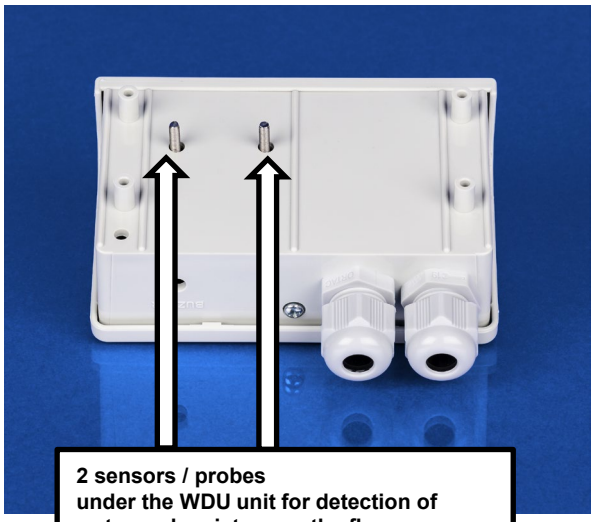
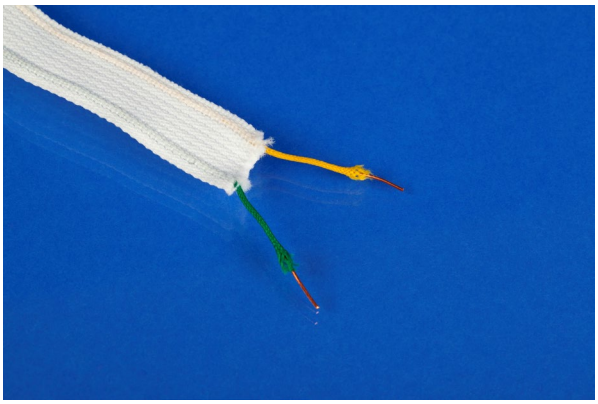

CE **WDU 31 SRBM**



**2 sensors / probes**
**under the WDU unit for detection of water and moisture on the floor**



Water Detection Tape WDT can be connected to Water Leakage Detector WDU-series.
See separate data sheet for WDT.

## Features

- **Early detection = Early warning**
- **Detection of water and moisture**
- **24 Vac/dc**
- **2 x cable glands**
- **IP54**
- **LED status indication on PCB**

**WDU-series available with**

- **2 x sensors / probes**
  **under the Water Leakage Detector WDU unit**
  **for detection of water and moisture on the floor**
- **Relay output**
- **Buzzer**
- **Modbus RS485**
- **3 x independent inputs or 1 x input**
  **for connection to Water Detection Tape WDT**
- **1 x external input**

**4 x DIP switches**

**DIP switch 1:**
**Sensitivity, High or Low for**
**Water Detection Tape WDT inputs 1, 2, 3 .**

**DIP switch 2:**
**Alarm Mode, Continuous or Temporary.**

**DIP switch 3:**
**Buzzer Mode, Continuous or Intermittent.**

**DIP switch 4:**
**Relay, normally open or closed, reversing the contact**

## Application

Data Centers, Computer flooring, Record rooms, Engineering rooms, Operating rooms, Compressor rooms, Heating and Cooling pipes, Insulated piping in district heating chambers, Stock Areas / Ware houses.

## Description

The Water Leakage Detector WDU-series detects conductive liquids which is making it ideal for monitoring leakage and moisture content and to prevent or minimize water damages.

The main applications for Water Leakage Detector WDU are in the building and climate technology.

The Water Leakage Detector WDU can be used as stand alone.

2 x sensors / probes under integrated the Water Leakage Detector WDU unit for detection of water and moisture on the floor.

The Water Leakage Detector WDU can also be used with Water Detection Tape WDT .

Water Leakage Detector WDU can be supplied with relay output, buzzer and Modbus RS485.

The relay output for Water Leakage Detector WDU provides an alarm signal for connection to a BMS controller or remote alarm annunciation panel.

Water Leakage Detector WDU can be supplied with 3 x independent inputs or 1 x input for connection to Water Detection Tape WDT.

The Water Leakage Detector WDU can be supplied with external input, dry contact and can be normally open or closed.
The external input is used for getting data from third party devices, for example, there may be a floating switch, alarm switch or any device having an alarm output with a relay. (External input make it possible to get the alarm data from this third device to water leakage detector WDU).

Power supply for Water Leakage Detector WDU is 24 Vac/dc.

The Water Leakage Detector WDU have 4 x DIP switches
SW1: Sensitivity, High or Low for Water Detection Tape WDT inputs 1, 2, 3 .
SW2: Alarm Mode, Continuous or Temporary.
SW3: Buzzer Mode, Continuous or Intermittent.
SW4: Relay, normally open or closed, reversing the contact

Water Leakage Detector WDU senses the change when moisture or water is in contact with the sensors/probes under the unit or water is in contact with the external Water Detection Tape WDT.

The Water Detection Tape WDT is made of texturized stockinet-knitted polyester in which parallel uninsulated wires of soft annealed copper are woven.

The Water Detection Tape WDT indicating the presence of moisture or water/liquid between the wires.

The Water Leakage Detector WDU is tested by placing a wet finger on the sensors/probes under the unit.

Testing of the Water Leakage Detector WDU together with the Water Detection Tape WDT is made by placing a wet finger at the end of the wires of the Water Detection Tape WDT.

More details about Water Detection Tape WDT in separate data sheet.

## Ordering codes

| Model | Input(s) | "options" |
|---|---|---|
| WDU = water leakage detector | 31 = 3 x independent inputs for water detection tape WDT and 1 x external input<br>10 = 1 x input for water detection tape WDT | S = 2 x Sensors / probes<br>R = Relay Output<br>B = Buzzer<br>M = Modbus RS485 |

## Ordering examples

| Type no. | Description |
|---|---|
| **WDU 31 SRBM** | Water leakage detector<br>3 x independent inputs for water detection tape WDT and 1 x external input<br>2 x Sensors/probes, Relay, Buzzer and Modbus RS485 |
| **WDU 10 SRBM** | Water leakage detector<br>1 x input for water detection tape WDT<br>2 x Sensors/probes, Relay, Buzzer and Modbus RS485 |
| **WDU 31 SRB** | Water leakage detector<br>3 x independent inputs for water detection tape WDT and 1 x external input<br>2 x Sensors/probes, Relay and Buzzer |
| **WDU 10 SRB** | Water leakage detector<br>1 x input for water detection tape WDT<br>2 x Sensors/probes, Relay and Buzzer |
| **WDU 31 SR** | Water leakage detector<br>3 x independent inputs for water detection tape WDT and 1 x external input<br>2 x Sensors/probes and Relay |
| **WDU 10 SR** | Water leakage detector<br>1 x input for water detection tape WDT<br>2 x Sensors/probes and Relay |

**Notes**

1. All combinations are possible.
2. External input should be dry contact and can be normally open or closed.
3. External input (digital input as dry contact) is used for getting data from third party devices.
   For example, there may be a floating switch, alarm switch or any device having an alarm output with a relay.
   (External input make it possible to get the alarm data from this third device to water leakage detector WDU).
4. Use only advised water detection tape WDT

**Water Detection Tape WDT**

1. Water detection tape WDT is specially manufactured for moisture and water leakage detection.
2. Do not use water detection tape WDT as for power or signal cable.
3. Water detection tape WDT can detect only conductive liquids.
4. WDT an be supplied in rolls of 25 meters WDT 25 and 50 meters WDT 50, other lengths shorter than 25 meters available.

**General Notes**

1. Observe maximum permissible cable lengths.
2. If the signal cables runs parallel to the mains cable: Use shielded cables.
3. Relay contact rating is max. 1A at 230 Vac.
4. We kindly advise using 24 V on relay contacts and using external power relay for bigger loads to avoid high voltage harmonics.
5. Please use shielded and twisted paired cables for Modbus connections.
6. Do not use on grounded or conductive floors (with sensing probes touching to floor).
7. Prevent probes from touching to any chemical.

## DIP switches

SW1: Sensitivity, High or Low for Water Detection Tape WDT inputs 1, 2, 3 .

SW2: Alarm Mode, Continuous or Temporary.

SW3: Buzzer Mode, Continuous or Intermittent.

SW4: Relay, normally open or closed, reversing the contact

### SW1 - Sensitivity

| | | |
|---|---|---|
|  | ON | HIGH, responds to lower level of moisture |
|  | OFF | LOW, responds to higher level of moisture |

### SW2 - Alarm Mode

| | | |
|---|---|---|
|  | ON | PERMANENT Alarm, until a manual reset |
|  | OFF | TEMPORARY Alarm, resets automatically whenever alarm is off |

### SW3 - Buzzer Mode

| | | |
|---|---|---|
|  | ON | Intermittent (pulsed) Signal |
|  | OFF | Continuous Signal |

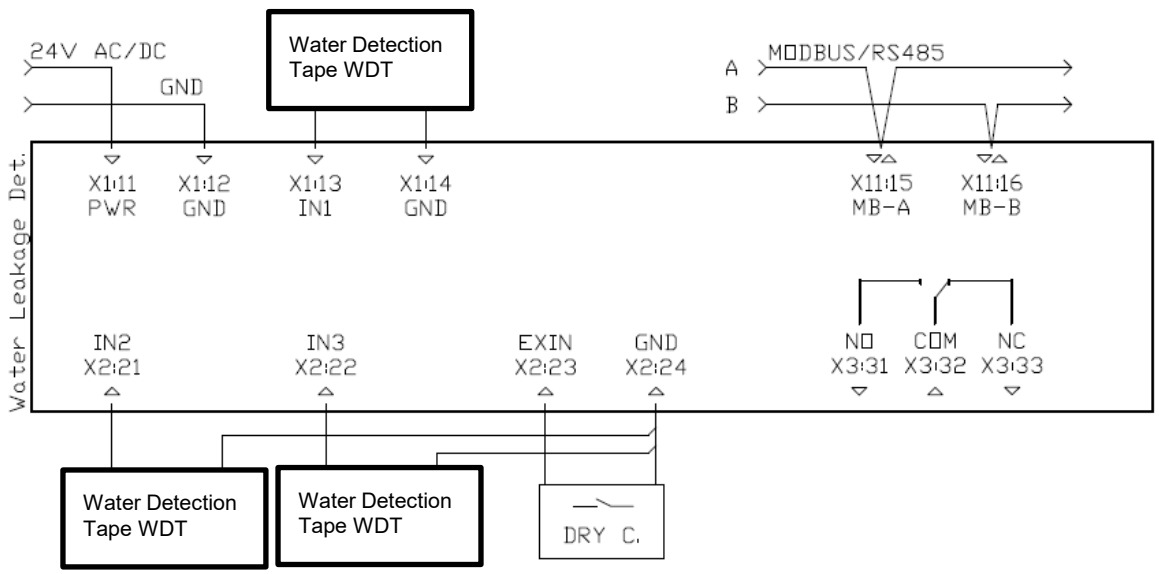
### SW4 - Relay Reverse

| | | |
|---|---|---|
|  | ON | Reversed, relay is normally closed and de-activates with alarm |
|  | OFF | Normal, relay is normally open and activates with alarm |

## Technical data

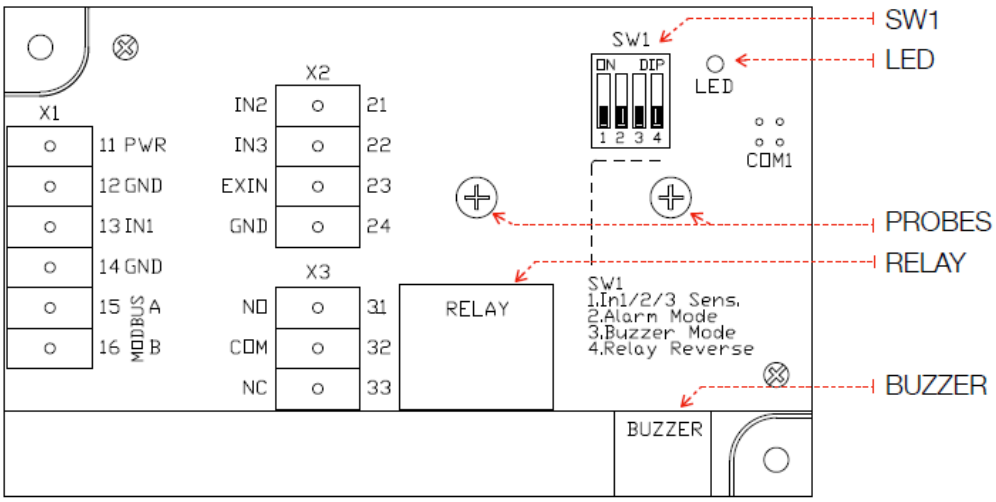
| | | |
|---|---|---|
| Electrical | Power Supply | AC 24V (± %5), 50-60 Hz<br>DC 15…35 V |
| | Power Consumption | < 2 W |
| Inputs | water detection tape | 1 x input for water detection tape WDT for WDU 10<br>3 x independent inputs for water detection tape WDT (and 1 x external input) for WDU 31 |
| Outputs | Relay Output | Changeover Contact, max. 1A @ 220 Vac |
| | Buzzer | > 90 db |
| Sensitivity | all models | adjusted by DIP Switch as HIGH and LOW |
| Response | all models | 5-10 sec, depending on moisture level |
| Connections | Terminals | Screw terminal |
| | Cable | maximum 1.5mm2 |
| | Cable Gland | 2 x M16 |
| Protection | all models | IP54 |
| Standards | EMC Directive | EN 61326-1 |
| | CE Conformity | CE 2020-3 |
| Dimensions | net | 109.5 x 70.0 x 42.0 mm |
| | packed | 150.0 x 85.0 x 50.0 mm |
| Weight | net 125 gr | packed 150 gr |

## Electrical Connections




Relay contact rating is max. 1A at 230VAC
Use 24V on relay contacts and using external power relay for bigger loads to avoid high voltage harmonics
Use shielded and twisted paired cables for Modbus connections

## Hardware


| | | |
|---|---|---|
| **SW1** | config | see page 4 |
| **LED** | working | blinks periodically |
| | modbus | blinks for each Modbus transmitting |
| | alarm | on when buzzer signals |
| **PROBES** | | adjustable probes |
| **RELAY** | | max. rating 1A @ 220 Vac |
| **BUZZER** | silent | normal working |
| | alarm | sounds continuous or intermittent |
| **X1** | **11** PWR | 14…35 Vdc or 24 Vac (± %5, 50-60 Hz) |
| | **12** GND | ground for power and reference for outputs |
| | **13** IN1 | detector cable input 1 |
| | **14** GND | reference for IN1 |
| | **15** modbus-A | modbus communication positive pair |
| | **16** modbus-B | modbus communication negative pair |
| **X2** | **21** IN2 | detector cable input 2 |
| | **22** IN3 | detector cable input 3 |
| | **23** EXIN | external input, only dry contact |
| | **24** GND | reference for IN2, IN3 and EXIN |
| **X3** | **31** | normally open |
| | **32** | common |
| | **33** | normally closed |

## Modbus Protocol

Default Settings: Modbus ID:1, 9600, 8bit, None, 1.

Register Table starts from Base 1.

Use Function 3 for Reading and Function 6 for Writing Holding Registers.

Whenever changing any Modbus Parameter,
the new parameter is activated instantly and you should have to configure the master device according to the new parameters.

ID:254 is the common address for all units.

| Register | R/W | Default | Range | Description |
|---|---|---|---|---|
| 1 | R & W | 1 | 1-253 | Modbus Address |
| 2 | R & W | 0 | 0-1 | Baudrate, *0: 9.600, 1: 19.200* |
| 3 | R & W | 0 | 0-3 | Bit_Parity_Stop, *0: 8bit_None_1, 1: 8bit_None_2, 2: 8bit_Even_1, 3: 8bit_Odd_1* |
| 4 | R & W | 500 | 1-1023 | Threshold for HIGH sensitivity, *lower values for higher sensitivity* |
| 5 | R & W | 1000 | 1-1023 | Threshold for LOW sensitivity, *higher values for lower sensitivity* |
| 6 | R | 0 | 0-1023 | IN1, Analog value |
| 7 | R | 0 | 0-1023 | IN2, Analog value |
| 8 | R | 0 | 0-1023 | IN3, Analog value |
| 9 | R | 0 | 0-1 | IN1, Alarm situation, *0: normal, 1: alarm* |
| 10 | R | 0 | 0-1 | IN2, Alarm situation, *0: normal, 1: alarm* |
| 11 | R | 0 | 0-1 | IN3, Alarm situation, *0: normal, 1: alarm* |
| 12 | R | 0 | 0-1 | EXIN, Alarm situation, *0: normal, 1: alarm* |
| 13 | R | 0 | 0-1 | TOTAL ALARM, *any alarm will be enough for total alarm, 0: normal, 1: alarm* |
| 14 | R | 0 | 0 | Empty, for future use |
| 15 | R | 0 | 0 | Empty, for future use |

## Drawings