



WATCHMAN® UNI^{RX}

User Guide



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Watchman UNI[®] is a universal receiver for heating oil and waste oil level measurement. As a receiver it is compatible with the Sensor Watchman range including:

- ▼ **WatchmanSonic** - Part code 003963
- ▼ **WatchmanAlarm** - Part code 004030
- ▼ **WatchmanSonic Plus** - Part code 002893
- ▼ **WatchmanSonic 4-20mA waveguide** - Part code 019052
- ▼ **4-20mA pressure sensor** - Part code 004035
- ▼ **Float Switch (Leak sensor)** - Part code 020036

It is also compatible with other industry standard sensors.

Available to buy online: www.kepartshop.com

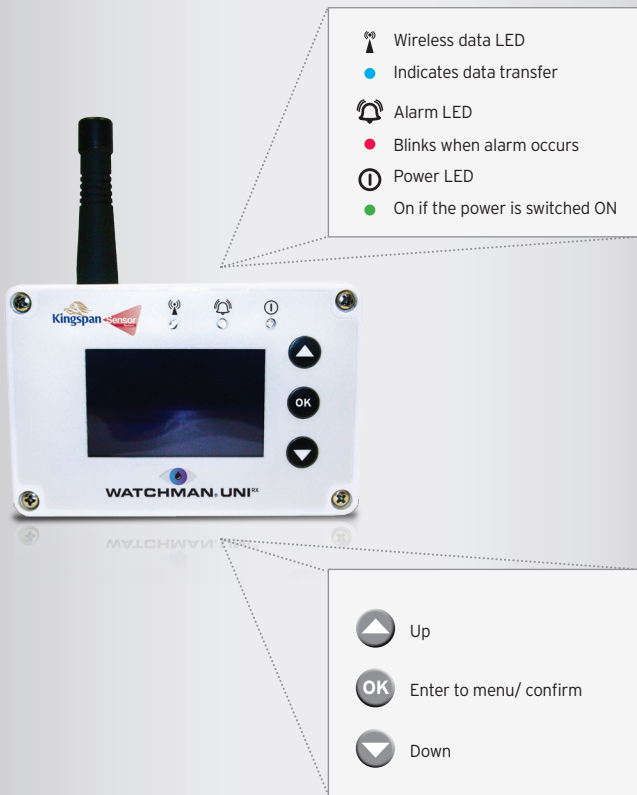


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MAIN FEATURES

- ▼ Level measurement using ultrasonic or 4-20mA sensor
 - ▼ Display level in 'Litres', 'cm' and '%'
 - ▼ Compatible with 4.20mA and wireless Watchman transmitter range
 - ▼ "Waste oil mode" option
 - ▼ "Offset" setup for WatchmanSonic transmitter
 - ▼ Easy to use screen menu with wizard setup
 - ▼ Theft rate alarm indication + audible notification
 - ▼ Leak alarm indication + audible notification
 - ▼ 128x64 graphic display, blue backlight
 - ▼ Two fully configurable relay outputs (up to 240V, 500mA)
 - ▼ RS232 interface
 - ▼ Buzzer (80db)
 - ▼ Keypad membrane
-

INDICATOR AND BUTTON DESCRIPTIONS





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FIRMWARE REVISION

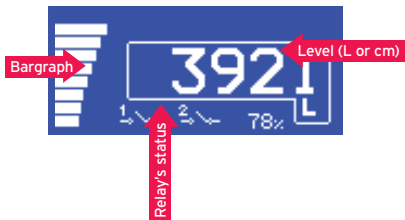
When powering up the unit, software version will be displayed for 3 seconds.



UNIRX V1.4

1. Main Screen

Level can be displayed in 'L' or 'cm', see section 3.0.



MAIN SCREEN INDICATORS

Low level (only for normal mode)

When the level reaches the threshold, nozzle icon will appear on the screen and the buzzer will sound three times every 1 hour. Low level threshold can be set up using setup wizard.



Theft rate alarm

(only for WatchmanAlarm)

When the level drop is detected (more than 3cm/2 hours) the 'tank' icon is displayed on the screen, alarm led flashes and the buzzer sounds continuously.

To **switch OFF** the audible alarm press any key. Alarm will reset at the next good reading, up to 30 minutes.



Leak alarm

When a leak is detected the 'drop' icon is displayed on the screen, alarm led flashes and buzzer sounds three times every one hour.



No signal from the transmitter heard in last 12 hours

(only for WatchmanSonic products)

When the unit detects a transmission not heard for a long time the triangle icon is displayed on the screen.



No echo (wireless unit) or no connection (wired unit)

When the No Echo is detected the triangle icon and middle bars are displayed and level is not available.



Low Battery (only for WatchmanSonic products)

When the Low Battery has been detected on the transmitter unit, the battery and triangle icons are displayed on the screen.



2. Setup Screen

To enter the Setup Screen press the  button on Main Screen.



2.1 Setup Wizard

Using the Setup Wizard, set the sensor type, tank details and thresholds. To start, select your sensor type and follow the instructions on the screen.



CUSTOM STRAPPING TABLE

Use this feature if your tank type is not listed and you have information on your tank's calibration via a calibration chart or strapping bands (These can be obtained from the tank supplier / manufacturer).

This feature is a tabular record of volume in Litres versus height measurement in cm. The higher amount of strapping bands entered to the table will increase the accuracy of the custom strapping table.

The custom strapping table must contain a minimum of 2 strapping bands and a maximum of 20.

All unused strapping bands must be set to 0 cm and 0 Litres. The bands must run in sequence from lowest volume to highest as per example below.

CM	L
000000	000000
000001	000000
000002	000000
000003	000000
000004	000000
000005	000000
000006	000000
000007	000000
000008	000000
000009	000000
000010	000000
000011	000000
000012	000000
000013	000000
000014	000000
000015	000000
000016	000000
000017	000000
000018	000000
000019	000000
000020	000000

CM	L
000000	000000
000001	000000
000002	000000
000003	000000
000004	000000
000005	000000
000006	000000
000007	000000
000008	000000
000009	000000
000010	000000
000011	000000
000012	000000
000013	000000
000014	000000
000015	000000
000016	000000
000017	000000
000018	000000
000019	000000
000020	000000



SETUP WIZARD FLOW CHART NORMAL MODE

SETUP
1. SETUP WIZARD
2. RELAY1 SETUP
3. RELAY2 SETUP
4. LCD BACKLIGHT ON/OFF
5. BUZZER ON/OFF
6. EXIT

SETUP WIZARD
MODE: NORMAL
WASTE OIL

SETUP WIZARD
SENSOR: W-MANSONIC
W-MAN ALARM
W-MANSONIC PLUS
4-20MA (PRESSURE)
4-20MA

SETUP WIZARD
SENSOR: W-MANSONIC
W-MAN ALARM
W-MANSONIC PLUS
4-20MA (PRESSURE)
4-20MA

SETUP WIZARD
SENSOR: W-MANSONIC
W-MAN ALARM
W-MANSONIC PLUS
4-20MA (PRESSURE)
4-20MA

SETUP WIZARD
TANK HEIGHT: 200 CM

SETUP WIZARD
4MA: 0 CM

SETUP WIZARD
OFFSET COMPENSATION? YES
NO

SETUP WIZARD
TANK HEIGHT: 200 CM

SETUP WIZARD
PRESSURE RANGE: 15.0 PSI

SETUP WIZARD
DENSITY: 1.000

SETUP WIZARD
20MA: 200 CM

SETUP WIZARD
TANK HEIGHT: 200 CM

SETUP WIZARD
SONIC HEIGHT: 202 CM

SETUP WIZARD
SHOW VOLUME IN LITRES?
YES
NO

SETUP WIZARD
SENSOR: W-MANSONIC
W-MAN ALARM
W-MANSONIC PLUS
4-20MA (PRESSURE)

SETUP WIZARD
SENSOR: W-MANSONIC
W-MAN ALARM
W-MANSONIC PLUS
4-20MA (PRESSURE)

SETUP WIZARD
SENSOR: W-MANSONIC
W-MAN ALARM
W-MANSONIC PLUS
4-20MA (PRESSURE)

SETUP WIZARD
PAIR THE NEW SONIC? YES
NO

SETUP WIZARD
HOLD THE MAGNET TO THE
WHITE DOT UNTIL
PAIRING IS COMPLETE...

DONE-RELEASE THE MAGNET

SETUP WIZARD
TANK HEIGHT: 200 CM

SETUP WIZARD
SONIC HEIGHT: 202 CM

SETUP WIZARD
TANK TYPE: BM1200
BM2500
BM3500
BM4000
BM5000
BM9000
CUSTOM

CM	L
01	0
02	10
03	20
04	30
05	40

CM	L
06	50
07	60
08	70
09	80
10	90

CM	L
11	0
12	0
13	0
14	0
15	0

CM	L
16	0
17	0
18	0
19	0
20	0

SETUP WIZARD
TANK CAPACITY: 1200 L

SETUP WIZARD
LOW LEVEL: 20 %

SETUP WIZARD
EMPTY: 10 %

SETUP WIZARD
NO ECHO AUDIBLE ALARM: OFF
ON

SETUP WIZARD
SAVE SETTINGS? YES
NO

03

0

BM...

CUSTOM

YES

NO

YES

NO

SETUP WIZARD FLOW CHART WASTE OIL MODE

SETUP
 1. SETUP WIZARD
 2. RELAY1 SETUP
 3. RELAY2 SETUP
 4. LCD BACKLIGHT ON/OFF
 5. BUZZER ON/OFF
 6. EXIT

SETUP WIZARD
 MODE: NORMAL
 WASTE OIL

SETUP WIZARD
 SENSOR: W-MANSONIC
 W-MAN ALARM
 W-MANSONIC PLUS
 4-20MA (PRESSURE)
 4-20MA

SETUP WIZARD
 SENSOR: W-MANSONIC
 W-MAN ALARM
 W-MANSONIC PLUS
 4-20MA (PRESSURE)
 4-20MA

SETUP WIZARD
 SENSOR: W-MANSONIC
 W-MAN ALARM
 W-MANSONIC PLUS
 4-20MA (PRESSURE)
 4-20MA

SETUP WIZARD
 TANK HEIGHT: 200 CM

SETUP WIZARD
 OFFSET COMPENSATION? YES NO

SETUP WIZARD
 4MA: 0 CM

SETUP WIZARD
 TAKE OUT THE PRESSURE
 SENSOR FROM THE LIQUID
 AND PRESS OK

SETUP WIZARD
 20MA: 200 C

SETUP WIZARD
 TANK HEIGHT: 200 CM

SETUP WIZARD
 PRESSURE RANGE: 15.0 PSI

SETUP WIZARD
 DENSITY: 1.000

SETUP WIZARD
 SHOW VOLUME IN LITRES?
 YES NO

SETUP WIZARD
 TANK TYPE: BM1200
 BM2500
 BM3500
 BM4000
 BM5000
 BM9000
 CUSTOM

CM	L
01	0
02	0
03	0
04	0
05	0

CM	L
06	75
07	91
08	100
09	0
10	0

CM	L
11	0
12	0
13	0
14	0
15	0

CM	L
16	0
17	0
18	0
19	0
20	0

SETUP WIZARD
 TANK CAPACITY: 1200 L

SETUP WIZARD
 HIGH LEVEL: 80 %

SETUP WIZARD
 FULL: 90 %

SETUP WIZARD
 NO ECHO AUDIBLE ALARM: OFF ON

SETUP WIZARD
 SAVE SETTINGS? YES NO



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2.2 Relay1 Setup

This option enables configuration of Relay1.

SETUP

1. SETUP WIZARD
2. RELAY1 SETUP
3. RELAY2 SETUP
4. LCD BACKLIGHT ON/OFF
5. BUZZER ON/OFF
6. EXIT

2.3 Relay2 Setup

This option enables configuration of Relay2.

SETUP

1. SETUP WIZARD
2. RELAY1 SETUP
3. RELAY2 SETUP
4. LCD BACKLIGHT ON/OFF
5. BUZZER ON/OFF
6. EXIT

2.4 LCD Backlight ON/OFF

This option enables switching ON/OFF the backlight.

AUTO OFF- backlight will be switched off after approx.

2 minutes ON - backlight will remain ON all the time.

SETUP

1. SETUP WIZARD
2. RELAY1 SETUP
3. RELAY2 SETUP
4. LCD BACKLIGHT ON/OFF
5. BUZZER ON/OFF
6. EXIT

2.5 Buzzer ON/OFF



This option enables switching ON/OFF internal buzzer.

Note: If the option OFF is chosen, the internal buzzer will not sound in the event of any alarms.

SETUP

1. SETUP WIZARD
2. RELAY1 SETUP
3. RELAY2 SETUP
4. LCD BACKLIGHT ON/OFF
5. BUZZER ON/OFF
6. EXIT

3. Switching between cm and L

To switch the level displaying method between cm and Litres press the  or  key when on the Main Screen.

4. TERMINOLOGY

Tank height (single skin tank)

- height from the bottom of the tank to the top of the tank.

Tank height (bunded inner tank and outer tank)

- height from the bottom of the tank to the top of the inner tank.

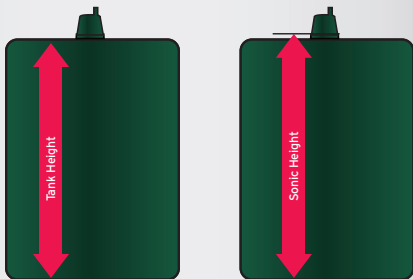
Sonic height

- height from the bottom of the tank to the top of the WatchmanSonic base.

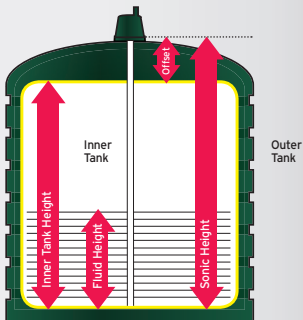
Offset

- calculated automatically.
-

Single Skin Tank



Bunded Tank





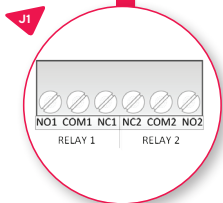
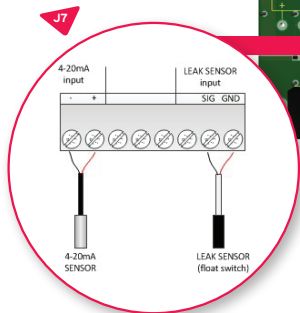
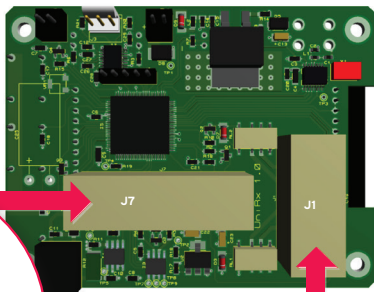
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SPECIFICATIONS

1. Electrical and environmental specification

- ▼ Supply voltage: 9-12VDC (9V AC adapter included).
- ▼ Max current consumption: 100mA.
- ▼ Operating temperature: 0°C+40°C.
- ▼ Relay's max switching current: 500mA.

2. Connections



3. LEDs

Colour	Function	Action
Blue	Data received from the transmitter	"short blink" indicates radio frame received properly
Red	Alarm indication	Blinks if the alarm occurs
Green	Power ON indication	"ON" if the power is switched on and device is working properly

4. Relay Outputs

	Resistive load
Contact mechanism	DPCO
Max. switching voltage	250VAC, 220VDC
Max. switching current	500mA

5. Wireless WatchmanSonic Input

- ▼ 433MHz, FM transmission
 - ▼ Max communication distance: 200m in normal "line of sight" conditions
 - ▼ Compatible transmitters: WATCHMANSONIC, WATCHMANALARM, WATCHMANSONIC PLUS
-

6. Wired Leak Sensor Input

- ▼ Volt free contact compatible

7. 4-20mA Input

- ▼ Active type
 - ▼ Sensor's supply: 9VDC
 - ▼ Overcurrent protection: 150mA resettable fuse
-

8. RS232 Interface Option

- ▼ 9600,8,N,1
- ▼ Communication cable required: No 003582



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DIMENSIONS





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