



M I C R O S E N S

Product Overview

# MICROSENS MSFET3330 amplifier MSFET-ANALOG

Interface electronics to drive the MSFET3330 pH sensor element



## Key Features

- Small packaging
- Sensor status indication
- Switch for reading the integrated temperature diode
- Analogue output

## Applications

- Laboratory
- Benchtop setup
- MSFET 3330 Demo Kit

## Characteristics

- Temperature range:  
-20°C ... 80°C
- Box material:  
Polycarbonate

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# System Description

## MSFET3330 Amplifier Connections

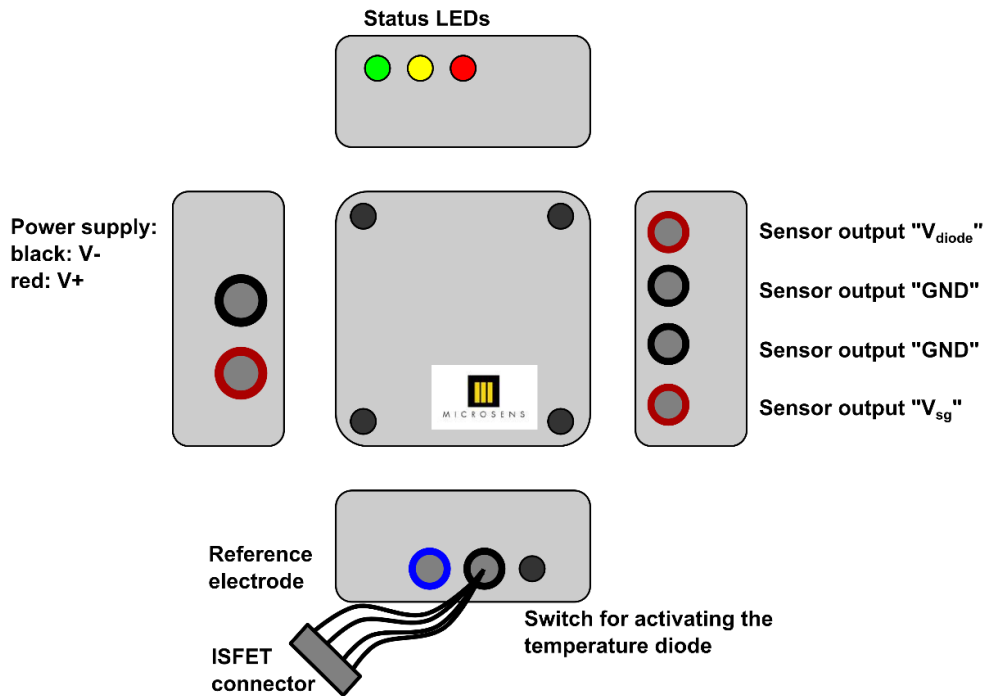


Figure 1: Schematics of the ISFET control electronics casing indicating the connections.

### Dimensions:

	min	typical	max	
Length		63		mm
Width		58		mm
Height	34		38	mm

### ISFET status LED:

	Status	Action required?
Green	ISFET ok	
Yellow	ISFET not submerged or in ambiguous state, Reference electrode not connected	1) Submerge ISFET and connect reference electrode 2) Restart interface electronics
Red	ISFET not connected or not working	1) Switch off electronics 2) connect or change ISFET sensor 3) Switch on electronics

**DC Specifications:**

	min	typical	max	
<b>Input</b>				
V_in (red: +, black: GND)	7	9	16	V
I_in	3	6	10	mA
<b>ISFET settings (1)</b>				
V <sub>ds</sub>		0.5		V
I <sub>d</sub>		100		μA
<b>Output</b>				
V <sub>sg</sub>	0		4.5	V
V <sub>diode</sub>	0		9.5	V
V <sub>sg</sub> /pH		-55		mV/pH
V <sub>diode</sub> /degC		-20		mV/degC

<b>Recommendations for operation and handling</b>
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**Operation**

- 1.) For temperature measurements activate the temperature diode for a short time by pressing the “temperature diode” button. In normal operation the temperature diode is disconnected.
- 2.) The “V-“ input should be connected to a floating GND.
- 3.) Switch the amplifier off, when the connected ISFET is not in contact with a liquid.
- 4.) Be careful not to inverse the input voltage.

**Handling**

- 5.) Protect from liquids. The amplifier housing is not watertight.

<sup>1</sup> The ISFET amplifier is designed to work with the ISFET 3330 (Ta<sub>2</sub>O<sub>5</sub>) sensor. The working point setting might not be optimum for other types of ISFET.