

WiDetect A1e

Product data sheet

WiDetect A1e is a monitoring unit for registration of water levels, humidity, temperatures etc in chambers and for detection of moisture in insulated pipes.

WiDetect A1e has 12 inputs in order to measure, for example, room temperature and humidity, flow and return water temperatures in media pipes and water levels in chambers and other wet rooms

The unit can also register the loop and insulation resistance in insulated pipes. In this case it is required that it exist two or several un-insulated copper wires in the insulation.

The unit has four wakeup inputs for activation of for example level switches and/or temperature switches.

Function

WiDetect A1e is equipped with an LAN-module or 3G modem who are delivering measurement values to the XTool monitoring software.

The unit can be delivered for battery operation or with an external transformer.

Models

WiDetect A1e exists in different types for battery operation or 12 VDC power supply and with 3G modem for wireless communication.

Our most sophisticated model is A1-BG where battery package, LAN - module and 3G modem are built-in into the unit.

The battery operation time is up to 5 years during stated relations. The battery is of type Lithium (Li-SOCI2), an environmentally friendly alternativ, with very low self-discharge.



Communication

WiDetect A1e is a modern alarm unit developed with the last technology. All models have built-in LAN interface and are at delivery prepared for this type of communication. The models A1e-G och A1e-BG are equipped with a 3G modem for wireless communication.

Relay outputs

Via the NO/NC (normal open/normal closed) outputs an alarm can be transmitted further to a main unit or computer. The outputs are potential free. (Not applicable at battery operation.)

Sensors

Moisture and temperature transmitter's, strap-on temperature sensors and level indicators compatible with WiDetect A1 exists as a choice.

The sensors can be of type active, and can be power supplied from A1e. Also passive sensors type PT-1000 can be connected.

A1e is equipped with a sabotage alarm sensor and is optional.



Inputs

Digital and analogue inputs:
 WiDetect A1e has four (4) pcs of contacts for measuring of voltage 0-10V or current loop 4-20mA. An analog / digital converter translates the measurement voltage to 0 C and% Rh. The units all measuring inputs (12 pcs) can be configured as digital inputs.

Resistance inputs:

All models of WiDetect A1e have two inputs for measurement of loop and insulation resistance and the battery effect. Both the alarm inputs each have nine (9) adjustable alarm limits via a potentiometer on the motherboard. Through software Xtool any number of alarm limits between 1kohm - 1 Mohm could be set.

Outputs

The WiDetect A1e unit has a 2-pole, potential free, alternating relay contact for forwarding of sum alarm. The relay is activated if the unit is power supplied from an external power source. Not active when battery package is built-in. There is also a +24 DCV (150 mA) output power supply of external sensors.

Power supply

The unit A1e is normally power supplied by 12 V DC via an outer transformer. The transformer will primarily be run with 100-240 VAC, 50-60 Hz.

Power can also be done by an integrated battery pack with lithium cells of type SAFT LSH20, Li-SOCI2. The operation time (batteries) during certain obvious conditions can to last up to 7-8 years. This is tested by SP Swedish National Testing and Research.

Communication

The unit can be supplied with built-in Ethernet (TCP / IP), modem (RJ-45 10/100Mbit) for socket based communications and / or integrated 3G modems (Quad band 850/900/1800/1900 MHz) with TCP / IP for wireless socket based communication.

Real time clock

A1e has a real time clock (RTC) that keeps the current calendar time. Calendar time is used for the device to know when measurements are made according to established schedules. The time can be read and modified using commands in the protocol between Xtool / Dashboard and A1e.

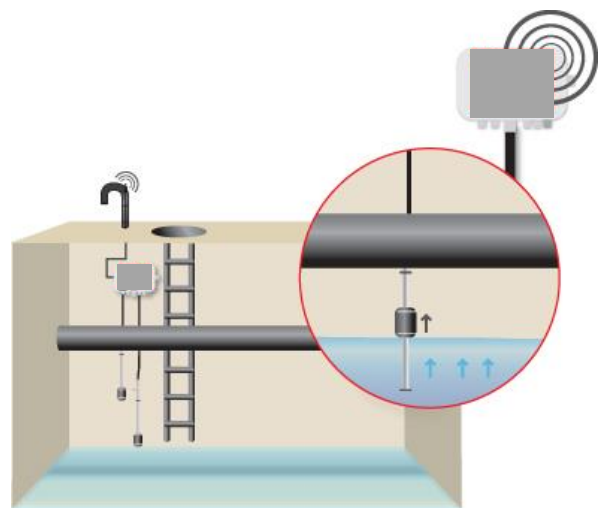
External program memory.

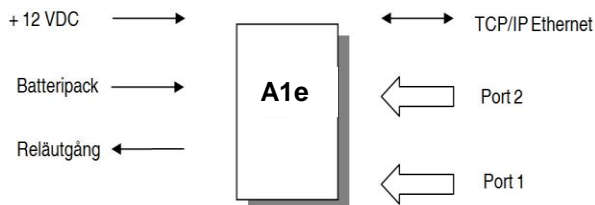
A serial EEPROM memory stores measurements values before future transfer to XTool. The memory has a capacity in order to store > 1000 measurements.

Alarm function

It is possible to set alarms on all analog and digital measurements. Loop and resistance alarm are activated if the measured resistance between the alarm wires and media pipe are below the configured alarm limit or short circuit and if break of the alarm wire. Communication method for the alarm is 3G or LAN. External alarm (for example siren, flashing light) can be activated by a built-in relay contact. WiDetect A1e device has programmable blocking time for the alarm.

Alerts can be sent via SMS and e-mail to the mobile phone or another computer.



System sketch

Case:

Material: Polycarbonat

Size: 200 x 110 x 60 mm

Case class: IP 67, IP68 option.

Working temperature: - 20 °C to +70 °C

Models:

A1e Art.no 0609016, excl. battery/3G

A1e-G Art.no 0609014, incl. 3G modem

A1e-B Art.no 0609012, incl. battery pack

A1e-BG Art.no 0609010, Incl 3G, battery

CE & ETL-marked.

Technical data

Indication led for active unit respectively active alarm.

Analogue inputs:

 4 pcs freely adjustable U/I
 4–20 mA, accuracy $\pm 0,2$ mA
 0–10 V, accuracy $\pm 0,1$ V

PT 1000 inputs:

 4 st, - 20 °C to +250 °C, resolution 1 °C, accuracy ± 1 °C.

Level inputs:

4 pcs "wake up" inputs for level sensors

1 pcs sabotage switch (magnetsensor)

Resistance input:

 2 pcs with adjustable alarm limits in 9 steps
 Alarm wire lenght: up to 5000 m depend on sensor type.

Loop resistance / interruption: Yes.

Insulations resistance: 1 kohm – 1 Mohm

Battery voltage: - 0.5V - +0.5V

Power consumption:

 Idle < 50 μ A.

Technical specification

WiDetect A1e

Unit	X1e	A1e	X2	X4	X3/X5
XTool monitoring software	√	√	√	√	√
Stand alone function	√	-	√	√	-
Water leak detection	√	√	√	√	√
Steam leak detection	√	√	√	√	√
Oil leak detection	-	-	-	-	-/√
TDR (pulse echo meter)	-	-	-	√	√
Analogue/digital inputs	-	√	√	√	√
Measuring channels	4	4	4	4	4
Max. alarm wire / channel	5000	5000	5000	5000	3000/1500
Communication					
Broadband	√	√	√	√	√
3G	√	√	√	√	√
Fibre optic	√	√	√	√	√
Size (LxDxH) mm	200 x 110 x 60	200 x 110 x 60	260x150x90	260x150x90	260x150x90
Casing material	Polycarbonat	Polycarbonat	Aluminium	Aluminium	Aluminium
EMC protection	√	√	√	√	√
Power supply					
Primary	Battery pack / 12VDC	Battery pack / 12VDC	110/230 VAC	110/230 VAC	110/230 VAC
Secondary	24 VDC	24 VDC	12V DC	12V DC	12V DC
Internal transformer	-	-	√	√	√
Power consumption (idle)			15W	15W	15W
Protection class	IP65	IP65	IP53	IP53	IP53
External steel case (optional)	IP67	IP67	IP67	IP67	IP67
Potentialfree relay output NO/NC	√	√	√	√	√
Measurement					
Insulation resistance	1kohm- 1 Mohm	1kohm- 1 Mohm	1kohm- 50Mohm	1kohm- 50Mohm	1kohm- 50Mohm
Alarm limit activating	Manually or from software	Manually or from software	through software	through software	through software
Adjustable alarm limits	√	√	√	√	√
Measurement					
Loop resistance	0-200 ohm	0-200 ohm	0-200 ohm	0-200 ohm	0-200 ohm
Adjustable alarm limit	√	√	√	√	√
Pulse echo meter (TDR)					
TDR measurement	-	-	-	√	√
TDR resolution	-	-	-	1 ns-5ns	0,25 ns-5ns
TDR accuracy	-	-	-	< 1 m	< 1 m
Battery voltage	-0.5 volt....+ 0.5 volt	-0.5 volt....+ 0.5 volt	-0.5 volt....+ 0.5 volt	-0.5 volt....+ 0.5 volt	-0.5 volt...+ 0.5 volt

