



ARANKA

Solution
with **Perfection**



ARANKA

USER MANUAL

AIDP 24C

DEW POINT [MOISTURE] CONTROLLER



Ver. 1.0



CE -2209

ISO 9001:2015 COMPANY



TERMINAL CONNECTION

1	L	POWER 230 LINE
2	N	POWER 230 NEUTRAL
3	E	EARTH
4	-NA-	
5	-NA-	
6	-NA-	
7	NO R2	NORMAL OPEN FOR RELAY 2
8	C R2	COMMON FOR RELAY 2
9	NO R1	NORMAL OPEN FOR RELAY 1
10	C R1	COMMON FOR RELAY 1
11	-NA-	
12	- 4-20mA CH1	CHANNEL 1 4~20mA OUTPUT POSITIVE
13	+ 4-20mA CH1	CHANNEL 1 4~20mA OUTPUT NEGATIVE
14	-NA-	
15	-NA-	
16	-NA -	
17	-NA -	
18	-NA -	
19	-NA-	
20	-NA-	
21	RED WIRE FROM SENSOR AIDP24S	
22	BLACK WIRE FROM SENSOR AIDP24S	
23	YELLOW WIRE FROM SENSOR AIDP24S	
24	BLUE WIRE FROM SENSOR AIDP24S	
25	-NA -	
26	-NA -	
27	-NA -	
28	-NA -	
29	+ RS 485	RS 485 MODBUS RTU +
30	- RS 485	RS 485 MODBUS RTU -

**MODBUS RTU ADDRESS**

SR.	REGISTER	REGISTER	TYPE	BYTE	RW
NO>	ADDRESS				
1	0x40001	RH	FLOAT	4	R
2	40003	TEMPERATURE('C)	FLOAT	4	R
3	40005	TEMPERATURE(F)	FLOAT	4	R
4	40007	TEMPERATURE(K)	FLOAT	4	R
5	40009	DEW POINT Td('C)	FLOAT	4	R
6	40011	DEW POINT Td(F)	FLOAT	4	R
7	40013	DEW POINT Td(K)	FLOAT	4	R
8	40015	SATURATION PRESSURE(Pws)	FLOAT	4	R
9	40017	WATER PRESSURE(Pw)	FLOAT	4	R
10	40019	ABSOLUTE HUMIDITY(A)	FLOAT	4	R
11	40021	MIXING RATIO(X)	FLOAT	4	R
12	40023	ENTHALPY(h)	FLOAT	4	R
13	40025	PPMv DRY	FLOAT	4	R
14	40027	PPMm DRY	FLOAT	4	R
15	40029	PPMv WET	FLOAT	4	R
16	40031	PPMm WET	FLOAT	4	R
17	40033	PPM MOISTURE	FLOAT	4	R
		CALIBRATION			
18	40035	RH OFFSET	FLOAT	4	RW
19	40037	TEMPERATURE OFFSET	FLOAT	4	RW
20	40039	DEW POINT OFFSET('C)	FLOAT	4	RW
21	40041	ANALOG OUTPUT OFFSET(mA)	FLOAT	4	RW
		SETTING			
22	40043	DEW POINT MIN RANGE	FLOAT	4	RW
23	40045	DEW POINT MAX RANGE	FLOAT	4	RW
24	40047	PPM MOISTURE MIN RANGE	FLOAT	4	RW
25	40049	PPM MOISTURE MAX RANGE	FLOAT	4	RW
26	40051	ANALOG OUTPUT MODE	U CHAR	1	RW
27	40053	FACTORY RESET	U CHAR	1	RW
28	40054	SLAVE ID	U CHAR	1	RW
29	40055	BAUD RATE	U CHAR	1	RW
30	40056	Md	FLOAT	4	RW
31	40058	Mgas	FLOAT	4	RW
32	40080	PARITY BIT	U CHAR	1	RW
33	40081	STOP BIT	U CHAR	1	RW
34	40086	SET POINT 1 (DEW)	FLOAT	4	RW
35	40088	SET POINT 1 (PPM)	U INTEGER	2	RW
36	40089	RELAY 1 HYSTERESIS	FLOAT	4	RW
37	40091	RELAY 1 CONTROL MODE	U CHAR	1	RW
38	40092	PARAMETER CONTROL MODE	U CHAR	1	RW
39	40093	SET POINT 2 (DEW)	FLOAT	4	RW
40	40095	SET POINT 2 (PPM)	U INTEGER	2	RW
41	40096	RELAY 2 HYSTERESIS	FLOAT	4	RW
42	40098	RELAY 2 CONTROL MODE	U CHAR	1	RW





MODBUS RTU ADDRESS

Parity Bit		
PARITY		VALUE
NONE		0
EVEN		1
ODD		2

BAUDRATE		
BAUDRATE		VALUE
9600		0
19200		1
38400		2
57600		3
115200		4

STOP BIT		
STOP BIT		VALUE
1		0
2		1

RELAY 1 CONTROL MODE		
MODE		VALUE
HEAT		0
COOL		1

PARAMETER CONTROL MODE		
MODE		VALUE
DEW		0
PPM		1





SPECIFICATIONS

POWER	: 90~260VAC , 50HZ
RANGE	: -110~60'Cdp
RESOLUTION	: 0.01'Cdp
ACCURACY	: ± 2 'Cdp
DIGITAL OUTPUT	: 5A, 1CO, RELAY
ANALOGUE OUTPUT	: 4~20mA
COMMUNICATION	: Rs485 MODBUS RTU
DISPLAY	: OLED LCD
BODY	: ABS
OUTER DIMENSIONS	: 96x96x85mm
CUTOUT DIMENSIONS	: 92x92mm

KEY FUNCTION

	TO SET DEW POINT CONTROLLING VALUE
	TO ENTER MENU
	TO INCREASE VALUE & IT WILL SCROLL 0 TO 9
	TO SHIFT DIGIT
	FOR START CALIBRATION
	TO SAVE DATA IN CALIBRATION MENU& SET POINT

**MAIN SCREEN**

DEW:
+014.93 °C_{Adp}
RH:053.705% MOI: PPM
T :+024.97°C 16706

MAIN SCREEN FOR DEW POINT

MOISTURE:
16931 PPM
RH:053.705% DEW: °C_d
T :+024.97°C +014.94

MAIN SCREEN FOR MOISTURE

RELAY SETPOINT SETTING

DEW:
+014.93 °C_{Adp}
RH:053.705% MOI: PPM
T :+024.97°C 16706

SET



SET POINT
1 SET POINT 1
2 SET POINT 2

ENT



Sp1 VALUE: -040.00 °C_d
SP1 HYST.: +000.00 °C_d

USING **SHIFT** KEY CURSER WILL MOVE FROM LEFT TO RIGHT & USING **UP** KEY YOU CAN SET DESIRE VALUE OF DEW POINT VALUE.
USING **ENT** KEY CURSER WILL MOVE TO NEXT LINE.
HYST. IS HYSTERESIS VALUE
TO SET RELAY OFFSET OPERATION.

AFTER SETTING
DESIRE VALUE PRESS

SET



SET POINT
1 SET POINT 1
2 SET POINT 2



PRESS FOR NEXT



ENT



Sp2 VALUE: -030.00 'Cdp

SP2 HYST.: +000.00 'Cdp

USING **SHIFT** KEY CURSER WILL MOVE FROM LEFT TO RIGHT & USING **UP** KEY YOU CAN SET DESIRE VALUE OF DEW POINT VALUE.
USING **ENT** KEY CURSER WILL MOVE TO NEXT LINE.
HYST. IS HYSTERESIS VALUE
TO SET RELAY OFFSET OPERATION.

AFTER SETTING
DESIRE VALUE PRESS

SET



SET POINT
1 SET POINT 1
2 SET POINT 2

PRESS TO MAIN SCREEN

SET



DEW:

+014.93 'C_{Adp}

RH:053.705% MOI: PPM
T :+024.97'C 16706



CALIBRATION

IN CALIBRATION YOU CAN SET OFFSET BECAUSE SENSOR IS LINEAR CALIBRATED IN FACTORY

DEW:
+014.93 °C_{Adp}
RH:053.705% MOI: PPM
T :+024.97°C 16706

CAL



1 OFFSET

ENT



PASSWORD

[****]

ENT



RH : +00.00 %
TEMP. : +00.00 °C
DEW POINT : +00.00 °C
AO OUTPUT : +00.00mA

ENTER PASSWORD USING UP & SHIFT KEY AFTER ENTERED PASSWORD PRESS ENT KEY

ENTER DESIRE OFFSET FOR RH/TEMPERATURE/DEW POINT/ANALOGUE OUT PUT FOR DEW POINT. IF YOU FOUND ANY DEVIATION WE RECOMMEND TO MAKE OFFSET IN RH OR TEMPERATURE IT WILL AUTOMATICALLY UPDATE DEW VALUE ALSO.

AO OUTPUT IS FOR DEW POINT RETRANSMISSION VALUE ERROR REMOVING IN mA.

PRESSING CAL KEY TWICE YOU CAN JUMP BACK TO MAIN SCREEN



PROGRAM PARAMETER SETTING

CONTROL SETTING

DEW:
+014.93°C_{Adp}
RH:053.705% MOI: PPM
T :+024.97°C 16706

PROG



1 CONTROL SETTING
2 PARAMETER SETTING
3 COMM. SETTING
4 FACTORY SETTING

TO SET CONTROL RELAY
OPERATION, DEW OR MOISTURE
AND ANALOGUE OUTPUT

ENT



PASSWORD

[****]

ENT



ENTER PASSWORD USING UP & SHIFT KEY AFTER ENTERED PASSWORD PRESS ENT KEY

SP 1 MODE : -HOT
SP 2 MODE : HOT
CONTROL MODE : DEW
AO MODE : DEW

AS ABOVE SCREEN **SP1** IS RELAY SET POINT 1 RELAY OPERATION MODE IF YOU SELECT HOT RELAY WILL KEEP ON TILL SET VALUE ACHIEVE, IF YOU SELECT COOL MODE RELAY WILL ON WHEN SET VALUE IS LESS THAN PRESENT VALUE.

SP2 IS RELAY SET POINT 2 RELAY OPERATION MODE IF YOU SELECT HOT RELAY WILL KEEP ON TILL SET VALUE ACHIEVE, IF YOU SELECT COOL MODE RELAY WILL ON WHEN SET VALUE IS LESS THAN PRESENT VALUE.

CONTROL MODE IS TO SELECT MAIN DISPLAY & CONTROLLER WORK AS DEW POINT OR MOISTURE CONTROLLER.

AO MODE IS TO SET 4-20mA OUTPUT AS PER DEW POINT OR MOISTURE VALUE..

YOU CAN CHANE MODE USING UP KEY & FOR NEX LINE PRESS ENT KEY.

NOTE: AFTER ANY CHANGING IN MODE PRESS ENT KEY COMPULSORY TO STORE CHANG IN MODE.

PRESSING PROG KEY YOU CAN JUMP BACK TO MAIN SCREEN



PROGRAM PARAMETER SETTING

PARAMETER SETTING

DEW:
+014.93 °C_{Adp}
RH:053.705% MOI: PPM
T :+024.97°C 16706

PROG



1 CONTROL SETTING
2 PARAMETER SETTING
3 COMM. SETTING
4 FACTORY SETTING

TO SET GAS VALUE ONLY
APPLICABLE TO CALCULATE
MIXING RATIO. AND MIN
MAX VALUE TO FOR ANALOGUE
OUTPUT.

ENT



PASSWORD
[****]

ENT



ENTER PASSWORD USING UP & SHIFT KEY AFTER ENTERED PASSWORD PRESS ENT KEY

1 GAS VALUE
2 MIN-MAX SET

ENT



PASSWORD
[****]

ENT



Md : +028.93 g/mol
Mgas: +0.28.96 g/mol

GAS VALUE NEED ONLY IN CASE WHERE YOU NEED TO SEE MIXING RATION OR VOLUME/VOLUME PPM OR MASS/MASS PPM VALUE. Mgas IS USE FOR MIXING RATIO AND Md IS FOR V/V PP OR MV/MV PPM.

PRESSING PROG KEY YOU CAN JUMP BACK TO MAIN SCREEN



PROGRAM PARAMETER SETTING

1 GAS VALUE
2 MIN-MAX SET

ENT



PASSWORD

[****]

ENT



DEW MIN : -110.00'C
DEW MAX : +060.00'C
PPM MIN : 00000 PPM
PPM MAX : 01000 PPM

MIN-MAX SET USE TO ENTER ANALOGUE 4-20mA OUTPUT RANGE FOR DEW POINT OR MOISTURE..

PRESSING PROG KEY YOU CAN JUMP BACK TO MAIN SCREEN



PROGRAM PARAMETER SETTING

COMM. SETTING

DEW:
+014.93 °C_{Adp}
RH:053.705% MOI: PPM
T :+024.97°C 16706

PROG



1 CONTROL SETTING
2 PARAMETER SETTING
3 COMM. SETTING
4 FACTORY SETTING

TO SET RS485 COMMUNICATION
PARAMETER.

ENT



PASSWORD

[****]

ENT



ENTER PASSWORD USING UP & SHIFT KEY AFTER ENTERED PASSWORD PRESS ENT KEY

ID : 000
BAUDRATE : 9600
PARITY : NONE
STOP BIT : 1

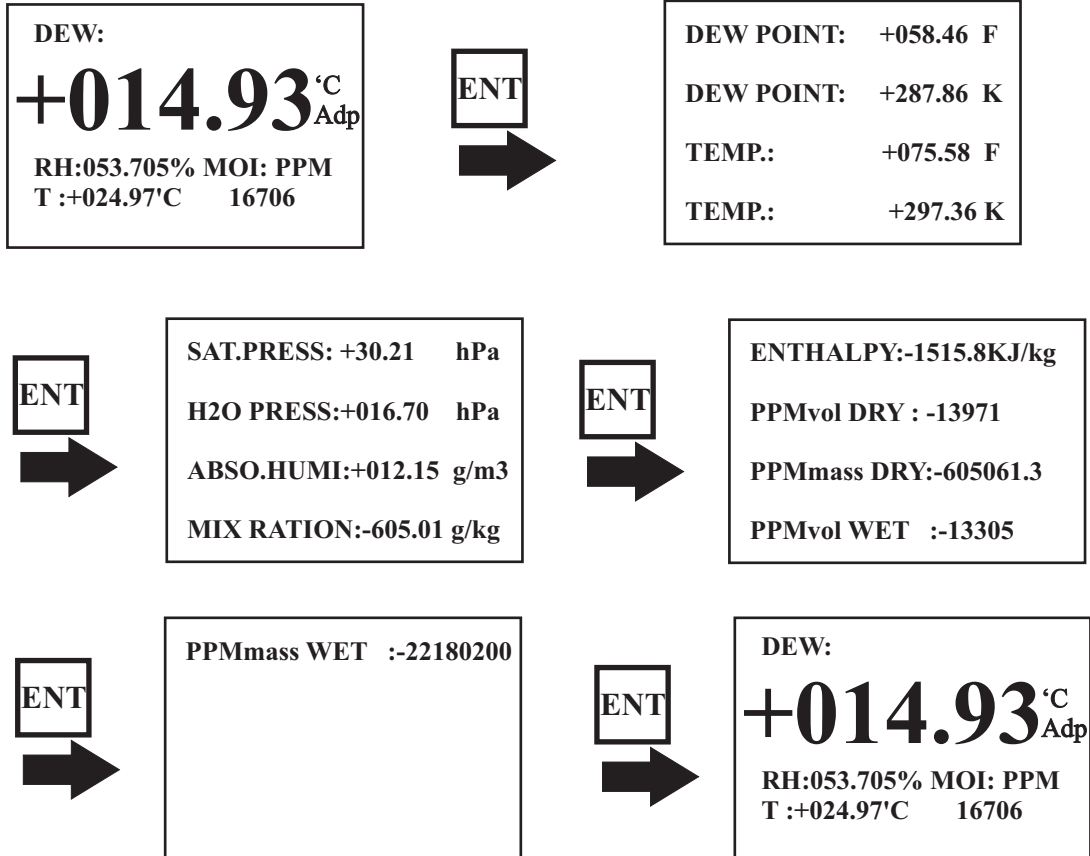
ABOVE SCREEN IS TO USE SET RS485 MODBUS INTERFACE SETTING
CAN SET ID UP TO 32 NOS, BAUDRATE CAN SET 9600/19200/38400/57600/115200.
PARITY CAN SET NONE /EVEN/ODD. STOP BIT CAN SET 1/2.

DEFAULT VALUE : ID 000, BAUDRATE : 9600, PARITY : NONE, STOP BIT : 1

PRESSING PROG KEY YOU CAN JUMP BACK TO MAIN SCREEN



TO SEE OTHER VALUE



READING PERAMETERS
RELATIVE HUMIDITY %
TEMPERATURE IN 'C
TEMPERATURE IN 'F
TEMPERATURE IN 'K
DEW POINT IN 'C
DEW POINT IN 'F
DEW POINT IN 'K
SATURATED PRESSURE IN hPa
WATER PRESSURE IN hPa
ABSOLUTE HUMIDITY IN g/m3
MIXING RATION g/Kg
ENTHELPHY IN Kj/Kg
PPM VOLUME DRY
PPM MASS DRY
PPM VOLUME WET
PPM MASS WET
PPM MOISTURE

PARAMETER PASSWORD

DISCRIPTION	PASS WORD
CALIBRATION OFFSET	5088
CONTROL SETTING	2032
PARAMETER SETTING	2033
COMM. SETTING	2034
GAS VALUE	4567
MIN-MAX SET	5678



ARANKA

Solution
with **Perfection**

WIRING DIAGRAM



**AIDPSIC
INTERFACE CABLE**



AIDP24S



**AIDP24FC
FLOW CELL**

SR NO: _____



ARANKA INSTRUMENTS **LLP**

FACTORY :
50, NILKANTH INDUSTRIAL PARK,
AMBIKA TUBE COMPOUND,
NEAR OVER BRIDGE VATVA, GIDC,
Vatva, Ahmedabad - 382445.

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