# Panel Indikator
# PM 1430
# &
# PM 1530

Wallox AB
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Tångvägen 9C
239 42 Falsterbo

Telefon: 040 152525
Telefax: 040 151472

# Catalogue



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# 1. Reading Before Use

Thank you for your purchase for FineTek product. This menu introduces the product features, operations, maintenance and troubleshooting to help user get familiar with product, and avoid harm by unperoper use. Before use, please carefully study the details of product. Extra support requirement can be found at www.fine-tek.com or directly contact us by telephone and facsimile. On line revision will issue at web site and not further inform. User can get newest support and download at www.fine-tek.com. In case of any unexpected problem, don't disassembe it by yourself or you will lose the product guarantee. Contact us, if you have any question hard to be defined.

Symbol Instruction

**Danger**→ Deathly danger or significant harm might be caused with unproper use.

**Notice**→ Damage to user or equipment with unproper use.

**Electric Shock**→ Notice for Electric Shock.

**Fire**→ Notice for Fire.

**Prohibit**→ Prohibit for Wrong Operation.

# 2. Warranty

### 2.1 Warranty for New Product

All FineTek products will get one year guarantee in regular operation. Product within guarantee period will get service and no charge for any nominal fee. User finds any defect during delivery process or not be broken by wrong operation that can ask return or replace. In maintenance, user has the obligation to send all complete parts to FineTek in well carefully package. Over range operation, over charge or any abnormal operation will excess out the guarantee range. Product not in guarantee period and condition will charge necessary fee for the repair or replace.

Things below will not in guarantee coverage and will be charged service fee:

- Expire the guarantee date.
- Not properly use according to operation manual.
- Irresistible environment effects or natural disaster (earthquake, flood disaster, fire, lighting stroke, hurricane)
- Human-made damage (scratch, cutting, throwing down, hammering) or abnormal operation (over power range, over ambient condition, over range operation, corrosion, watering, electric charge), non-proved third-party device connection or expend, replace non-proved components or module.

### 2.2 Warranty Under Maintenance

Maintenance Guarantee: All the products will get six months guarantee service since repair or replaced components. During six months, any fault caused in same condition will be serviced with free charge

## 2.3 Service Network

| Beanch | Address | Tel | Fax |
|---|---|---|---|
| **Head Quarter (Taiwan)** | No.16, Tzuchiang St., Tucheng Industrial Park, New Taipei City 236, Taiwan | +886 2-2269-6789 | +886 2-2268-6682 |
| **Taichung Brance (Taiwan)** | | +886 4-2465-2820 | +886 4-2463-9926 |
| **Kaoshung Branch (Taiwan)** | | +886 7-333-6968 | +886 7-536-8758 |
| **Fineautomation Co.,Ltd. (China)** | No.451 DuHui Rd, MinHang District, Shanghai, China 201109 | +86 216490-7260 | +86 216490-7276 |
| **Beijing Branch Office (China)** | No.8 GuanGqu Men Street, Block A, Room 191 | +86 108353-5118 | +86 108353-2816 |
| **Guangzhou Branch Office (China)** | No.536 LongKou Rd West, Grass Park B-18C TianHe District, Guangzhou, China | +86 203846-1387 | +86 203846-1397 |
| **Wuhan Branch Office(China)** | No.14 ZhongZan Rd, Century square , Block B, WuChang District, Wuhan, China | +86 27-8733-2314 | +86 27-8733-2341 |
| **Jinan Branch Office (China)** | No.44 HongLou Rd South, HuiKe Park Building 6, Unit 2, Room 1601, LicHeng District, Jinan, China | +86 531-83173652 | +86 31-83173670 |
| **Nanjing Branch (China)** | Everest Building Room 1709, 19 Cutral Road, Nanjing Drum Tower District, Nanjing, China | +86 025-83176832 | +86 025-83176831 |
| **Finetek Pte Ltd. (Singapore)** | No. 11 Kaki Bukit Road 1 #04-01 Eunos Technolink 415939, Singapore | +65 6452-6340 | +65 6734-1878 |
| **FineTeK GmbH (Germany)** | Frankfurter Str. 62, OG D-65428 Ruesselsehim, Germany | +49 (0)6142-17608-16 | +49 (0)142-17608-20 |

# 3. Product Introduction

PM-1430 (4 digits display) and PM-1530 (5 digits display) are digital type microprocessor panel meters, which accept various signal inputs. Digital numeric can be set as any unit display, for examples kg/cm2, bar, cm and kg…etc. It is suitable for most process and electrical measurements.

**Feature**

a. 4 push buttons control panel, user friendly.
b. Wide power supply range 20~250 Vac/Vdc.
c. Readings range -1999~9999 (4 digits) & -19999~99999 (5 digits).
d. Available with one current or voltage input, and one voltage or current output.
e. Variable inputs acceptable as 0~20mA, 4~20mA, 0~200 mA, 0~5V, 1~5V, 0~10V, 2~10V, 0~20V, 0~200V inputs, and also be applied with non-standard input signal range, for example used with Capacitance Level Transmitter.
f. Two loop power supply 24 Vdc/50mA to drive measuring instrument.
g. Available with 1~4 relays output, and 1 set DI ( digital in ) for relay driver.
h. Sampling time is 24 t/seconds, against miscellaneous signal interference.
i. Available with RS-485 ModBus interface.
j. Non linearity measurement is available with all panel meters, to improve linearity for non-regular shaped silo / tank.

## 4. Order Information

Wide voltage supply model: PM-1530-W01-41011

**PM-1□30-W □□-□□□□□**

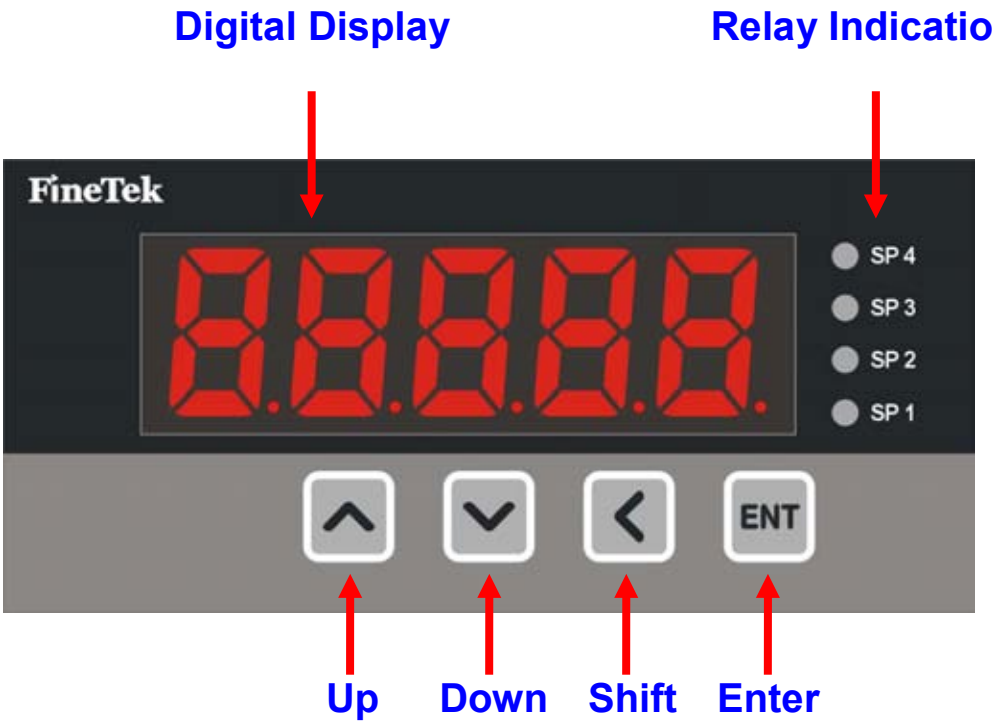
| | |
|---|---|
| Display | 4---4 digit<br>5---5 digit |
| Power Supply | 20~250 Vac-dc, 50~60Hz |
| Input Signal | 01---4~20mA DC with Exc 24V<br>02---0~20 mA DC with Exc 24V<br>03---0~200 mA DC with Exc 24V<br>04---0~5V DC with Exc 24V<br>05---0~10V DC with Exc 24V<br>06---0~20V DC with Exc 24V<br>07---0~200V DC with Exc 24V<br><br>A1---0~2mA AC RMS<br>A2---0~20mA AC RMS<br>A3---0~200mA AC RMS<br>A4---0~1A AC RMS<br>A5---0~5A AC RMS<br><br>C1---0~K2 mA DC with Exc 24V<br>C2---0~K20 mA DC with Exc 24V<br>C3---0~K200 mA DC with Exc 24V<br>C4---0~K1Amp DC<br>C5---0~K5Amp DC<br><br>B1---0~100mV AC RMS<br>B2---0~200mV AC RMS<br>B3---0~2V AC RMS<br>B4---0~20V AC RMS<br>B5---0~200V AC RMS<br>B6---0~600V AC RMS<br>B7---0~1000V AC RMS<br><br>D1---0~K20mV DC with Exc 24V<br>D2---0~K50mV DC with Exc 24V<br>D3---0~K100mV DC with Exc 24V<br>D4---0~K200mV DC with Exc 24V<br>E1---5/10/20/50/100/200mV/V DC (Option) with Exc 24V<br>E2---1/2/5/10/20mV/V DC (Option) with ISO 10V<br>E3---1/2/10/20/40mV/V DC (Option) with ISO 5V<br><br>F1---TC(K、J、E、N、T) & RTD (PT100、JPT100)<br>F2---TC(K、J、R、S、B、E、N、T) & RTD (PT100、JPT100) |
| Relay Contact | 0~4---0~4 Relays |
| Non-Linear Function | 0---Without (Standard)<br>1---Support 20 points Vessel Conversion |
| Analog Output | 0---Without<br>1---0~10V Analog Output<br>2---0/4~20mA |
| Communi-cation port | 0---Without<br>1---Support RS485 interface |
| Digital input | 0---Without<br>1---DI |

# 5. Specification

| Item | Specification | Remark |
|---|---|---|
| **Power Supply** | 20 ~250Vac-Vdc，50 / 60Hz | |
| **Power Consumption** | 7 VA (MAX) | |
| **Operation Temp.** | -20～70 ℃, 20%～90% RH non-condensed | |
| **Storage Temp.** | -20～75 ℃, 20%～90% RH non-condensed | |
| **Display** | 0.56" 4 digits 7 segment LED display<br>Readings range: -1999 ~ 9999<br>0.56" 5 digits 7 segment LED display<br>Readings range:-19999 ~ 99999<br>4 LED set-point indicator<br>Over range display: “1 “ or “-1” | |
| **Accuracy** | Input signal (AD)：DC－±0.1% F.S. , AC－±1% F.S.<br>TC－±0.5% F.S. , RTD－±1% F.S.<br>Output signal(DA)：±0.5% full scale | SIM-D02&D03,<br>SIM-D04,<br>SIM-D05:<br>±0.2% F.S |
| **Sampling Time** | Standard model: 24 times / second | |
| **Input Signal** | **SIM-100&200:**<br>0~20mAdc, 4~20mAdc, 0~200mAdc, 0~5Vdc, 1~5Vdc,<br>0~10Vdc, 2~10Vdc, 0~20Vdc, 0~200Vdc.<br>**SIM-A01:**<br>0~2mAac, 0~20mAac, 0~200mAac.<br>SIM-A02 & A03:<br>0~1Aac, 0~5Aac。<br>**SIM-A05:**<br>0~100mVac, 0~200mVac, 0~2Vac.<br>**SIM-A06:**<br>0~20Vac, 0~200Vac, 0~600Vac, 0~1000 Vac.<br>**SIM-D01:**<br>0~±2mAdc, 0~±20mAdc, 0~±200mAdc. | |

| | | |
|---|---|---|
| **Input Signal** | **SIM-D02& D03:**<br>0~±1Adc, 0~±5Adc.<br>**SIM-D04:**<br>0~5/10/20/50/100/200mVdc。<br>Isolated Exciting 5Vdc —<br>1mV/V, 2mV/V, 4mV/V, 10mV/V, 20mV/V, 40mV/V。<br>Isolated Exciting 10Vdc —<br>1mV/V, 2mV/V, 5mV/V, 10mV/V, 20mV/V。<br>**SIM-D05:**<br>0~±20mVdc, 0~±50mVdc,<br>0~±100mVdc,0~±200mVdc。<br>**SIM-D06:**<br>TC (K、J、R、S、B、E、N、T) & RTD (PT100、JPT100)。<br>K: -200 ~ 1370℃<br>J: -200 ~ 1200℃<br>E: -200 ~ 800℃<br>N: -200 ~1300℃<br>T: -200 ~ 400℃<br>R: 0 ~ 1760℃ (500 ~ 1760℃ is available range)<br>S: 0 ~ 1760℃ (500 ~ 1760℃ is available range)<br>B: 0 ~ 1820℃ (800 ~ 1820℃ is available range)<br>PT100: -200 ~ 850℃<br>JPT100: -200 ~ 500℃ | |
| **Output Signal** | 0~20mAdc,4~20mAdc,20~0mAdc,20~4mAdc, 0~5Vdc,<br>1~5Vdc, 0~10Vdc, 2~10Vdc。 | |
| **Relay Output** | 4 relay:<br>SPDT 3A / 250V AC or 5A / 30V DC | |
| **Digital Input** | 1 Digital In | Option |
| **Communication Interface** | RS 485 Modbus | Option |
| **Memory** | By EEPROM | |
| **Dimension** | DIN 1/8 :96 mm × 48 mm×128.5mm | |
| **Enclosure Protection** | IP65 rating | |

## 6. Operation Element



# 7. Button Symbols

Set up all functions by the 4 push buttons on the panel (ENT、SHT、UP and DOWN). Firstly enter the selection menu, then set required value of 4 push buttons while in „Selection" and „Setting":

| Item | Selection | Settings |
|---|---|---|
|   | Switch | Save Data |
|  | Enter | Position Shift |
|  | Escape | Increase |
|  | Escape | Decrease |

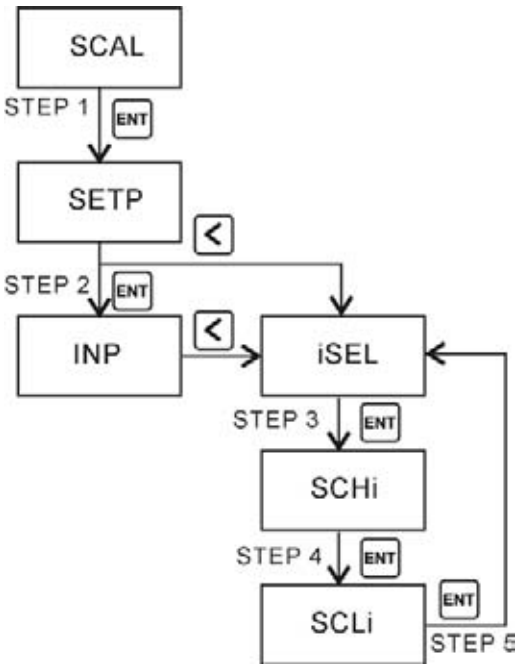
ENTER Button
To help you to identify selection and setting modes, please follow the operation charts below:

Introduction: (UP and DOWN is the same in selection mode. However UP means increase, and DOWN means decrease in setting mode.

**ENRER Button**

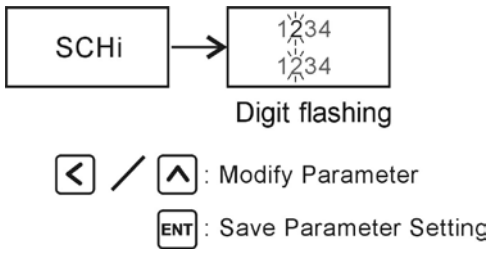
Main menu switch or sub-menu switch

Example: STEP1~ STEP2 and STEP3~ STEP5



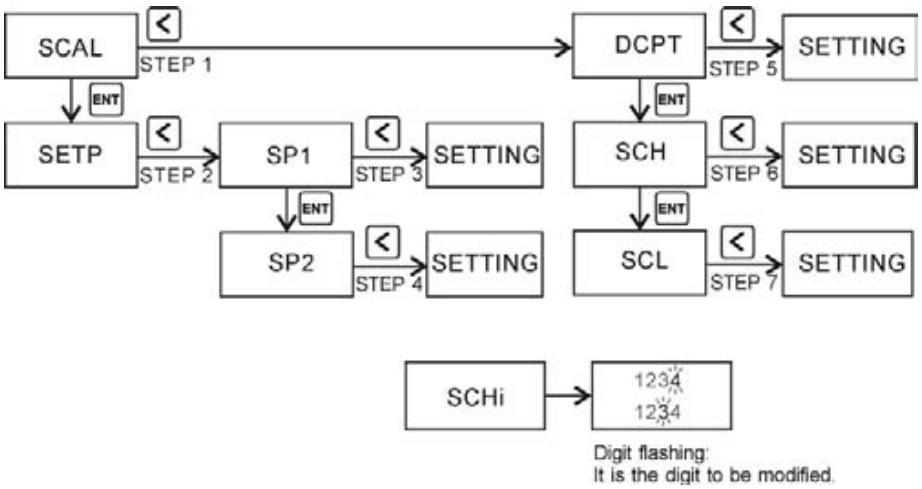

Confimation to save settings

Example: Confimation of change of SCHi value.



### SHIFT Button

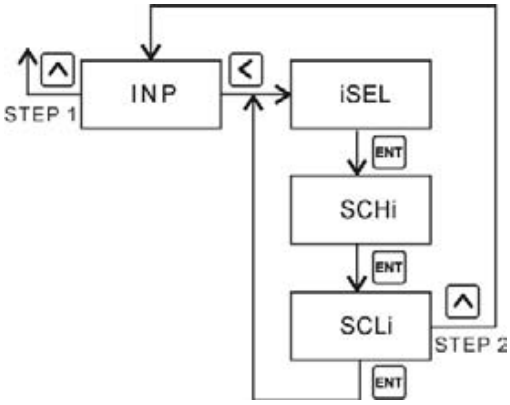
Entry from main menu to sub-menu, or position change in sub-menu.
For example: STEP 1 and STEP 2, STEP 3~7.



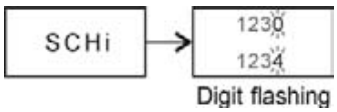

SHIFT: Entry into modification mode, press SHIFT to move to the numeric to be modified.
For example, to modify SCHi value – One numeric flashes, and press SHIFT to select the numeric which you want to change setting.

### UP Button

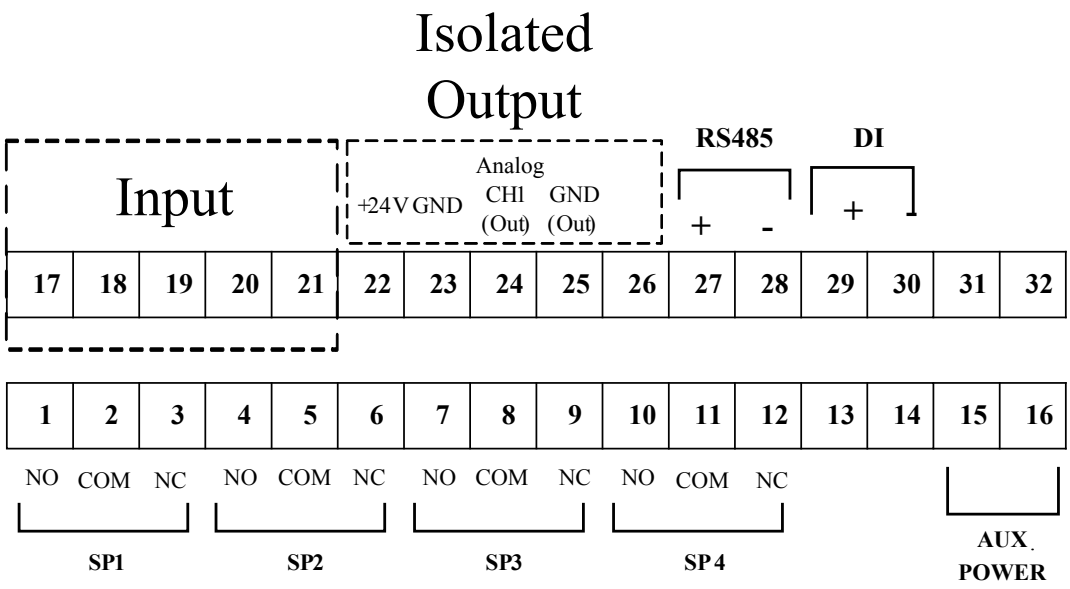
To escape from main menu, or escape from sub-menu to move to main menu.
For example: STEP 1 and STEP 2




Pressure UP button to increase the numeric.
For example: To change SCHi value from “1230” to “1234” , press UP button four times at the last digit “0” to “4”.

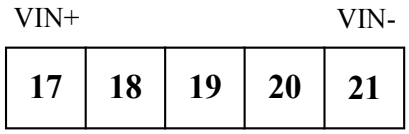
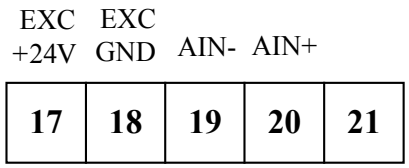
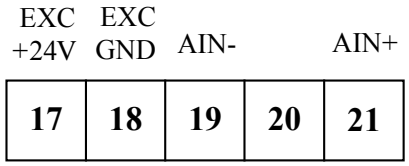
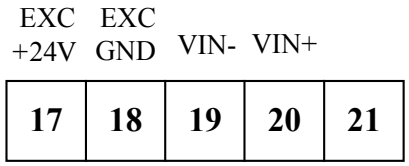
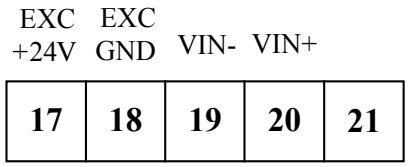
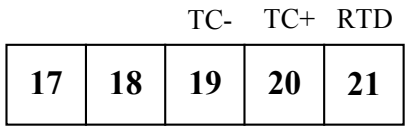
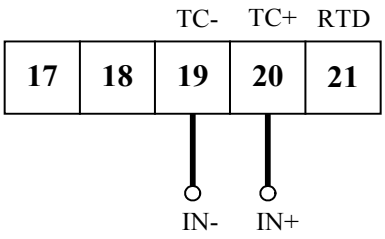
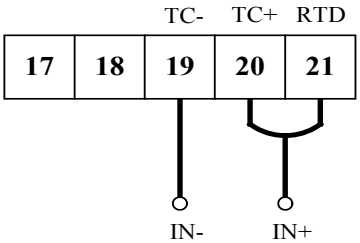


## 8. Terminal Assignment

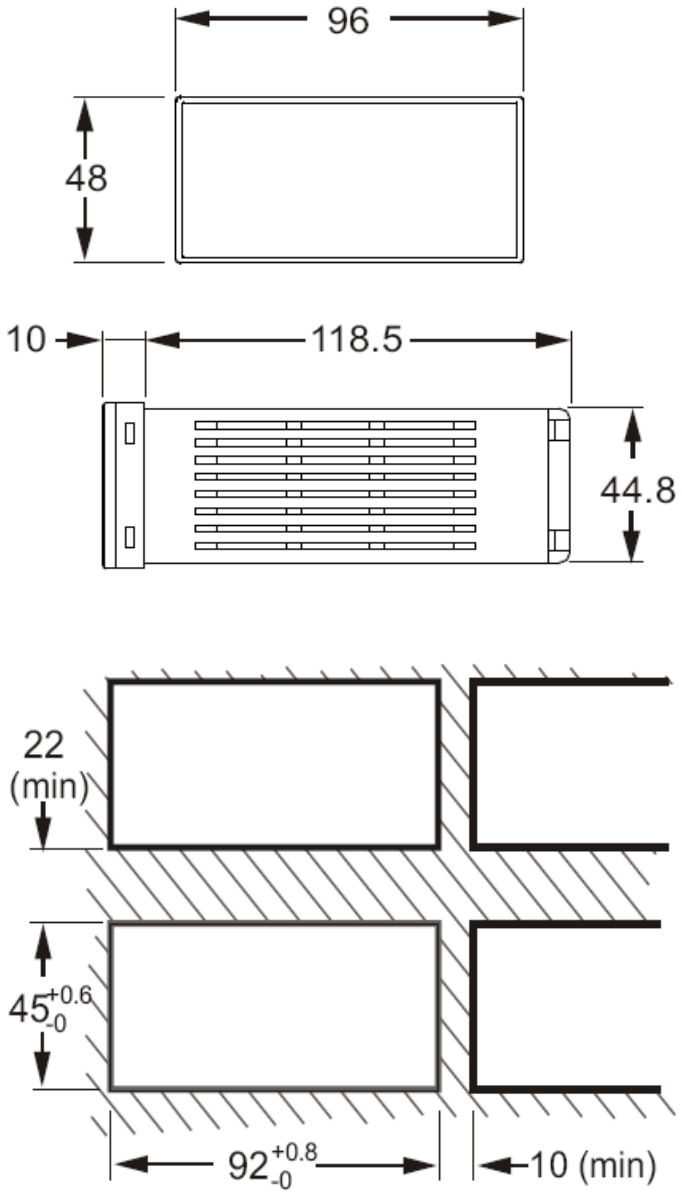



In different input modules, terminal assignment is changed with different inputs. Please refer to the following terminal assignment:

| Module | Input Terminal |
|---|---|
| **SIM-100&200** | EXC +24V, EXC GND, GND (IN-), CH1 (IN+) — 17 18 19 20 21 |
| **SIM-A01** | AIN+, AIN- — 17 18 19 20 21 |
| **SIM-A02&A03** | AIN+, AIN- — 17 18 19 20 21 |
| **SIM-A05** | VIN+, VIN- — 17 18 19 20 21 |

| | |
|---|---|
| **SIM-A06** |  |
| **SIM-D01** |  |
| **SIM-D02&D03** |  |
| **SIM-D04** |  |
| **SIM-D05** |  |
| **SIM-D06** |  |
| **Thermocouple (TC):**  | |
| **Resistance Temperature Detectors (RTD) :**  | |

## 9. Dimension




(Unit: mm)

# 10. Program Commands

| Command | Description | 4 Digits Setting Range | 4 Digits Factory Default | 5 Digits Setting Range | 5 Digits Factory Default |
|---|---|---|---|---|---|
| PASS | Password | 0~9999 | 4607 | 0~9999 | 4607 |
| CHSL | Channel Selection | CH1/CH2 | CH1 | CH1/CH2 | CH1 |
| SETT | Settings Selection for TEMP，TYPE，UNIT | | | | |
| TEMP | Room Temp. Display Function | ON/OFF | OFF | The fifth digit is the unit temperature | |
| TYPE | Temperature Type Selection | K、J、T、E、R、S、B、N、PT | K | The fifth digit is the unit temperature | |
| UNIT | Temperature Unit Display | ℃/℉ | ℃ | The fifth digit is the unit temperature | |
| SCAL | Settings Selection for DCPT，SCH，SCL | | | | |
| DCPT | Decimal Point Selection | 0~3 | Dot1 | 0~4 | Dot2 |
| SCH | Display Value for SPAN | -1999~9999 | 100.0 | -19999~99999 | 100.00 |
| SCL | Display Value for ZERO | -1999~9999 | 000.0 | -19999~99999 | 000.00 |
| SETP | Settings Selection for FULL，SP1~SP4，HON1~HON4，DON1~DON4，DOF1~DOF4，ENB1~ENB4，ALR1~ALR4 | | | | |
| FULL | STEP Entire Function / Simple Function Switch | YES/NO | NO | YES/NO | NO |
| SP1 | SP1 Set Point Value | -1999~9999 | 020.0 | -19999~99999 | 020.00 |
| SP2 | SP2 Set Point Value | -1999~9999 | 040.0 | -19999~99999 | 040.00 |
| SP3 | SP3 Set Point Value | -1999~9999 | 060.0 | -19999~99999 | 060.00 |
| SP4 | SP4 Set Point Value | -1999~9999 | 080.0 | -19999~99999 | 080.00 |
| HON1 | SP1 Hysterises High Band | 0~9999 | 000.0 | 0~99999 | 000.0 |
| HON2 | SP2 Hysterises High Band | 0~9999 | 000.0 | 0~99999 | 000.0 |
| HON3 | SP3 Hysterises High Band | 0~9999 | 000.0 | 0~99999 | 000.0 |
| HON4 | SP4 Hysterises High Band | 0~9999 | 000.0 | 0~99999 | 000.0 |
| HOF1 | SP1 Hysterises Low Band | 0~9999 | 000.0 | 0~99999 | 000.0 |
| HOF2 | SP2 Hysterises Low Band | 0~9999 | 000.0 | 0~99999 | 000.0 |
| HOF3 | SP3 Hysterises Low Band | 0~9999 | 000.0 | 0~99999 | 000.0 |
| HOF4 | SP4 Hysterises Low Band | 0~9999 | 000.0 | 0~99999 | 000.0 |
| DON1 | SP1 Relay Response Delay Time (in seconds) | 00~99 | 00 | 00~99 | 00 |

| | | | | | |
|---|---|---|---|---|---|
| DON2 | SP2 Relay Response Delay Time (in seconds) | 00~99 | 00 | 00~99 | 00 |
| DON3 | SP3 Relay Response Delay Time (in seconds) | 00~99 | 00 | 00~99 | 00 |
| DON4 | SP4 Relay Response Delay Time (in seconds) | 00~99 | 00 | 00~99 | 00 |
| DOF1 | SP1 Relay Response Reversion Delay Time (in seconds) | 00~99 | 00 | 00~99 | 000 |
| DOF2 | SP2 Relay Response Reversion Delay Time (in seconds) | 00~99 | 00 | 00~99 | 00 |
| DOF3 | SP3 Relay Response Reversion Delay Time (in seconds) | 00~99 | 00 | 00~99 | 00 |
| DOF4 | SP4 Relay Response Reversion Delay Time (in seconds) | 00~99 | 00 | 00~99 | 00 |
| ENB1 | SP1 Relay On/Off Selection | ON/OFF | ON | ON/OFF | ON |
| ENB2 | SP2 Relay On/Off Selection | ON/OFF | ON | ON/OFF | ON |
| ENB3 | SP3 Relay On/Off Selection | ON/OFF | ON | ON/OFF | ON |
| ENB4 | SP4 Relay On/Off Selection | ON/OFF | ON | ON/OFF | ON |
| ALR1 | SP1 Hi/Lo Alarm Selection | HI/LO | LO | HI/LO | LO |
| ALR2 | SP2 Hi/Lo Alarm Selection | HI/LO | LO | HI/LO | LO |
| ALR3 | SP3 Hi/Lo Alarm Selection | HI/LO | HI | HI/LO | HI |
| ALR4 | SP4 Hi/Lo Alarm Selection | HI/LO | HI | HI/LO | HI |
| INP | Settings Selection for ISEL，SCHi，SCLi | | | | |
| ISEL | Input S ignal S election: 0~20，4~20，200I，0~5，1~5，0~10，2~10，20V，200V，SPE | | 4~20 | | 4~20 |
| SCHi | SPAN Percentage for SPE Mode | 0~1000 | 100.0 | 0~10000 | 100.00 |
| SCLi | ZERO Percentage for SPE Mode | 0 ~1000 | 000.0 | 0~10000 | 000.00 |
| out | Setting for SIG | | | | |

| | | | | | |
|---|---|---|---|---|---|
| Sig | Output S ignal S election: 0~20 ， 4~20 ， 20~0 ， 20~4 ， 0~10 ， 2~10 ， 0~5 ， 1~5 ， SPE | | 4~20 | | 4~20 |
| DIRY | Settings Selection for SRY ， RY1 ， RY2 ， RY3 ， RY4 | | | | |
| SRY | DI Function | ON/OFF | OFF | ON/OFF | OFF |
| RY1 | Relay 1 Activation Prohibited | ON/OFF | OFF | ON/OFF | OFF |
| RY2 | Relay 2 Activation Prohibited | ON/OFF | OFF | ON/OFF | OFF |
| RY3 | Relay 3 Activation Prohibited | ON/OFF | OFF | ON/OFF | OFF |
| RY4 | Relay 4 Activation Prohibited | ON/OFF | OFF | ON/OFF | OFF |
| RATE | Settings Selection for FILT ， adSEL | | | | |
| FILT | Anti-miscellaneous signals feature | ON/OFF | ON | ON/OFF | ON |
| adSEL | AD24 reading rate<br>Anti-miscellaneous signal filter<br>OFF: 24 times/ second<br>Anti-miscellaneous signal filter<br>ON: 4 times/ second<br>AD12 reading rate<br>Anti-miscellaneous signal filter<br>OFF: 12 times/ second<br>Anti-miscellaneous signal filter<br>ON: 2 times/ second<br>AD06 reading rate<br>Anti-miscellaneous signal filter<br>OFF: 6 times/ second<br>Anti-miscellaneous signal filter<br>ON: 1 time/ second | | AD24 、 AD12 、 AD06 | | AD24 、 AD12 、 AD06 |
| LOCU | Setting for LOPE | | | | |
| LOPE | Reduce 0~99% Input Signal | 0~99 | 0 | 0~99 | 0 |
| NOLI | Non-Linear Tank Function | | | | |
| SEL | Enable/Disable | ON/OFF | OFF | ON/OFF | OFF |
| LP1 | Silo / Tank Set Point ＃1 | 0~1000 | 5 | 0~10000 | 5 |
| LP2 | Silo / Tank Set Point ＃2 | 0~1000 | 10 | 0~10000 | 10 |
| LP3 | Silo / Tank Set Point ＃3 | 0~1000 | 15 | 0~10000 | 15 |
| LP4 | Silo / Tank Set Point ＃4 | 0~1000 | 20 | 0~10000 | 20 |
| LP5 | Silo / Tank Set Point ＃5 | 0~1000 | 25 | 0~10000 | 25 |
| LP6 | Silo / Tank Set Point ＃6 | 0~1000 | 30 | 0~10000 | 30 |

| | | | | | |
|---|---|---|---|---|---|
| LP7 | Silo / Tank Set Point ＃7 | 0~1000 | 35 | 0~10000 | 35 |
| LP8 | Silo / Tank Set Point ＃8 | 0~1000 | 40 | 0~10000 | 40 |
| LP9 | Silo / Tank Set Point ＃9 | 0~1000 | 45 | 0~10000 | 45 |
| LP10 | Silo / Tank Set Point ＃10 | 0~1000 | 50 | 0~10000 | 50 |
| LP11 | Silo / Tank Set Point ＃11 | 0~1000 | 55 | 0~10000 | 55 |
| LP12 | Silo / Tank Set Point ＃12 | 0~1000 | 60 | 0~10000 | 60 |
| LP13 | Silo / Tank Set Point ＃13 | 0~1000 | 65 | 0~10000 | 65 |
| LP14 | Silo / Tank Set Point ＃14 | 0~1000 | 70 | 0~10000 | 70 |
| LP15 | Silo / Tank Set Point ＃15 | 0~1000 | 75 | 0~10000 | 75 |
| LP16 | Silo / Tank Set Point ＃16 | 0~1000 | 80 | 0~10000 | 80 |
| LP17 | Silo / Tank Set Point ＃17 | 0~1000 | 85 | 0~10000 | 85 |
| LP18 | Silo / Tank Set Point ＃18 | 0~1000 | 90 | 0~10000 | 90 |
| LP19 | Silo / Tank Set Point ＃19 | 0~1000 | 95 | 0~19999 | 95 |
| LP20 | Silo / Tank Set Point ＃20 | 0~1000 | 100 | 0~10000 | 100 |
| IV1 | Input Signal Set Point ＃1 | 0~1000 | 5 | 0~10000 | 5 |
| IV2 | Input Signal Set Point ＃2 | 0~1000 | 10 | 0~10000 | 10 |
| IV3 | Input Signal Set Point ＃3 | 0~1000 | 15 | 0~10000 | 15 |
| IV4 | Input Signal Set Point ＃4 | 0~1000 | 20 | 0~10000 | 20 |
| IV5 | Input Signal Set Point ＃5 | 0~1000 | 25 | 0~10000 | 25 |
| IV6 | Input Signal Set Point ＃6 | 0~1000 | 30 | 0~10000 | 30 |
| IV7 | Input Signal Set Point＃7 | 0~1000 | 35 | 0~10000 | 35 |
| IV8 | Input Signal Set Point ＃8 | 0~1000 | 40 | 0~10000 | 40 |
| IV9 | Input Signal Set Point ＃9 | 0~1000 | 45 | 0~10000 | 45 |
| IV10 | Input Signal Set Point ＃10 | 0~1000 | 50 | 0~10000 | 50 |
| IV11 | Input Signal Set Point ＃11 | 0~1000 | 55 | 0~10000 | 55 |
| IV12 | Input Signal Set Point ＃12 | 0~1000 | 60 | 0~10000 | 60 |
| IV13 | Input Signal Set Point ＃13 | 0~1000 | 65 | 0~10000 | 65 |
| IV14 | Input Signal Set Point ＃14 | 0~1000 | 70 | 0~10000 | 70 |
| IV15 | Input Signal Set Point ＃15 | 0~1000 | 75 | 0~10000 | 75 |
| IV16 | Input Signal Set Point ＃16 | 0~1000 | 80 | 0~10000 | 80 |
| IV17 | Input Signal Set Point ＃17 | 0~1000 | 85 | 0~10000 | 85 |
| IV18 | Input Signal Set Point ＃18 | 0~1000 | 90 | 0~10000 | 90 |
| IV19 | Input Signal Set Point ＃19 | 0~1000 | 95 | 0~10000 | 95 |
| IV20 | Input Signal Set Point ＃20 | 0~1000 | 100 | 0~10000 | 100 |
| cod | User Code Modification | 0~9999 | 4607 | 4607 | 0~9999 |
| SYS | Settings Selection for LOAD，FINE | | | | |

| | | | | | |
|---|---|---|---|---|---|
| LOAD | Reset to Default Setting | YES/NO | NO | YES/NO | NO |
| FINE | Read Software Version Code | | | | |

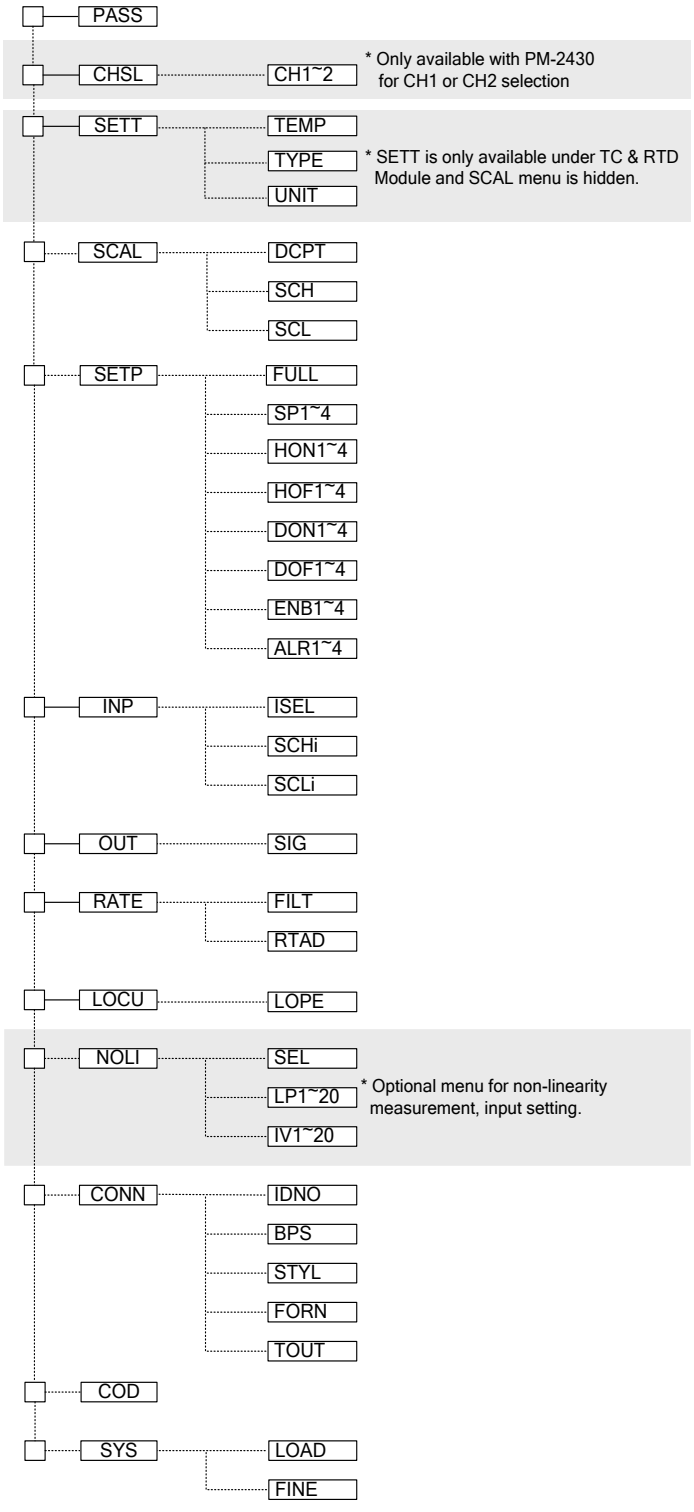
| Command | Description | Setting Range | Factory Default |
|---|---|---|---|
| CONN | RS485 Transmission Setting | | |
| IDNO | Set ModBus Communication Address | 0~255 | 255 |
| BPS | Set ModBus Transmission Rate (Baud Rate) | more | 9600 |
| 600 | 600 Baud | 600 | |
| 1200 | 1200 Baud | 1200 | |
| 2400 | 2400 Baud | 2400 | |
| 4800 | 4800 Baud | 4800 | |
| 9600 | 9600 Baud | 9600 | |
| 144G | 14400 Baud | 14400 | |
| 192G | 19200 Baud | 19200 | |
| STYL | Set Transmission Style | more | 8N1 |
| 8N1 | 8 Byte, No Parity, 1 Stop Bit | 8N1 | |
| 8N2 | 8 Byte, No Parity, 2 Stop Bits | 8N2 | |
| 8O1 | 8 Byte, Odd Parity, 1 Stop Bit | 8O1 | |
| 8E1 | 8 Byte, Even Parity, 1 Stop Bit | 8E1 | |
| FORN | Set Transmission Mode | more | HEX |
| HEX | RTU Mode | HEX | |
| ASCI | ASCII Mode | ASCII | |
| TOUT | Time Out | 100~9999mS | 300mS |

# 11. Program Settings Flowchart

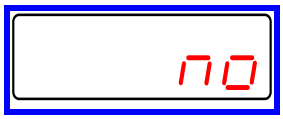
a. Only available for PM-2430, choose CH 1 or CH 2.

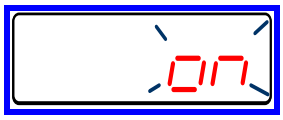
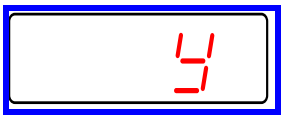
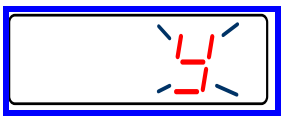
b. SETT is only available with TC & RTD module, and SCAL is not available.

c. * Non-linearity function and input settings are optional.

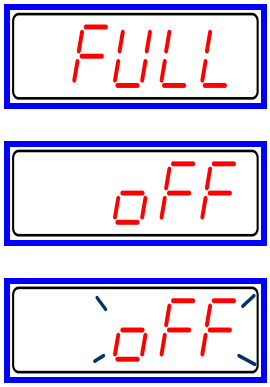
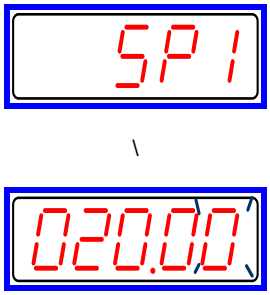
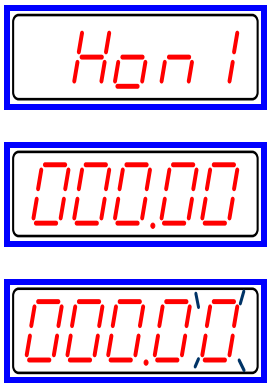
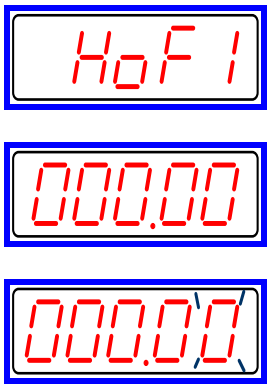


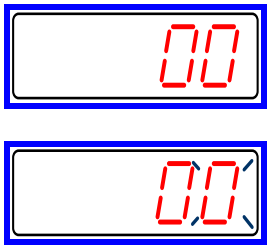
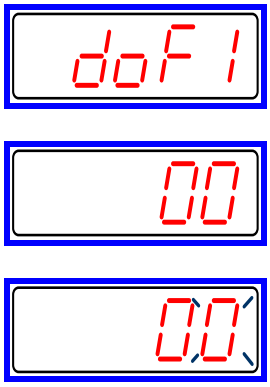
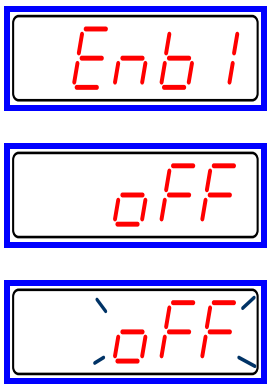
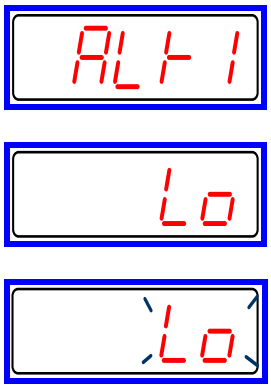
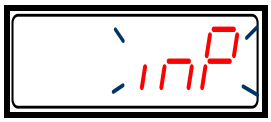
# 12. Operation Procedure

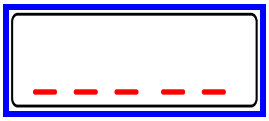
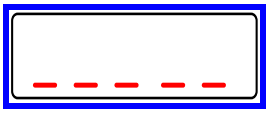
| Step | Function | Symbols Display | Note |
|---|---|---|---|
| 1. | Please make sure product specification and wirings are correct, then operate the controller via 20~250Vac/Vdc power source. | | PM-1530-W example |
| 2. | Start up logo: FINE |  | |
| | Software version: A-01 as indicated |  | |
| | Entry to monitoring screen:<br>Indication without any setting |  | If INP is 4-20mA、1-5V、2-10V, indication will be -25.00. |
| 3. | **Device Parameter Protected by User Code** | | |
| | 3-1<br>Press ENT key under monitoring screen，and password is required for entry. The controller indicates PASS/no. |  <br>  | |
| | 3-2<br>Press SHT key，and the numeric flashes. Adjust the numeric by Up、Down key. Then you can press SHT key to switch to another numeric position. |  | User code default is 4607. Indicated number is user code +1234. |
| | 3-3<br>After setting is completed, press ENT key to save data. Now the device indicates PASS/YES. |  <br>  | |
| 4. | **SETT : Settings for TEMP，TYPE，UNIT** | | |
| | 4-1<br>Press ENT key for entry, and select “SETT” mode. |  | |

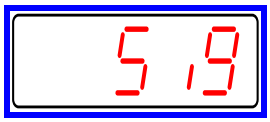
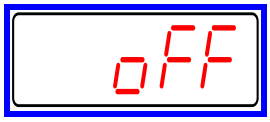
| | | | |
|---|---|---|---|
| | 4-2<br>Press SHT key for entry, and press SHT key again. The indicator “TEMP” flashes quickly. Us e Up、Down key select the sub-menu, and press ENT key after selection. |  <br>  <br>  | TEMP is display for indoor temperature.<br>(Default is non-display for indoor temperature.) |
| | 4-3<br>Press ENT key, and select “TYPE” mode, which shows current setting. Press SHT key for entry, and use UP, DOWN to adjust setting. P ress ENT key to save data. |  <br>  <br>  | TTYPE is for temperature selections - K、J、T、E、R、S、B、N、PT types. (Default is K type). When you use K、J、T、E、R、S、B、N types, please set INP value as 0-20. For PT type, INP value has to be 200I. |
| | 4-4<br>Press ENT key, and choose “UNIT” mode which shows current setting. Press SHT key for entry, and use UP, DOWN to adjust setting. P ress ENT key to save data. |  <br>  <br>  | UNIT is temperature unit selection for ℃ or ° F (Default is ℃) |

| | | | |
|---|---|---|---|
| | **SCAL ：Settings for DCPT，SCH，SCL** | | |
| | 5-1<br>Press ENT key, and select “SCAL” mode. |  | |
| | 5-2<br>Press SHT key for entry to “DCPT”. Press SHT key again, the numeric on the indicator starts to flash quickly. Use Up、Down key to adjust the setting, and press ENT key to save data after setting. |  <br>  <br>  | Dot setting range is 0~4. |
| **5.** | 5-3<br>Press SHT key to enter full scale setting “SCH”. The indicator starts to flash quickly. U se Up、Down key to adjust the setting, and press ENT key to save data after setting. |  <br>  <br>  | SCH setting range is -19999~99999. |
| | 5-4<br>Press SHT key to enter zero scale setting “SCL”. The indicator starts to flash quickly. U se Up、Down key to adjust the setting, and press ENT key to save data after setting. |  <br>  <br>  | SCL setting range is -19999~99999. |
| **6.** | **SETP：Settings for FULL、SP、HON、HOF、DON、DOF、ENB、ALR** | | |
| | 6-1<br>Press ENT key, and select “SETP” mode. |  | FULL setting OFF:<br>SP1~SP4→ALR1~ALR4<br>FULL setting ON: |

| | | | |
|---|---|---|---|
| | 6-2<br>Press ENT key, the indicator “FULL” flashes quickly and shows current setting. Press SHT key for entry, and use UP, DOWN to adjust setting. Press ENT key to save data. |  | SP1~SP4<br>→HON1~HON4<br>→HOF1~HOF4<br>→DON1~DON4<br>→DOF1~DOF4<br>→ENB1~ENB4<br>→ALR1~ALR4 |
| | 6-3<br>Press SHT key, and enter to SP1~SP4 relay contact settings. Use Up、Down key to select the numeric, then press SHT key to switch numeric position. Use Up、Down to adjust numeric setting. Press ENT key to save data. |  | SP1~SP4<br>Relay contact setting<br>range : -19999~99999 |
| | 6-4<br>Press SHT key to enter HON1~HON4 hysterises high band setting. Use Up、Down key to select the numeric, then use SHT key to switch numeric position. Use Up、Down key to adjust numeric setting and pressure ENT key to save data. |  | HON1~HON6<br>Hysterises high band<br>setting range: 0~99999 |
| | 6-5<br>Press SHT key to enter HOF1~HOF4 hysterises low band setting. Use Up、Down key to select the numeric, then use SHT key to switch numeric position. Use Up、Down key to adjust numeric setting and press ENT key to save data. |  | HOF1~HOF6<br>Hysterises low band setting<br>range: 0~99999 |
| | 6-6<br>Press SHT key to enter DON1~DON4 relay response delay setting. Use Up、Down key to select the numeric, then use SHT key to switch numeric position. Use Up、 |  | DON1~DON4<br>Relay response delay<br>setting: 0~99 seconds |

| | | | |
|---|---|---|---|
| | Down key to adjust numeric setting and pressure ENT key to save data. |  | |
| | 6-7<br>Press SHT key to enter DOF1~DOF4 relay response reversion delay setting. Use Up、Down key to select the numeric, then use SHT key to switch numeric position. Use Up、Down key to adjust numeric setting and pressure ENT key to save data. |  | DOF1~DOF4<br>Relay response r eversion delay setting:<br>0~99 seconds |
| | 6-8 Press SHT key to enter relay on/off setting “ENB”. The indicator starts to flash quickly. U se Up、Down key to adjust relay setting on/off, and press ENT key to save data after setting. |  | ENB1~ENB4<br>Relay setting selection: ON / OFF |
| | 6-9 Press SHT key to enter high/low alarm setting“ALR”. The indicator starts to flash quickly. U se Up、Down key to adjust alarm setting on/off, and press ENT key to save data after setting. |  | ALR1~ALR4:<br>High /low alarm selection:<br>HI / LO |
| **7.** | **INP：Settings for ISEL，SCHI，SCLI** | | |
| | 7-1<br>Press ENT key and select “INP” mode. |  | |

| | | |
|---|---|---|
| 7-2<br>Press SHT key to enter input type selection“iSEL”. The indicator starts to flash quickly. U se Up、Down key to select input type, and press ENT key to save data after selection. |  <br>  <br>  | Input type selection:<br>0-20(mA)、4-20(mA) 、<br>200I(mA)、0-5(V) 、<br>1-5(V) 、0-10(V) 、<br>2-10(V) 、20V(V) 、<br>200V(V) 、 SPE |
| 7-3<br>Press ENT key, and select “SCHi” mode. |  <br>  | Input type selection:<br>0-20(mA)、4-20(mA) 、<br>200I(mA)、0-5(V) 、<br>1-5(V) 、0-10(V) 、<br>2-10(V) 、20V(V)<br>Be displayed on indicator. |
| 7-4<br>Press ENT key, and select “SCLi” mode. |  <br>  | Input type selection:<br>0-20(mA)、4-20(mA) 、<br>200I(mA)、0-5(V) 、<br>1-5(V) 、0-10(V) 、<br>2-10(V) 、20V(V)<br>Be displayed on indicator. |
| 7-5<br>Press SHT key and the indicator “iSEL” starts to flash quickly. Use Up、Down key to select sub-menu, and press ENT key to save data after selection. |  <br>  <br>  | Input type selection:<br>0-20(mA)、4-20(mA) 、<br>200I(mA)、0-5(V) 、<br>1-5(V) 、0-10(V) 、<br>2-10(V) 、20V(V) 、<br>200V(V) 、 SPE |
| 7-6<br>Press SHT key, and select “ SCHi” mode which flashes quickly. Use Up、Down key to set value.<br><br>Press SHT key to switch numeric position, and use Up、Down key to set value. |  <br>  | Input type “SPE” selected:<br><br>Full scale setting:<br>000.00~100.00 |

| | | | |
|---|---|---|---|
| | Press ENT key to save data after setting. |  | |
| | 7-7<br>Press SHT key, and select "SCLi" mode which flashes quickly. Use Up、Down key to set value.<br><br>Press SHT key to switch numeric position, and use Up、Down key to set value.<br>Press ENT key to save data after setting. |  <br>  <br>  | Input type "SPE" selected:<br><br>Empty scale setting:<br>000.00~100.00 |
| | **OUT：Setting for SIG** | | |
| | 8-1<br>Press ENT key, and select "OUT" mode. |  | |
| **8.** | 8-2<br>Press SHT key for entry. Press SHT key again, and the indicator "SIG" starts to flash quickly. U se Up、Down key to select sub-menu. Press ENT key to save data. |  <br>  <br>  | Output type selection:<br>0-20(mA)、4-20(mA) 、<br>20-0(mA)、20-4(mA) 、<br>0-5(V) 、1-5(V) 、<br>0-10(V) 、2-10(V) |
| | **DIRY：Settings for SRY，RY1，RY2，RY3，RY4** | | |
| | 9-1<br>Press ENT key, and select "DIRY" mode. |  | |
| **9.** | 9-2<br>Press SHT key for entry. Press SHT key again, and the indicator "SRY" starts to flash quickly. U se Up、Down key to select sub-menu. Press ENT key to save data. |  <br>  <br>  | DI:<br>Operation allowed or prohibited:<br>OFF / ON |



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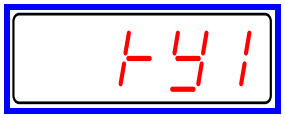
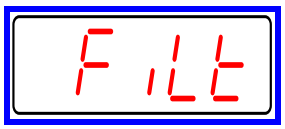
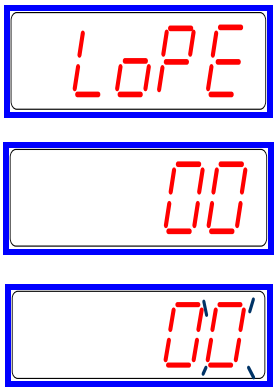
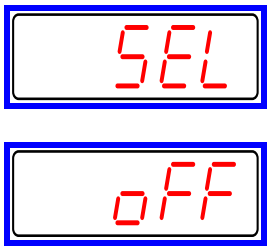
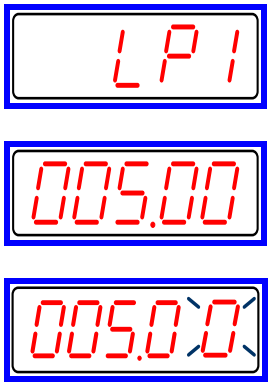
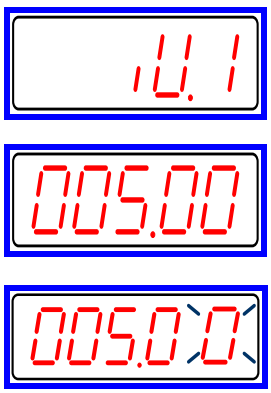
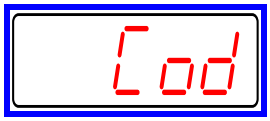
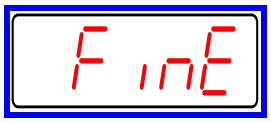
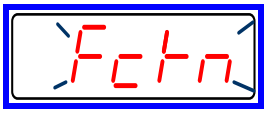
| | | | |
|---|---|---|---|
| | 9-3<br>Press SHT key, the indicator “RY” flashes quickly. U se Up、Down key to select sub-menu. Press ENT key to save data. |    | RY1~RY4<br>Relay activation prohibited / allowed selection: OFF / ON |
| **10.** | **RATE：Settings for FILT， AD24，AD12，AD06** | | |
| | 10-1<br>Press ENT key, and select “RATE” mode. |  | |
| | 10-2<br>Press SHT key for entry. Press SHT key again, and the indicator “FILT” starts to flash quickly. U se Up、Down key to select sub-menu. Press ENT key to save data. |    | FILT:<br>Anti-miscellaneous signals feature<br>OFF / ON |
| | 10-3<br>Press SHT key, the indicator “RTAD” flashes quickly. U se Up、Down key to select sub-menu. Press ENT key to save data. |    | AD24、AD12、AD06:<br>3 Reading speed selectable |
| **11.** | **LOCU : Setting for LOPE** | | |
| | 11-1<br>Press ENT key, and select “LOCU” mode. |  | LOPE:<br>Low input signal reduction:<br>0~99% |

| | | | |
|---|---|---|---|
| | 11-2<br>Press SHT key for entry. Press SHT key again, and the indicator “LOPE” starts to flash quickly. U se Up、Down key to select sub-menu. Press ENT key to save data. |  | |
| **12.** | **NOLI：Setting for non-linearity measurement** | | |
| | 12-1<br>Press ENT key, and select “NOLI” mode. |  | |
| | 12-2<br>Press SHT key for entry. Press SHT key again, and the indicator “SEL” starts to flash quickly. U se Up、Down key to select sub-menu. Press ENT key to save data. |  | |
| | 12-3<br>Press SHT key to enter dimension settings for LP1~LP20 non-linearity silo/tank measurement. Press SHT key to switch numeric position, and use Up、Down key to set value. Press ENT key to save data after setting. |  | LP1~LP20<br>Non-linearity silo/tank measurement dimension setting range:<br>000.00~100.00 |
| | 12-4<br>Press SHT key to enter input settings for IV1~IV20 non-linearity silo/tank measurement. Press SHT key to switch numeric position, and use Up、Down key to set value. Press ENT key to save data after setting. |  | IV1~IV20<br>Non-linearity silo/tank measurement input setting range:<br>000.00~100.00 |
| **13.** | **User Code Modification** | | |

| | | | |
|---|---|---|---|
| | 13-1<br>Press SHT key to enter user code setting “Cod”. Press SHT key to switch numeric position, and use Up、Down key to set value. Press ENT key to save data after setting. |    | |
| **14.** | **SYS：Setting for LOAD、FINE** | | |
| | 14-1<br>Press ENT key, and select “SYS” mode. |  | |
| | 14-2<br>Press SHT key for entry, and the indicator “LOAD” starts to flash quickly. Use Up、Down key to select sub-menu. P ress ENT key to save data. |   | LOAD:<br>Reset to Default Setting<br>NO / YES |
| | 14-3<br>Press ENT key, and select “FINE” mode. |   | FINE:<br>Company name and software version identification |
| **15.** | **Conn：Setting for RS485 Communication** | | |
| | 15-1<br>Press ENT key, and select “CONN” mode. |  | |
| | 15-2<br>Press SHT key to enter ModBus communication address setting “IDNO”. Press SHT key to switch numeric position, and use Up、Down key to set value. Press ENT key to save data after setting. |    | ModBus:<br>Communication address setting range:<br>00001~00255 |

| | | | |
|---|---|---|---|
| | 15-3<br>Press SHT key for entry, and the indicator “BPS” starts to flash quickly. Use Up、Down key to select sub-menu. P ress ENT key to save data. |    | ModBus transmission rate (baud rate) selectable :<br>600(600BPS)、<br>1200(1200BPS) 、<br>2400(2400BPS)、<br>4800(4800BPS) 、<br>9600(9600BPS) 、<br>144-(14400BPS) 、<br>192-(19200BPS) 、 |
| | 15-4<br>Press SHT key for entry, and the indicator “STYL” starts to flash quickly. Use Up、Down key to select sub-menu. P ress ENT key to save data. |    | Data transmission style selection:<br>8N1(8 Byte, No parity, 1 Stop Bit) 、<br>8N2(8 Byte, No parity, 2 Stop Bit) 、<br>8O1(8 Byte, Odd parity, 1 Stop Bit) 、<br>8E1 (8 Byte, Even parity, 1 Stop Bit) |
| | 15-5<br>Press SHT key for entry, and the indicator “ASCI” starts to flash quickly. Use Up、Down key to select sub-menu. P ress ENT key to save data. |    | Data transmission mode selection:<br>HEX (RTU Mode) 、<br>ASCI (ASCII Mode) |
| | 15-5<br>Press SHT key to enter time out setting “TOUT”. Pre ss SHT key to switch numeric position, and use Up、Down key to set value. Press ENT key to save data after setting. |    | Time out setting range:<br>100~9999 (ms) |

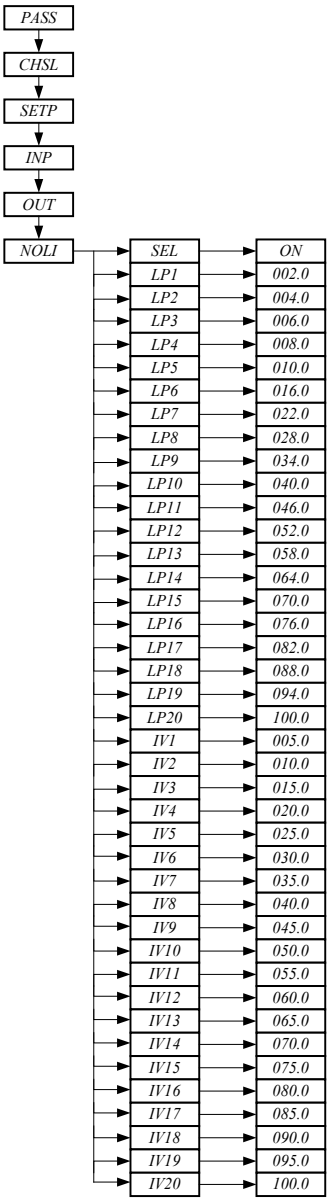
# 11. Non-Linearity Measurement Settings

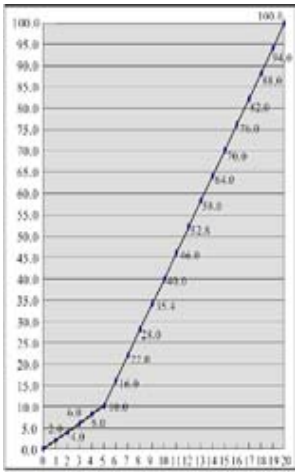
Features:

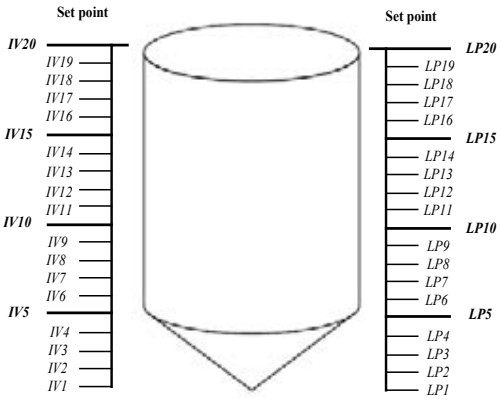
Non-linearity measurement is suitable for non-regular shaped tanks, to provide more accurate measurement than traditional device.

Configuration:

Linearization of input signals and calculated values of 20 points (LP1~LP20). Input signals can be divided into 20 points (IV1~IV20), and calculate the proportional value accordingly.



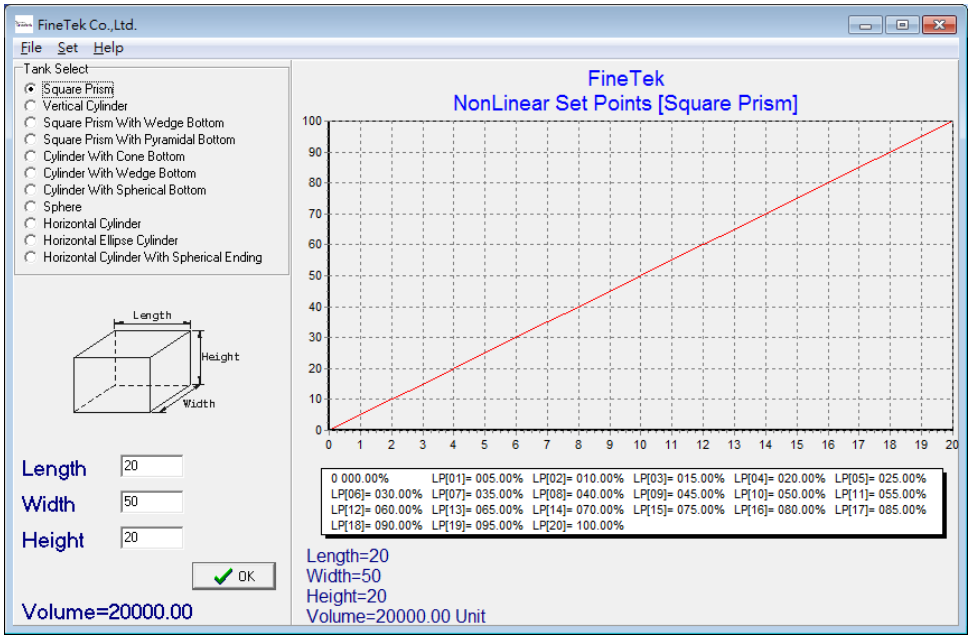



Example: Enter silo/tank height and the number of 20 setting points into the parameters of this device.

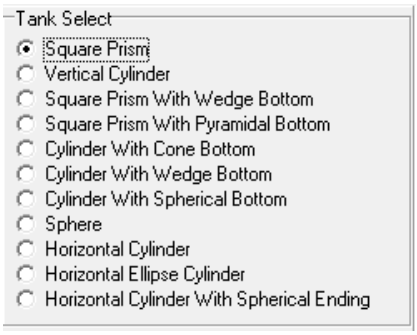
### 11.1 Non-Linearity Measuring Software Introduction

Get into " Vessel Maste r" for setting into the software.

This software has two languages versions for your choices – Chinese & English.
Setting → Language → Chinese, or Setting →Language→ English.




There are 11 kinds of non-regular silo / tank shapes for your choices. Please enter the numbers of height, width, length of your silo / tank. Then press OK to save data.




You can print out the 20 setting points – File => Print.

# 12. Communication

## 12.1 ModBus Command List

**Panel Meter ModBus Command List**

| Address | Function | Authority | Address | Function | Authority | Address | Function | Authority | Address | Function | Authority | Address | Function | Authority |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 0 | VerCode | R | | | | | | | | | | | | |
| 1 | Sp1_HB | R/W | 51 | Don3 | R/W | 101 | Ch1Lp09 | R/W | 151 | DspData2H | R | 201 | Ch2IV19 | R/W |
| 2 | Sp1_LB | R/W | 52 | Don4 | R/W | 102 | Ch1Lp10 | R/W | 152 | DspData2L | R | 202 | Ch2IV20 | R/W |
| 3 | Sp2_HB | R/W | 53 | Don5 | R/W | 103 | Ch1Lp11 | R/W | 153 | Ch2Dot | R/W | 203 | Ch2SRY | R/W |
| 4 | Sp2_LB | R/W | 54 | Don6 | R/W | 104 | Ch1Lp12 | R/W | 154 | Ch2SchH | R/W | 204 | Ry5 | R/W |
| 5 | Sp3_HB | R/W | 55 | Don7 | R/W | 105 | Ch1Lp13 | R/W | 155 | Ch2SchL | R/W | 205 | Ry6 | R/W |
| 6 | Sp3_LB | R/W | 56 | Don8 | R/W | 106 | Ch1Lp14 | R/W | 156 | Ch2SclH | R/W | 206 | Ry7 | R/W |
| 7 | Sp4_HB | R/W | 57 | Dof1 | R/W | 107 | Ch1Lp15 | R/W | 157 | Ch2SclL | R/W | 207 | Ry8 | R/W |
| 8 | Sp4_LB | R/W | 58 | Dof2 | R/W | 108 | Ch1Lp16 | R/W | 158 | Ch2Isel | R/W | 208 | Ch2FILT | R/W |
| 9 | Sp5_HB | R/W | 59 | Dof3 | R/W | 109 | Ch1Lp17 | R/W | 159 | Ch2Schi | R/W | 209 | Ch2RTAD | R/W |
| 10 | Sp5_LB | R/W | 60 | Dof4 | R/W | 110 | Ch1Lp18 | R/W | 160 | Ch2Scli | R/W | 210 | Ch2LOCU | R/W |
| 11 | Sp6_HB | R/W | 61 | Dof5 | R/W | 111 | Ch1Lp19 | R/W | 161 | Ch2Out | R/W | 211 | | |
| 12 | Sp6_LB | R/W | 62 | Dof6 | R/W | 112 | Ch1Lp20 | R/W | 162 | Ch2Sel | R/W | 212 | | |
| 13 | Sp7_HB | R/W | 63 | Dof7 | R/W | 113 | Ch1IV01 | R/W | 163 | Ch2Lp01 | R/W | 213 | | |
| 14 | Sp7_LB | R/W | 64 | Dof8 | R/W | 114 | Ch1IV02 | R/W | 164 | Ch2Lp02 | R/W | 214 | | |
| 15 | Sp8_HB | R/W | 65 | Ehb1 | R/W | 115 | Ch1IV03 | R/W | 165 | Ch2Lp03 | R/W | 215 | | |
| 16 | Sp8_LB | R/W | 66 | Ehb2 | R/W | 116 | Ch1IV04 | R/W | 166 | Ch2Lp04 | R/W | 216 | | |
| 17 | Hon1_HB | R/W | 67 | Ehb3 | R/W | 117 | Ch1IV05 | R/W | 167 | Ch2Lp05 | R/W | 217 | | |
| 18 | Hon1_LB | R/W | 68 | Ehb4 | R/W | 118 | Ch1IV06 | R/W | 168 | Ch2Lp06 | R/W | 218 | | |
| 19 | Hon2_HB | R/W | 69 | Ehb5 | R/W | 119 | Ch1IV07 | R/W | 169 | Ch2Lp07 | R/W | 219 | | |
| 20 | Hon2_LB | R/W | 70 | Ehb6 | R/W | 120 | Ch1IV08 | R/W | 170 | Ch2Lp08 | R/W | 220 | | |
| 21 | Hon3_HB | R/W | 71 | Ehb7 | R/W | 121 | Ch1IV09 | R/W | 171 | Ch2Lp09 | R/W | 221 | | |
| 22 | Hon3_LB | R/W | 72 | Ehb8 | R/W | 122 | Ch1IV10 | R/W | 172 | Ch2Lp10 | R/W | 222 | | |
| 23 | Hon4_HB | R/W | 73 | Alr1 | R/W | 123 | Ch1IV11 | R/W | 173 | Ch2Lp11 | R/W | 223 | | |
| 24 | Hon4_LB | R/W | 74 | Alr2 | R/W | 124 | Ch1IV12 | R/W | 174 | Ch2Lp12 | R/W | 224 | | |
| 25 | Hon5_HB | R/W | 75 | Alr3 | R/W | 125 | Ch1IV13 | R/W | 175 | Ch2Lp13 | R/W | 225 | | |
| 26 | Hon5_LB | R/W | 76 | Alr4 | R/W | 126 | Ch1IV14 | R/W | 176 | Ch2Lp14 | R/W | 226 | | |
| 27 | Hon6_HB | R/W | 77 | Alr5 | R/W | 127 | Ch1IV15 | R/W | 177 | Ch2Lp15 | R/W | 227 | | |
| 28 | Hon6_LB | R/W | 78 | Alr6 | R/W | 128 | Ch1IV16 | R/W | 178 | Ch2Lp16 | R/W | 228 | | |
| 29 | Hon7_HB | R/W | 79 | Alr7 | R/W | 129 | Ch1IV17 | R/W | 179 | Ch2Lp17 | R/W | 229 | | |
| 30 | Hon7_LB | R/W | 80 | Alr8 | R/W | 130 | Ch1IV18 | R/W | 180 | Ch2Lp18 | R/W | 230 | | |
| 31 | Hon8_HB | R/W | 81 | DspData1H | R | 131 | Ch1IV19 | R/W | 181 | Ch2Lp19 | R/W | 231 | | |
| 32 | Hon8_LB | R/W | 82 | DspData1L | R | 132 | Ch1IV20 | R/W | 182 | Ch2Lp20 | R/W | 232 | | |
| 33 | Hof1_HB | R/W | 83 | Ch1Dot | R/W | 133 | Ch1SRY | R/W | 183 | Ch2IV01 | R/W | 233 | | |
| 34 | Hof1_LB | R/W | 84 | Ch1SchH | R/W | 134 | Ry1 | R/W | 184 | Ch2IV02 | R/W | 234 | | |
| 35 | Hof2_HB | R/W | 85 | Ch1SchL | R/W | 135 | Ry2 | R/W | 185 | Ch2IV03 | R/W | 235 | | |
| 36 | Hof2_LB | R/W | 86 | Ch1SclH | R/W | 136 | Ry3 | R/W | 186 | Ch2IV04 | R/W | 236 | | |
| 37 | Hof3_HB | R/W | 87 | Ch1SclL | R/W | 137 | Ry4 | R/W | 187 | Ch2IV05 | R/W | 237 | | |
| 38 | Hof3_LB | R/W | 88 | Ch1Isel | R/W | 138 | Ch1FILT | R/W | 188 | Ch2IV06 | R/W | 238 | | |
| 39 | Hof4_HB | R/W | 89 | Ch1Schi | R/W | 139 | Ch1RTAD | R/W | 189 | Ch2IV07 | R/W | 239 | | |
| 40 | Hof4_LB | R/W | 90 | Ch1Scli | R/W | 140 | Ch1LOCU | R/W | 190 | Ch2IV08 | R/W | 240 | | |
| 41 | Hof5_HB | R/W | 91 | Ch1Out | R/W | 141 | | | 191 | Ch2IV09 | R/W | 241 | | |
| 42 | Hof5_LB | R/W | 92 | Ch1Sel | R/W | 142 | | | 192 | Ch2IV10 | R/W | 242 | | |
| 43 | Hof6_HB | R/W | 93 | Ch1Lp01 | R/W | 143 | | | 193 | Ch2IV11 | R/W | 243 | | |
| 44 | Hof6_LB | R/W | 94 | Ch1Lp02 | R/W | 144 | | | 194 | Ch2IV12 | R/W | 244 | | |
| 45 | Hof7_HB | R/W | 95 | Ch1Lp03 | R/W | 145 | | | 195 | Ch2IV13 | R/W | 245 | | |
| 46 | Hof7_LB | R/W | 96 | Ch1Lp04 | R/W | 146 | | | 196 | Ch2IV14 | R/W | 246 | | |
| 47 | Hof8_HB | R/W | 97 | Ch1Lp05 | R/W | 147 | | | 197 | Ch2IV15 | R/W | 247 | | |
| 48 | Hof8_LB | R/W | 98 | Ch1Lp06 | R/W | 148 | | | 198 | Ch2IV16 | R/W | 248 | | |
| 49 | Don1 | R/W | 99 | Ch1Lp07 | R/W | 149 | | | 199 | Ch2IV17 | R/W | 249 | | |
| 50 | Don2 | R/W | 100 | Ch1Lp08 | R/W | 150 | | | 200 | Ch2IV18 | R/W | 250 | | |

## 12.2 Communication Parameter

| Address | VerCode | Function | Authority |
|---|---|---|---|
| 00 H | | | |
| 01 H | Sp1H | SP1 Set point value, High setting ranges: -1 ~ 9 | R/W |
| 02 H | Sp1L | SP1 Set point value, Low setting ranges: -1999 ~ 9999 | R/W |
| 03 H | Sp2H | SP2 Set point value, High setting ranges: -1 ~ 9 | R/W |
| 04 H | Sp2L | SP2 Set point value, Low setting ranges: -1999 ~ 9999 | R/W |
| 05 H | Sp3H | SP3 Set point value, High setting ranges: -1 ~ 9 | R/W |
| 06 H | Sp3L | SP3 Set point value, Low setting ranges: -1999 ~ 9999 | R/W |
| 07 H | Sp4H | SP4 Set point value, High setting ranges: -1 ~ 9 | R/W |
| 08 H | Sp4L | SP4 Set point value, Low setting ranges: -1999 ~ 9999 | R/W |
| 09 H | Sp5H | SP5 Set point value, High setting ranges: -1 ~ 9 | R/W |
| 10 H | Sp5L | SP5 Set point value, Low setting ranges: -1999 ~ 9999 | R/W |
| 11 H | Sp6H | SP6 Set point value, High setting ranges: -1 ~ 9 | R/W |
| 12 H | Sp6L | SP6 Set point value, Low setting ranges: -1999 ~ 9999 | R/W |
| 13 H | Sp7H | SP7 Set point value, High setting ranges: -1 ~ 9 | R/W |
| 14 H | Sp7L | SP7 Set point value, Low setting ranges: -1999 ~ 9999 | R/W |
| 15 H | Sp8H | SP8 Set point value, High setting ranges: -1 ~ 9 | R/W |
| 16H | Sp8L | SP8 Set point value, Low setting ranges: -1999 ~ 9999 | R/W |
| 17 H | Hon1H | SP1 Hysterises High Band, High setting ranges: 0 ~ 9 | R/W |
| 18H | Hon1L | SP1 Hysterises High Band, Low setting ranges: 0 ~ 9999 | R/W |
| 19H | Hon2H | SP2 Hysterises High Band, High setting ranges: 0 ~ 9 | R/W |
| 20H | Hon2L | SP2 Hysterises High Band, Low setting ranges: 0 ~ 9999 | R/W |
| 21H | Hon3H | SP3 Hysterises High Band, High setting ranges: 0 ~ 9 | R/W |
| 22H | Hon3L | SP3 Hysterises High Band, Low setting ranges: 0 ~ 9999 | R/W |
| 23H | Hon4H | SP4 Hysterises High Band, High setting ranges: 0 ~ 9 | R/W |
| 24H | Hon4L | SP4 Hysterises High Band, Low setting ranges: 0 ~ 9999 | R/W |
| 25H | Hon5H | SP5 Hysterises High Band, High setting ranges: 0 ~ 9 | R/W |
| 26H | Hon5L | SP5 Hysterises High Band, Low setting ranges: 0 ~ 9999 | R/W |
| 27H | Hon6H | SP6 Hysterises High Band, High setting ranges: 0 ~ 9 | R/W |
| 28H | Hon6L | SP6 Hysterises High Band, Low setting ranges: 0 ~ 9999 | R/W |
| 29H | Hon7H | SP7 Hysterises High Band, High setting ranges: 0 ~ 9 | R/W |
| 30H | Hon7L | SP7 Hysterises High Band, Low setting ranges: 0 ~ 9999 | R/W |
| 31H | Hon8H | SP8 Hysterises High Band, High setting ranges: 0 ~ 9 | R/W |
| 32H | Hon8L | SP8 Hysterises High Band, Low setting ranges: 0 ~ 9999 | R/W |
| 33H | Hof1H | SP1 Hysterises Low Band, High setting ranges: 0 ~ 9 | R/W |
| 34H | Hof1L | SP1 Hysterises Low Band, Low setting ranges: 0 ~ 9999 | R/W |
| 35H | Hof2H | SP2 Hysterises Low Band, High setting ranges: 0 ~ 9 | R/W |
| 36H | Hof2L | SP2 Hysterises Low Band, Low setting ranges: 0 ~ 9999 | R/W |
| 37H | Hof3H | SP3 Hysterises Low Band, High setting ranges: 0 ~ 9 | R/W |
| 38H | Hof3L | SP3 Hysterises Low Band, Low setting ranges: 0 ~ 9999 | R/W |
| 39H | Hof4H | SP4 Hysterises Low Band, High setting ranges: 0 ~ 9 | R/W |
| 40H | Hof4L | SP4 Hysterises Low Band, Low setting ranges: 0 ~ 9999 | R/W |
| 41H | Hof5H | SP5 Hysterises Low Band, High setting ranges: 0 ~ 9 | R/W |
| 42H | Hof5L | SP5 Hysterises Low Band, Low setting ranges: 0 ~ 9999 | R/W |
| 43H | Hof6H | SP6 Hysterises Low Band, High setting ranges: 0 ~ 9 | R/W |
| 44H | Hof6L | SP6 Hysterises Low Band, Low setting ranges: 0 ~ 9999 | R/W |
| 45H | Hof7H | SP7 Hysterises Low Band, High setting ranges: 0 ~ 9 | R/W |
| 46H | Hof7L | SP7 Hysterises Low Band, Low setting ranges: 0 ~ 9999 | R/W |
| 47H | Hof8H | SP8 Hysterises Low Band, High setting ranges: 0 ~ 9 | R/W |
| 48H | Hof8L | SP8 Hysterises Low Band, Low setting ranges: 0 ~ 9999 | R/W |

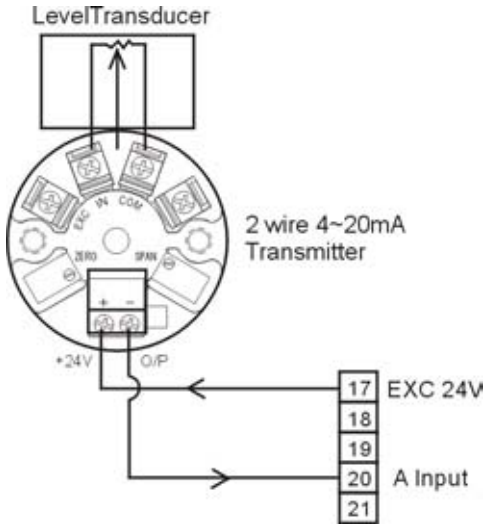
| | | | |
|---|---|---|---|
| 49H | Don1 | SP1 Relay Response Delay Time, Setting ranges: 0 ~ 99 | R/W |
| 50H | Don2 | SP2 Relay Response Delay Time, Setting ranges: 0 ~ 99 | R/W |
| 51H | Don3 | SP3 Relay Response Delay Time, Setting ranges: 0 ~ 99 | R/W |
| 52H | Don4 | SP4 Relay Response Delay Time, Setting ranges: 0 ~ 99 | R/W |
| 53H | Don5 | SP5 Relay Response Delay Time, Setting ranges: 0 ~ 99 | R/W |
| 54H | Don6 | SP6 Relay Response Delay Time, Setting ranges: 0 ~ 99 | R/W |
| 55H | Don7 | SP7 Relay Response Delay Time, Setting ranges: 0 ~ 99 | R/W |
| 56H | Don8 | SP8 Relay Response Delay Time, Setting ranges: 0 ~ 99 | R/W |
| 57H | Dof1 | SP1 Relay Response Reversion Delay Time, Setting ranges: 0 ~ 99 | R/W |
| 58H | Dof2 | SP2 Relay Response Reversion Delay Time, Setting ranges: 0 ~ 99 | R/W |
| 59H | Dof3 | SP3 Relay Response Reversion Delay Time, Setting ranges: 0 ~ 99 | R/W |
| 60H | Dof4 | SP4 Relay Response Reversion Delay Time, Setting ranges: 0 ~ 99 | R/W |
| 61H | Dof5 | SP5 Relay Response Reversion Delay Time, Setting ranges: 0 ~ 99 | R/W |
| 62H | Dof6 | SP6 Relay Response Reversion Delay Time, Setting ranges: 0 ~ 99 | R/W |
| 63H | Dof7 | SP7 Relay Response Reversion Delay Time, Setting ranges: 0 ~ 99 | R/W |
| 64H | Dof8 | SP8 Relay Response Reversion Delay Time, Setting ranges: 0 ~ 99 | R/W |
| 65H | Enb1 | SP1 Relay On (1) /Off (0) Selection | R/W |
| 66H | Enb2 | SP2 Relay On (1) /Off (0) Selection | R/W |
| 67H | Enb3 | SP3 Relay On (1) /Off (0) Selection | R/W |
| 68H | Enb4 | SP4 Relay On (1) /Off (0) Selection | R/W |
| 69H | Enb5 | SP5 Relay On (1) /Off (0) Selection | R/W |
| 70H | Enb6 | SP6 Relay On (1) /Off (0) Selection | R/W |
| 71H | Enb7 | SP7 Relay On (1) /Off (0) Selection | R/W |
| 72H | Enb8 | SP8 Relay On (1) /Off (0) Selection | R/W |
| 73H | Alr1 | SP1 Hi( 1 ) / Lo( 0 ) Alarm Selection | R/W |
| 74H | Alr2 | SP2 Hi( 1 ) / Lo( 0 ) Alarm Selection | R/W |
| 75H | Alr3 | SP3 Hi( 1 ) / Lo( 0 ) Alarm Selection | R/W |
| 76H | Alr4 | SP4 Hi( 1 ) / Lo( 0 ) Alarm Selection | R/W |
| 77H | Alr5 | SP5 Hi( 1 ) / Lo( 0 ) Alarm Selection | R/W |
| 78H | Alr6 | SP6 Hi( 1 ) / Lo( 0 ) Alarm Selection | R/W |
| 79H | Alr7 | SP7 Hi( 1 ) / Lo( 0 ) Alarm Selection | R/W |
| 80H | Alr8 | SP8 Hi( 1 ) / Lo( 0 ) Alarm Selection | R/W |
| 81H | DspData1H | The First Decimal Display (-1~9) | R |
| 82H | DspData1L | The Second ~ FiFth Decimal Display (-1999~9999) | R |
| 83H | Ch1Dot | Decimal point setting range: 0 ~ 4 | R/W |
| 84H | Ch1SchH | Full scale setting, the first decimal setting (-1~9) | R/W |
| 85H | Ch1SchL | Full scale setting, second ~ fifth decimal setting (-1999~9999) | R/W |
| 86H | Ch1SclH | Zore scale setting, the first decimal setting (-1~9) | R/W |
| 87H | Ch1SclL | Zore scale setting, second ~ fifth decimal setting (-1999~9999) | R/W |
| 88H | Ch1Isel | Input signal selections : 0~20( 0 ), 4~20( 1 ) , 200I( 2 ) , 0~5( 3 ) , 1~5( 4 ) , 0~10( 5 ) , 2~10( 6 ) , 20V( 7 ) , 200V( 8 ) , SPE( 9 ) | R/W |
| 89H | Ch1Schi | Full scale setting under IESL/SPE mode: 4 decimal setting 0~1000，5 decimal setting 0~10000 | R/W |
| 90H | Ch1Scli | Zero scale setting under IESL/SPE mode: 4 decimal setting 0~1000, 5 decimal setting 0~10000 | R/W |
| 91H | Ch1Out | Output signal selection: 0~20( 0 ) , 4~20( 1 ) , 20~0( 2 ) , 20~4( 3 ) , 0~5( 4 ) , 1~5( 5 ) , 0~10( 6 ) , 2~10( 7 ) | R/W |
| 92H | Ch1Sel | Non-linearity measurement On ( 1 ) or Off ( 0 ) | R/W |
| 93H | Ch1Lp01 | Silo/Tank setting point 1: 4 decimal 0~1000, 5 decimal 0~10000 | R/W |
| 94H | Ch1Lp02 | Silo/Tank setting point 2: 4 decimal 0~1000, 5 decimal 0~10000 | R/W |
| 95H | Ch1Lp03 | Silo/Tank setting point 3: 4 decimal 0~1000, 5 decimal 0~10000 | R/W |
| 96H | Ch1Lp04 | Silo/Tank setting point 4: 4 decimal 0~1000, 5 decimal 0~10000 | R/W |
| 97H | Ch1Lp05 | Silo/Tank setting point 5: 4 decimal 0~1000, 5 decimal 0~10000 | R/W |
| 98H | Ch1Lp06 | Silo/Tank setting point 6: 4 decimal 0~1000, 5 decimal 0~10000 | R/W |
| 99H | Ch1Lp07 | Silo/Tank setting point 7: 4 decimal 0~1000, 5 decimal 0~10000 | R/W |

| | | | |
|---|---|---|---|
| 100H | Ch1Lp08 | Silo/Tank setting point 8: 4 decimal 0~1000, 5 decimal 0~10000 | R/W |
| 101H | Ch1Lp09 | Silo/Tank setting point 9: 4 decimal 0~1000, 5 decimal 0~10000 | R/W |
| 102H | Ch1Lp10 | Silo/Tank setting point 10: 4 decimal 0~1000, 5 decimal 0~10000 | R/W |
| 103H | Ch1Lp11 | Silo/Tank setting point 11: 4 decimal 0~1000, 5 decimal 0~10000 | R/W |
| 104H | Ch1Lp12 | Silo/Tank setting point 12: 4 decimal 0~1000, 5 decimal 0~10000 | R/W |
| 105H | Ch1Lp13 | Silo/Tank setting point 13: 4 decimal 0~1000, 5 decimal 0~10000 | R/W |
| 106H | Ch1Lp14 | Silo/Tank setting point 14: 4 decimal 0~1000, 5 decimal 0~10000 | R/W |
| 107H | Ch1Lp15 | Silo/Tank setting point 15: 4 decimal 0~1000, 5 decimal 0~10000 | R/W |
| 108H | Ch1Lp16 | Silo/Tank setting point 16: 4 decimal 0~1000, 5 decimal 0~10000 | R/W |
| 109H | Ch1Lp17 | Silo/Tank setting point 17: 4 decimal 0~1000, 5 decimal 0~10000 | R/W |
| 110H | Ch1Lp18 | Silo/Tank setting point 18: 4 decimal 0~1000, 5 decimal 0~10000 | R/W |
| 111H | Ch1Lp19 | Silo/Tank setting point 19: 4 decimal 0~1000, 5 decimal 0~10000 | R/W |
| 112H | Ch1Lp20 | Silo/Tank setting point 20: 4 decimal 0~1000, 5 decimal 0~10000 | R/W |
| 113H | Ch1IV01 | Input signal setting point 1: 4 decimal 0~1000, 5 decimal 0~10000 | R/W |
| 114H | Ch1IV02 | Input signal setting point 2: 4 decimal 0~1000, 5 decimal 0~10000 | R/W |
| 115H | Ch1IV03 | Input signal setting point 3: 4 decimal 0~1000, 5 decimal 0~10000 | R/W |
| 116H | Ch1IV04 | Input signal setting point 4: 4 decimal 0~1000, 5 decimal 0~10000 | R/W |
| 117H | Ch1IV05 | Input signal setting point 5: 4 decimal 0~1000, 5 decimal 0~10000 | R/W |
| 118H | Ch1IV06 | Input signal setting point 6: 4 decimal 0~1000, 5 decimal 0~10000 | R/W |
| 119H | Ch1IV07 | Input signal setting point 7: 4 decimal 0~1000, 5 decimal 0~10000 | R/W |
| 120H | Ch1IV08 | Input signal setting point 8: 4 decimal 0~1000, 5 decimal 0~10000 | R/W |
| 121H | Ch1IV09 | Input signal setting point 9: 4 decimal 0~1000, 5 decimal 0~10000 | R/W |
| 122H | Ch1IV10 | Input signal setting point 10: 4 decimal 0~1000, 5 decimal 0~10000 | R/W |
| 123H | Ch1IV11 | Input signal setting point 11: 4 decimal 0~1000, 5 decimal 0~10000 | R/W |
| 124H | Ch1IV12 | Input signal setting point 12: 4 decimal 0~1000, 5 decimal 0~10000 | R/W |
| 125H | Ch1IV13 | Input signal setting point 13: 4 decimal 0~1000, ，5 decimal 0~10000 | R/W |
| 126H | Ch1IV14 | Input signal setting point 14: 4 decimal 0~1000, 5 decimal 0~10000 | R/W |
| 127H | Ch1IV15 | Input signal setting point 15: 4 decimal 0~1000, 5 decimal 0~10000 | R/W |
| 128H | Ch1IV16 | Input signal setting point 16: 4 decimal 0~1000, 5 decimal 0~10000 | R/W |
| 129H | Ch1IV17 | Input signal setting point 17: 4 decimal 0~1000, 5 decimal 0~10000 | R/W |
| 130H | Ch1IV18 | Input signal setting point 18: 4 decimal 0~1000, 5 decimal 0~10000 | R/W |
| 131H | Ch1IV19 | Input signal setting point 19: 4 decimal 0~1000, 5 decimal 0~10000 | R/W |
| 132H | Ch1IV20 | Input signal setting point 20: 4 decimal 0~1000, 5 decimal 0~10000 | R/W |
| 138H | Ch1FILT | Anti-miscellaneous signals feature On ( 1 ) / Off ( 0 ) | R/W |
| 139H | Ch1RTAD | AD reading rate selection AD06( 0 )、AD12( 1 )、AD24( 2 ) | R/W |
| 140H | Ch1LOCU | Input signal cut-off setting, rang: 0~99(%) | R/W |

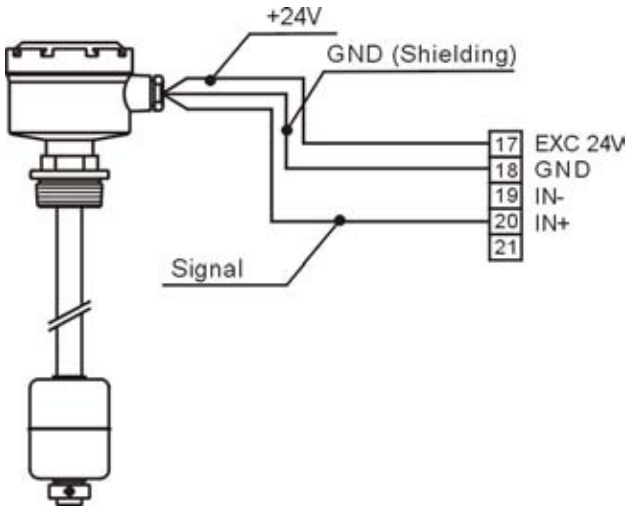
# 13. Product Application and Program Setting Examples

### 13.1 Current Input Wiring

a. 2-wire Input signal 4~20mA

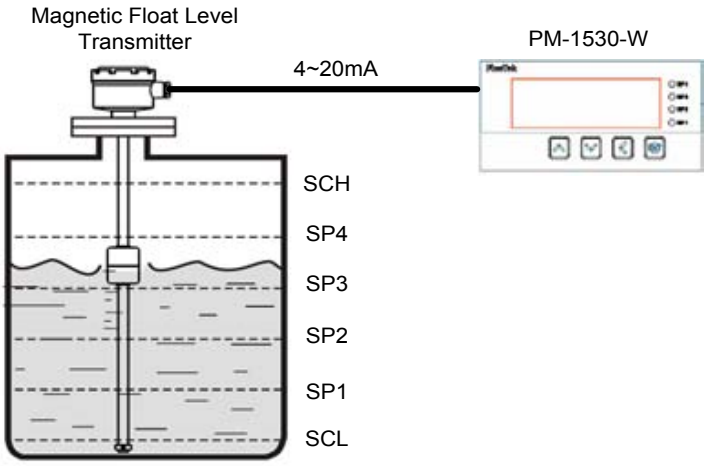



b. 4-wire Input signal 4~20mA



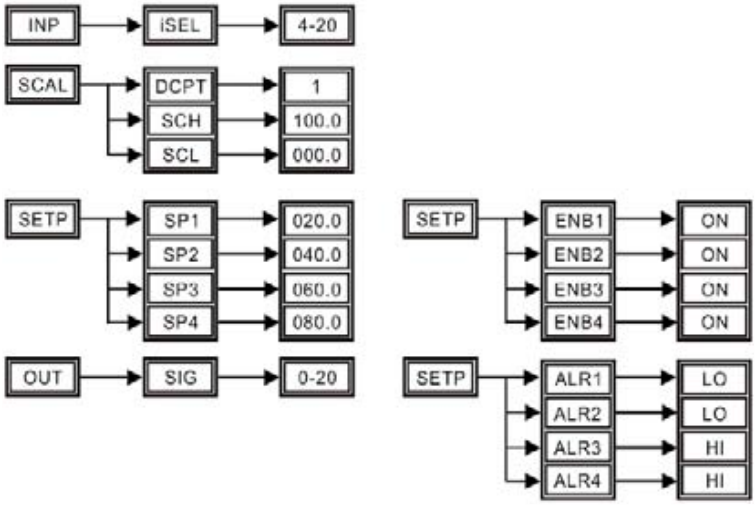
### 13.2 Program Setting Example 1

Magnetic Float Level Transmitter provides current output 4~ 20mA for liquid level from empty to full tank. The transmitter can be applied with PM-1530-W Panel Meter.




Application and Settings:
Empty tank, current output 4mA, display 000.00
Full tank, current output 20mA, display 100.00
Relay 1 (SP1) setting point at 20% of tank level --- low level alarm
Relay 2 (SP2) setting point at 40% of tank level --- low level alarm
Relay 3 (SP3) setting point at 60% of tank level --- high level alarm
Relay 4 (SP4) setting point at 80% of tank level --- high level alarm

Linearity output signal:
Empty tank: current output 4mA; Full tank: current output 20mA
Settings:



### 13.3 Program Setting Example 2

To address the problem with non-standard current input signal 4~20mA, ”SPE” mode can help you to make settings easily with the Panel Meter.

Example: Input signal 7mA~11mA, display required as 0%~100%。

Formula:

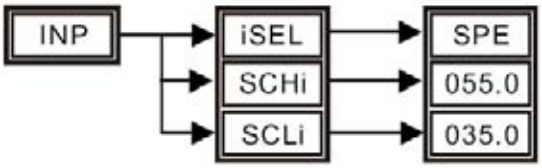
$$\text{Setting Number} = \frac{\text{Real Current Input}}{\text{SCAL Number Selected by SIM Signal}} \times 100\%$$

Setting:

Current input 7mA~11mA

SCLi= $\frac{7}{20} \times 100\% = 35\%$

SCHi= $\frac{11}{20} \times 100\% = 55\%$

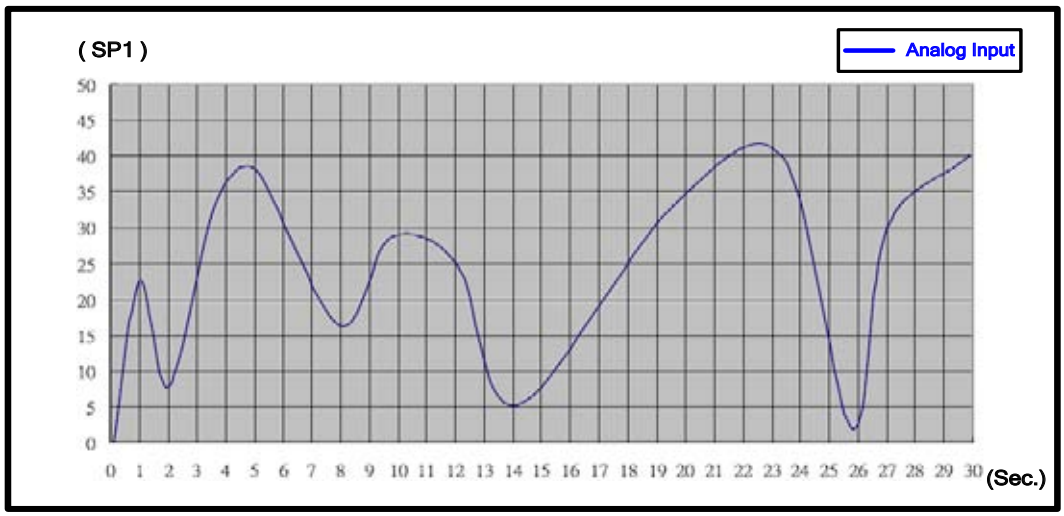


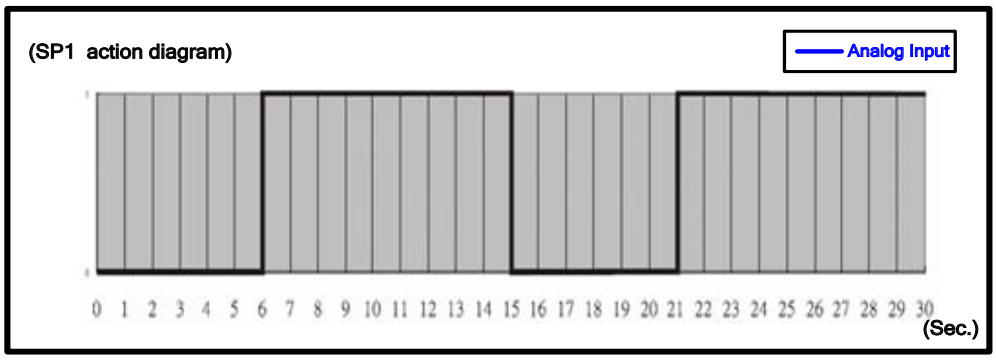

### 13.4 Program Setting Example 3

Settings:

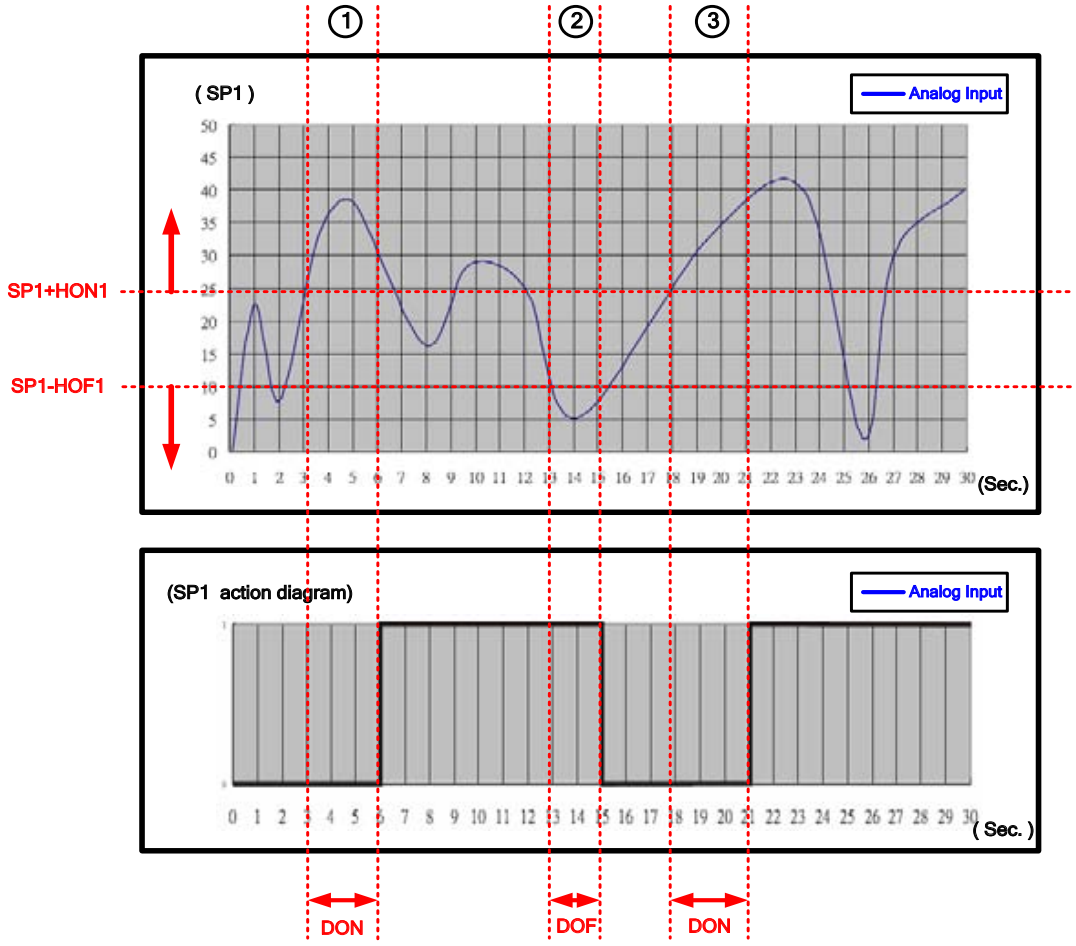
SCH=100.0 S CL=000.0 S P1=020.0 H ON1=005.0 H OF1=010.0

DON=03 DO F=02 E NB1=ON A LR1=Hi






Relay action diagram:




Examples:

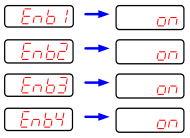
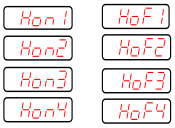
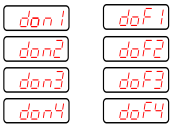
a. DON=3 means relay response delay time 3 seconds. When analog output is higher than 25 and continues for 3 seconds, SP1 Relay becomes ON.

b. DOF=2 means relay response delay time 2 seconds. At timing of 13 seconds, when analog output is lower than 10 and continues for 2 seconds, SP1 Relay becomes OFF.

c. DON=3 means relay response delay time 3 seconds. At timing of 18 seconds, when analog output is higher than 25 and continues for 3 seconds, SP1 Replay becomes ON.

# 14. Trouble Shooting and NoticeExamples

## 14.1 Fault Finding and Repair

| Cause | Cure |
|---|---|
| No display on panel | 1. Please check if power supply is connected.<br>2. Power supply should be 20~250V AC/DC 50/60Hz. |
| Relay failure – no response | 1. Please check if LED indication is normal.<br>2. Check if terminal wiring is connected correctly. |
| No display on panel LED indication & Relay failure | 1. Check operation menu:<br>  <br>“Enb”should be ON.<br>2. “Hon / Hof” should have setting values.<br>  <br>3. “Don /Dof” should have setting values.<br>  <br>4. “Alf” setting value should be the same as default value.<br>  |
| Discrepancy between analog input and panel display | Check operation menu, and check if settings are correct:<br>  |
| Display does not change even analog input is different. | Check if input signal wiring is connected well. |

### 14.2 Installation Notice

a. Attention

- Please use the device via correct power source.
- Please keep away from dangerous place with flammable air or fire.
- Please make sure terminal wirings correct.
- Luck screws on terminals tightly.

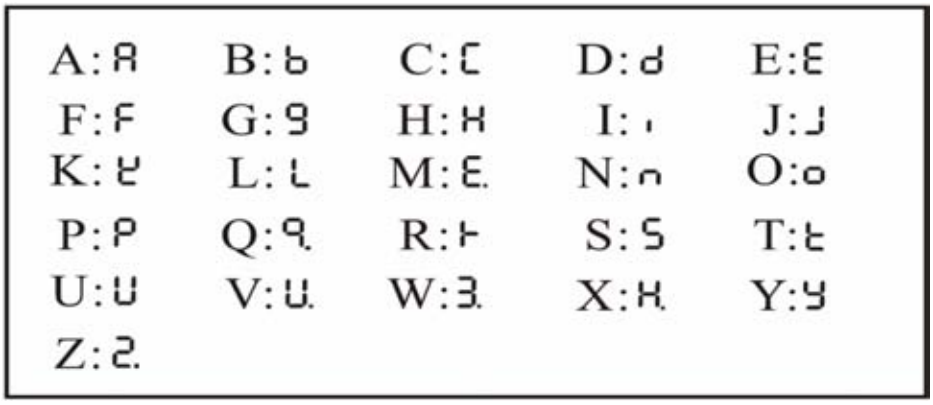
b. Installation Notice – More Care For The Following Place

- With strong vibration or impact
- Ambient temperature & humidity higher than the device's resistance
- Too much dust
- Corrosive air（especially for sulfur or ammonia）
- Outdoor with sunlight direct explore
- With high frequency equipment nearby（high frequency welding machinery etc）

c. Operation Notice

- Do not use the device in the place with ambient temperature & humidity higher than the device's resistance. The device's life time is related ambient temperature. Ambient temperature becomes higher, that shortens life time.
- If you place several panel meters closely, that will increase temperature inside these meters. Please consider to use cooling device to reduce operation temperature, such as cooling fan.
- Please use relays within the contact rating. Over contact rating will damage the relays.

### 14.3 7-Segment Display Corresponding To The Codes



### 14.4 Forgot User Code

a. When password is positive number:
   PM-1530-W default password is 4607. When display indicates 5841, please deduct 1234 and you can get the password.
b. When password is positive number:
   If you deduct number 1234 but get positive number on display, please add 1000 to get positive number. That number is password.

### 14.5 Loop Resistance Range

PM-1530-W loop resistance range is 0 ~ 500Ω. Accuracy will decrease with over resistance (DA >±0.5% F.S.). Please use the device with within this range.