

# EST120 2 IN 1 GRAIN TEMPERATURE AND LEVEL MONITORING TRANSMITTER



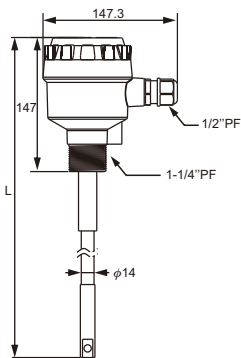
Thank for buying FineTek's products.  
Please read the user manual first before  
using it. It is important to be familiar with  
product's performance and function. Please  
keep the user manual for operation reference. 08-EST120-B13-EM, 05/12/2025



## NOTE PROCEDURES OF CALIBRATION FOR THE FIRST INSTALLATION

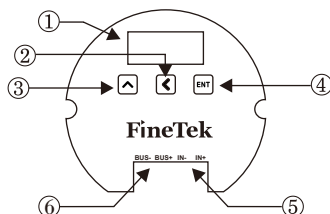
For installation of EST120, it requests to do the calibration in  
any two level points for getting a correct measuring result of  
material level height.  
Strongly recommend to record the capacitance value for empty  
in silo after mounting EST120, and then record and set when  
the silo is full with materials, so that enable to have a correct  
result of measurement.




## DIMENSION OF PRODUCT



(unit:mm)

## DESCRIPTION OF PANEL

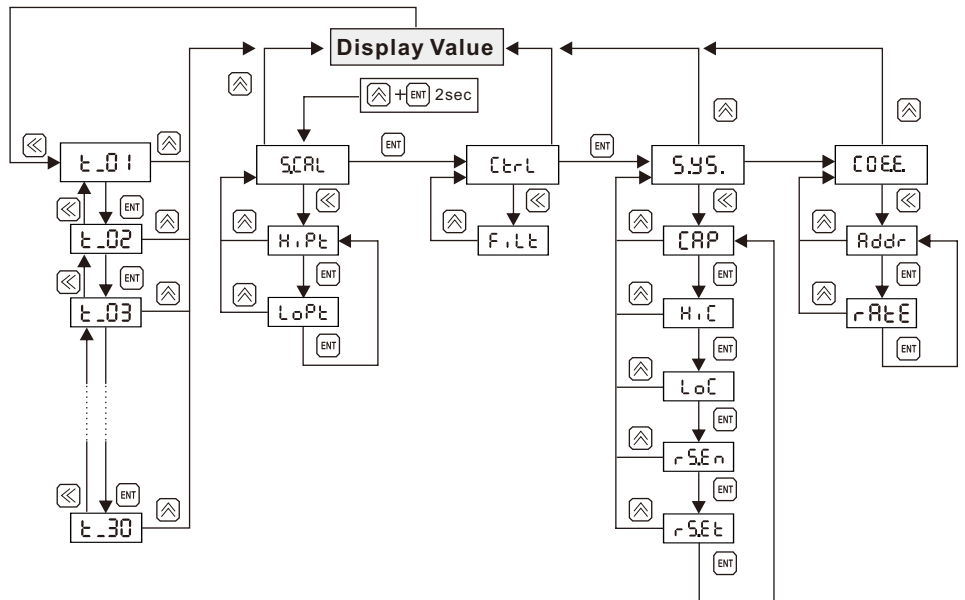


- ① LCD monitor
- ②  Shift
- ③  UP
- ④  Enter
- ⑤ Power supply terminal
- ⑥ RS-485 terminal

## CODE

A:R	B:b	C:c	D:d	E:E	F:F
G:9	H:H	I:i	J:J	K:K	L:L
M:M	N:n	O:o	P:P	Q:Q	R:r
S:S	T:t	U:U	V:V	W:W	X:X
Y:Y	Z:Z				

## PROGRAM SETTING FLOW CHART



## SETTINGS




Item	Sub-Item	Range	Default	Description
SCAL	H.Pt	-1999~9999	100.0	High Point Value (Note1)
	LoPt	-1999~9999	0.0	Low Point Value
Ctrl	F.Lt	LO,MID,HI	LO	Software filter
SYS	CAP	0~9999		Current Level
	H.C	0~9999	4000	High Calibration Point
	LoC	0~9999	0.0	Low Calibration Point
	rSEn			Refresh temperature calibration (Note2)
	rSEt			Reset to Factory Default
CODE	Addr	1~255	1	Device Address
	rAtE	9.6,19.2,38.4,57.6,115.2	9.6	Communication Rate
t_01		-99.9~999.9	(Note2)	Temp. of 01 <sup>st</sup> point
t_02		-99.9~999.9		Temp. of 02 <sup>nd</sup> point
t_03		-99.9~999.9		Temp. of 03 <sup>rd</sup> point
t_04		-99.9~999.9		Temp. of 04 <sup>th</sup> point
t_05		-99.9~999.9		Temp. of 05 <sup>th</sup> point
t_06		-99.9~999.9		Temp. of 06 <sup>th</sup> point
t_07		-99.9~999.9		Temp. of 07 <sup>th</sup> point
t_08		-99.9~999.9		Temp. of 08 <sup>th</sup> point
t_09		-99.9~999.9		Temp. of 09 <sup>th</sup> point
t_10		-99.9~999.9		Temp. of 10 <sup>th</sup> point
t_11		-99.9~999.9		Temp. of 11 <sup>th</sup> point
t_12		-99.9~999.9		Temp. of 12 <sup>th</sup> point
t_13		-99.9~999.9		Temp. of 13 <sup>th</sup> point
t_14		-99.9~999.9		Temp. of 14 <sup>th</sup> point
t_15		-99.9~999.9		Temp. of 15 <sup>th</sup> point
t_16		-99.9~999.9		Temp. of 16 <sup>th</sup> point
t_17		-99.9~999.9		Temp. of 17 <sup>th</sup> point
t_18		-99.9~999.9		Temp. of 18 <sup>th</sup> point
t_19		-99.9~999.9		Temp. of 19 <sup>th</sup> point
t_20		-99.9~999.9		Temp. of 20 <sup>th</sup> point
t_21		-99.9~999.9		Temp. of 21 <sup>th</sup> point
t_22		-99.9~999.9		Temp. of 22 <sup>th</sup> point
t_23		-99.9~999.9		Temp. of 23 <sup>th</sup> point
t_24		-99.9~999.9		Temp. of 24 <sup>th</sup> point
t_25		-99.9~999.9		Temp. of 25 <sup>th</sup> point
t_26		-99.9~999.9		Temp. of 26 <sup>th</sup> point
t_27		-99.9~999.9		Temp. of 27 <sup>th</sup> point
t_28		-99.9~999.9		Temp. of 28 <sup>th</sup> point
t_29		-99.9~999.9		Temp. of 29 <sup>th</sup> point
t_30		-99.9~999.9		Temp. of 30 <sup>th</sup> point

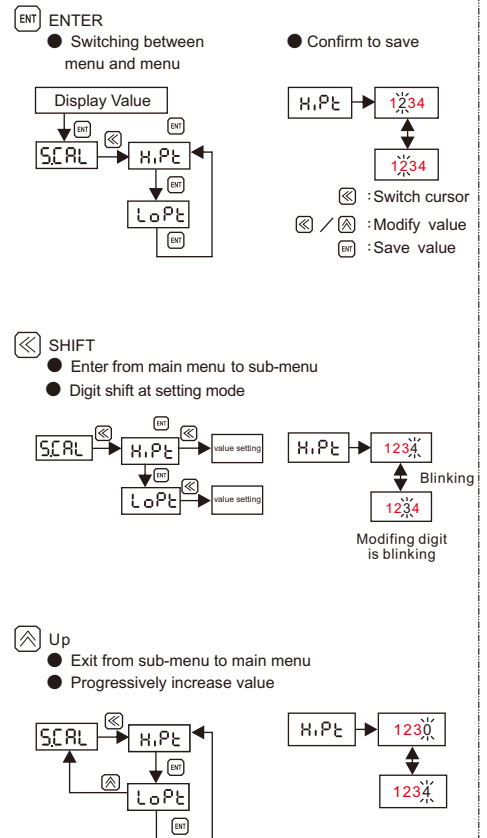
Note 1: Please refer to calibration process when setting  
Hi point and Lo point

Note 2: When the display of temperature is abnormal, please  
refresh the temperature calibration.

## BUTTON INSTRUCTION

There are three input button, UP, SHIFT, and ENTER, on control  
panel. First, select item, and then set the value. Functions of  
these three buttons are described as below.

	At Menu	At Setting
 Up	Exit	Adding
 SHIFT	Enter	Shift
 ENTER	Shift	Confirm



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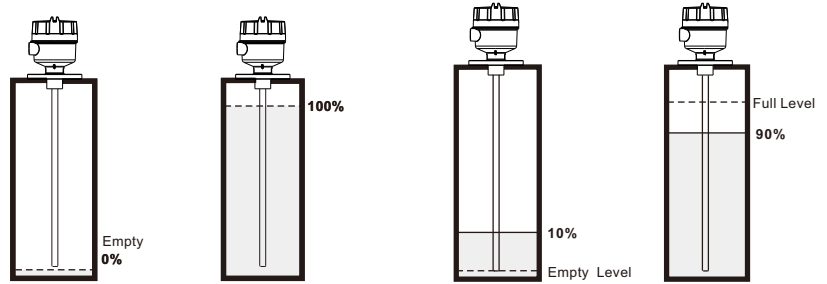
## CALIBRATION WORKING FLOW

### Note :

1. Read instruction before calibration
2. Let material level slightly contact sen-sor cable when calibrating low point
3. During calibration, sensor cable must be inside the vessel.
4. Separate HIPT, LOPT as far as possible (Minimum 50%). It would be the best to calibrate from empty to full.

### Standard Calibration Procedure:

1. Vessel Full: Set and save HIPT
2. Vessel Empty: Set and save LOPT



Example 1  
Display 0 at empty, 100 at full. Calibrate with empty and full vessel

### Procedure

When vessel is empty, key in 0.0 in LOPT. And then press "ENT" to save the value.(Note 1)  
When vessel is full, key in 100.0 in HIPT. And then press "ENT" to save the value.(Note 1)

### Example 2

When vessel is 10% full, key in 10.0 in LOPT. And then press "ENT" to save the value.  
When vessel is 90% full, key in 90.0 in HIPT. And then press "ENT" to save the value.

Note 1: At HIPT and LOPT setting, after press "ENT" button, it will show a switching screen

[←] [→] [ENTER] press "ENT" again to save the value or press "UP" to cancel the setting.

Note2: HiC ~ LoC instructions and the use timing

### HiC ~ LoC Instructions:

When HIPT or LOPT is calibrated, the system automatically writes the current corresponding measurement values (CAP) into HiC or LoC.

Example 1: when the lowest point indicates 0% while the corresponding CAP value shows 100pF; the highest point indicates 100% while the corresponding shows 1500pF, when HIPT and LOPT calibration finished, the lowest point measurement value 100pF is written to LoC and the highest point measurement value 1500pF is written to HiC.

Example 2: when the lowest point indicates 10% while the corresponding CAP value shows 200pF; the highest point indicates 90% while the corresponding shows 1400pF, when HIPT and LOPT calibration finished, the system will write the lowest point display value 200pF is written to LoC and the highest point display value 1400pF is written to HiC, When HIPT or LOPT is calibrated, the system will automatically write the corresponding CAP values to HiC and LoC while modifying HiC and LoC will not affect HIPT/LOPT calibration values. For example, after the calibration completion of the example 1, the LoC is modified to 50pF, the corresponding LOPT is still 0%; the HiC is modified to 1600pF and the corresponding HIPT is still 100%.

### HiC ~ LoC use timing:

Timing 1: When the usage environment (test medium, tank structure, probe length, installation position etc.) are the same,

The four parameters of HIPT, LOPT, HiC, and LoC can be copied and set to another device sequentially to save calibration steps.

Timing 2: The transmitter maintenance or replacement by new circuit board can follow the original parameter settings.

※ Because the change of HiC and LoC will affect the original calibration values of HiC and LoC, the measurement results will be changed. If not necessary, please do NOT change the HiC and LoC values Arbitrarily.

## MODBUS ADDRESS TABLE

Parameter	ADDRESS		TYPE	UNITS	PROPERTY	DESCRIPTION
	HEX	DEC				
PFC_CAP_VALUE	0x1022	4130	FLOAT32	PF	R	Current level value
PFC_DISPLAY_PERCENTAGE	0x1024	4132	FLOAT32	%	R	Capcitance
PFC_BOARD_TEMPERATURE	0x1026	4134	FLOAT32	°C	R	Temp. of PCB
PFC_TEMPERATURE_VALUE-1	0x1028	4136	FLOAT32	°C	R	1st point's temperature
PFC_TEMPERATURE_VALUE-2	0x102a	4138	FLOAT32	°C	R	2nd point's temperature
PFC_TEMPERATURE_VALUE-3	0x102c	4140	FLOAT32	°C	R	3rd point's temperature
PFC_TEMPERATURE_VALUE-4	0x102e	4142	FLOAT32	°C	R	4th point's temperature
PFC_TEMPERATURE_VALUE-5	0x1030	4144	FLOAT32	°C	R	5th point's temperature
PFC_TEMPERATURE_VALUE-6	0x1032	4146	FLOAT32	°C	R	6th point's temperature
PFC_TEMPERATURE_VALUE-7	0x1034	4148	FLOAT32	°C	R	7th point's temperature
PFC_TEMPERATURE_VALUE-8	0x1036	4150	FLOAT32	°C	R	8th point's temperature
PFC_TEMPERATURE_VALUE-9	0x1038	4152	FLOAT32	°C	R	9th point's temperature
PFC_TEMPERATURE_VALUE-10	0x103A	4154	FLOAT32	°C	R	10st point's temperature
PFC_TEMPERATURE_VALUE-11	0x103C	4156	FLOAT32	°C	R	11st point's temperature
PFC_TEMPERATURE_VALUE-12	0x103E	4158	FLOAT32	°C	R	12nd point's temperature
PFC_TEMPERATURE_VALUE-13	0x1040	4160	FLOAT32	°C	R	13rd point's temperature
PFC_TEMPERATURE_VALUE-14	0x1042	4162	FLOAT32	°C	R	14th point's temperature
PFC_TEMPERATURE_VALUE-15	0x1044	4164	FLOAT32	°C	R	15th point's temperature
PFC_TEMPERATURE_VALUE-16	0x1046	4166	FLOAT32	°C	R	16th point's temperature
PFC_TEMPERATURE_VALUE-17	0x1048	4168	FLOAT32	°C	R	17th point's temperature
PFC_TEMPERATURE_VALUE-18	0x104A	4170	FLOAT32	°C	R	18th point's temperature
PFC_TEMPERATURE_VALUE-19	0x104C	4172	FLOAT32	°C	R	19th point's temperature
PFC_TEMPERATURE_VALUE-20	0x104E	4174	FLOAT32	°C	R	20th point's temperature
PFC_TEMPERATURE_VALUE-21	0x1050	4176	FLOAT32	°C	R	21th point's temperature
PFC_TEMPERATURE_VALUE-22	0x1052	4178	FLOAT32	°C	R	22nd point's temperature
PFC_TEMPERATURE_VALUE-23	0x1054	4180	FLOAT32	°C	R	23rd point's temperature
PFC_TEMPERATURE_VALUE-24	0x1056	4182	FLOAT32	°C	R	24th point's temperature
PFC_TEMPERATURE_VALUE-25	0x1058	4184	FLOAT32	°C	R	25th point's temperature
PFC_TEMPERATURE_VALUE-26	0x105A	4186	FLOAT32	°C	R	26th point's temperature
PFC_TEMPERATURE_VALUE-27	0x105C	4188	FLOAT32	°C	R	27th point's temperature
PFC_TEMPERATURE_VALUE-28	0x105E	4190	FLOAT32	°C	R	28th point's temperature
PFC_TEMPERATURE_VALUE-29	0x1060	4192	FLOAT32	°C	R	29th point's temperature
PFC_TEMPERATURE_VALUE-30	0x1062	4194	FLOAT32	°C	R	30th point's temperature
PFC_Hi_Point	0x106D	4205	FLOAT32	%	R/W	Hi_Point
PFC_Lo_Point	0x106F	4207	FLOAT32	%	R/W	Lo_Point
PFC_Hi_C	0x1073	4211	FLOAT32	PF	R/W	Hi_C
PFC_Lo_C	0x1075	4213	FLOAT32	PF	R/W	Lo_C
PFC_Reset	0x108A	4234	FLOAT32		R/W	(Standard type)Reset
PFC_Save	0x108E	4238	FLOAT32		R/W	(Standard type)Save(Signed)

Protocol	Modbus-RTU	
Parameter		
Serial signaling rate		9600 Baud
Date format	Date bits	8 Date bits
	Parity bit	None Parity
	Stop bit	1 Stop Bit