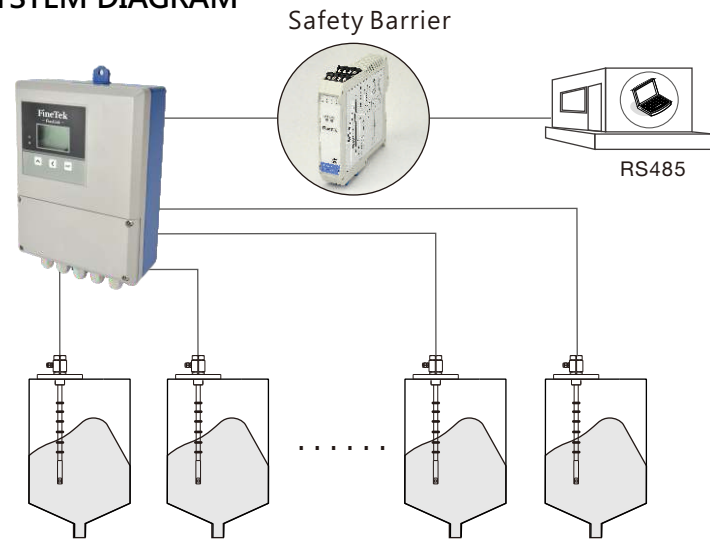
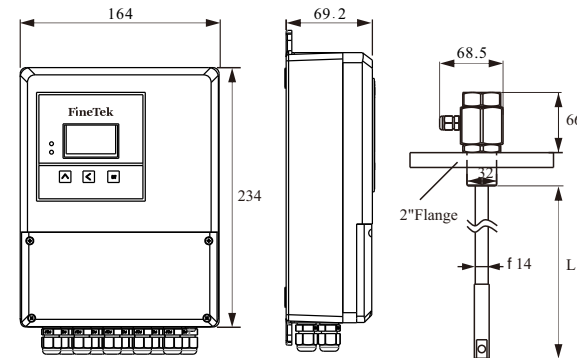


# FineLink system Hub(1 to 8) operation manual

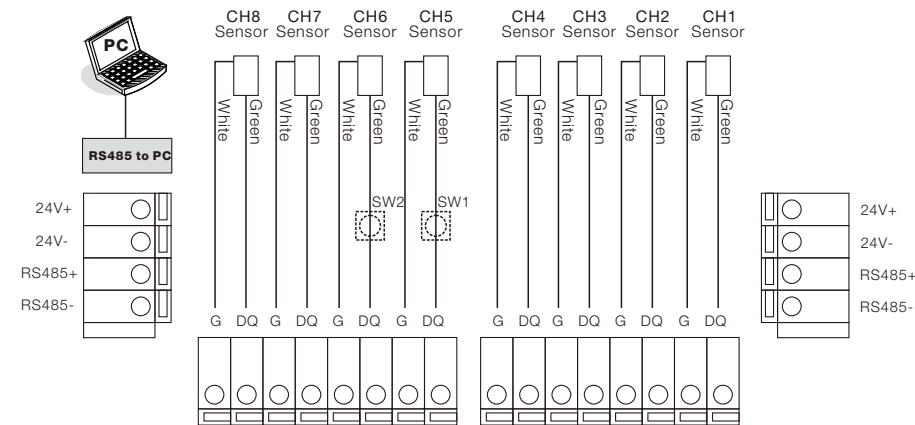
## SYSTEM DIAGRAM



## DIMENSION



## WIRING DIAGRAM



## ID position setting

- Check the power supply, RS 485 positive and negative
- Make sure the wiring is correct
- ID is in hexadecimal (base 16), must change to decimal
  - Each adjustment on Sw1 represents 1
  - Each adjustment on Sw2 represents 16
  - For example:
    - For ID# 10, adjust H: 0, L: A
    - For ID# 30, adjust H: 1, L: E
- EST100 must connect with FineLink Hub to transmit the signal.

## POWER CORD

In order to enhance the function of noise resistance, please use shield cable for better isolation when wiring.

### ⚠ WARNING!

Electrostatic charging is potentially with hazard. To avoid static electricity occurred when cleaning the case of the device, must only use wetted cloth dampened with water. Do not use any chemical cleaning liquid which is flammable.

## SPECIFICATION

Hub JMW601□□-A4

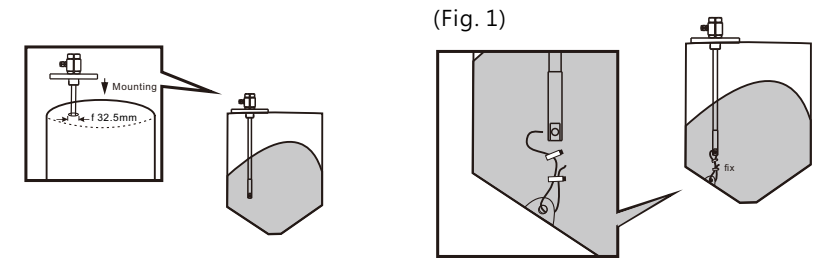
Power input	12~28Vdc
Ambient temp.	-40~+80 °C
Channels of EST110	8
Housing material	Aluminum alloy (ADC-12)
Communication interface	RS 485
RS-485 baud rate	1200~57600
Cable diameter	φ4~7
Cable Isolated Thickness	>0,5mm
IP rating	IP67
Intrinsic safety certification	ATEX II 1D Ex ia III C T80°C, T95°C Da IECEX Ex ia III C T80°C, T95°C Da (Need to match the barrier with same Exia explosion proof)

Temperature Sensor EST10000-A

Measurement range	-10~+85 °C
Resolution	0.1 °C
Accuracy	±0.5 °C
Length Max.	Max.30m
Quantity of sensors	Max.30PCS
Position of sensors	One sensor is built in every meter
Cable material	Coated with XLPE, inner ring is copper wire (Standard)
Tensile load	4000Kgf
IP rating	IP67
Intrinsic safety certification	ATEX II 1D Ex ia III C T80°C, T95°C Da IECEX Ex ia III C T80°C, T95°C Da (Need to match the barrier with same Exia explosion proof)

## INSTALLATION

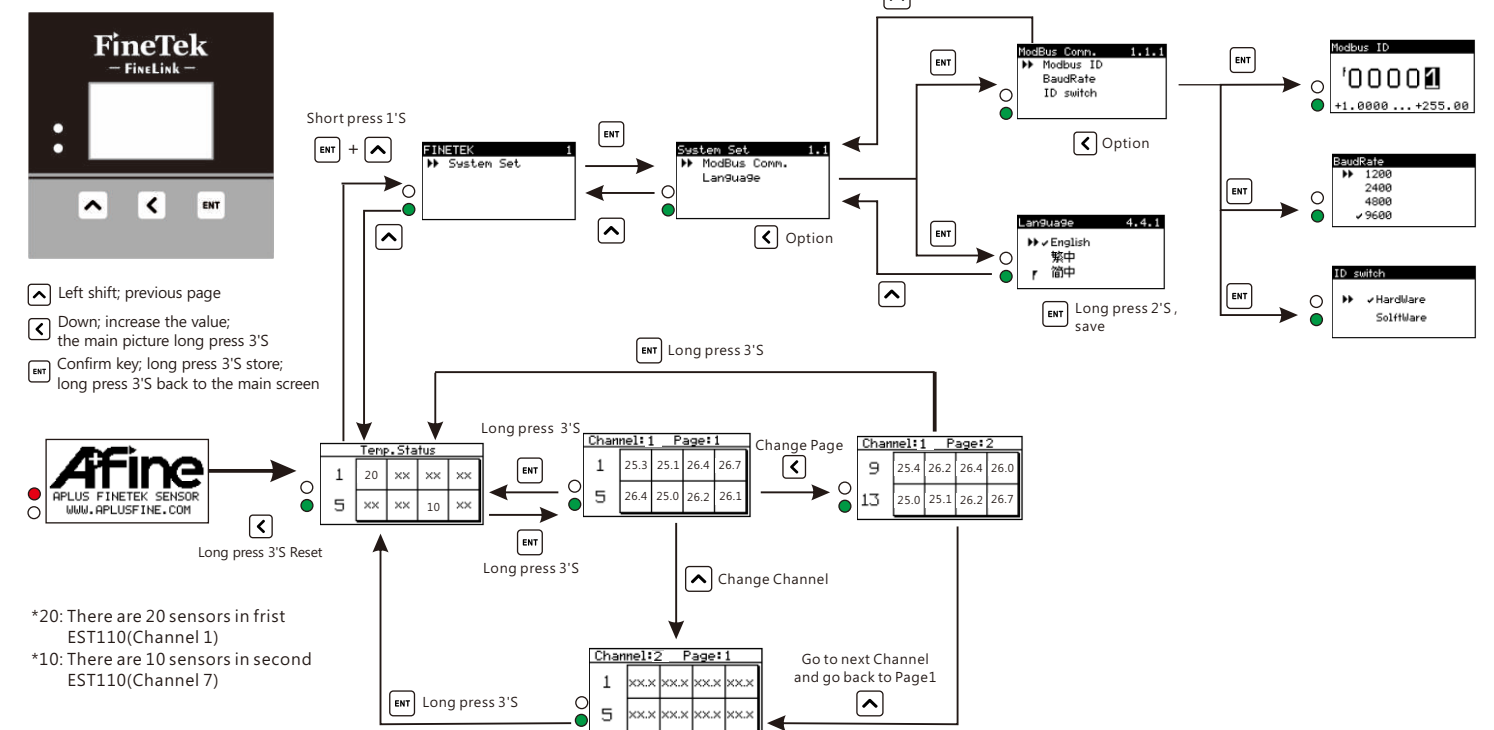
Drill a 32.5 mm hole (extending neck or flange), and then mount the device with the flange. Please ensure the O-Ring is water proof when the device is installed out-door.



## PRECAUTIONS

- EST110 measures temperature of material. Sensor can be mounted directly on the top of the silo by thread connection.
- To avoid the cable damage, please fix the cable to the bottom of tank. The tensile force does not exceed 30 kgf. (Fig. 1)
- EST110 temperature sensor can't work alone, must use it with one-wire FineLink together.
- For signal stable, FineTek recommend customer use CAT5E or CAT6 UTP cable and connect with insulated ICD connector.
- In order not to damage the temperature sensor, please don't use multi-meter's omic mode nor any mode which provide voltage source to test 1-Wire Grain Temperature Sensor.
- The total length of sensor cable and wiring cable is not longer than 100 meters.
- The enclosure of Hub has potential electrostatic charging hazard. The end-user must take precautions to ensure electrostatic charging cannot occur. Clean only with a damp cloth.
- Radial thickness of extruded insulation on one wire in the cable between Hub and temperature sensor should be more than 0.25mm.

## DISPLAY PANEL DIAGRAM



\*20: There are 20 sensors in frist EST110(Channel 1)  
\*10: There are 10 sensors in second EST110(Channel 7)

## SIMPLE TROUBLESHOOTING

Abnormal condition	Possible Causes	Solution
The display screen is not lit.	No power supply	Check the power line and repair it
	Power supply does not meet product specifications	Confirm the power supply 12 ~ 28Vdc
RS485 communication error	Wrong wiring	Make sure the wiring is correct
	Connection is incorrect	Make sure the connect ion set t ings (Compor t , ID, baud) are cor rect
EST100XX temperature can not be read	Wrong wiring	Make sure the wiring is correct

## EXPLOSION - Proof product installation precautions

1. This product must be combined with explosion-proof system that has passed explosion-proof certification to use it for explosive hazards area, the specifications of the fence must conform to the parameters in the table below and be properly wired according to the operating instructions

HUB					
Circuit	Maximum output voltage U <sub>o</sub> (V)	Maximum output current I <sub>o</sub> (mA)	Maximum output power P <sub>o</sub> (mW)	Maximum internal equivalent parameter	
				C <sub>i</sub> (nF)	L <sub>i</sub> (mH)
Power	28	100	700	0	0
RS485	8.5	90	192	0	0
Circuit	Maximum output voltage U <sub>o</sub> (V)	Maximum output current I <sub>o</sub> (mA)	Maximum output power P <sub>o</sub> (mW)	Maximum internal equivalent parameter	
				C <sub>o</sub> (μF)	L <sub>o</sub> (mH)
Power	5.88	19.8	29.11	20	10
Sensor	5.88	129	189.6	20	10

Temperature sensor					
Circuit	Maximum input voltage U <sub>o</sub> (V)	Maximum input current I <sub>o</sub> (mA)	Maximum input power P <sub>o</sub> (mW)	Maximum internal equivalent parameter	
				C <sub>i</sub> (μF)	L <sub>i</sub> (mH)
Power	5.88	129	189.6	0	0

2. The certification parameters between the explosion-proof barrier and the on-site intrinsically safe instrument are clear and comply with the following table.

Insulation gate parameters	Safety parameter matching	Intrinsic instrument parameters + Cable parameters
U <sub>o</sub>	£	U <sub>i</sub>
I <sub>o</sub>	£	I <sub>i</sub>
P <sub>o</sub>	£	P <sub>i</sub>
C <sub>o</sub>	∩	C <sub>i</sub> +C <sub>c</sub>
L <sub>o</sub>	∩	L <sub>i</sub> +L <sub>c</sub>

Among them:

- U-fence maximum output voltage
- I<sub>o</sub>-fence maximum output current
- P<sub>o</sub>-fence maximum output power
- C<sub>o</sub>-fence maximum external capacitance
- L<sub>o</sub>-fence maximum external inductance
- C<sub>c</sub>-cable distributed capacitance
- U<sub>i</sub> field instrument maximum input voltage
- I<sub>i</sub>- field instrument maximum input current
- P<sub>i</sub>- field instrument maximum input power
- U<sub>i</sub> field instrument maximum internal capacitance
- L<sub>i</sub>-field instrument maximum internal inductance
- L<sub>c</sub>-cable distribution inductance

3. When using the FineLink system, the Hub and Temperature Sensor shells should be reliably connected to the earth.
4. Customers may not replace their own internal parts, and regularly check the product shell on the explosion-proof mark to prevent damage or loss.

## MODBUS ADDRESS TABLE

Parameter name	Address		Variable type	Attributes	Initial value	Can be set value
	HEX	DEC				
Confirm the stored value	0x1280	4616	UINT16	R/W	0	1: Write
ID setting	0x1214	4628	UINT16	R/W	0	1~255
Baud rate setting	0x1215	4629	UINT32	R/W	9600	1200 · 2400 · 4800 · 9600 · 19200 · 38400 · 57600
Hardware, software control	0x1216	4631	UINT16	R/W	0	0: Hardware 1: Software
Reread it	0x1219	4634	UINT16	R/W	0	1: RESET

Parameter name	Address		Variable type	Unit	Attributes
	HEX	DEC			
Channel 1 point 1 point temperature	0x1020	4128	FLOAT32	°C	R
Channel 1 point 2 point temperature	0x1022	4130	FLOAT32	°C	R
Channel 1 point 3 point temperature	0x1024	4132	FLOAT32	°C	R
Channel 1 point 4 point temperature	0x1026	4134	FLOAT32	°C	R
Channel 1 point 5 point temperature	0x1028	4136	FLOAT32	°C	R
Channel 1 point 6 point temperature	0x102A	4138	FLOAT32	°C	R
Channel 1 point 7 point temperature	0x102C	4140	FLOAT32	°C	R
Channel 1 point 8 point temperature	0x102E	4142	FLOAT32	°C	R
Channel 1 point 9 point temperature	0x1030	4144	FLOAT32	°C	R
Channel 1 point 10 point temperature	0x1032	4146	FLOAT32	°C	R
Channel 1 point 11 point temperature	0x1034	4148	FLOAT32	°C	R
Channel 1 point 12 point temperature	0x1036	4150	FLOAT32	°C	R
Channel 1 point 13 point temperature	0x1038	4152	FLOAT32	°C	R
Channel 1 point 14 point temperature	0x103A	4154	FLOAT32	°C	R
Channel 1 point 15 point temperature	0x103C	4156	FLOAT32	°C	R
Channel 1 point 16 point temperature	0x103E	4158	FLOAT32	°C	R
Channel 1 point 17 point temperature	0x1040	4160	FLOAT32	°C	R
Channel 1 point 18 point temperature	0x1042	4162	FLOAT32	°C	R
Channel 1 point 19 point temperature	0x1044	4164	FLOAT32	°C	R
Channel 1 point 20 point temperature	0x1046	4166	FLOAT32	°C	R
Channel 1 point 21 point temperature	0x1048	4168	FLOAT32	°C	R
Channel 1 point 22 point temperature	0x104A	4170	FLOAT32	°C	R
Channel 1 point 23 point temperature	0x104C	4172	FLOAT32	°C	R
Channel 1 point 24 point temperature	0x104E	4174	FLOAT32	°C	R
Channel 1 point 25 point temperature	0x1050	4176	FLOAT32	°C	R
Channel 1 point 26 point temperature	0x1052	4178	FLOAT32	°C	R
Channel 1 point 27 point temperature	0x1054	4180	FLOAT32	°C	R
Channel 1 point 28 point temperature	0x1056	4182	FLOAT32	°C	R
Channel 1 point 29 point temperature	0x1058	4184	FLOAT32	°C	R
Channel 1 point 30 point temperature	0x105A	4186	FLOAT32	°C	R

Parameter name	Address		Variable type	Unit	Attributes
	HEX	DEC			
Channel 2 point 1 point temperature	0x105C	4188	FLOAT32	°C	R
Channel 2 point 2 point temperature	0x105E	4190	FLOAT32	°C	R
Channel 2 point 3 point temperature	0x1060	4192	FLOAT32	°C	R
Channel 2 point 4 point temperature	0x1062	4194	FLOAT32	°C	R
Channel 2 point 5 point temperature	0x1064	4196	FLOAT32	°C	R
Channel 2 point 6 point temperature	0x1066	4198	FLOAT32	°C	R
Channel 2 point 7 point temperature	0x1068	4200	FLOAT32	°C	R
Channel 2 point 8 point temperature	0x106A	4202	FLOAT32	°C	R
Channel 2 point 9 point temperature	0x106C	4204	FLOAT32	°C	R
Channel 2 point 10 point temperature	0x106E	4206	FLOAT32	°C	R
Channel 2 point 11 point temperature	0x1070	4208	FLOAT32	°C	R
Channel 2 point 12 point temperature	0x1072	4210	FLOAT32	°C	R
Channel 2 point 13 point temperature	0x1074	4212	FLOAT32	°C	R
Channel 2 point 14 point temperature	0x1076	4214	FLOAT32	°C	R
Channel 2 point 15 point temperature	0x1078	4216	FLOAT32	°C	R
Channel 2 point 16 point temperature	0x107A	4218	FLOAT32	°C	R
Channel 2 point 17 point temperature	0x107C	4220	FLOAT32	°C	R
Channel 2 point 18 point temperature	0x107E	4222	FLOAT32	°C	R
Channel 2 point 19 point temperature	0x1080	4224	FLOAT32	°C	R
Channel 2 point 20 point temperature	0x1082	4226	FLOAT32	°C	R
Channel 2 point 21 point temperature	0x1084	4228	FLOAT32	°C	R
Channel 2 point 22 point temperature	0x1086	4230	FLOAT32	°C	R
Channel 2 point 23 point temperature	0x1088	4232	FLOAT32	°C	R
Channel 2 point 24 point temperature	0x108A	4234	FLOAT32	°C	R
Channel 2 point 25 point temperature	0x108C	4236	FLOAT32	°C	R
Channel 2 point 26 point temperature	0x108E	4238	FLOAT32	°C	R
Channel 2 point 27 point temperature	0x1090	4240	FLOAT32	°C	R
Channel 2 point 28 point temperature	0x1092	4242	FLOAT32	°C	R
Channel 2 point 29 point temperature	0x1094	4244	FLOAT32	°C	R
Channel 2 point 30 point temperature	0x1096	4246	FLOAT32	°C	R

Parameter name	Address		Variable type	Unit	Attributes
	HEX	DEC			
Channel 3 point 1 point temperature	0x1098	4248	FLOAT32	°C	R
Channel 3 point 2 point temperature	0x109A	4250	FLOAT32	°C	R
Channel 3 point 3 point temperature	0x109C	4252	FLOAT32	°C	R
Channel 3 point 4 point temperature	0x109E	4254	FLOAT32	°C	R
Channel 3 point 5 point temperature	0x10A0	4256	FLOAT32	°C	R
Channel 3 point 6 point temperature	0x10A2	4258	FLOAT32	°C	R
Channel 3 point 7 point temperature	0x10A4	4260	FLOAT32	°C	R
Channel 3 point 8 point temperature	0x10A6	4262	FLOAT32	°C	R
Channel 3 point 9 point temperature	0x10A8	4264	FLOAT32	°C	R
Channel 3 point 10 point temperature	0x10AA	4266	FLOAT32	°C	R
Channel 3 point 11 point temperature	0x10AC	4268	FLOAT32	°C	R
Channel 3 point 12 point temperature	0x10AE	4270	FLOAT32	°C	R
Channel 3 point 13 point temperature	0x10B0	4272	FLOAT32	°C	R
Channel 3 point 14 point temperature	0x10B2	4274	FLOAT32	°C	R
Channel 3 point 15 point temperature	0x10B4	4276	FLOAT32	°C	R
Channel 3 point 16 point temperature	0x10B6	4278	FLOAT32	°C	R
Channel 3 point 17 point temperature	0x10B8	4280	FLOAT32	°C	R
Channel 3 point 18 point temperature	0x10BA	4282	FLOAT32	°C	R
Channel 3 point 19 point temperature	0x10BC	4284	FLOAT32	°C	R
Channel 3 point 20 point temperature	0x10BE	4286	FLOAT32	°C	R
Channel 3 point 21 point temperature	0x10C0	4288	FLOAT32	°C	R
Channel 3 point 22 point temperature	0x10C2	4290	FLOAT32	°C	R
Channel 3 point 23 point temperature	0x10C4	4292	FLOAT32	°C	R
Channel 3 point 24 point temperature	0x10C6	4294	FLOAT32	°C	R
Channel 3 point 25 point temperature	0x10C8	4296	FLOAT32	°C	R
Channel 3 point 26 point temperature	0x10CA	4298	FLOAT32	°C	R
Channel 3 point 27 point temperature	0x10CC	4300	FLOAT32	°C	R
Channel 3 point 28 point temperature	0x10CE	4302	FLOAT32	°C	R
Channel 3 point 29 point temperature	0x10D0	4304	FLOAT32	°C	R
Channel 3 point 30 point temperature	0x10D2	4306	FLOAT32	°C	R

Parameter name	Address		Variable type	Unit	Attributes
	HEX	DEC			
Channel 4 point 1 point temperature	0x10D4	4308	FLOAT32	°C	R
Channel 4 point 2 point temperature	0x10D6	4310	FLOAT32	°C	R
Channel 4 point 3 point temperature	0x10D8	4312	FLOAT32	°C	R
Channel 4 point 4 point temperature	0x10DA	4314	FLOAT32	°C	R
Channel 4 point 5 point temperature	0x10DC	4316	FLOAT32	°C	R
Channel 4 point 6 point temperature	0x10DE	4318	FLOAT32	°C	R
Channel 4 point 7 point temperature	0x10E0	4320	FLOAT32	°C	R
Channel 4 point 8 point temperature	0x10E2	4322	FLOAT32	°C	R
Channel 4 point 9 point temperature	0x10E4	4324	FLOAT32	°C	R
Channel 4 point 10 point temperature	0x10E6	4326	FLOAT32	°C	R
Channel 4 point 11 point temperature	0x10E8	4328	FLOAT32	°C	R
Channel 4 point 12 point temperature	0x10EA	4330	FLOAT32	°C	R
Channel 4 point 13 point temperature	0x10EC	4332	FLOAT32	°C	R
Channel 4 point 14 point temperature	0x10EE	4334	FLOAT32	°C	R
Channel 4 point 15 point temperature	0x10F0	4336	FLOAT32	°C	R
Channel 4 point 16 point temperature	0x10F2	4338	FLOAT32	°C	R
Channel 4 point 17 point temperature	0x10F4	4340	FLOAT32	°C	R
Channel 4 point 18 point temperature	0x10F6	4342	FLOAT32	°C	R
Channel 4 point 19 point temperature	0x10F8	4344	FLOAT32	°C	R
Channel 4 point 20 point temperature	0x10FA	4346	FLOAT32	°C	R
Channel 4 point 21 point temperature	0x10FC	4348	FLOAT32	°C	R
Channel 4 point 22 point temperature	0x10FE	4350	FLOAT32	°C	R
Channel 4 point 23 point temperature	0x1100	4352	FLOAT32	°C	R
Channel 4 point 24 point temperature	0x1102	4354	FLOAT32	°C	R
Channel 4 point 25 point temperature	0x1104	4356	FLOAT32	°C	R
Channel 4 point 26 point temperature	0x1106	4358	FLOAT32	°C	R
Channel 4 point 27 point temperature	0x1108	4360	FLOAT32	°C	R
Channel 4 point 28 point temperature	0x110A	4362	FLOAT32	°C	R
Channel 4 point 29 point temperature	0x110C	4364	FLOAT32	°C	R
Channel 4 point 30 point temperature	0x110E	4366	FLOAT32	°C	R

Parameter name	Address		Variable type	Unit	Attributes
	HEX	DEC			
Channel 5 point 1 point temperature	0x1110	4368	FLOAT32	°C	R
Channel 5 point 2 point temperature	0x1112	4370	FLOAT32	°C	R
Channel 5 point 3 point temperature	0x1114	4372	FLOAT32	°C	R
Channel 5 point 4 point temperature	0x1116	4374	FLOAT32	°C	R
Channel 5 point 5 point temperature	0x1118	4376	FLOAT32	°C	R
Channel 5 point 6 point temperature	0x111A	4378	FLOAT32	°C	R
Channel 5 point 7 point temperature	0x111C	4380	FLOAT32	°C	R
Channel 5 point 8 point temperature	0x111E	4382	FLOAT32	°C	R
Channel 5 point 9 point temperature	0x1120	4384	FLOAT32	°C	R
Channel 5 point 10 point temperature	0x1122	4386	FLOAT32	°C	R
Channel 5 point 11 point temperature	0x1124	4388	FLOAT32	°C	R
Channel 5 point 12 point temperature	0x1126	4390	FLOAT32	°C	R
Channel 5 point 13 point temperature	0x1128	4392	FLOAT32	°C	R
Channel 5 point 14 point temperature	0x112A	4394	FLOAT32	°C	R
Channel 5 point 15 point temperature	0x112C	4396	FLOAT32	°C	R
Channel 5 point 16 point temperature	0x112E	4398	FLOAT32	°C	R
Channel 5 point 17 point temperature	0x1130	4400	FLOAT32	°C	R
Channel 5 point 18 point temperature	0x1132	4402	FLOAT32	°C	R
Channel 5 point 19 point temperature	0x1134	4404	FLOAT32	°C	R
Channel 5 point 20 point temperature	0x1136	4406	FLOAT32	°C	R
Channel 5 point 21 point temperature	0x1138	4408	FLOAT32	°C	R
Channel 5 point 22 point temperature	0x113A	4410	FLOAT32	°C	R
Channel 5 point 23 point temperature	0x113C	4412	FLOAT32	°C	R
Channel 5 point 24 point temperature	0x113E	4414	FLOAT32	°C	R
Channel 5 point 25 point temperature	0x1140	4416	FLOAT32	°C	R
Channel 5 point 26 point temperature	0x1142	4418	FLOAT32	°C	R
Channel 5 point 27 point temperature	0x1144	4420	FLOAT32	°C	R
Channel 5 point 28 point temperature	0x1146	4422	FLOAT32	°C	R
Channel 5 point 29 point temperature	0x1148	4424	FLOAT32	°C	R
Channel 5 point 30 point temperature	0x114A	4426	FLOAT32	°C	R

Parameter name	Address		Variable type	Unit	Attributes
	HEX	DEC			
Channel 6 point 1 point temperature	0x114C	4428	FLOAT32	°C	R
Channel 6 point 2 point temperature	0x114E	4430	FLOAT32	°C	R
Channel 6 point 3 point temperature	0x1150	4432	FLOAT32	°C	R
Channel 6 point 4 point temperature	0x1152	4434	FLOAT32	°C	R
Channel 6 point 5 point temperature	0x1154	4436	FLOAT32	°C	R
Channel 6 point 6 point temperature	0x1156	4438	FLOAT32	°C	R
Channel 6 point 7 point temperature	0x1158	4440	FLOAT32	°C	R
Channel 6 point 8 point temperature	0x115A	4442			