



**New!!**

# **AITRONIC IIOT**

## **(INDUSTRIAL INTERNET OF THING)**

**Changing Old to Smart Machine**  
**Reducing Maintenance and Energy cost**



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# CONTENT

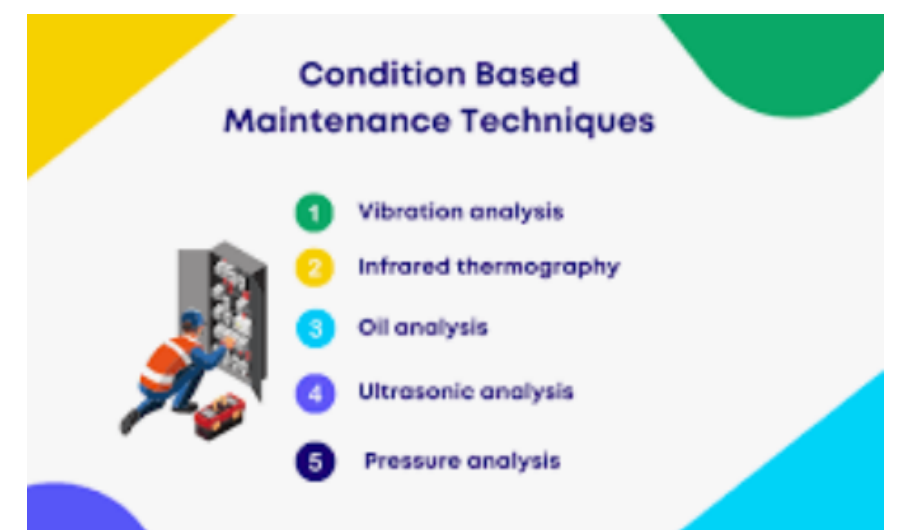
- **Benefit of IIoT**
- **Application**
- **AIT-4PT-4A**
  - › **Feature**
  - › **Specification**





# BENEFIT OF IIOT

- Changing from Break-down, preventive to Condition Base Maintenance
- Reducing maintenance costs more than 10%
- Monitoring and precaution energy consumption
- Reducing energy costs more than 15%



## APPLICATION

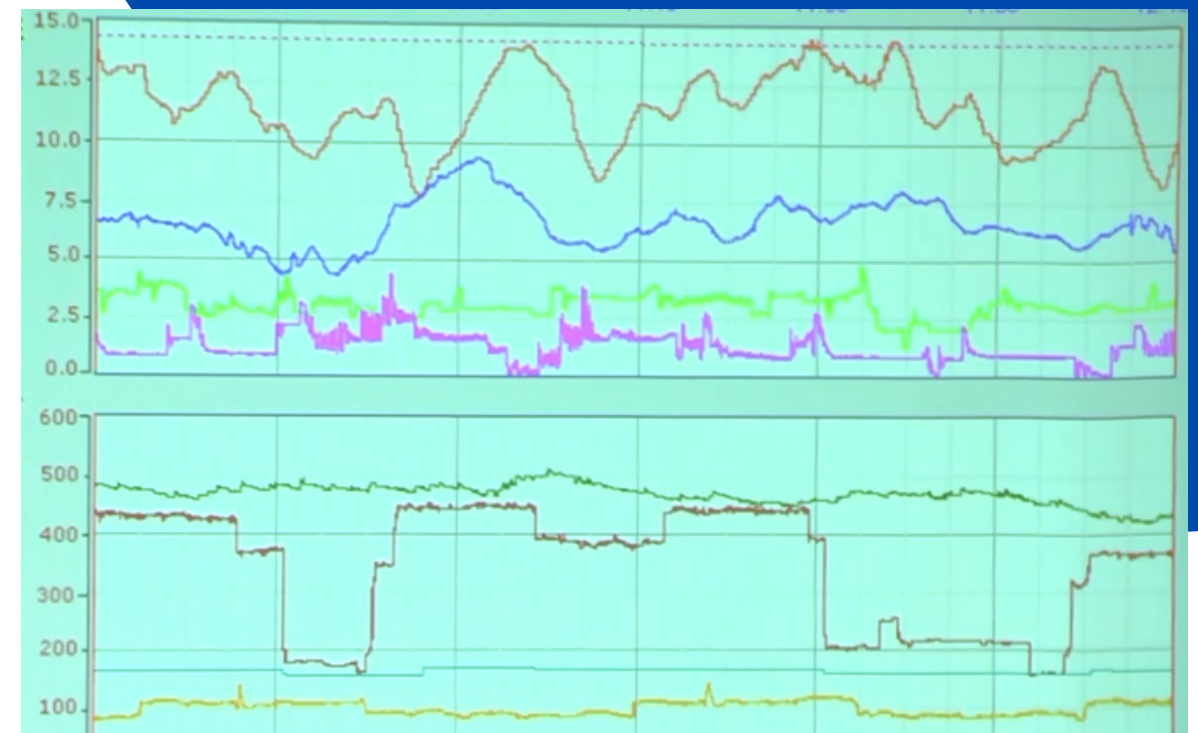
- Air Compressor and Compressed Air System
- Chiller and Chilled Water System
- Boiler and Steam System
- Air Conditioning System
- Heating and Cooling Exchanger
- Utilizes System





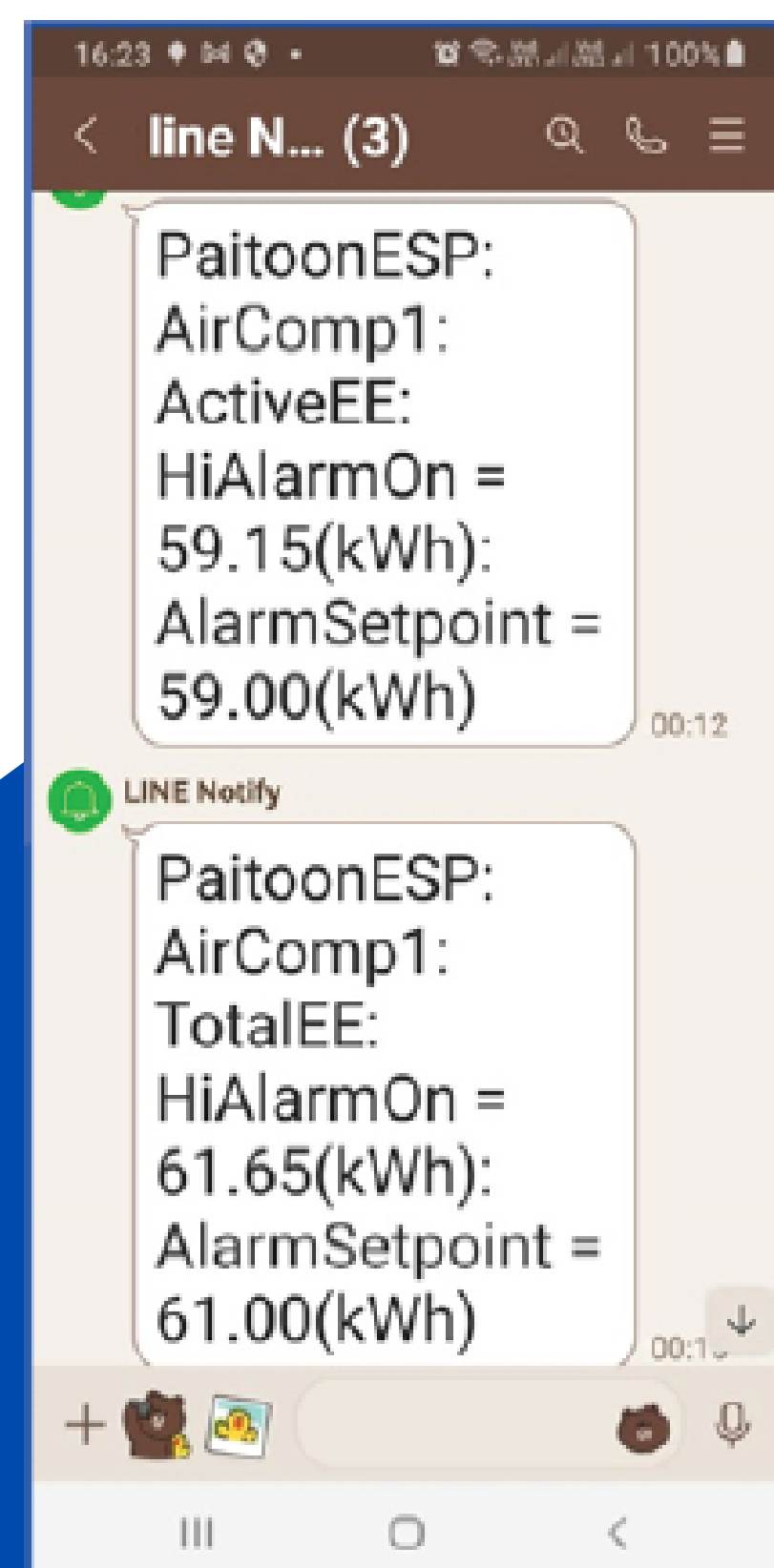
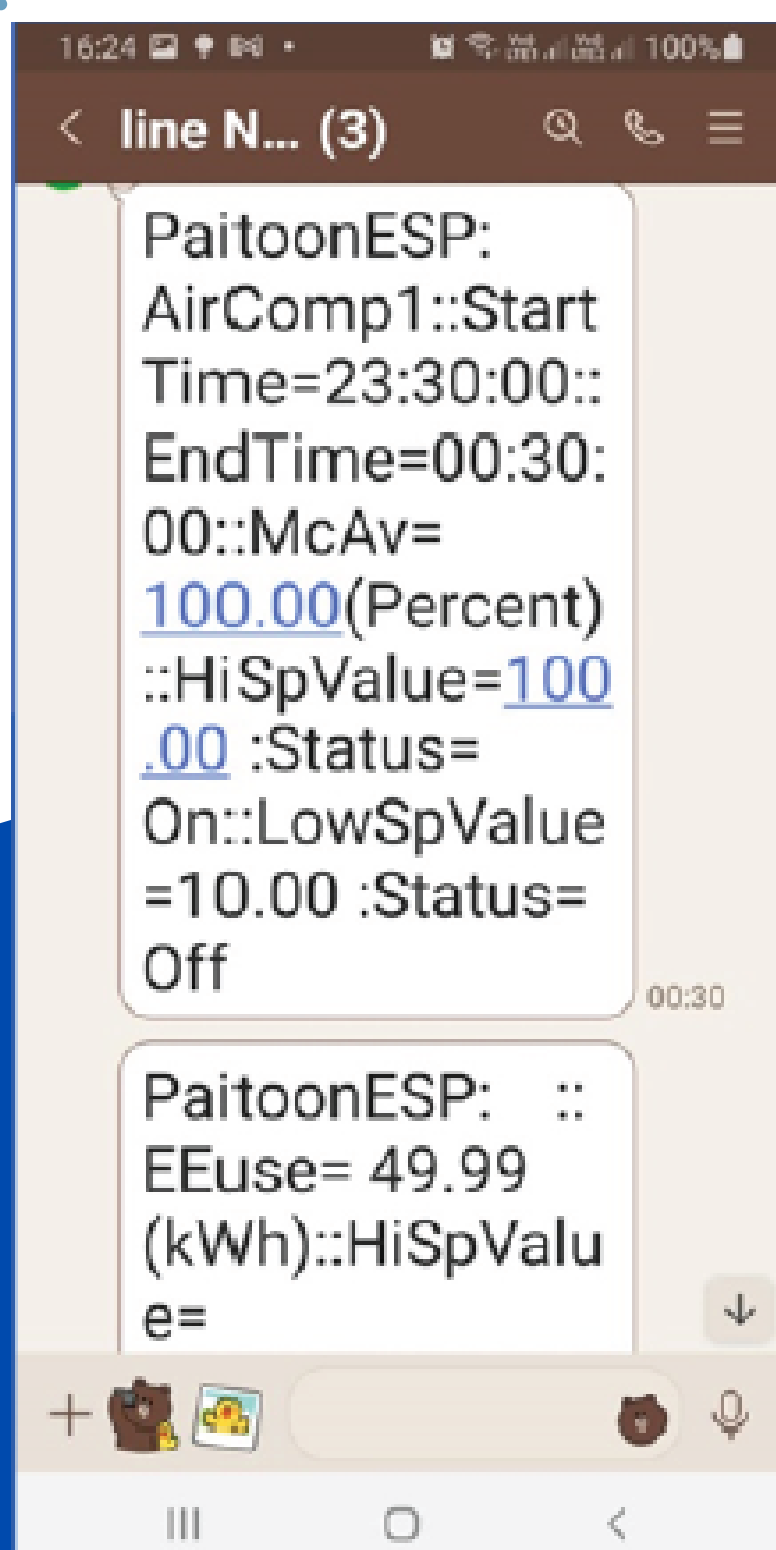
# CONDITION BASE MAINTENANCE

- ✓ Thermography analysis
- ✓ Vibration analysis
- ✓ Pressure analysis
- ✗ Ultrasonic analysis
- ✗ Oil analysis



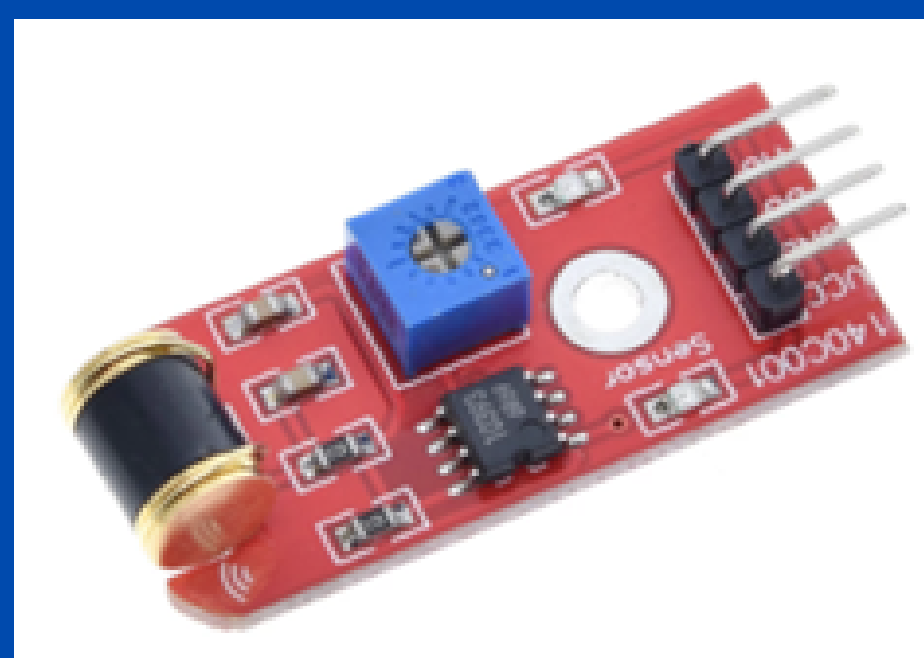
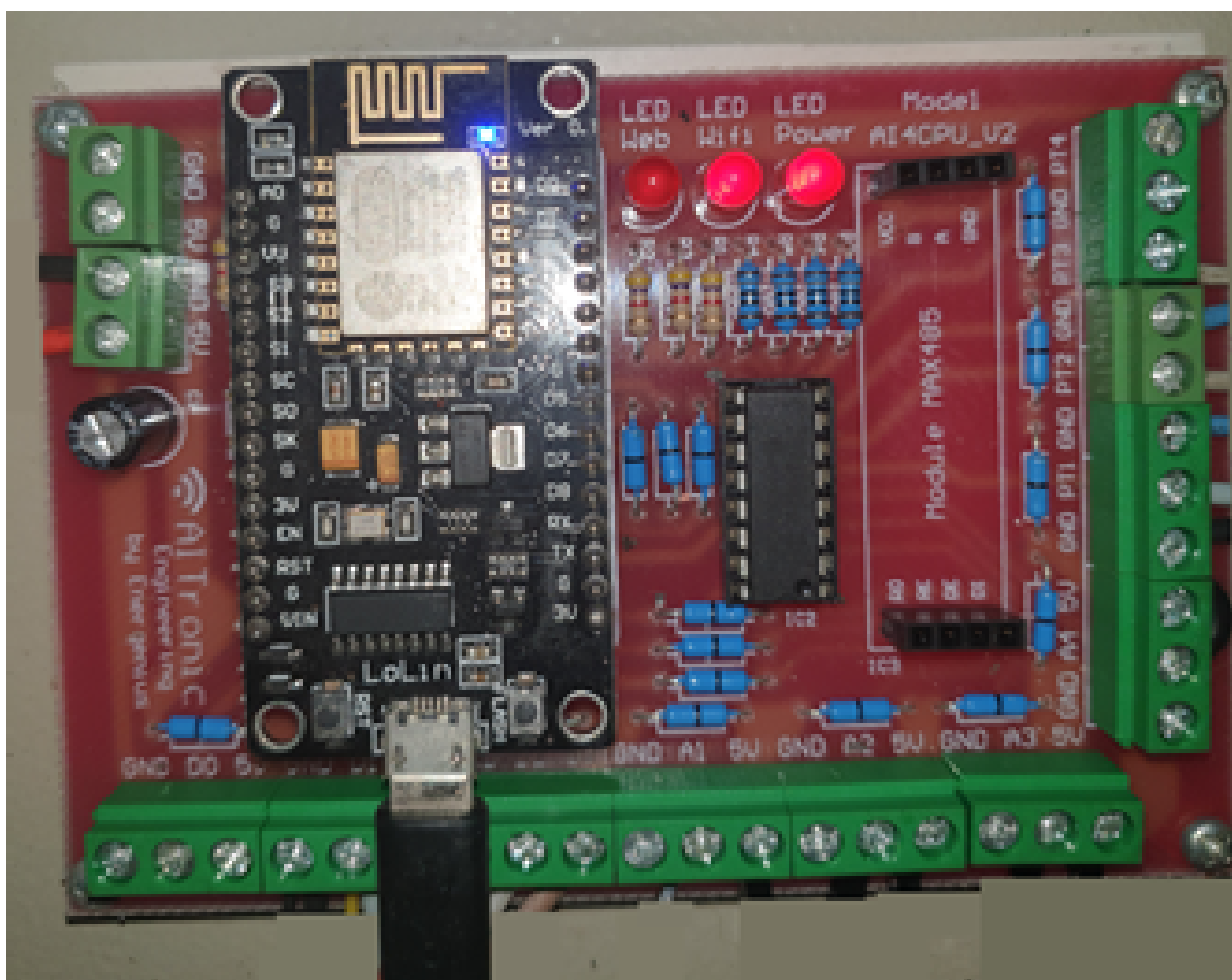
## ENERGY MONITORING AND PRECAUTION

- Shift or Daily Energy Monitoring
- Time, Shift or Daily Energy Precaution via Line Notification
- Various Energy monitors and precaution
  - › Total Machine Energy Use
  - › Active Current Energy Use
  - › Unload Energy Ratio
  - › Machine Available Ratio



# AIT-4PT-4A IIOT

- AIT-4PT-4A is a revolutionary new technology in the industry. Transforming machines into smart machines, adding innovative capabilities such as proactive maintenance, saving energy, reducing cost and greenhouse gas emissions.
- AIT-4PT-4A is an embedded CPU.
- AIT-4PT-4A can measure machine temperature (both DS18B20 type (-55-125°C) and PT100 type)
- And Measuring Current and analog values (such as pressure, vibration, gas, up to 4 sensors)



## AIT-4PT-4A IIOT FEATURE

- Measuring data and logging every minute.
- You can set
  - › temperature and temperature difference (such measure the efficiency of the heating or cooling exchanger)
  - › higher-lower alarm level and notify via LINE application and logging.
  - › current and various types of energy used can also be set alarm level and notified via LINE application.
  - › Analogue sensors (such as pressure, vibration, gas, etc.,) can also be set alarm level and notified via LINE a application

## AIT-4PT-4A IIOT SPECIFICATION

### Temperature Sensors

- DS18B20 : 4 Channels (-55 C – 125 C)
- PT100 : 4 Channels (0 C – 500 C)
- Can be set Temperature and Temperature Differential (For Heating and Cooling Exchanger Efficiency Monitoring) High-Low Alarm and send to Line Notify and data logging
- Shift or daily Average -Max-min Temperature and Occur Time Report



# AIT-4PT-4A IIOT SPECIFICATION



## Current and Analog sensors

### Current Sensor (0-100 A)

- Can be set High-Low Alarm and sent to Line Notify and data logging
- Shift or Daily Average-Max-Min Value and Occur Time Report
- Calculate Total Energy, Active Energy and set up a High-Low Alarm.
- Calculate Loading Factor (Alarm Idle Operation)
- Calculate Machine Available Rate, Unload Ratio and Alarm

	A	B	C	D	E	F	G	H	I	J	K	L	M	N	O
1	Date	Time	Temp1(C)	Temp2(C)	Temp3(C)	Temp4(C)	Temp5(C)	Temp6(C)	Temp7(C)	Temp8(C)	Current(A)	Current2(A)	Pressure(Ba)	Vibration(m/s2)	Electricity
1752	25/9/2022	4:31:20	28.44	28.69	0.25	-28.69	28.44	99.8	100	13.4	1000	222.46			
1753	25/9/2022	4:32:21	28.44	28.69	0.25	-28.69	28.44	100	100	13.4	1000	223.29			
1754	25/9/2022	4:33:22	28.44	28.69	0.25	-28.69	28.44	99.8	100	13.4	1000	224.12			
1755	25/9/2022	4:34:23	28.44	28.69	0.25	-28.69	28.44	100	100	13.36	997.07	224.96			
1756	25/9/2022	4:35:23	28.44	28.69	0.25	-28.69	28.44	99.61	100	13.4	1000	225.79			
1757	25/9/2022	4:36:24	28.44	28.69	0.25	-28.69	28.44	99.8	100	13.4	1000	226.62			
1758	25/9/2022	4:37:24	28.44	28.69	0.25	-28.69	28.44	99.71	100	13.4	1000	227.45			
1759	25/9/2022	4:38:25	28.44	28.69	0.25	-28.69	28.44	100	100	13.4	1000	228.28			
1760	25/9/2022	4:39:26	28.44	28.69	0.25	-28.69	28.44	100	100	13.4	1000	229.12			
1761	25/9/2022	4:40:26	28.44	28.69	0.25	-28.69	28.44	100	100	13.4	1000	229.95			
1762	25/9/2022	4:41:27	28.44	28.69	0.25	-28.69	28.44	100	100	13.4	1000	230.78			
1763	25/9/2022	4:42:28	28.44	28.69	0.25	-28.69	28.44	100	100	13.4	1000	231.62			
1764	25/9/2022	4:43:28	28.44	28.69	0.25	-28.69	28.44	99.8	100	13.4	1000	232.45			
1765	25/9/2022	4:44:29	28.44	28.69	0.25	-28.69	28.44	100	100	13.4	1000	233.28			
1766	25/9/2022	4:45:29	28.44	28.69	0.25	-28.69	28.44	100	100	13.4	997.07	234.11			
1767	25/9/2022	4:46:30	28.44	28.69	0.25	-28.69	28.44	100	100	13.4	1000	234.95			
1768	25/9/2022	4:47:31	28.44	28.69	0.25	-28.69	28.44	100	100	13.36	1000	235.78			
1769	25/9/2022	4:48:32	28.44	28.69	0.25	-28.69	28.44	100	100	13.4	1000	236.61			

	A	B	C	D	E	F	G	H	I	J	K
1	Date	Time	MachineName	AirComp1	StartTime	21:31:00	EndTime	0:01:00	MinValue	MinTime	LowAlarmSp
4351	25/9/2022	0:01:02	Item	Unit	AverageValue	29.59	MaxValue	29.75	22:03:15	100	29.38
4352	25/9/2022	0:01:05	Temp1	degreeCelsius	29.59	30	21:32:15	80	29.69	23:39:19	-2.36
4353	25/9/2022	0:01:08	Temp2	degreeCelsius	29.57	30	21:32:15	80	29.69	23:39:19	-4.36
4354	25/9/2022	0:01:11	Temp3	degreeCelsius	0	0	21:32:15	80	0	21:32:15	-4.86
4355	25/9/2022	0:01:15	Temp4	degreeCelsius	0	0	21:32:15	87	0	21:32:15	-7.36
4356	25/9/2022	0:01:18	Temp5	degreeCelsius	0.28	0.38	23:47:29	85	0.19	22:03:16	-109.36
4357	25/9/2022	0:01:20	Temp21	degreeCelsius	-29.87	-29.69	23:39:19	83	-30	21:32:15	-111.36
4358	25/9/2022	0:01:23	Temp32	degreeCelsius	0	0	21:32:15	81	0	21:32:15	-13.36
4359	25/9/2022	0:01:26	Temp43	degreeCelsius	29.59	29.75	22:03:15	79	29.38	23:47:30	-15.36
4360	25/9/2022	0:01:29	Temp14	degreeCelsius	99.96	100	0:00:32	6390	99.61	23:52:19	76
4361	25/9/2022	0:01:32	Current1	Amp	99.9	100	21:32:15	6370	99.61	21:36:17	74
4362	25/9/2022	0:01:35	Current2	Ampere	13.3	13.4	21:32:15	6350	13.35	21:33:43	7.2
4363	25/9/2022	0:01:38	Pressure	Bar	999.8	1000	21:32:15	6330	996.09	21:34:35	70
4364	25/9/2022	0:01:41	Vibration	nanometer	38.8	40	21:41:51	690	36	21:32:37	6300
4365	25/9/2022	0:01:44	PT1	degreeCelsius	34.9	36	21:43:12	670	33	21:32:23	6280
4366	25/9/2022	0:01:47	PT2	degreeCelsius	34.6	36	22:14:31	650	32	21:33:23	6260
4367	25/9/2022	0:01:50	PT3	degreeCelsius	1385.1	1386	21:32:15	2630	1376	21:34:32	6240
4368	25/9/2022	0:01:53	PT4	degreeCelsius	-3.8	0	21:43:12	57	-6	21:32:23	6180
4369	25/9/2022	0:01:56	PT21	degreeCelsius							

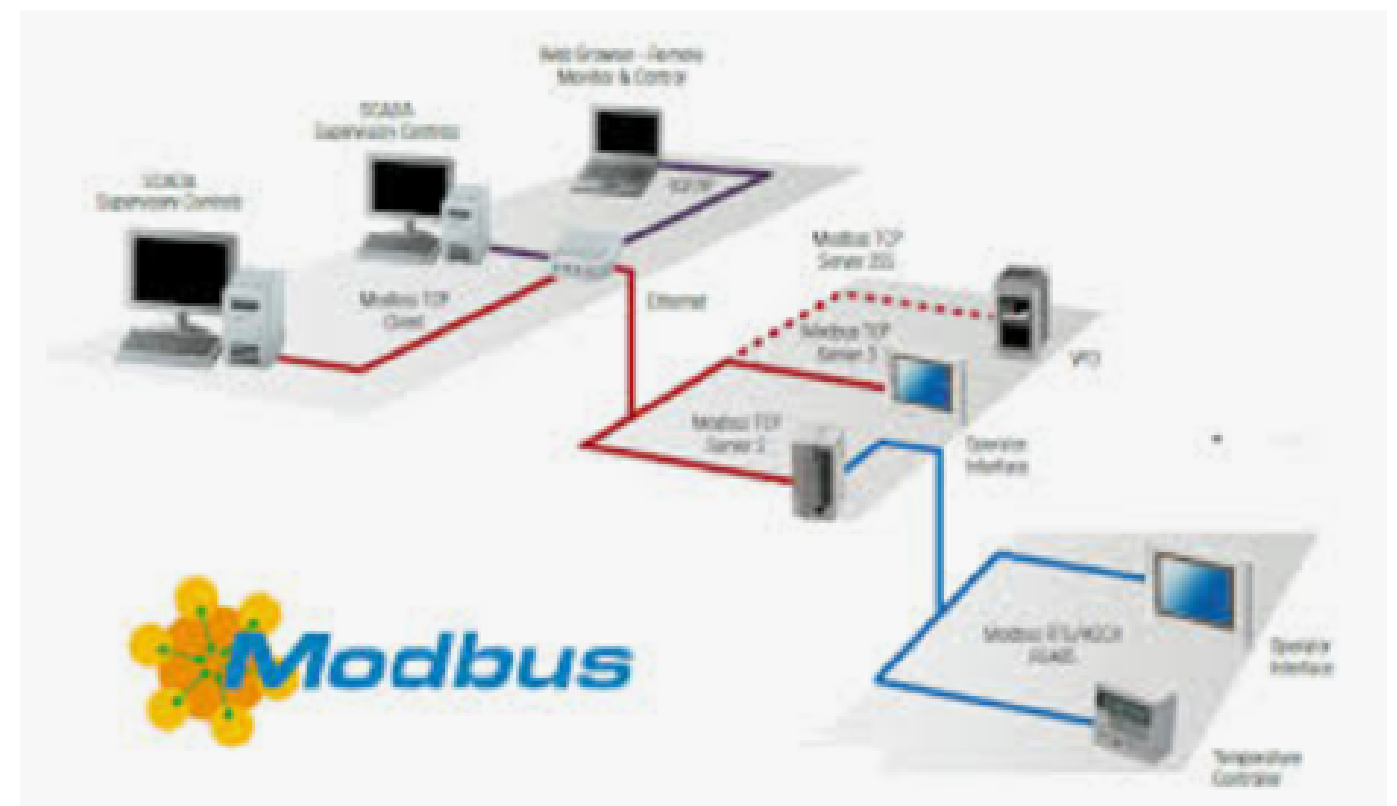
## Analog Sensors

- 3 Analogue Sensors : 0-5 VDC (such as pressure, vibration, gas) can be monitored and set High-Low Alarm and sent to Line Notify and data logging
- Shift or Daily Average-Max-min Value and Occur Time Report

# AIT-4PT-4A IIOT SPECIFICATION

## Modbus Communication (via TCP Modbus communication protocol)

- Temperature, Current, Energy and sensor value display
- Alarm status display
- Alarm and parameter set point read-write data
- Communication to other devices such as PLC or SCADA program



## Environmental Limits

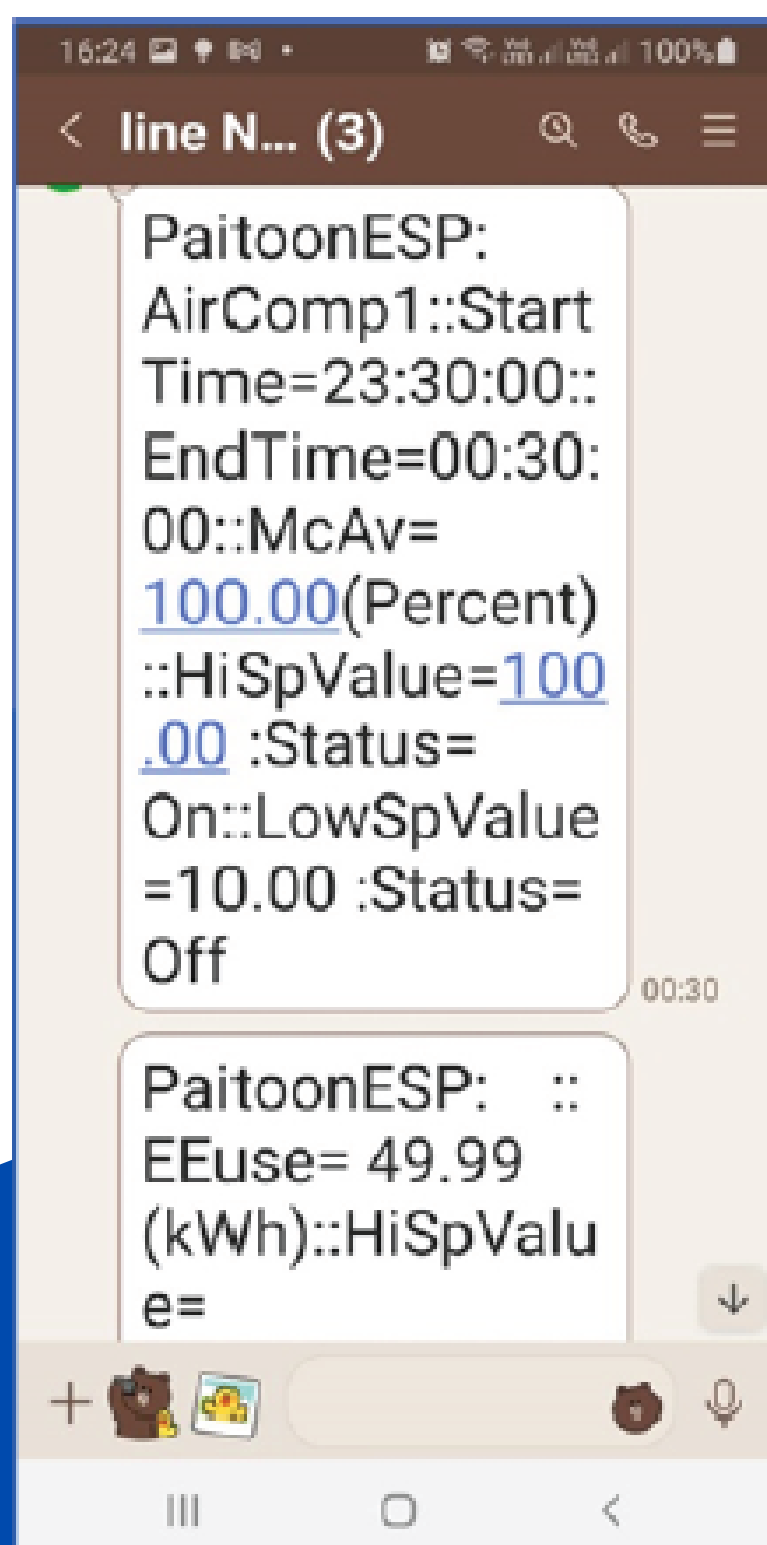
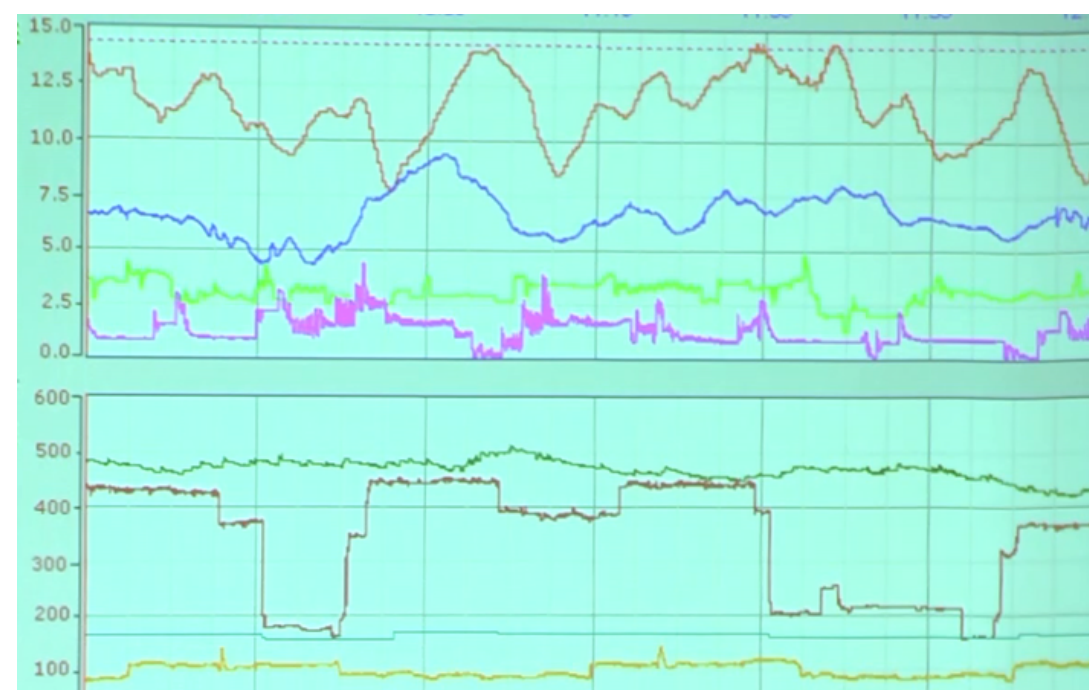
- Operating Temperature Range: -40-85 degree celsius
- Operating Humidity: 5-95%



# AIT-4PT-4A IIOT

If you are looking for a system to replace your old machinery to be a smart machine. improving efficiency, reducing the operating costs and also greenhouse gas emissions....

**AIT-4TP-4A is a system of choice!!!**



ESPsummary												
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	A	B	C	D	E	F	G	H	I	J	K	
4001	25/9/2022	0:01:02	MachineName	AirComp1	StartTime	21:31:00	EndTime	0:01:00				
4002	25/9/2022	0:01:05	Item	Unit	AverageValue	MaxValue	MinValue	MaxTime	MinTime	LowAlarmSp	MinValue	MaxTime
4003	25/9/2022	0:01:08	Temp1	degreeCelsius	29.59	29.75	22.03	15	100	29.58	23.47	20
4004	25/9/2022	0:01:11	Temp2	degreeCelsius	29.87	30	21.32	15	80	29.89	23.39	19
4005	25/9/2022	0:01:15	Temp3	degreeCelsius	0	0	21.32	15	80	0	21.32	15
4006	25/9/2022	0:01:18	Temp4	degreeCelsius	0	0	21.32	15	80	0	21.32	15
4007	25/9/2022	0:01:20	Temp21	degreeCelsius	0.28	0.38	23.47	29	86	0.19	22.03	16
4008	25/9/2022	0:01:23	Temp32	degreeCelsius	-29.87	-29.89	23.39	19	80	-30	21.32	15
4009	25/9/2022	0:01:26	Temp43	degreeCelsius	0	0	21.32	15	80	0	21.32	15
4010	25/9/2022	0:01:29	Temp14	degreeCelsius	29.59	29.75	22.03	15	79	29.58	23.47	20
4011	25/9/2022	0:01:32	Current1	Amp	99.98	100	0:00:32	4390	99.91	23.62	19	76
4012	25/9/2022	0:01:36	Current2	Ampere	99.9	100	21:32	15	4370	99.81	21.36	17
4013	25/9/2022	0:01:38	Pressure	Bars	13.3	13.4	21:32	15	4380	13.35	21.33	43
4014	25/9/2022	0:01:41	Vibration	nanometer	999.8	1000	21:32	15	4390	999.89	21.34	36
4015	25/9/2022	0:01:44	PT1	degreeCelsius	38.8	40	21:41	51	480	38	21.32	37
4016	25/9/2022	0:01:47	PT2	degreeCelsius	34.9	36	21:43	12	470	33	21.32	23
4017	25/9/2022	0:01:50	PT3	degreeCelsius	34.6	36	22:14	31	460	32	21.33	23
4018	25/9/2022	0:01:53	PT4	degreeCelsius	1386.1	1386	21:32	15	2630	1376	21.34	32
4019	25/9/2022	0:01:56	PT21	degreeCelsius	-3.8	0	21:43	12	47	-4	21.32	23

