

# FS11

## General

Dimensions	42,5 x 7,5 x 5 cm
Weight	190 grams
Power	Replaceable CR123A battery
Operating voltage	3.0 V
Battery life expectancy	1 year (using default measurement interval)
Default measurement interval	Once per hour
Internal memory	Last 2 weeks (using default measurement interval)
Operating temperature	-20°C to +60°C
Certification	CE
Product model	FS11
Housing material	Polyurethane epoxy resin

## Air temperature

Sensor position	7,5 cm above ground level
Output	Degrees Celsius (°C)
Measurement range	-20°C to +60°C
Accuracy	±1°C

## Air humidity

Sensor position	7,5 cm above ground level
Output	Relative Humidity (%RH)
Measurement range	0 - 99,9%RH
Accuracy	±2%RH (at 25°C and 20%RH to 80%RH)

## Soil temperature

Sensor position	10cm below ground level
Output	Degrees Celsius (°C)
Measurement range	-20°C to +60°C
Accuracy	±1°C

## Soil moisture

Sensing zones	0-10 cm, 10-20 cm, 20-30 cm below ground level
Output	Volumetric water content (%)
Measurement range	From 0% to field capacity (55% for clay, 40% for sand)
Accuracy	±3% With Farm21 soil calibration and correct installation

## Connectivity

Network protocol	LoRaWan 1.0.3
Frequencies	EU: 863-870 MHz, NA: 902-928 MHz, ASIA/AUS: 920-925 MHz
Transmit power	NA and AUS up to 20 dBm, other regions up to 14 dBm
Transmission interval	1 Every hour (default)



# FS21

## General

Dimensions	10 x 6,5 x 6,5 cm (exc. antenna and add-on)
Weight	205 grams
Power	USB Rechargeable 26650 battery (20Wh)
Operating voltage	3.0 V
Battery full charge to empty	1 year (using default measurement interval)
Default measurement interval	Once per hour
Internal memory	Last 2 weeks (using default measurement interval)
Operating temperature	-20°C to +60°C
Certification	CE
Product model	FS21

## Air temperature

Sensor position	7,5 cm above ground level
Output	Degrees Celsius (°C)
Measurement range	-20°C to +60°C
Accuracy	±1°C

## Air humidity

Sensor position	7,5 cm above ground level
Output	Relative Humidity (%RH)
Measurement range	0 - 99,9%RH
Accuracy	±2%RH (at 25°C and 20%RH to 80%RH)

## Connectivity

Network protocol	NB-IoT/ LTE-M/ EGPRS
Frequencies	NB-IoT Bands: B1/B3/B8/B5/B20/B28 @H-FDD
Transmission interval	1 Every hour (default)
Location	GNSS Positioning



# Soil moisture add-on

## General

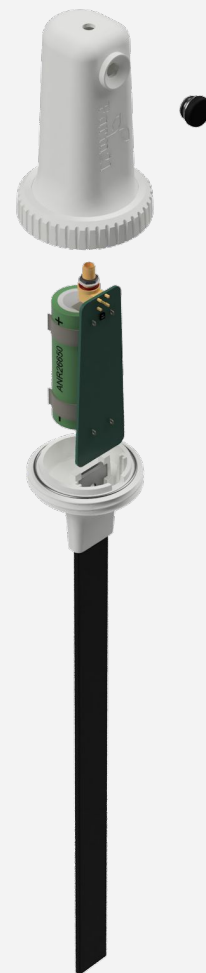
Dimensions	35 x 6 x 6 cm
Weight	95 grams

## Soil temperature

Sensor position	10 cm & 20 cm below ground level
Output	Degrees Celsius (°C)
Measurement range	-20°C to +60°C
Accuracy	±1°C

## Soil moisture

Sensing zones	0-10 cm, 10-20 cm, 20-30 cm below ground level
Output	Volumetric water content (%)
Measurement range	From 0% to field capacity (55% for clay, 40% for sand)
Accuracy	±3% With Farm21 soil calibration and correct installation



# DS10

## General

Dimensions	8 x 8 x 500cm
Weight	210 grams
Power	Internal 8500 mAh battery
Operating voltage	3.3 V
Battery life expectancy	3 years
Default measurement interval	Once per hour
Operating temperature	-50°C to +85°C
Certification	CE
Product model	DS10
Housing	IP66 Waterproof Enclosure

## Soil temperature

Output	Degrees Celsius (°C)
Measurement range	-40°C to +80°C
Accuracy	±0.5°C
Resolution	0.1 °C

## Soil moisture

Output	Saturation (%)
Measurement range	From completely dry (0%) to fully saturated (100%)
Accuracy	±2% (0-50%) ±3% (50-100%)
Resolution	0.03% (0-50%) 1% (50-100%)

## EC

Output	µs/cm
Measurement range	0 ~ 10000 µs/cm
Accuracy	±3%
Resolution	10 µs/cm

## Connectivity

Network protocol	NB-IoT
Frequencies	NB-IoT Bands: B1/B3/B8/B5/B20/B28 @H-FDD
Transmission interval	1 Every hour (default)



# BSP10

## General

Dimensions	32 x 3 x 115cm
Weight	810 grams
Power	Internal 2400 mAh battery
Operating voltage	3.3 V
Battery life expectancy	2 years
Default measurement interval	Once per hour
Operating temperature	-20°C to +85°C
Certification	CE
Product model	DS10
Housing	IP66 Waterproof Enclosure

## Air temperature

Output	Degrees Celsius (°C)
Measurement range	-40°C to +80°C
Accuracy	±0.8°C
Resolution	0.01 °C

## Air humidity

Output	Relative Humidity (%RH)
Measurement range	0 ~ 99.9% RH
Accuracy	± 10%RH (10 ~ 90%RH)
Resolution	0.04% RH

## Temperature

Output	Degrees Celsius (°C)
Measurement range	-55 °C ~ 125 °C
Accuracy	±0.5°C at -10 to 85°C, ±2°C at -55 to +125°C
Resolution	0.0625 °C

## Connectivity

Network protocol	LoRaWan 1.0.3
Frequencies	EU: 863-870 MHz, NA: 902-928 MHz, ASIA/AUS: 920-925 MHz
Transmit power	NA and AUS up to 20 dBm, other regions up to 14 dBm
Transmission interval	1 Every hour (default)

