

# RedDetect™ system X5

## Product datasheet

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RedDetect X5 is developed to monitor, detect and locate fault on insulated pipelines with oil based liquids. The built-in pulse echo meter and the software compare function make it a flexible and effective alarm unit.

### Usage

RedDetect X5 is equipped with the latest technology – all in one unit. The modern construction makes X5 perfectly equipped for the different challenges and needs of the future.

RedDetect X5 has four channels for connection of alarm wires and can locate fault on alarm wires length up to 1500 meters per channel. You can use one or multiple uninsulated wires in each pipe.

### Intelligence

RedDetect X5 measures the status of the pipe continuously and compares the incoming radar curves with the defined reference curves in the database. The monitoring software (XTool) will automatically give an alarm if a deviation from the reference curve occurs.

### Properties

The system is delivered with Ethernet connection as standard, LCD-display with menu system, internal memory and a powerful integrated TDR (pulse echo meter) with an accuracy of < 1 meter\*.  
*\*The accuracy depends on that the alarm wires is always on the same distance from the mediapipe, that all insulated cables are known and that there is an alarm drawing showing the exact location of the pipe and alarm wire.*

The RedDetect system uses Ethernet and/or GPRS as the primary communication types. For powerless solution you can use solar panel and



## Technical information

### Inputs

RedDetect X5 has four (4) pcs BNC-inputs for measurement of the insulation resistance, loop resistance, battery voltage and radar curves (impedance). Port 1

### Digital and analogue inputs

RedDetect X5 has four (4) pcs contacts for measuring of voltage 0-10V or current loop 4-20mA, alternative digital levels. It can for example be used to measure the temperature and humidity on pipes and in chambers. Port 2

### Outputs

RedDetect X5 unit has a 3-pole, choppy relay contact (NO/NC).

Power supply primary 110/230 VAC.  
Secondary 12 volt DC for operating extern devices as modems etc.

### Communication

Built-in Ethernet (TCP/IP) modem.  
RJ-45, 10/100Mbit Ethernet for communication.

### Memory

Internal flash memory.

### LCD-display

2x16 character large-font LCD-display with background lighting for presentation of measure values and menus. The measuring values for the insulation resistance and loop resistance can directly be read from the display. Even alarm limits can be shown.

### Front panel

5-keys keyboard for manoeuvre of menu system. The front panel has 2 pcs of lighting diodes for showing alarm and operating status.

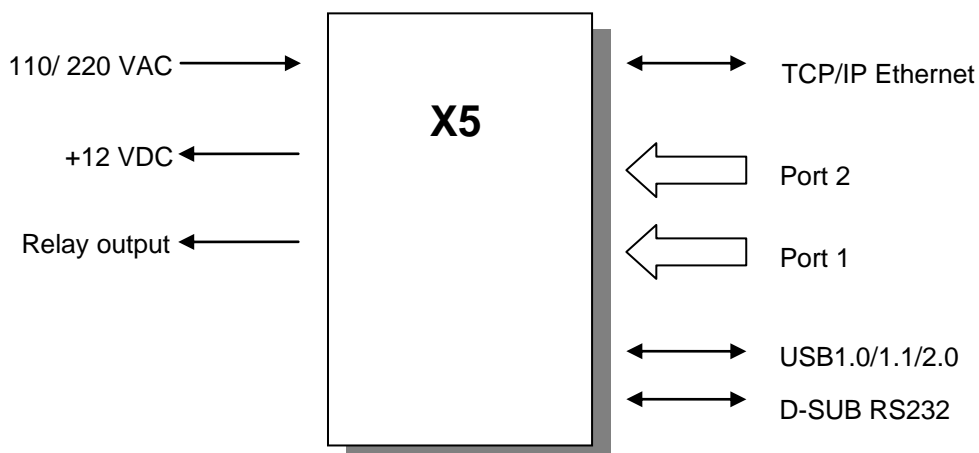
### Solar panel

The RedDetect X5 can be powered with a solar panel and battery for powerless solution. Please contact us for more information.

### Functions

#### Common

- Built-in transformer
- Stand alone function
- Fast built-in TDR ver. 2.0
- Clock and battery backup
- Collects radar curve automatically at a resistance alarm.



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## Technical data

### General

Working temperature	-20 / +80 degrees C.
Power supply	110/230 VAC
Power consumption (idle)	15W
Case	IP53 (IP67, optional steel case)

Communication protocol	TCP/IP
Communication types	Broadband, GPRS, fibre optic
Channels	4 channels with BNC contacts
Alarm wires	1 500 m alarm wire / channel (Opened or looped)

TDR	Built-in TDR pulse echometer ver. 2.0
Connctions	Ethernet

### Measurement

Insulation resistance	1 kohm – 50 Mohm
Loop resistance	0 – 200 ohm
Battery voltage	-0.5 volt.....+ 0.5 volt
TDR curve	resolution 0,25 ns

### Outputs

Relay output	NO/NC
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### Ingångar

Analogue (digital)	0-10 V / 4-20mA
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### Size

Length	260 mm
Height	150 mm (excl. contacts)
Depth	90 mm
Weight	2 kg



Alarm wire inputs

Analogue / Relay  
inputs

Ethernet

RS232

USB

Power supply

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## Technical specification

Unit	X1	X2	X4	X5
XTool monitoring software	√	√	√	√
Stand alone function	√	√	√	√
Water leak detection	√	√	√	√
Steam leak detection	√	√	√	√
Oil leak detection	-	-	-	√
TDR (pulse echo meter)	-	-	√	√
<b>Measuring channels</b>	<b>4</b>	<b>4</b>	<b>4</b>	<b>4</b>
Max. alarm wire / channel	5000	5000	5000	<b>1500</b>
<b>Communication</b>				
Broadband	√	√	√	√
GPRS	√	√	√	√
Fibre optic	√	√	√	√
<b>Size (LxDxH) mm</b>	<b>200 x 110 x 60</b>	<b>260x150x90</b>	<b>260x150x90</b>	<b>260x150x90</b>
Casing material	Polycarbonat	Aluminium	Aluminium	<b>Aluminium</b>
EMC protection	√	√	√	√
<b>Power supply</b>				
Primary	Battery pack / 12VDC	110/230 VAC	110/230 VAC	<b>110/230 VAC</b>
Secondary	24 VDC	12V DC	12V DC	<b>12V DC</b>
Internal transformer	-	√	√	√
Power consumption (idle)		15W	15W	<b>15W</b>
<b>Protection class</b>	<b>IP65</b>	<b>IP53</b>	<b>IP53</b>	<b>IP53</b>
External steel case (optional)	IP67	IP67	IP67	<b>IP67</b>
<b>Potentialfree relay output NO/NC</b>	√	√	√	√
<b>Measurement</b>				
Insulation resistance	1kohm- 1 Mohm	1kohm- 50Mohm	1kohm- 50Mohm	<b>1kohm- 50Mohm</b>
Alarm limit activating	Manually or from software	through software	through software	<b>through software</b>
Adjustable alarm limits	√	√	√	√
<b>Measurement</b>				
Loop resistance	0-200 ohm	0-200 ohm	0-200 ohm	<b>0-200 ohm</b>
Adjustable alarm limit	√	√	√	√
<b>Pulse echo meter (TDR)</b>				
TDR measurement	-	-	√	√
TDR resolution	-	-	1 ns	<b>0,25 ns</b>
TDR accuracy	-	-	< 1 m	<b>&lt; 1 m</b>
Battery voltage	-0.5 volt.....+ 0.5 volt	-0.5 volt.....+ 0.5 volt	<b>-0.5 volt.....+ 0.5 volt</b>	-0.5 volt.....+ 0.5 volt

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