AX-WLD-DT-M Drip Tray Monitor - Modbus RTU

Product Overview

The AX-WLD-DT-M is a water level alarm module. It is intended for monitoring the condensate levels in drip trays on air-conditioning units. The unit comprises two stainless steel probes and integrated electronics to transmit the signal over Modbus RTU. The probes are mounted at the level required to generate an alarm signal. The excitation signal generated by the unit for the sensor connections ensures that the probes do not degrade when exposed to damp for long periods.



Products Features

- 24V ac/dc operated
- Internal excitation of probes ensures long probe life

Product Specifications

Supply voltage:	24Vac @ 50Hz $\pm 10\%$ or 24Vdc $\pm 10\%$ at 50mA max
Power consumption:	1.5W max
Excitation:	AC, Internal
Probe material:	Stainless steel 303

Communication

Protocol: Standard Modbus RTU protocol over RS485 Address range: 1-63 (settable using dipswitch), 1-247 (settable using configuration register) Baud rates supported: 9600bps,19200bps,38400bps,57600bps Parity: None (default), Odd, Even (odd, even selectable via configuration register) Number of stop bits: 1(default),2 (2 is selectable via configuration register) Isolation: 1500VDC between Power and Output 1200hms termination : Available on board. Enabled using jumper

Isolated RS-485 output

IP65 Enclosure

Terminals :	Rising clamp 0.5-1.5mm ² cable
Ambient Temperature Range :	-10°C to 50°C
Ambient Relative humidity:	0-90% Non condensing
Enclosure material:	ABS
Dimensions:	104 x 104 mm
Weight:	100gm
Ingress protection:	IP 65
Country of origin :	United Kingdom

Product Order Codes

Order Code AX-WLD-DT-M **Description** Drip tray alarm module

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The unit should be installed by suitably qualified technician in conjunction with any guidelines for the equipment it is to be connected to and any local regulations. Field wiring should be installed to satisfy the requirements set out by the manufacturer of the equipment that the sensor is being connected to. Anti-static precautions must be observed when handling these transmitters. The PCB contains circuitry that can be damaged by static discharge.

The unit should not be mounted where temperatures will exceed the ambient temperature range specified.

Mount the AX-WLD-DT-M at the appropriate height above the drip tray at which the alarm is required to operate.

Operation

When power is initially applied, the unit checks that the probes are clear of water. If no water is detected, the alarm status register will be set 0. The register will be set to 1 when water is detected across the two probes. The value will remain same until water is dried and a force reset command is given or the power is removed and reapplied. To reset the unit power should be removed and the sensor probes completely dried before reapplying power.

Termination Impedance

If the slave device is at the end of the network, enable 1200hms termination resistor by placing TERM in ENABLE Position. This ensures the proper termination of signals travelling in both directions on the bus. Do NOT use more than two termination impedances in a network.

Connections



Typical wiring diagram



Use twisted pair shielded cables with a characteristic impedance of approximately 120 ohms. Either ends of the network should be terminated with 120 Ohms to avoid signal reflections. It could be avoided if the total cable length is less than 50metres. The maximum number of devices that can be connected to a network is 32, including the master. Annicom recommends use of repeaters if the total length is more than 300metres. The shield should be connected to the earth at one end only, preferably at the master control panel.

Modbus RTU is a serial protocol. As the number of devices in a network increases, there will be potential delays in updating data from each device. The system designer determines the number of devices connected in a network depending on the data refresh interval.

Fixing



AX-WLD-DT-M **Drip Tray Monitor - Modbus RTU**



Network Communication Details

Dipswitch configuration

The commu	nication parameters can be set using	the	A5	A4	4 A3	A2	A1	A	0	1.1	
Dipswitches	or can be programmed over the net	work.	1							Comms.	
When dipswitches are used, the device address is set using switches A5 to A0 and the baud rate is selected by B1 and B0. The Parity will be None and the Number of Stop bits will be 1 in this mode. The new values will not be updated until either the unit is re-powered or a software reset executed.			OFF	OF	F OFF	OFF	OFF	OF	F	set by registers 40050:53	
							1			Address	
			OFF	OF	F OFF	OFF	OFF	10	N	1	
When the dipswitches A5 to A0 are set to OFF, the		OFF	OF	F OFF	OFF	ON	OF	F	2		
communication parameters will be loaded from the configuration registers 40050 to 40053. When these registers are modified, the updated values will not be stored until a Non			\downarrow	\downarrow	\downarrow	\downarrow	\downarrow	\downarrow		\downarrow	
			ON	ON	N ON	ON	ON	0	N	63	
Volatile Mei not be used i	nory Update command has been ex until either a Force Reset command	or a re-power					Devite	. [
of the unit.	,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,		OFF	OFF	Baud		Parity		NO OF STOP BITS		
			OFF	ON	192	00	NJ =			0	
			ON	OFF	384	00	None	2		One	
Modbus R	egister Details		ON	ON	576	00					
Address	Supported function codes	Description			Data typ	e C	Data				
Data regis	ters										
30001				uint16 0: No alarm 1: Alarm							
30003	04(Read Input Registers)	Time since the al	et	uint16	0	0-65535 minutes					
30005		Internal error			uint16	:Normal :Error					
Configurat	ion registers										
40050		Modbus Address	k)	uint16	1	1-247(Default:1)					
40051	03(Read Holding Registers) 06(Preset Single Register)	Baud rate (Network)			uint16 0: 9600(De 1:19200 2:38400 3:57600			efaul	fault)		
40052	16(Preset Multiple Registers)	Parity			uint16	0 1 2	0:None(Default) 1:Odd 2:Even				
40053			uint16 0:1 Stop bit (Default) 1:2 Stop bits					lt)			
Control reg	gisters										
40100		Force reset			uint16 0:Normal 1:Reset						
40101	06(Preset Single Register)	Non volatile memory update			uint16	0 1	0:Normal 1:Update				
40102		Force factory defaults			uint16	uint16 U:Normal 1:force Defaults					

Datasheet Contents

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