

Introduction

The Microcom F100 probe is a capacitive sensor for detecting water in channels and pipes. Its design makes it ideal for wastewater facilities where the presence of solids, rags or other elements requires a reliable moving-part-free solution.



The probe is available in two versions: The F100-N with 3V power supply and compatibility with the Nemos N200 GPRS datalogger and the F100-H with power supply between 5 and 24V, compatible with the Hermes series.

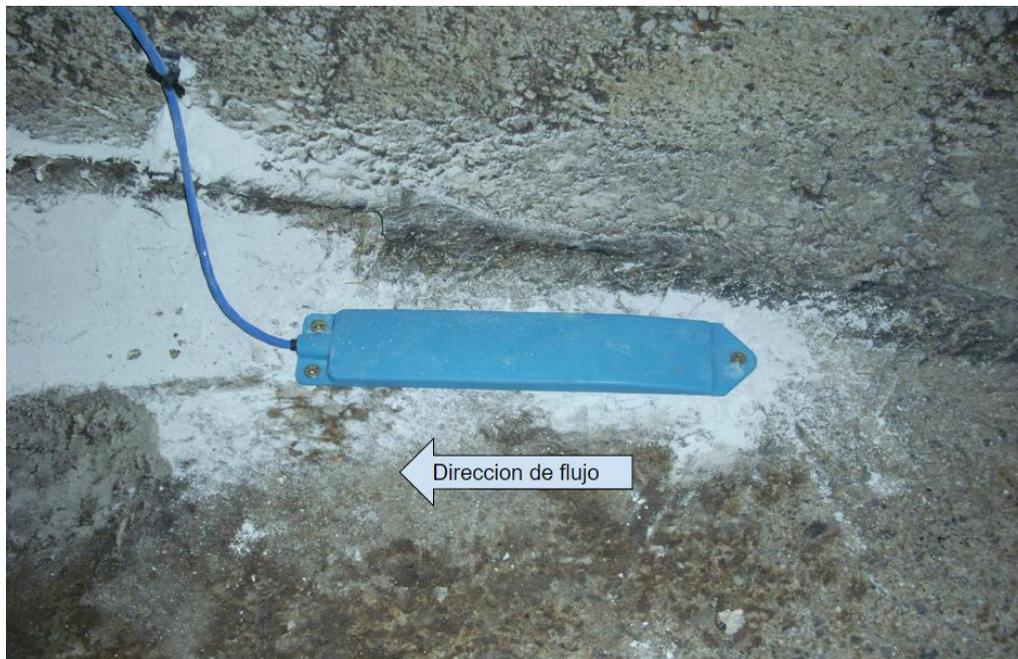
Operation

The probe's operating principle is based on measuring the marked difference between the dielectric constants of water and air. The sensor element is composed of two electrodes that form a capacitor which oscillates with a constant excitation current. By doing so, the oscillation frequency is directly proportional to the dielectric constant of the medium. A microcontroller manages the operation of the probe by comparing the current measurement with the configured detection threshold and consequently activating the output. The repeatability and stability of the detection threshold are ensured by the standard capacitor integrated in the probe which serves as a reference, making it practically insensitive to temperature changes.

The probe is calibrated at the factory to activate its output at a level higher than a depth of runoff of one centimetre.

Installation

Install the F100 probe at the bottom of the channel, as shown in the photograph below.



ATTENTION: The F100 probe should not be installed on a metal surface as this would interfere with correct operation.

Connection to Nemos N200

F100-N	NEMOS N200	DESCRIPTION
Green	Brown	Output of F100 probe wired to D0 input of Nemos N200.
White	Pink	Power input of F100 wired to D2 signal of Nemos N200.
Brown	Grey	GND of F100 probe to GND of Nemos N200.

NOTE: The Nemos N200 must be configured to enable the 3V supply voltage output in the D2 signal.

Connection to Hermes LC2

F100-H	HERMES LC2	DESCRIPTION
Green	I0	Output of F100 probe wired to I0 input of Hermes LC2.
White	5V	Power input of F100 wired to 5V output of Hermes LC2.
Brown	Grey	GND of F100 probe to GND of Hermes LC2.

Connections

N version

CABLE	DESCRIPTION
White	3V power supply
Brown	GND
Green	Output. Contact to GND indicates that there is no water. Open indicates water detection.
Yellow	Do not connect.

H version

CABLE	DESCRIPTION
White	5 to 24V power supply.
Brown	GND
Green	Output. Contact to GND indicates that there is no water. Supply voltage indicates water detection.
Yellow	Do not connect.

Technical characteristics

DETECTION THRESHOLD	Probe calibrated at the factory to activate at a depth of runoff of 1 cm.
POWER SUPPLY	N version: 3V, 20uA H version: 5 to 24V, 5mA
RESPONSE TIME	1 second
MATERIAL	PVdC
OPERATING TEMPERATURE	-20 to 75°C
IP CODE	IP68 at 2m 10 days