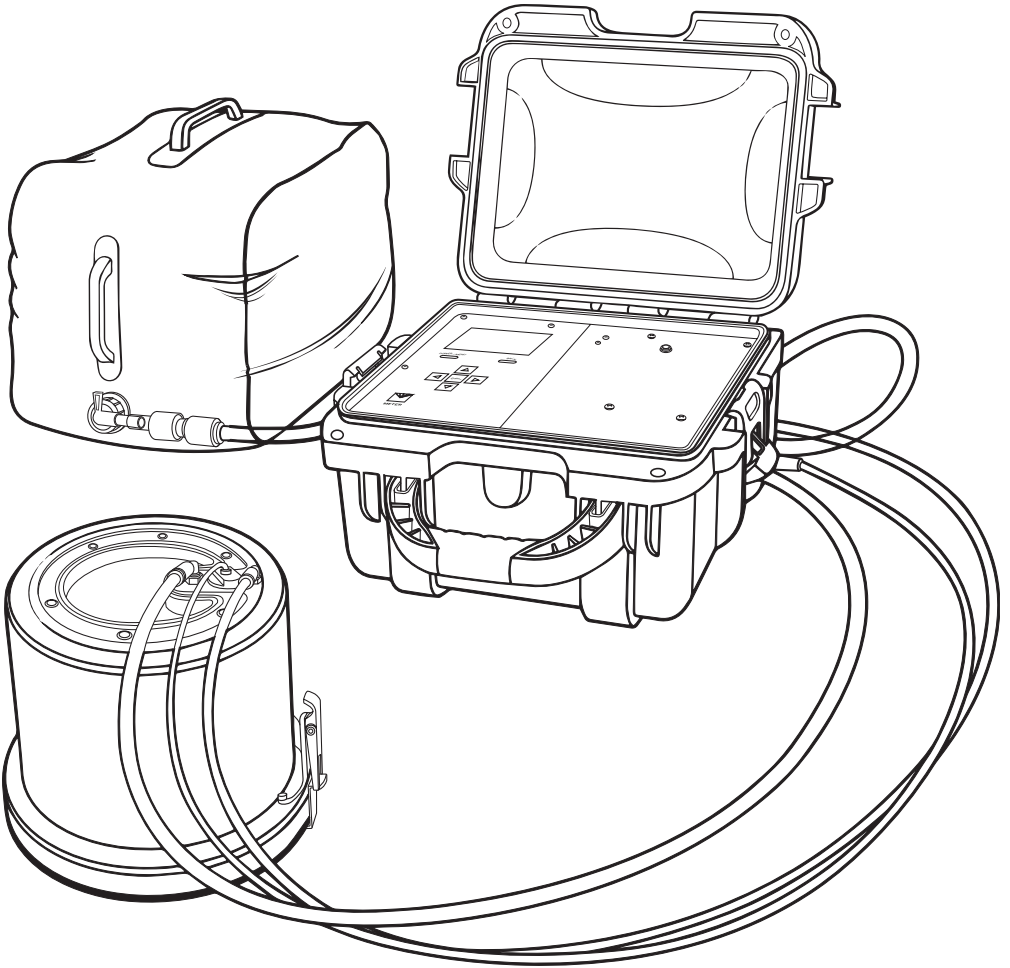




**METER**

# **SATURO**

**Datasheet**



# 1. INTRODUCTION

Thank you for choosing the SATURO Infiltrometer from METER Group. This manual should help you understand the functionality of SATURO, make high-quality  $K_{fs}$  measurements, and get the most out of the instrument.

SATURO was designed to be an automated instrument for measuring permeability and field saturated hydraulic conductivity ( $K_{fs}$ ) in soil. It utilizes a multipressure head analysis approach to simplify the corrections for three-dimensional flow from a single-ring infiltrometer, allowing for quick measurements of hydraulic conductivity without needing postprocessing. This automated approach reduces error in the hydraulic conductivity assessment (Reynold and Elrick 1990).

Verify all instrument contents shipped and appear in good condition:

- Control unit
- Two insertion rings: 5-cm depth and 10-cm depth
- Driving plate
- Infiltrometer head
- Charging adapter
- Two collapsible water tanks
- 6.4-mm (1/4-in) diameter tube for air output
- 9.5-mm (3/8-in) diameter tube for water output
- 7.9-mm (5/16-in) diameter tube for water input
- Metal file
- Driving mallet
- Flathead screwdriver

### 3. SYSTEM

This section describes the specifications, components, and theory of the SATURO system.

#### 3.1 SPECIFICATIONS

##### MEASUREMENT SPECIFICATIONS

###### Infiltration Rate

Range	0.0038–115.0000 cm/h
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Resolution	0.0038 cm/h
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Accuracy	±5% of reading
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###### $K_{fs}$

The  $K_{fs}$  values that can be effectively measured by SATURO are limited by the listed minimum and maximum infiltration rates. These depend on the pressure heads applied to the water during infiltration and to the three-dimensional flow characteristics of the soil, so the measurement range of  $K_{fs}$  cannot be specified explicitly. SATURO will generally be able to make measurements on poorly to moderately structured soils as coarse as medium sand, but the maximum infiltration rate can be exceeded by soils with excessive structure and especially by soils with

###### Water Level

Maintained at 5 cm

###### Pressure Head Ranges

0–40 cm (vacuum is applied for <5 cm settings)

###### Operating Temperature

0–50 °C

##### PHYSICAL SPECIFICATIONS

###### Charging Adapter

Power supply	18 V; 2.2 A
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Range	18–24 VDC
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###### Output

USB

### Control Unit

31.8 cm (12.5 in) x 25.7 cm (10.1 in) x 15.3 cm (6.0 in)

### Infiltrometer Head

Total height 18.3 cm (7.2 in)

Inner diameter 17.2 cm (6.75 in)

### Insertion ring

Inner diameter 14.4 cm (5.68 in)

Insertion depth  
5 cm (1.97 in)  
10 cm (3.94 in)

## COMPLIANCE

Manufactured under ISO 9001:2015

2004/108/EC and 2011/65/EU

## 3.2 COMPONENTS

SATURO consists of four main components: the control unit, insertion ring, infiltrometer head, and water supply tank (Figure 10).

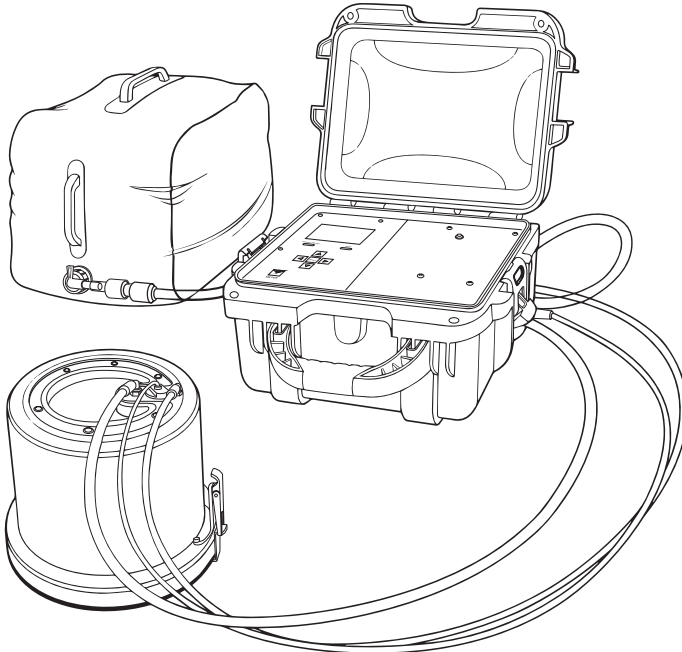


Figure 10 SATURO components

