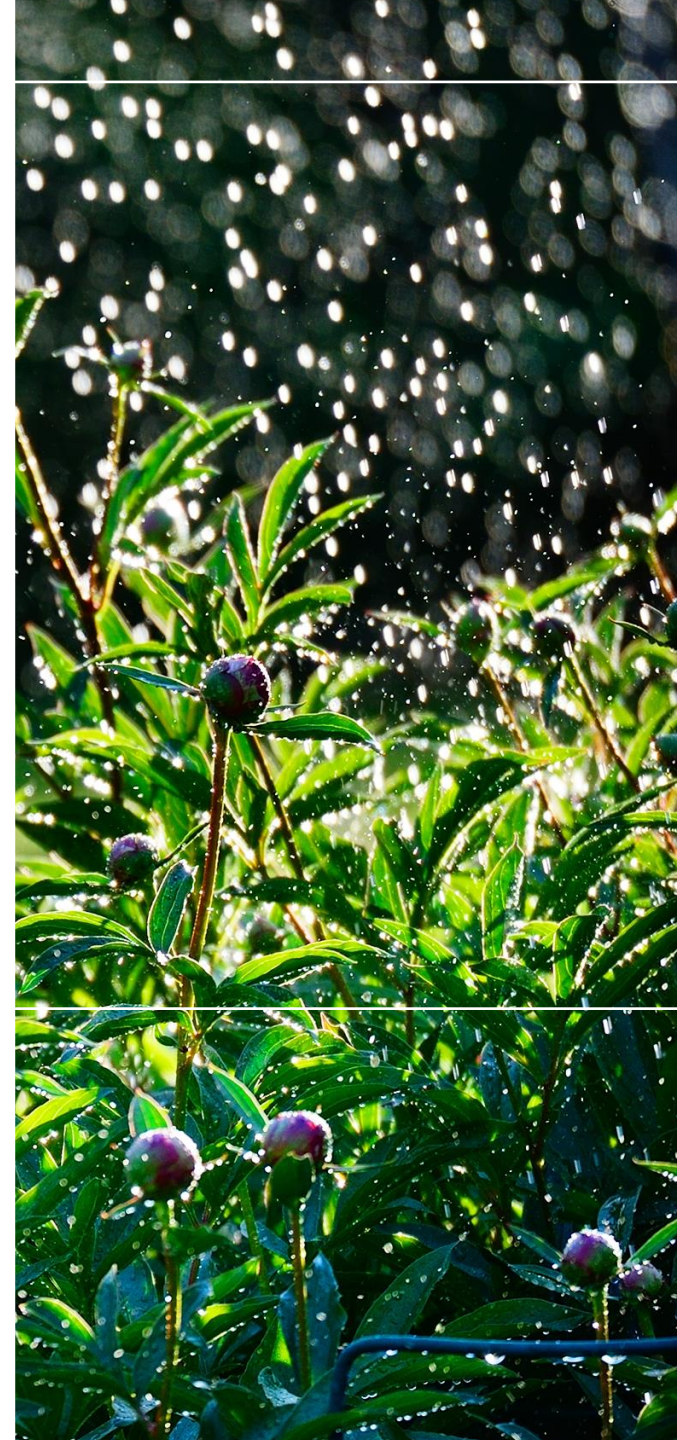


Resource-Efficient Automatic Irrigation with or without KNX

Jardana Irrigation Control

Frederik Riedel | Ostelsheim | 25.04.24

elsner | academy



Your speaker



- Frederik Riedel
- Manager and trainer in technical service at Elsner Elektronik GmbH
- Support, product consulting



Watering in the evening is wrong!



Is this statement true? What do you think?

- ✓ Yes, it is true. When the soil is hot, the water evaporates and does not reach the roots

When do you water your garden or what do you think is the best time to water?

Possible answers :

1. between 3:00 and 4:00 a.m.
2. between 3:00 and 5:00 p.m.
3. between 6:00 and 8:00 p.m.

Solution:

1. between 3:00 and 4:00 a.m. is the best time



Our learning goals today

After this webinar you will be able to

- ✓ Optimally irrigate different plant zones
- ✓ Using the optimum watering time
- ✓ Save water costs
- ✓ Optimally configure the functions of the Jardana



Agenda

1. Jardana functions
2. Installation and connection
3. Irrigation systems, optimal irrigation
4. Jardana Mobile App
5. KNX application, parameters
6. Application examples



1 | Functions of the irrigation system

elsner

Irrigation control Jardana

Item number: 70309



- Irrigation of four zones according to timer or measured soil moisture value
- Connection options for soil moisture sensors
- Can be used with app or KNX control
- Supply voltage via power supply unit (included in the scope of delivery)



Soil Moisture Sensor

Item number: 70313

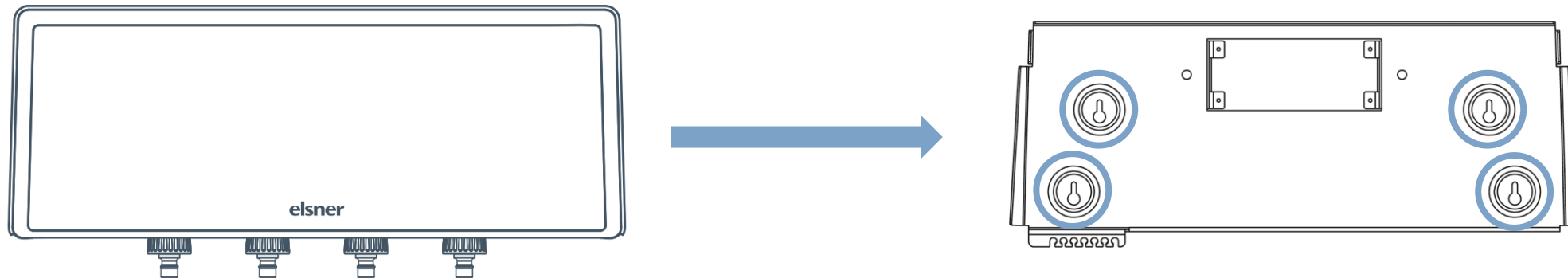


- Up to four soil moisture sensors can be connected to one Jardana
- The soil moisture sensors are optionally available

2. | Installation and connection

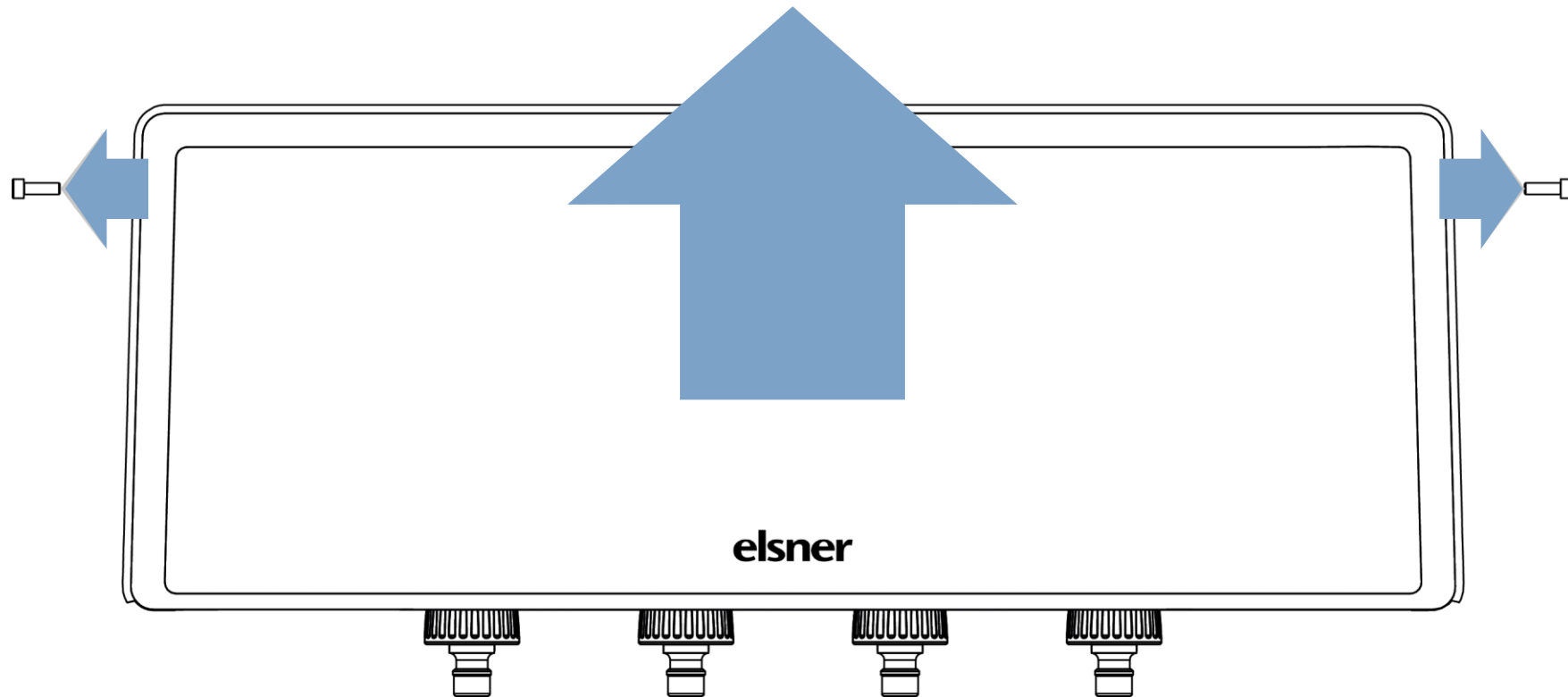


Mounting the Jardana control unit

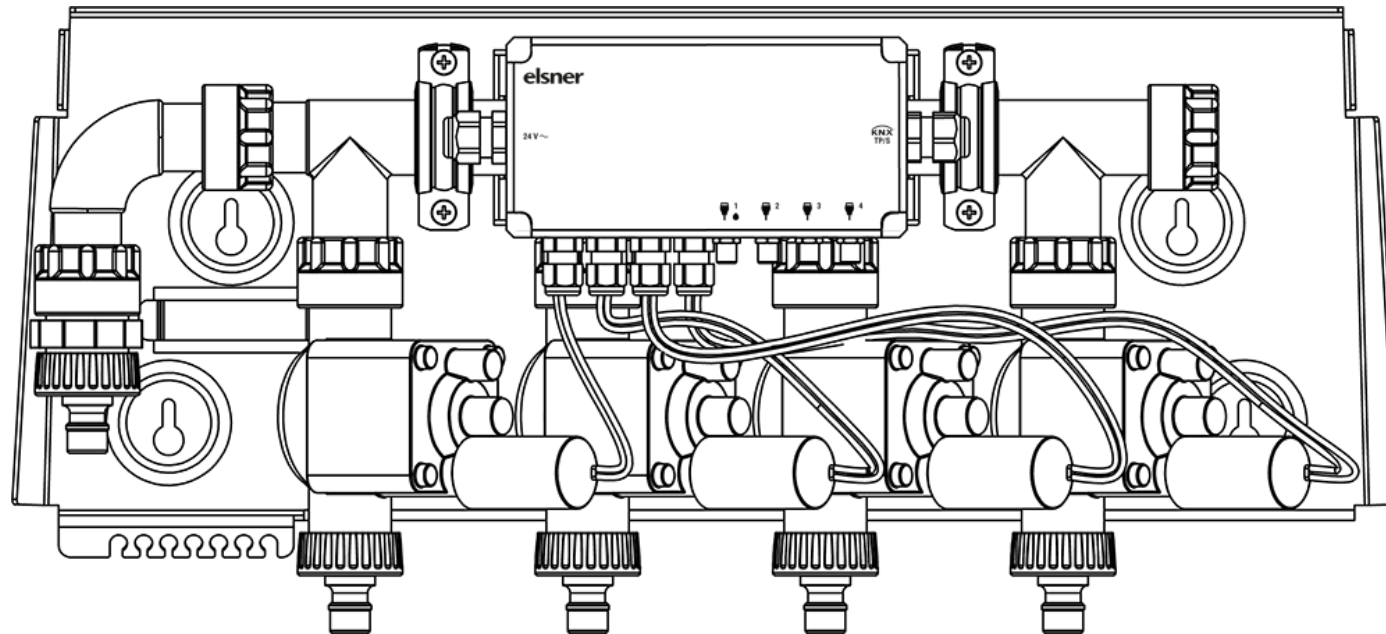


- The Jardana is attached to the wall with 4 screws
- Recommended mounting height: at least 50 cm above the floor

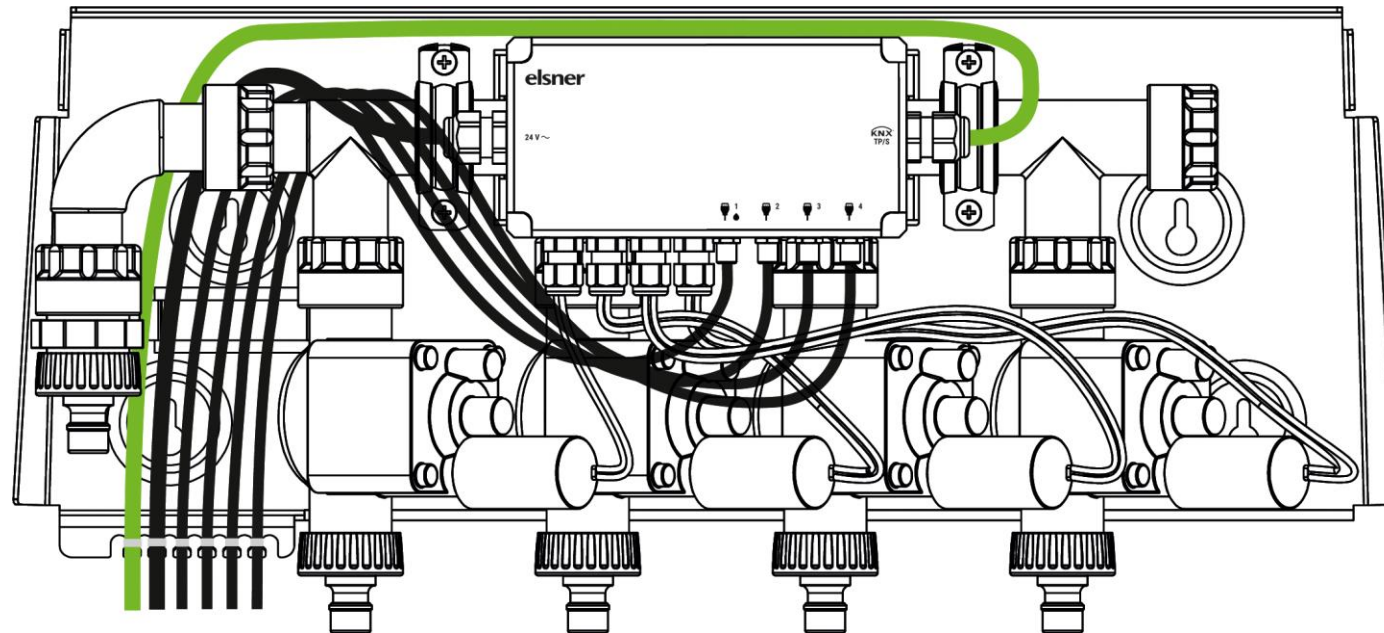
Mounting the Jardana control unit



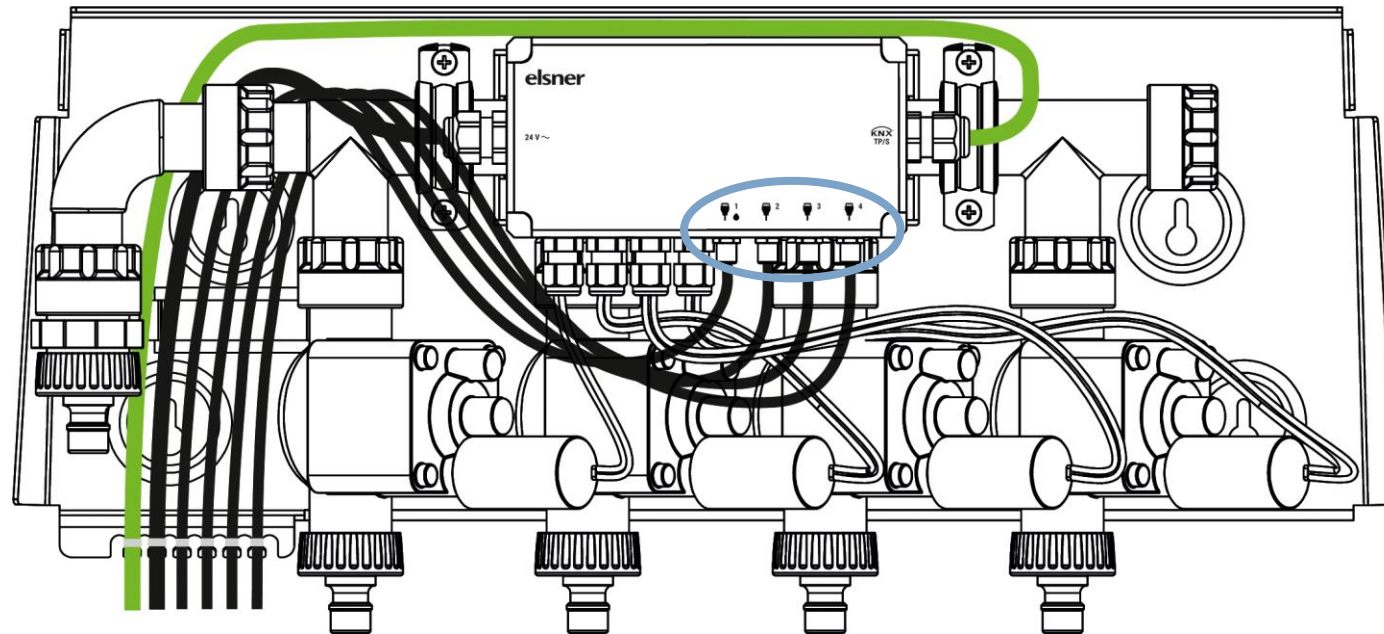
Mounting the Jardana control unit



Connection overview

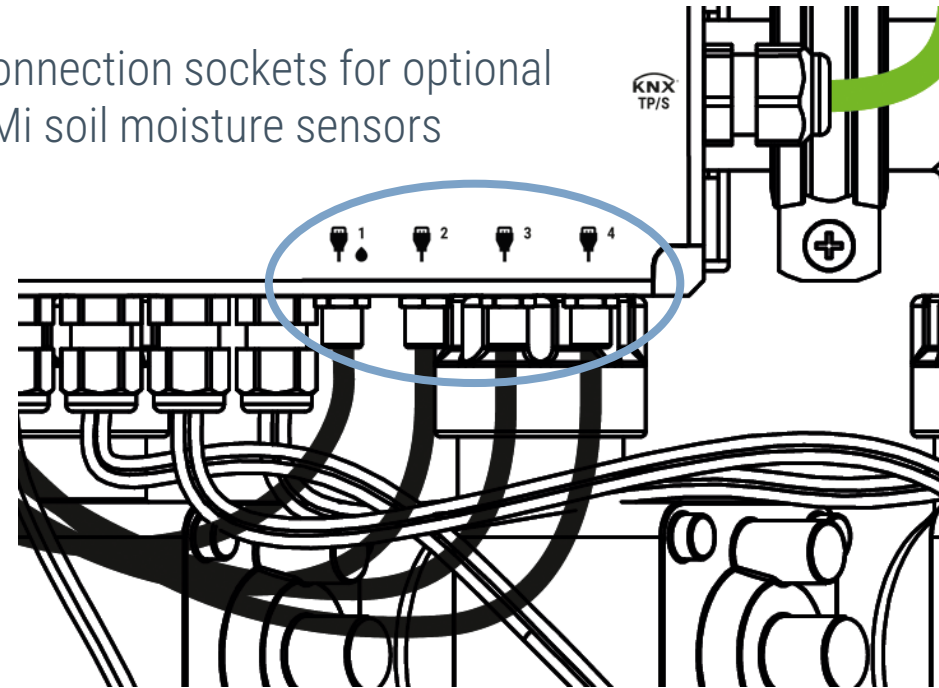


Connection of soil moisture sensors



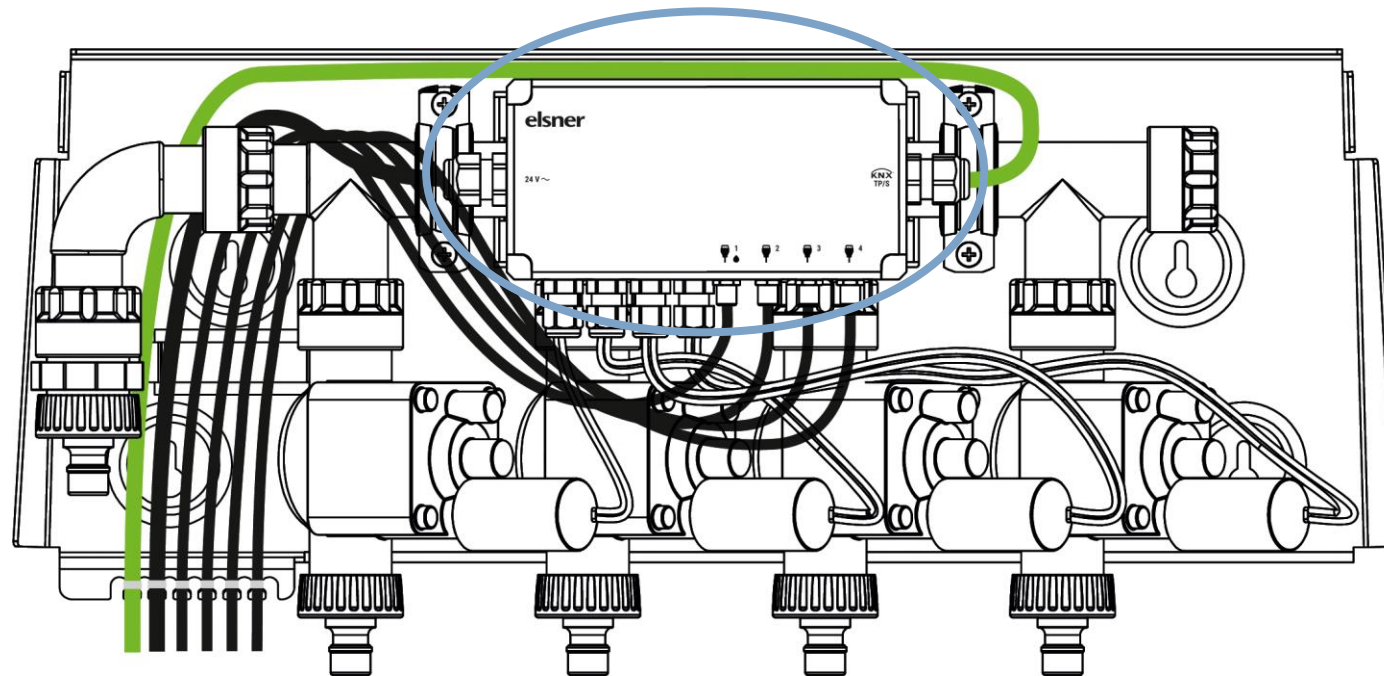
Connection of soil moisture sensors

Connection sockets for optional
TMI soil moisture sensors



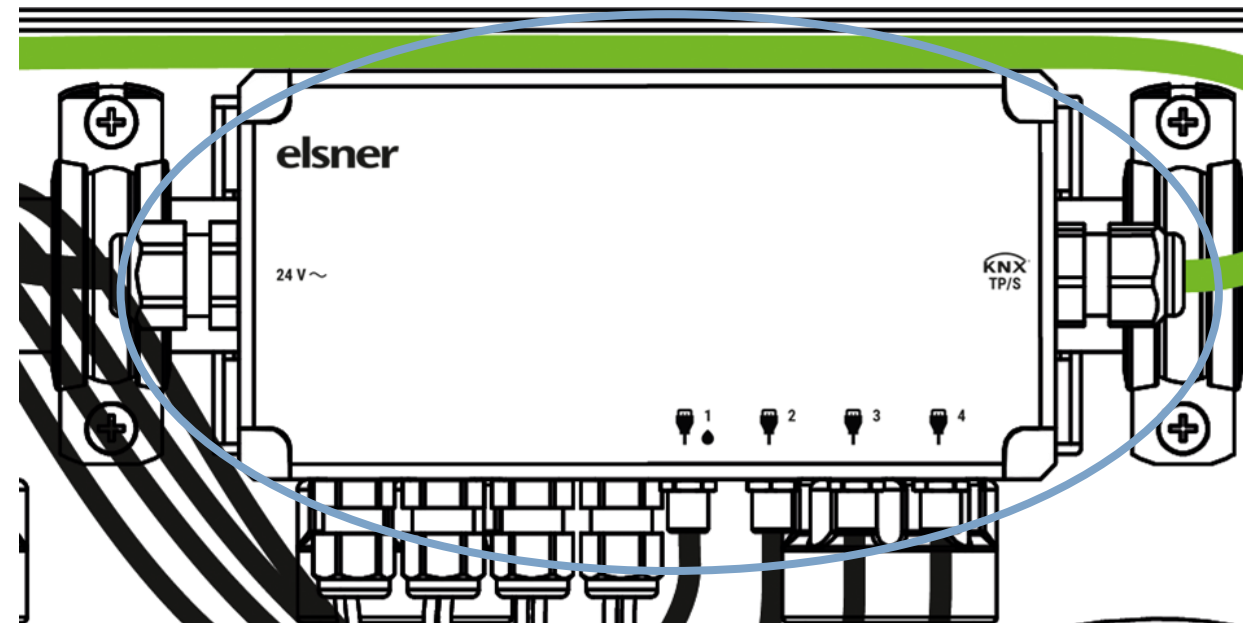
KNX bus connection

Jardana is prepared for the KNX connection, but can also be used without KNX (app, WLAN)



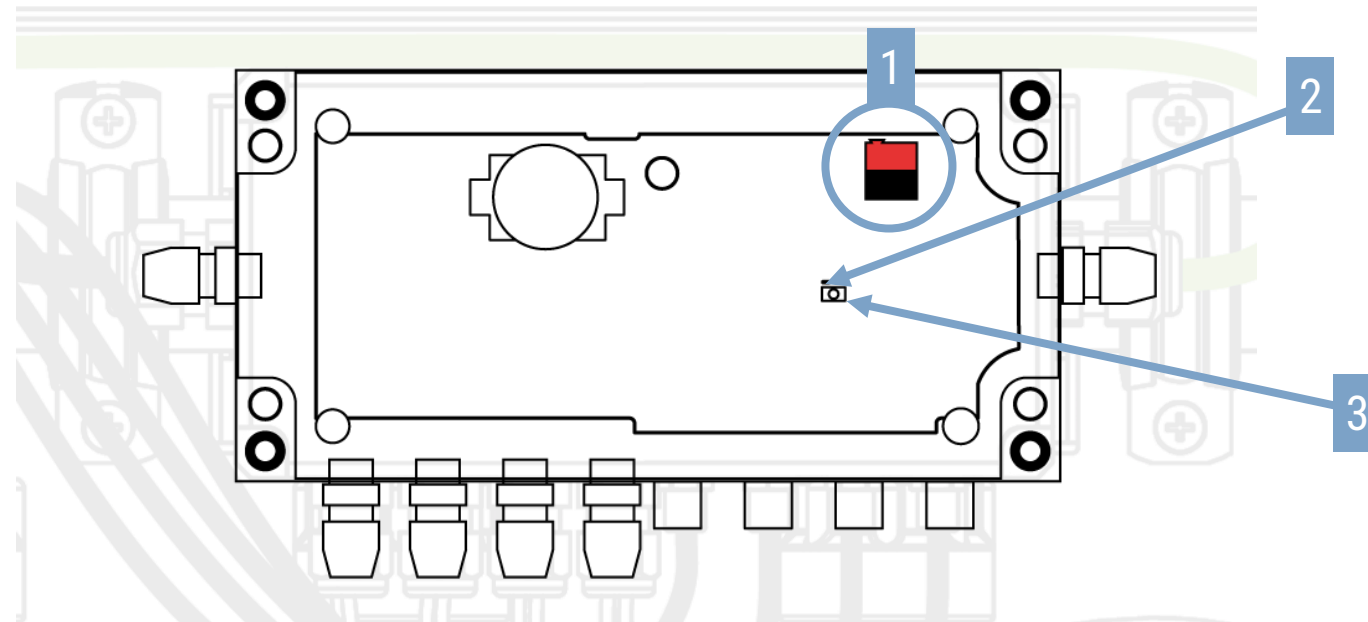
KNX bus connection

- Opening the electronics unit
- Remove the dummy plug
- Insert the supplied cable gland
- Run KNX-TP cable

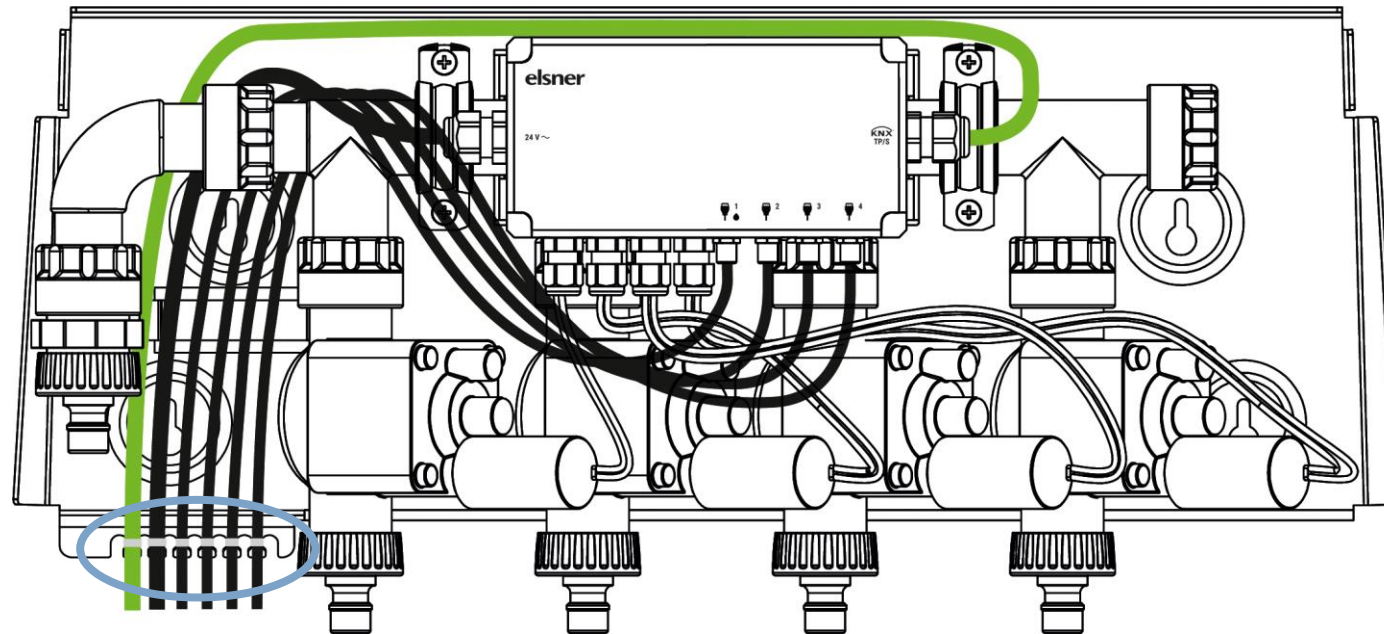


KNX bus connection

1. KNX plug terminal
2. Programming LED
3. Programming button

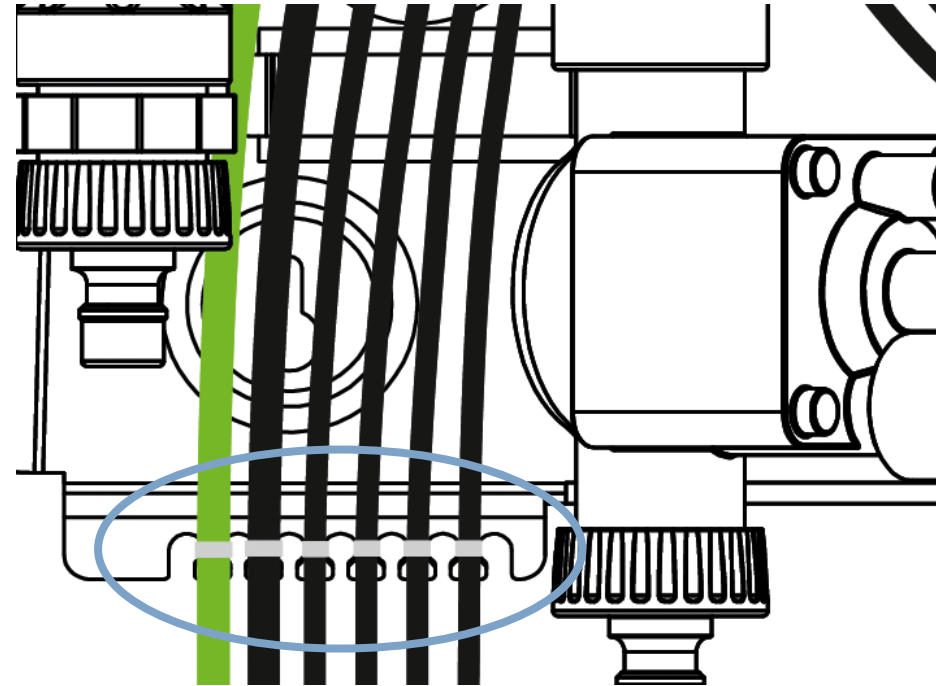


Connection: Arrange cables

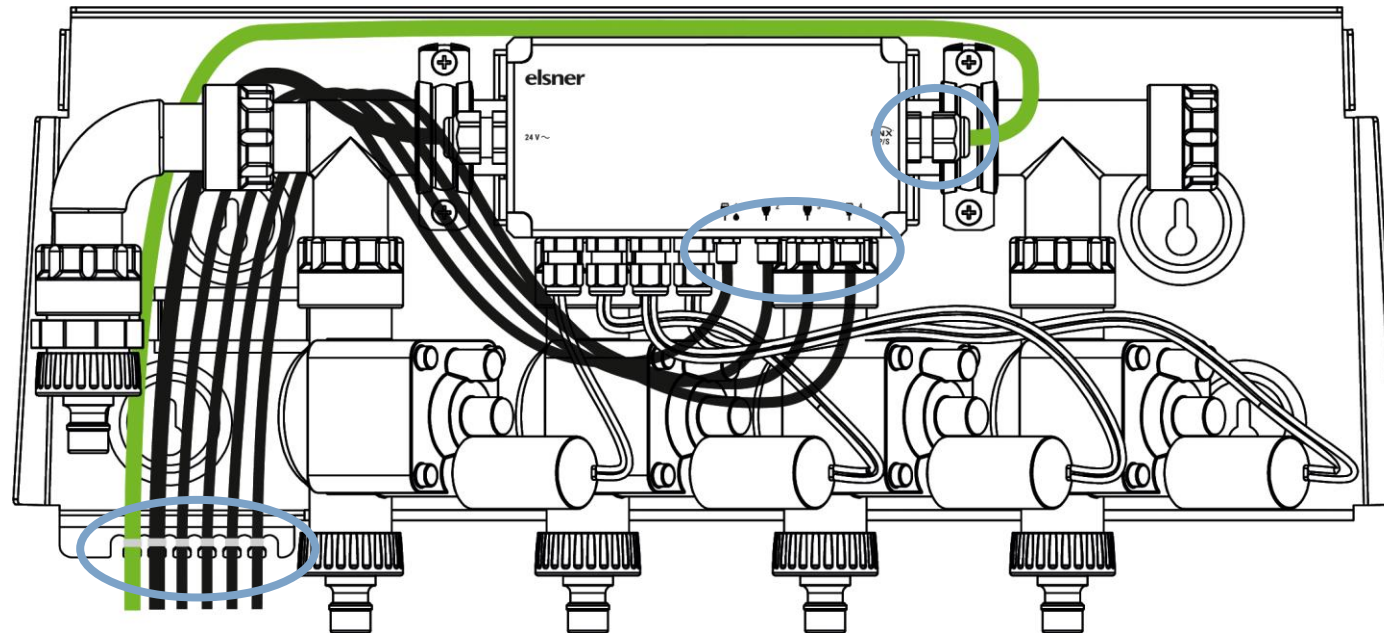


Connection: Arrange cables

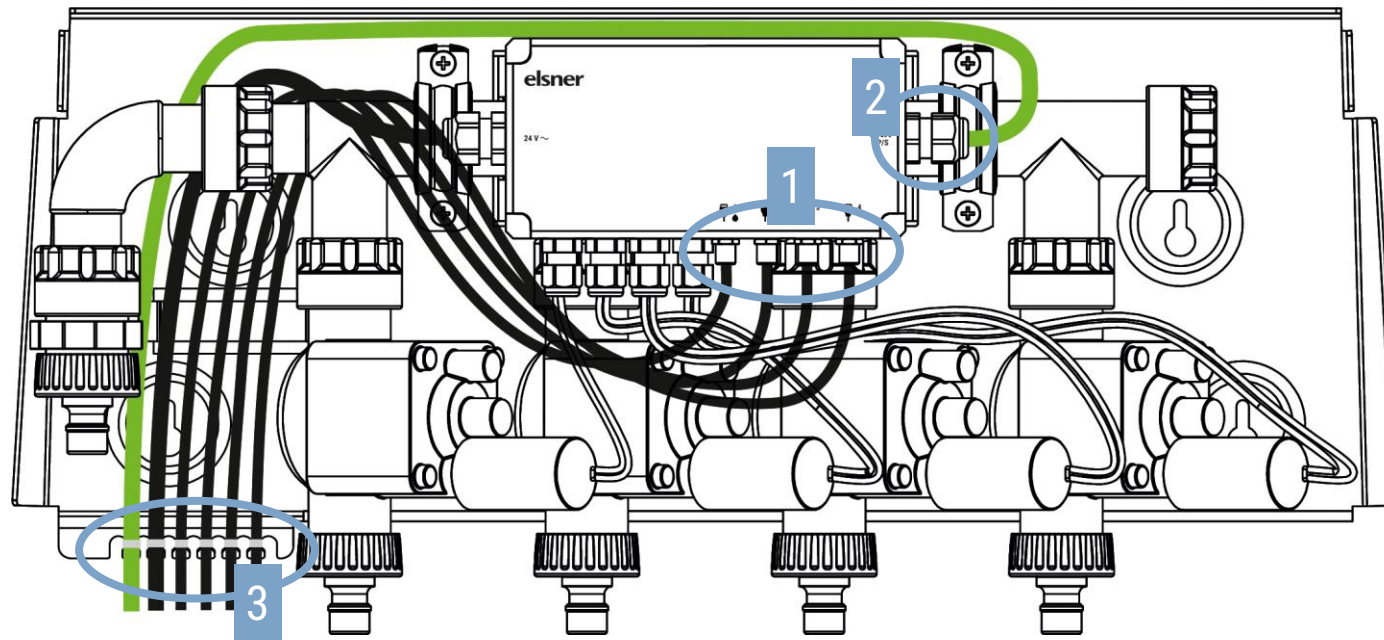
Arrange the cables and attach them to the wall bracket with the cable ties.



Connection overview

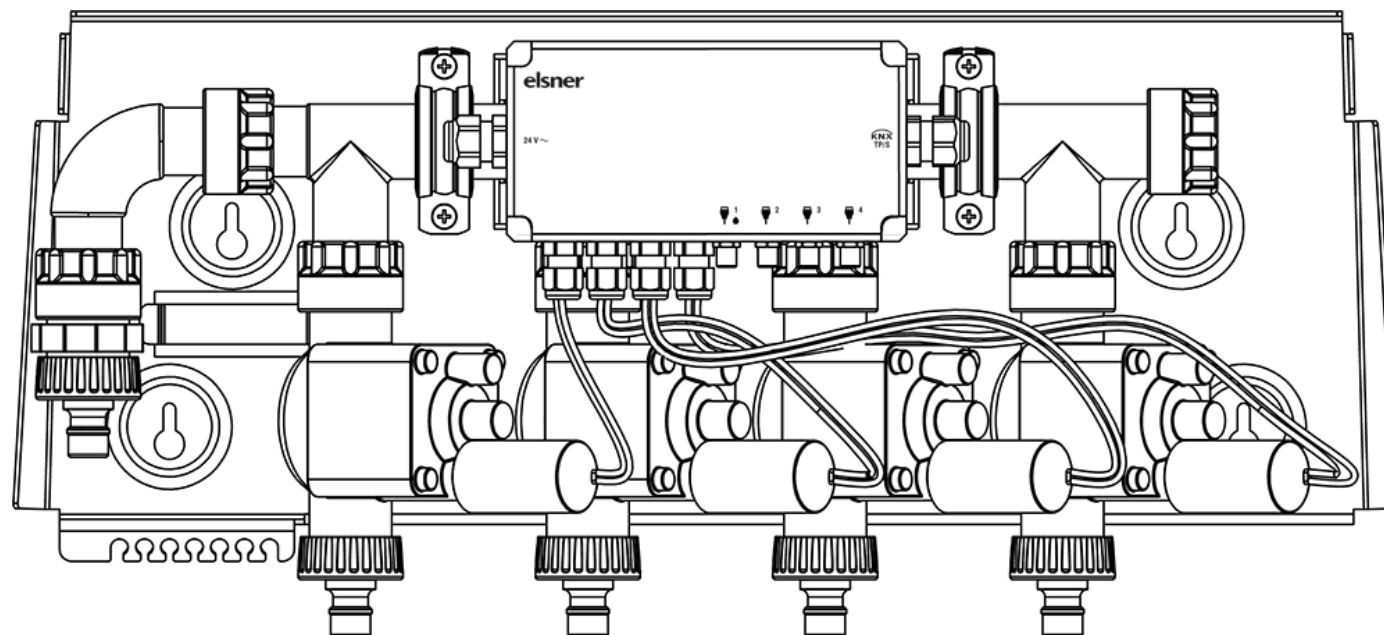


Connection overview

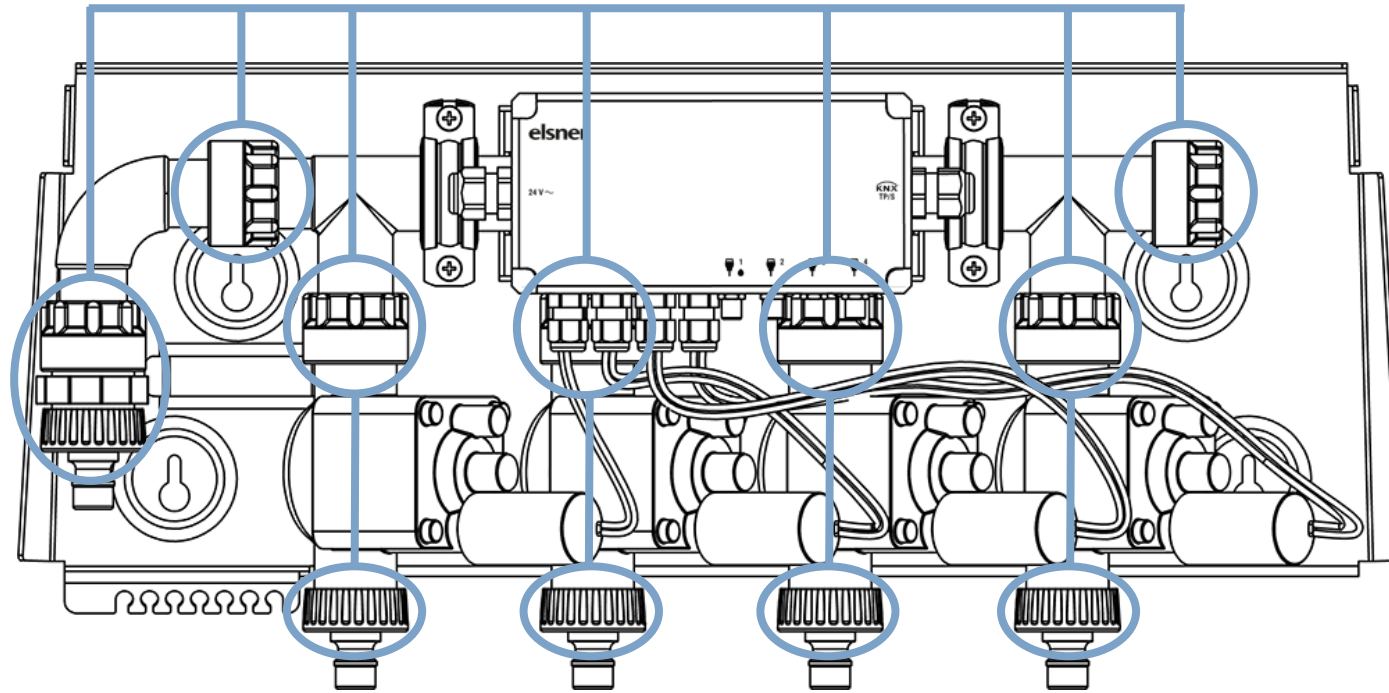


1. TMi soil moisture sensors (optional)
2. KNX bus (optional)
3. Arrange and fasten cables

Water connection

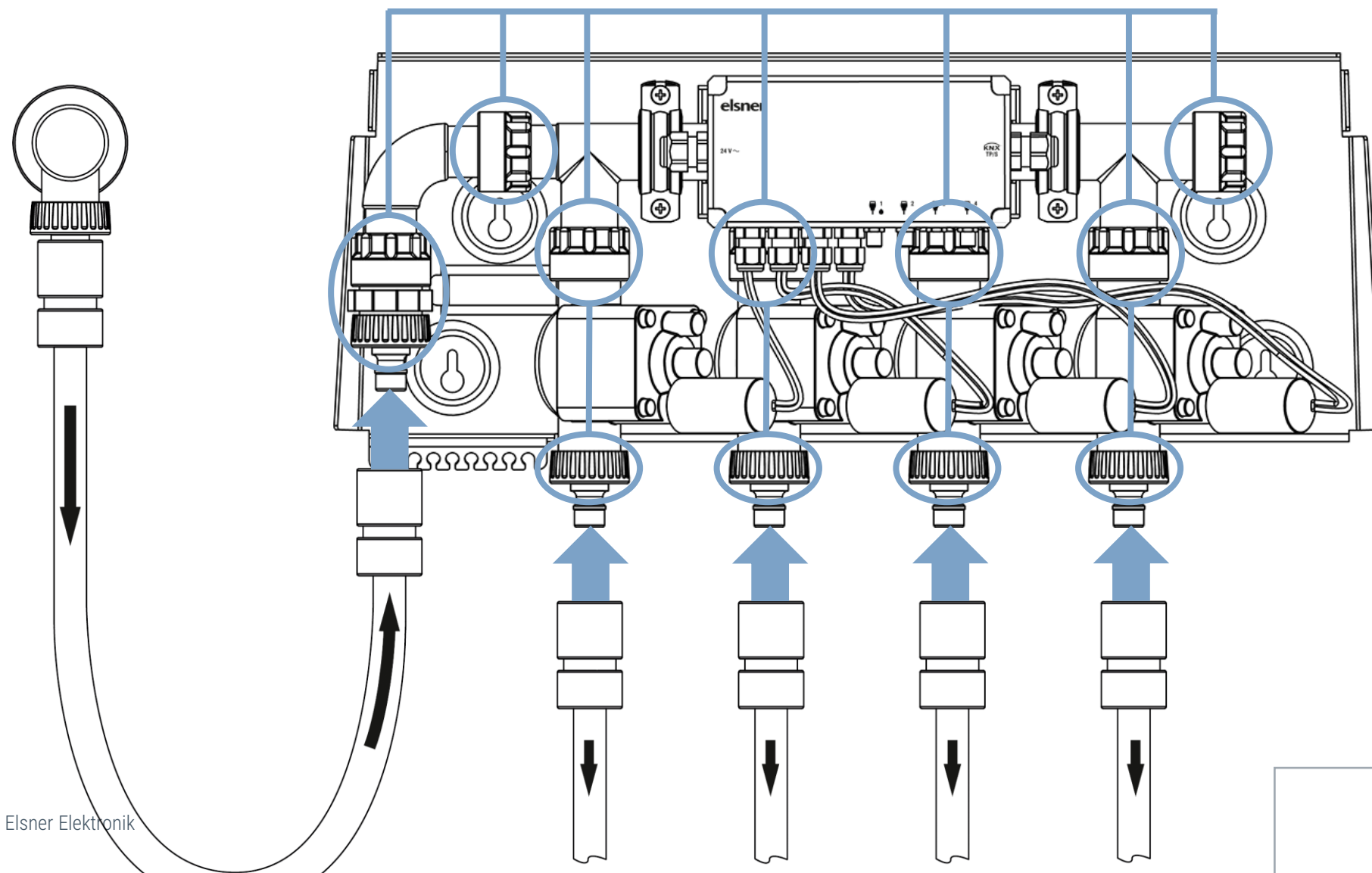


Water connection

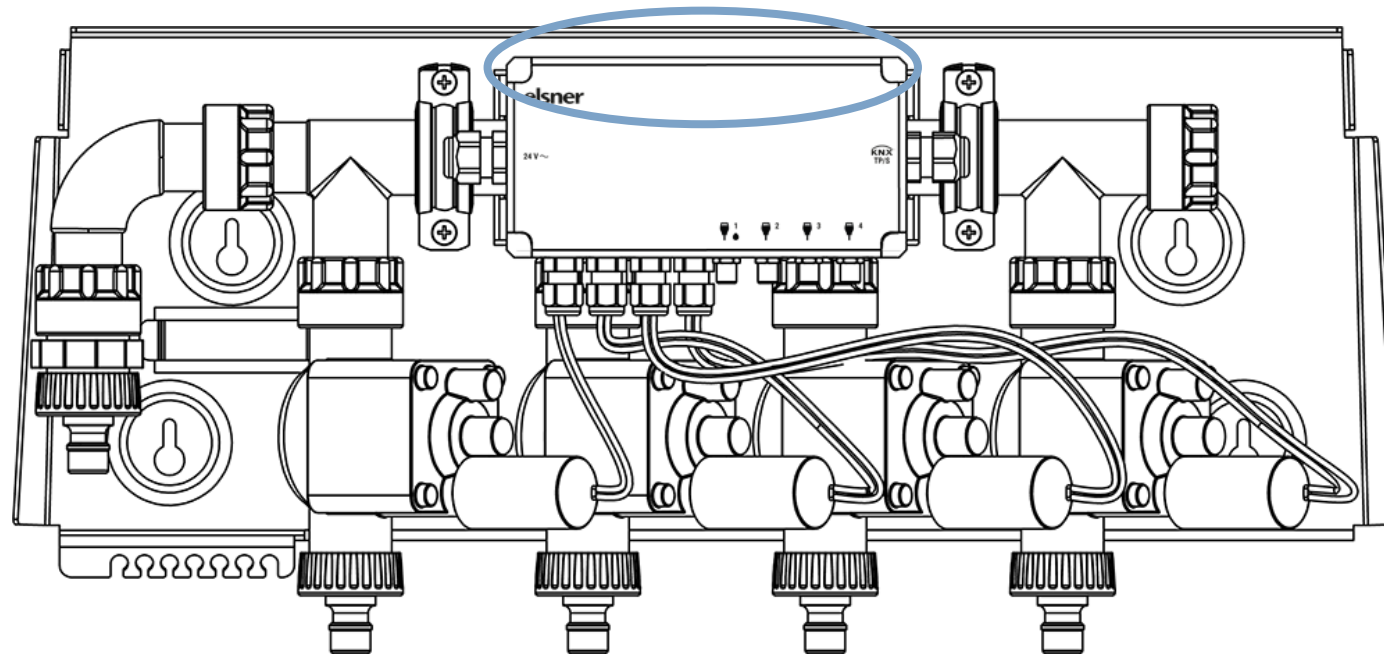


Check all the screw connections of the watersupply. They must be hand-tight.

Water connection

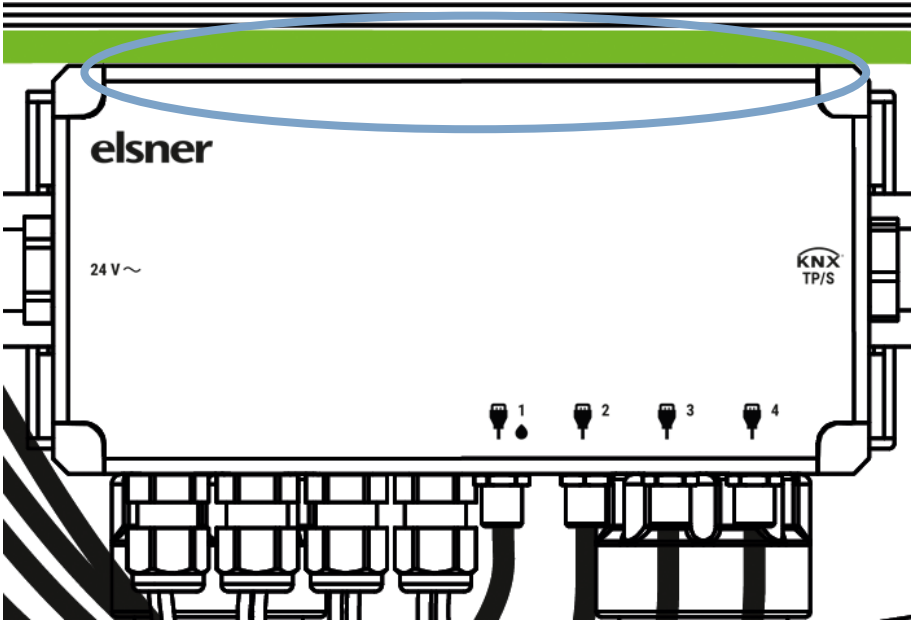


Commissioning



Commissioning

Status LEDs



First start



Loading



Restore access time window (60 s)



Access Point Modus

No connection is established during the first start



Other starts



Loading



Restore access time window (60 s)



Access Point Modus

depending on the setting



Station mode

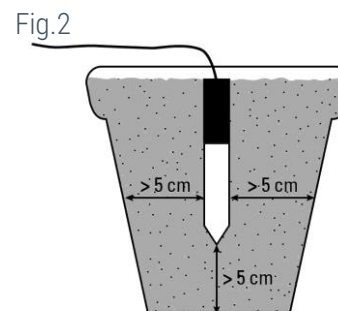
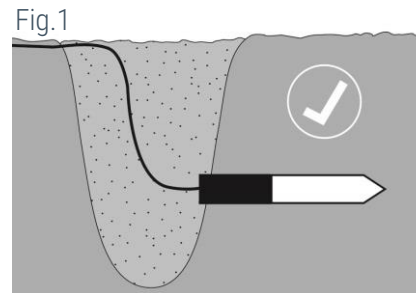
A connection is not established during the restore time window

Installation of TMi soil moisture sensors

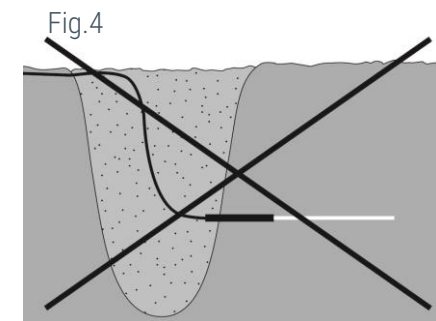
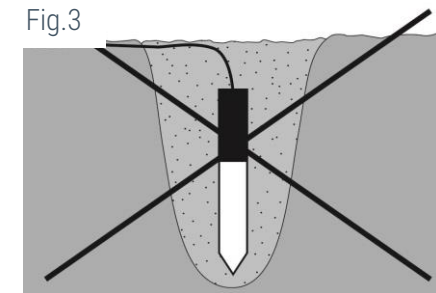


Moisture sensor
(green area with
conductive tracks)

Well placed



Unfavorably placed



3. | Optimal irrigation

Areas of application Irrigation

- Garden at the house
- Garden plot
- Balcony
- Vegetable garden or greenhouse

Jardana can help everywhere



Irrigation Systems

Typical types of irrigation in the garden

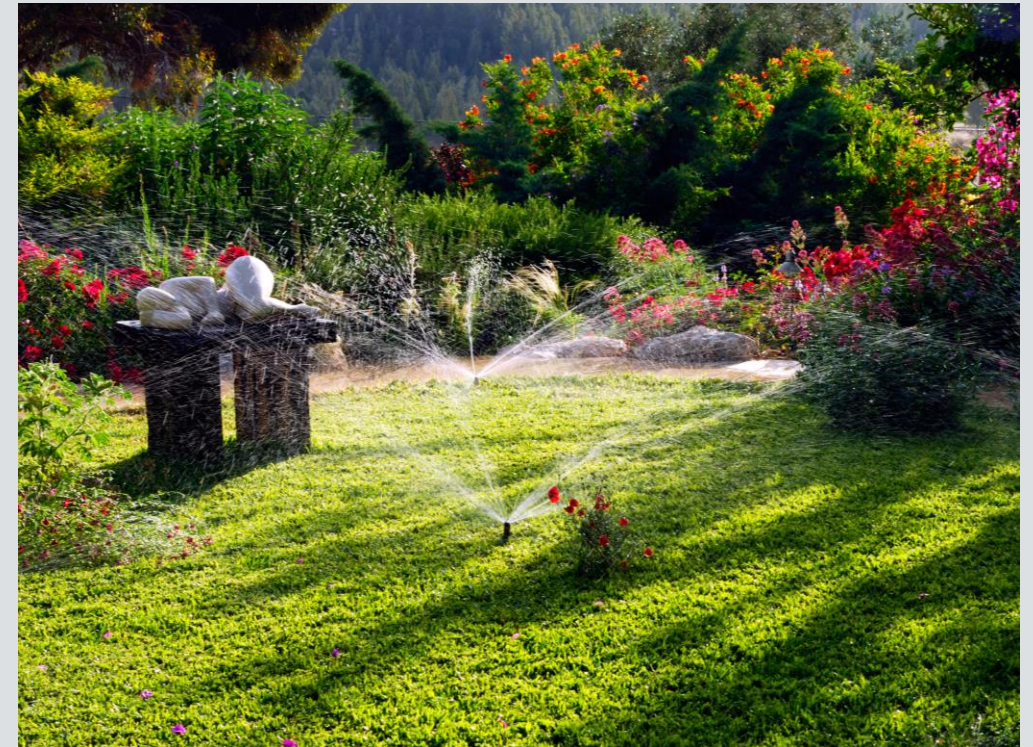
- Drip irrigation
- Sprinkler systems
- Spray irrigation systems
- Retractable irrigation systems

Jardana can control all types of irrigation.

When watering from a rainwater tank, ensure sufficient water pressure/pumping capacity:

- Minimum pressure for Jardana valves: 1.5 bar
- Lawn sprinklers often require 2 or even 4 bar

Only 1 valve is ever opened for watering.



Optimum irrigation

Tips

Water requirement

Varies depending on genus and location.

In general: Plants in sunny places need more water than shade plants



Optimum irrigation

Tips

Irrigation time

Water no later than 6 a.m.

In the evening, the moisture evaporates through the heated floor and cannot be absorbed.

Tip:

Covering the soil (e.g. with mulch) reduces evaporation and thus helps to save water



4. | Jardana Mobile App

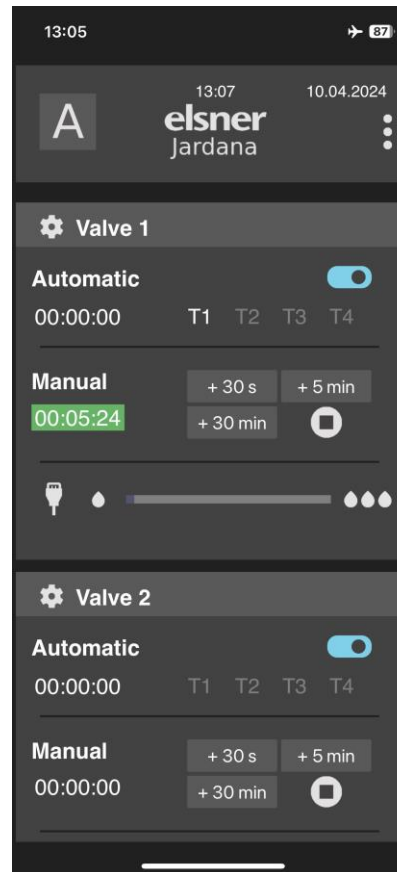


Jardana Mobile App

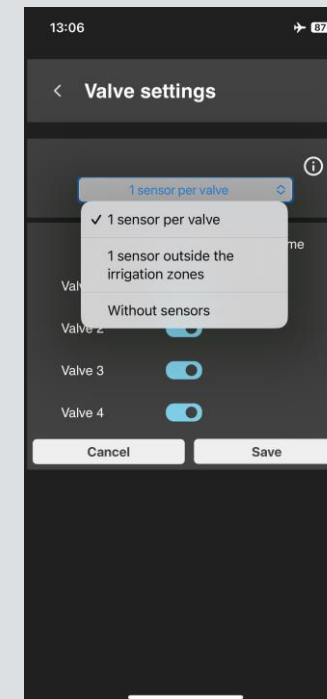
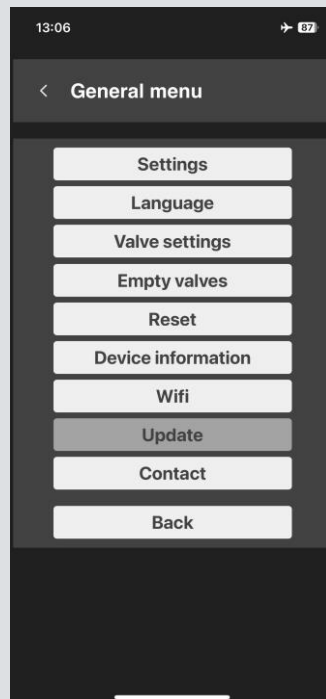
- Four timers can be set per valve
- Manual watering with automatic switch-off
- Automatic watering according to soil moisture



App: Homepage

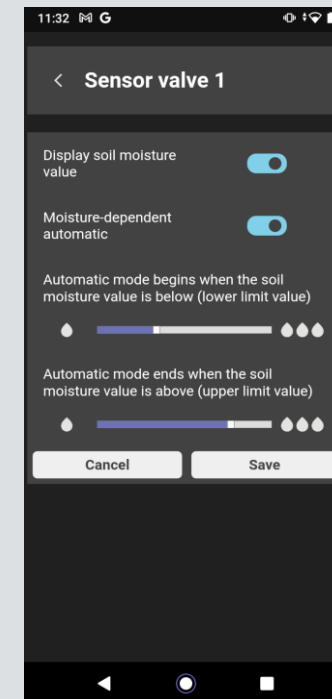
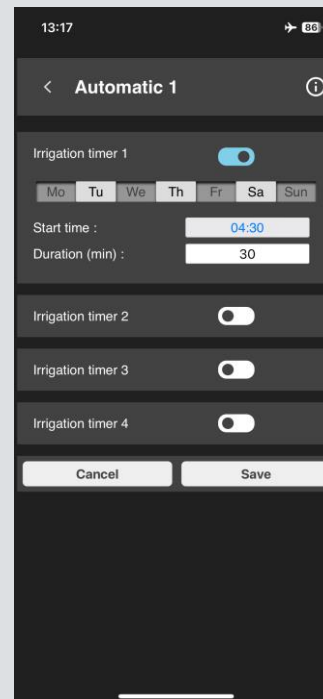
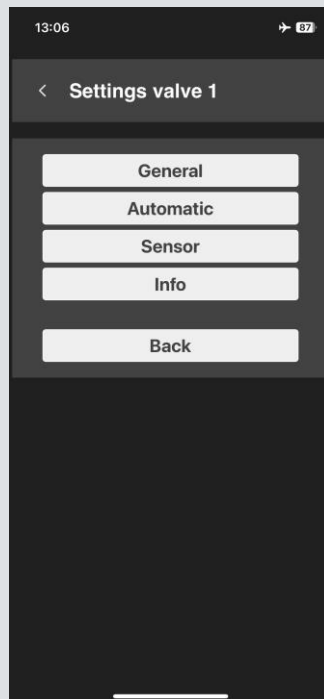


App: General settings / Irrigation variant



App: Set valves

Valve 1 corresponds to irrigation zone 1



5. | KNX parameters

The 'elsner' logo, rendered in a lowercase, grey, sans-serif font. It is positioned on a light grey rectangular background that is part of a larger, semi-transparent image of a KNX control panel. The panel has several blue cables plugged into it, and the background of the entire slide shows a blurred indoor scene with a plant and a wooden planter box.

KNX application: General settings

1.1.7 Jardana KNX > General settings > General settings

General settings	Date and time
General settings	Object type <input checked="" type="radio"/> two separate objects <input type="radio"/> a common object
Valves	Summertime Rule Europe ▼
Valves	Bus capacity
Valve 1	Transmission delay of the switching and status outputs after power return 5 s ▼
Valve 2	Maximum telegram quota 5 Telegrams per second ▼
Valve 3	
Valve 4	

KNX application: Valve settings

1.1.7 Jardana KNX > Valves > Valves > Valve 1

General settings	Watering time Watering is carried out for a preset time.
Valves	Maintain the times received via communication objects <input type="text" value="after power supply restoration"/>
Valve 1	
Valve 3	Manual watering: <input type="text" value="30"/> Minutes
Valve 4	Automatic watering: <input type="text" value="30"/> Minutes
	Ground moisture sensor
	Use ground moisture sensor <input type="radio"/> No <input checked="" type="radio"/> Yes
	The measurement is in a range between 0% (dry) and 100% (wet). If the value is unknown, 0% is transmitted.
	Send pattern measurement <input type="text" value="on change and periodically"/>
	Cycle <input type="text" value="10 min"/>
	from a change of <input type="text" value="5%"/>
	Maintain the threshold value received via communication object <input type="text" value="after power supply restoration"/>
	Only start automatic watering, if ground moisture level is below <input type="text" value="40%"/>

KNX application: Valve settings

Use context help

1.1.7 Jardana KNX > Valves > Valves > Valve 1

General settings

Valves

Valve 1

Valve 2

Valve 3

Valve 4

Watering time

Watering is carried out for a preset time.

Maintain the times received via communication objects

Manual watering: Minutes

Automatic watering: Minutes

Ground moisture sensor

Use ground moisture sensor No Yes

The measurement is in a range between 0% (dry) and 100% (wet). If the value is unknown, 0% is transmitted.

Send pattern measurement

Cycle

from a change of 5%

Maintain the threshold value received via communication object

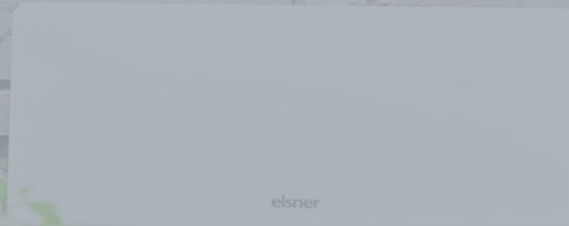
Only start automatic watering, if ground moisture level is below

Set the duration for **manual watering**. Manual watering starts as soon as communication object "Valve X: Start/stop manual watering (0=Stop / 1=Start)" receives a 1 and no other watering is being performed. If a 0 is received (or the Stop button in the App is pressed, watering ends, even if the time has not yet lapsed).

Set the duration for manual watering.

The duration of manual watering can be changed via the communication object "Valve X: Maximum manual watering time [min]".

6. | Application examples



1 Irrigation according to a time program



- Four zones with different irrigation systems/water requirements
- Irrigation at set times, regardless of the soil moisture level
- Manual control via app possible (stop, extend irrigation)

2 Irrigation according to time program with rain detection



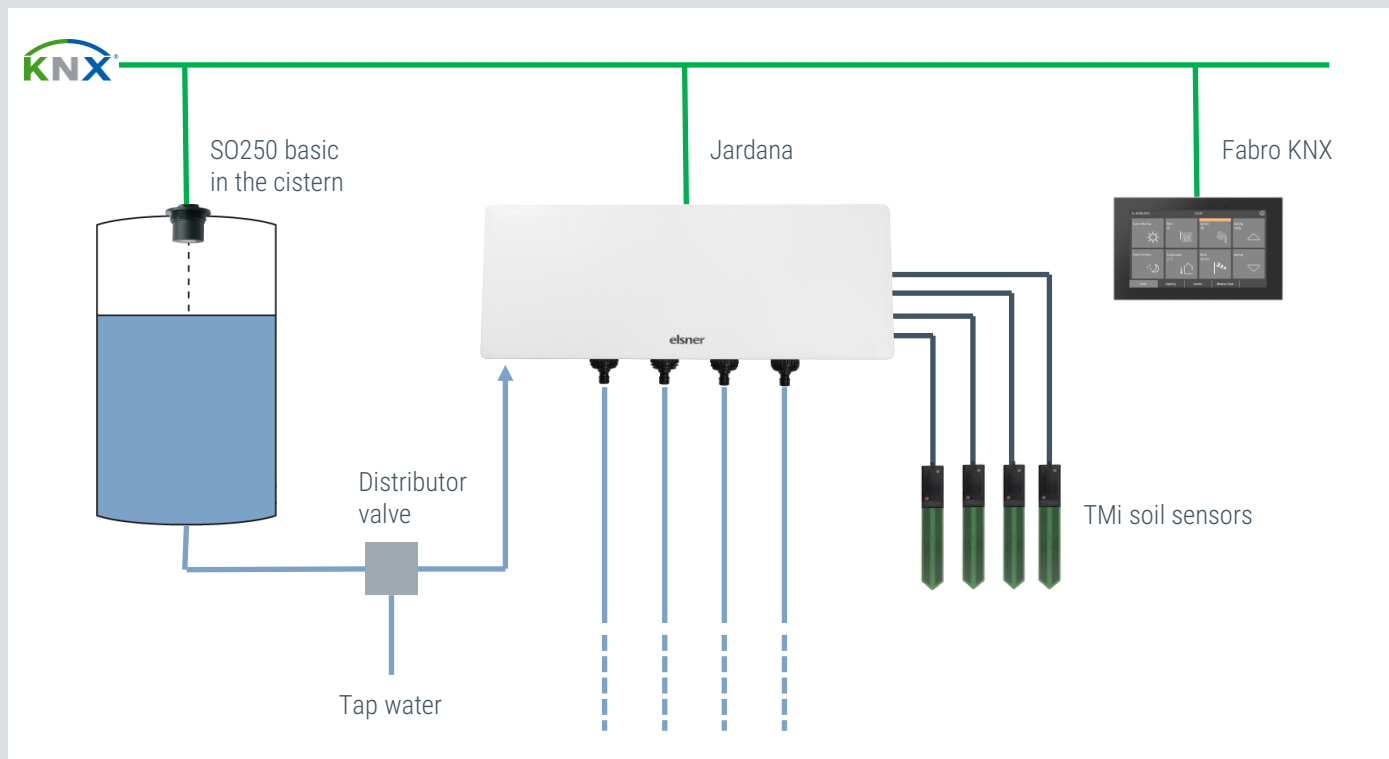
- Four zones with different irrigation systems/water requirements
- Irrigation at set times
- A soil moisture sensor at input 1 detects rain
- Irrigation for all zones is blocked when the soil at the sensor is moist enough
- Manual control via app possible (stop, extend irrigation)

3 Irrigation according to time program & soil moisture in the zones



- Four zones with different irrigation systems/water requirements
- Irrigation at set times
- Four soil moisture sensors measure in the four zones
- If the soil in a zone is moist enough, irrigation is blocked there
- Manual control via app possible (stop, extend irrigation)

4 Irrigation according to time program & soil moisture with KNX logic



- Four zones
- Irrigation according to time program and soil moisture in the zones (4 sensors)
- KNX controls water source
- Manual control via app possible
- Operation also via Fabro KNX display



elsner®
elektronik

elsner | academy

elsner-elektronik.de

Frederik Riedel

Tel | 07033 309450

f.riedel@elsner-elektronik.de