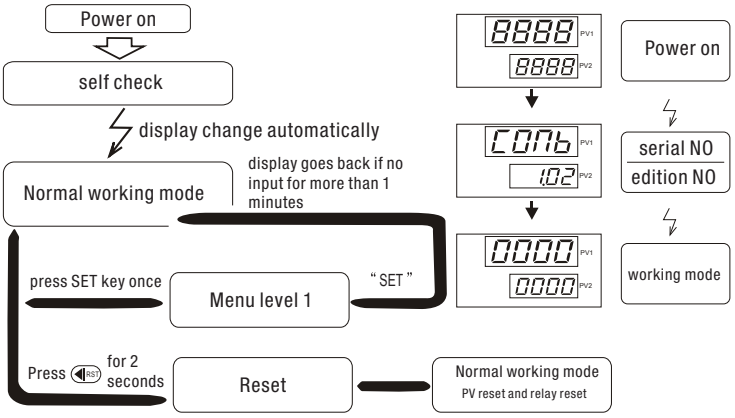
4. Panel layout and description



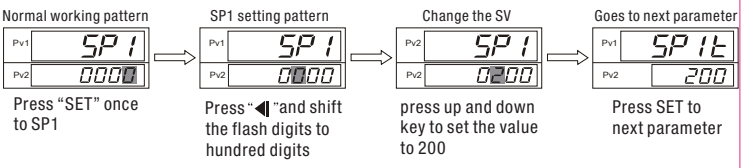
PV1: PV display window
PV2: Display setting value PV2
COM: Communication display
BAT: Batch counting indication
SUM: Total counting indication
SP1: SP1 indication PV2 shows SV1
OP1: SP1 output indication
OP2: SP2 output indication
OP3: bA1 batch counting output indication
OP3: SU1 total counting output indication
SET : Enter or function key
RST : Shift key or reset key
: decrease value
: increase value

5. Setting

5.1 Power on and programming navigation



5.2 Configure the setting value for example, change the SP1 value from 0 to 200

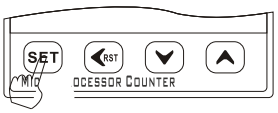


6. Parameter menu

6.1 Parameter menu 1

Press SET once to parameter level 1

6.1.1 menu 1 parameter list



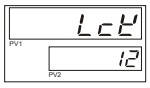
Next parameter will be displayed one by one when you press the SET key

Symbol	Description	Remark
SP1	SV for SP1	setting value for SP1, corresponding OP1 relay
SP1t	OP1 relay reset delay time	reset delay time range: 0.01 ~99.99 seconds
SP2	SV for SP2	setting value for SP2, corresponding OP2 relay
bA1	SV for batch counting	batch counting output, corresponding OP3 relay
bA1t	OP3 relay output reset time	Range:0.01 ~99.99 seconds
SU1	Totalizing count SV	totalizing count output, coorespoding OP4 relay
SU1t	OP4 relay output reset time	Range:0.01 ~99.99 seconds
Ud	device address	to check the device address under communication mode
LcY	access protection code	LCK=0, all parameters is configurable LCK=1,only parameters under menu 1 can be configured LCK=12,press SET to parameter menu 2 LCK=13,press SET to parameter menu 3 LCK=14,press SET to parameter menu 4

Remark: The parameter actually displayed on the counter would be different depends on different functions

6.2 Parameter menu 2

Goes to menu 1, and set LCK=12, press SET then you are in menu 2



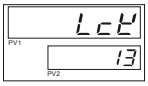
LCK=12
Press SET → menu 2

below parameter will be displayed one by one if you press SET,press SET and exit to normal working mode to save your configuration

symbol	description	remark
Hz	input frequency HZ	input frequency configuration range: 1-5000 HZ,based on different input srouce, the HZ is different,if the HZ is put as 3000, then the input HZ should be less than 3000, for a mechnical dry contact input.the proper HZ should 1-10, higher HZ will cause faulse counting, HZ=3000-5000 for encoders
InT	input pulse mode selection	=0, single pulse input,(IN1 addition, IN2 subtraction),counting when signal connected, =1,single pulse input,(IN1 addition, IN2 subtraction),counting when signal disconnected =2 2 phase input, 90°C quadrature addition and subtraction(U & D)
Ud	Counting mode	=U, addition,up counting =d, subtraction, down counting
nuL	multiplier	PV display= pulse number X nuL nuL range: 0.001~9.999
bAP	Batch counting modulus	batch counting value=PV1 / BAP (BAP range: 1~9999) for example, if you assign 100 as 1 batch, then set BAP=100
SUt	Power failure memory	=0, without retention function, reset to 0 after power on =1, with retention function, counter starts to work from where it went off,Remark: must reboot the counter to make the change effective if you change sut from 0 to 1
dP	Decimal point	Decimal point settting, range 0-3

6.3 Parameter menu 3

Goes to menu 1, and set LCK=13, press SET then you are in menu 3



LCK=13
Press SET → menu 3

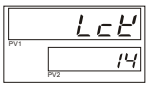
below parameter will be displayed one by one if you press SET,press SET and exit to normal working mode to save your configuration

symbol	description	remark
PV2	PV 2 display contents configuration	=SP1:PV2, lower display for SP1 value(SP1 mode),SP1 indicator lights up. =bAt: PV2 lower display for batch counting PV display,BAT indicator lights up. =SUM:PV2 lower display for totalize counting PV display,SUM indicator lights up
CSP1	SP1 output mode CSP1	=n: when PV1≥SP1, OP1 relay energize immediately PV1 and OP1 relay have to be reset manually =r: when PV1≥SP1, OP1 relay energize immediately PV1 and OP1 relay will reset automatically after delay SP1 =c:when PV1≥SP1, OP1 relay energize immediately PV1 reset automatically, OP1 relay reset after delay SP1 =Hn: when PV1>SP1,OP1 relay energize immediately PV1 and OP1 relay have to be reset manually =En: when PV1=SP1,OP1 relay energize immediately PV1 and OP1 relay have to be reset manually =Ln:when PV1<SP1,OP1 relay energize immediately PV1 and OP1 relay have to be reset manually
CSP2	SP2 output mode CSP2	=n: when PV1≥SP2, OP2 relay energize =An: when PV1≥(SP1-SP2),OP2 relay energize =Hn:when PV1≥(SP1+SP2),OP2 relay energize =En: when SP1≥ PV1≥SP2, OP2 relay energize =Ln: when PV1<(SP1-SP2),OP2 relay energize
CbA1	BA1 batch count output mode CbA1	=n: when batch PV2≥BA1, OP3 relay energize immediately PV2 and OP3 relay have to be reset manually =r: when batch PV2≥BA1, OP3 relay energize immediately PV2 and OP3 relay will reset automatically after delay bAt1 =c:when batch PV2≥BA1, OP3 relay energize immediately PV2 reset automatically, OP3 relay reset after delay bAt1 =Hn: when batch PV2>BA1,OP3 relay energize immediately PV2 and OP3 relay have to be reset manually =En: when batch PV2=BA1,OP3 relay energize immediately PV2 and OP3 relay have to be reset manually =Ln:when batch PV2<BA1,OP3 relay energize immediately PV2 and OP3 relay have to be reset manually
CSU1	Totalizing count output mode SUA1	=n: when totalizing PV2≥SU1, OP4 relay energize immediately PV2 and OP4 relay have to be reset manually =r: when totalizing PV2≥SU1, OP4 relay energize immediately PV2 and OP4 relay will reset automatically after delay SU1t =c:when totalizing PV2≥SU1, OP4 relay energize immediately PV2 reset automatically, OP4 relay reset after delay SU1t =Hn: when totalizing PV2>SU1,OP4 relay energize immediately PV2 and OP4 relay have to be reset manually =En: when totalizing PV2=SU1,OP4 relay energize immediately PV2 and OP4 relay have to be reset manually =Ln:when totalizing PV2<SU1,OP4 relay energize immediately PV2 and OP4 relay have to be reset manually

Remark: The parameter actually displayed on the counter would be different depends on different functions

6.4 Parameter menu 4

Goes to menu 1, and set LCK=14, press SET then you are in menu 4



LCK=14
Press SET → menu 4

below parameter will be displayed one by one if you press SET,press SET and exit to normal working mode to save your configuration

symbol	description	factory default	remark
Add	device address	1	range: 1-127
bAU	baud rate	9.6	options 2.4K 4.8K 9.6K 19.2K

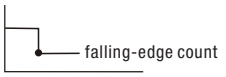
7. Special instructions

7.1 Maximum input frequency, parameter under menu 2

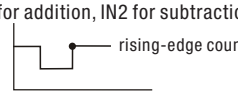
range 1-5000HZ. please select the suitable input HZ according to input signals for example: if you put HZ=3000, means the counter is ok for input frequency less than 3000HZ, the counter will have some faulse counting if the input is dry contact input and yet you set the frequency at high frequency
guidlines: for dry contact input, put HZ at 1~10, for transistor input, put HZ=3000 for encoder, put HZ=5000

7.2 Pulse input pattern, InT under menu 2

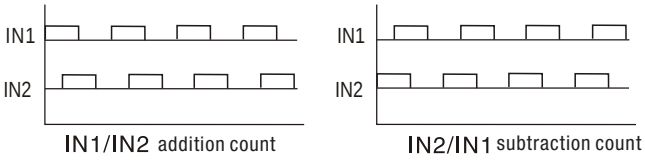
Int=0, single pulse input, counting executed when signal connected, IN1 for addition, IN2 for subtraction



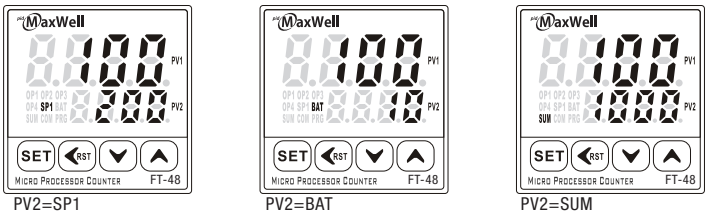
Int=1, single pulse input, counting executed when signal disconnected, IN1 for addition, IN2 for subtraction



Int=2, quadrature input up/down count: IN1/IN2 for addition count, IN2/IN1 for subtraction count the input IN1 and IN2 quadrature is 90° this is for encoders



PV2 display window can be configured to display different contents goes to PV2 under menu 3 to configure it



8. Reset manually from front panel key

under normal working mode, press RST for 2 seconds to reset

Remark: PV1 and batch PV, totalizing PV all will be reset, relay will be reset as well

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