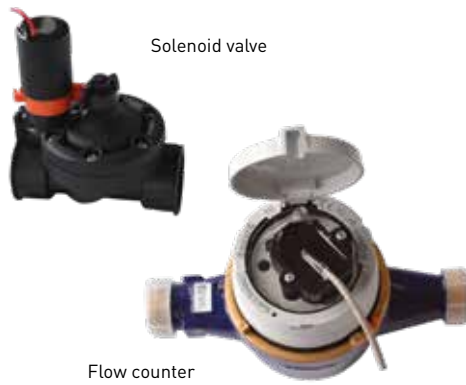


SOIL MEASUREMENTS

Wireless unit for remote monitoring



FFF – Field Humidity Wireless

Using the FFF, measurement data – preferably moisture and temperature in the soil – that is recorded from remote and scattered areas can be transferred directly to your PC or smartphone for monitoring purposes. This system enables the recording of real-time measurement data and monitoring with the help of a web-based dashboard. Thus, it is ideal for managing both urban facilities and farming operations. The wireless unit itself works with a very long-lasting battery and is waterproof. As such, it can be installed under the floor together with the sensors and is thus protected against vandalism. A special feature is the option to connect several different sensors to one wireless unit. Remote-controlled irrigation can be implemented using further components.

Usable sensors	Max. number per wireless unit
Volumetric humidity sensors with temperature measurement	
• Volume sensor SMT50 (refer to page 40)	4
• Volume sensor SMT100 (refer to page 40)	4
Electronic tensiometer (refer to page 39)	8
Conductivity sensor	4 – 8
Measuring head for flow meter (irrigation control)	1
Controllable units	
• Solenoid valve for irrigation control	1

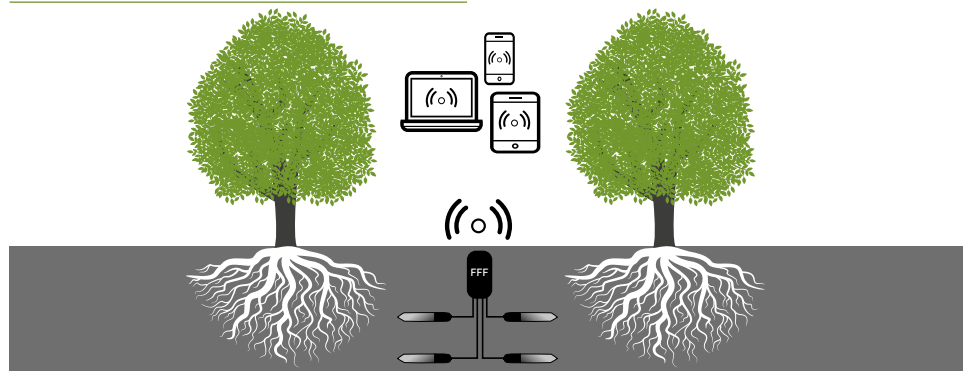
The system set up (installation) is simple. It only consists of connecting the sensors to the wireless unit and inserting the battery.

The dashboard of the Holfuy web service provides a clear user interface for easily viewing the sent measurement data. Measuring intervals can be easily changed, automatic notifications can be set and solenoid valves can be switched at the click of a mouse.

We would be happy to advise you on the best combination of wireless units and sensors for your projects and applications.

TECHNICAL DATA (wireless unit):

Power supply:	3.6 V lithium battery, type LS33600 with 17 Ah capacity
Power consumption:	<3.5 µA in sleep mode 80 mA LoRa, 500 mA NB-IoT during transmissions
Battery life:	at measuring interval of 4 hours > 5 years is possible
Measurement interval:	≥ 30 min to 4 hours, adjustable
Degree of protection:	IP68
Dimensions:	140 x 97 x 97 mm
Weight:	190 g without battery
Operating temperature:	-40 °C to +80 °C



Wireless radio technology	NB-IoT	LoRaWAN
Application range	No need to install your own network. Wireless unit transmits directly via the provider's NB-IoT network	Can be integrated into existing LoRa networks (SmartCity designs)
Wireless radio network availability	According to the provider (e.g. Vodafone)	Your own wireless radio network
Range	unlimited	up to 5 km

Connection options

	Measuring soil moisture and temperature	Measuring method
SMT50	low-cost sensor, maintenance-free, under-floor installation	FDR
SMT100	precision sensor, maintenance-free, under-floor installation	TDT
Electronic tensiometers	maintenance-free, above-floor (without temperature measurement)	Suction force
Flow measurement		
Measuring head for water meter	precise, maintenance-free	inductive
Controllable units		
Solenoid valve	Bistabil Pulse Solenoid Valve for connecting to irrigation systems	

ARTICLE NO.	
FFF	
50161003	FFF, 4 analogue sensors
50161004	FFF, 4 digital sensors
50161007	FFF, 1 solenoid valve
50161008	FFF, 1 flow counter
50161002	eSIM annual fee
5016100	Visualisation dashboard (annual fee)
Sensors	
501651	SMT50
501660	Volume sensor SMT 100 analogue, cable with open end
501661	Volume sensor SMT 100 digital, cable with open end
501606/8	E-sensors refer to page 39
502200	Solenoid valve
50168010	Conductivity module 10 mS/cm
	Flow counter according to the application

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