AKO ®

Sensor and Equipment

Clean Room Monitor CM Series

Instruction Manual

Please read the following safety considerations before use.

Safety considerations

Please observe all safety considerations for safe and proper product operation to avoid hazards.

Warning: Fail-safe device must be installed when using the unit with machinery that may cause serious injury or economic loss.(e.g. nuclear power control, medical equipment, ships, railways, aircraft, combustion, safety equipment, etc.)

Warning: Do not connect, repair or inspect the unit while connected to a power source.

Warning: Do not disassemble or modify the unit, please contact us if necessary.

Warning: check input power specification and check power terminal polarity before connecting the power source.

Caution: Do not use the unit outdoors.

Caution: Do not touch the temperature \ humidity by hands.

Caution: Do not use the water or oil-based detergent when clean the unit.
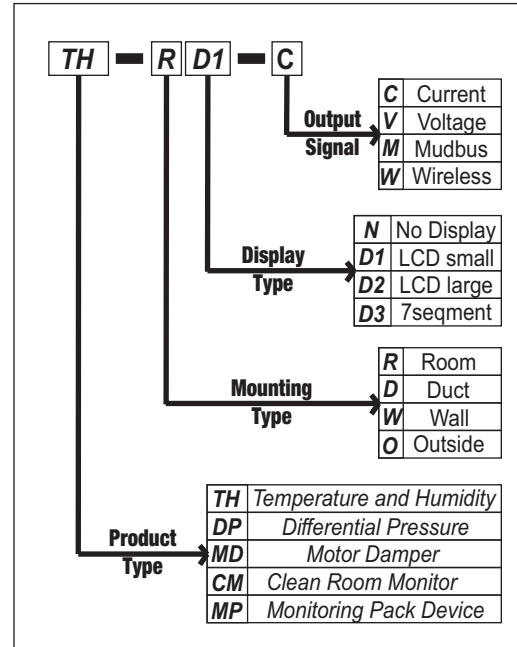

Caution: Do not use the unit where flammable or explosive gas, direct sunlight, radiant heat, vibration or impact may be present.

Caution: keep dust and wire residue from flowing into the unit.

Caution During use:

1. Do not store at the high temperature /humidity environment.
2. For cleaning use dry towel and do not use acid ,chrome acid, solvent but alcohol.
3. Separate the unit cable from high voltage line. power line to avoid inductive noise.
4. installation environment: it shall be used indoor and pollution degree 2

Failure to follow these instruction may result in product damage.

Ordering Information

Output Signal	C	Current
	V	Voltage
	M	Mudbus
	W	Wireless
Display Type	N	No Display
	D1	LCD small
	D2	LCD large
	D3	7seqment
Mounting Type	R	Room
	D	Duct
	W	Wall
	O	Outside
Product Type	TH	Temperature and Humidity
	DP	Differential Pressure
	MD	Motor Damper
	CM	Clean Room Monitor
	MP	Monitoring Pack Device

Terminal Connection

Power Supply:

AKO clean room Morintor Device can use 220VAC or 24VDC

220VAC (0.2A) — L N PE — AKO CM-WD3-M

AKO CM-WD3-M — + - CE — 24VDC (0.6A)
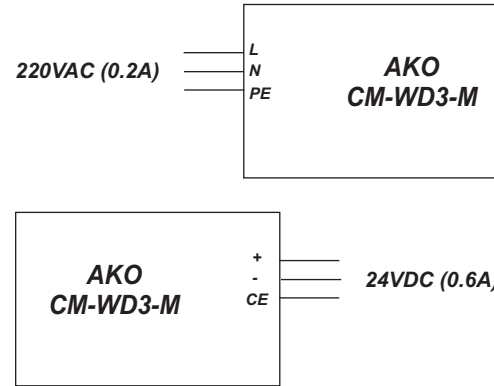
Modbus Connection:

AKO clean room Morintor Device can connect with controller by Modbus RTU (as salave device) for display 4 parameter on 7seqment.

AKO CM-WD3-M (Slave) Node:#n

Controller (master)

AKO CM-WD3-M (Slave) Node:#n+1
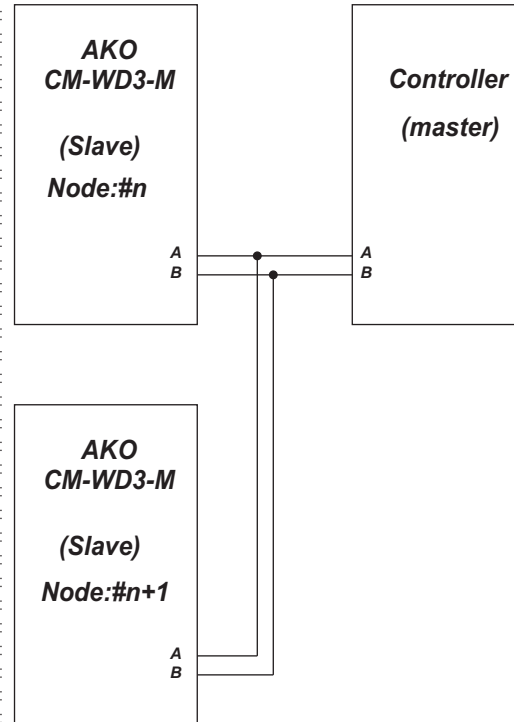
AKO clean room Morintor Device can connect with Sensor by Modbus RTU (as Master device) for display 4 parameter on 7seqment.

AKO CM-WD3-M (Master)

Temperature and humidity sensor (Slave)

Differential Pressure sensor (Slave)
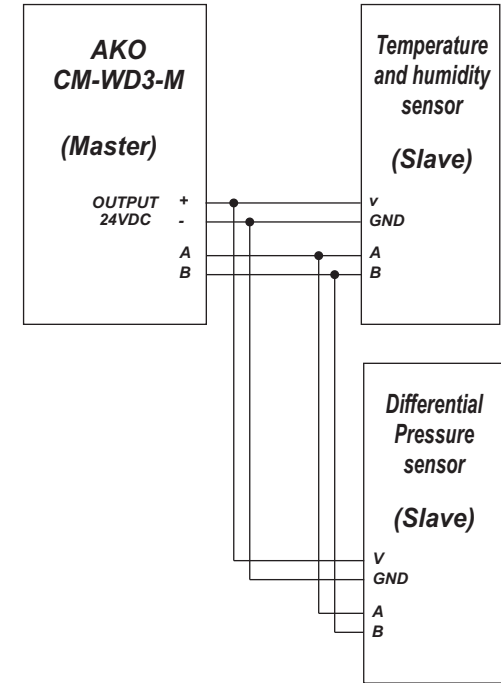
Specification

Model	CM-WD3-M
Power supply	220VAC (0.2A) or 24 VDC (0.6A)
Measuring Range	TEMP.:0...50'C HUMI.:0...100% PRESS.:0...100P.a
Input signal	Modbus RTU
Protection class	IP 65
Cable	Ø 0.5mm , 4-Wire

Modbus communication

Interface

Comm. protocol	*Modbus RTU*
Comm. type	*Rs485*
Max.connection	*255unit(address:01up255)* *for use max 31 devices, must use Repeater*
Comm. method	*Two-wire half duplex*
Comm. distance	*Max. 500m* *for max 150m, must use Repeater*
Comm. speed	*9.6 and 19.2kbps(selectable)*
Start bit	*1-bit (fixed)*
Data bit	*8-bit (fixed)*
Parity bit	*None (fixed)*
Stop bit	*1-bit (fixed)*

Modbus Mapping Table

Address	Item	Remark
40002 (0001)	*Temperature value*	*Temperature value x 10*
40003 (0002)	*Humidity value*	*Humidity value x 10*
40004 (0003)	*Pressure value*	*Pressure value x 10*
40005 (0004)	*Air Flow value*	*Air Flow value x 1*

Modbus communication setting

CM-WD3-M

8 Dip switches for
 Set communication address

2 Dip switches for
 Set Communication Speed

sw2

sw1

Slave ▮ Master

Reset ⊙

Modbus communication address

Sw1								Address
S8	**S7**	**S6**	**S5**	**S4**	**S3**	**S2**	**S1**	
0	0	0	0	0	0	0	1	*1*
0	0	0	0	0	0	1	0	*2*
0	0	0	0	0	0	1	1	*3*
0	0	0	0	0	1	0	0	*4*
0	0	0	0	0	1	0	1	*5*
0	0	0	0	0	1	1	0	*6*
0	0	0	0	0	1	1	1	*7*
0	0	0	0	1	0	0	0	*8*
0	0	0	0	1	0	0	1	*9*
0	0	0	0	1	0	1	0	*10*
0	0	0	0	1	0	1	1	*11*
0	0	0	0	1	1	0	0	*12*
0	0	0	0	1	1	0	1	*13*
0	0	0	0	1	1	1	0	*14*
0	0	0	0	1	1	1	1	*15*
0	0	0	1	0	0	0	0	*16*
0	0	0	1	0	0	0	1	*17*
0	0	0	1	0	0	1	0	*18*
0	0	0	1	0	0	1	1	*19*
0	0	0	1	0	1	0	0	*20*
0	0	0	1	0	1	0	1	*21*
0	0	0	1	0	1	1	0	*22*
0	0	0	1	0	1	1	1	*23*
0	0	0	1	1	0	0	0	*24*
0	0	0	1	1	0	0	1	*25*
.	.	.	.	.	.	.	.	*.*
.	.	.	.	.	.	.	.	*.*
.	.	.	.	.	.	.	.	*.*
1	1	1	1	1	1	0	1	*253*
1	1	1	1	1	1	1	0	*254*
1	1	1	1	1	1	1	1	*255*

Modbus communication speed

Sw2		Baud
S7	**S6**	**rate**
0	*0*	*9.6 kbps*
0	*1*	*19.2 kbps*
1	*0*	*-*
1	*1*	*-*

Dimensions