# Flow Switch with Non-Contacting Sensor.

- Installs in Minutes
- No moving parts
- Ideal for "difficult" liquids
- No contact, No maintenance
- Easy Calibration

Mount the UF DS200 ultrasonic sensor on the outside of metal or plastic pipes. The sensor continuously injects high frequency sound through the pipe wall and into the moving fluid where acoustic pulses are reflected back to the sensor from particles or bubbles in the fluid.

Flow rates of most liquids can be accurately controlled including acids, caustics, lubrication fluids, chemicals, abrasives, waste water and sludge. There are no moving parts and no sensor maintenance is required.

The compact, water tight electronics enclosure includes adjustable controls with separate ON and OFF relay set-points and time delay. A LED bargraph for flow rate and set points plus relay status are included.

Installation can be made while the flow system is in full operation. No contact is made with the moving fluid and no holes are drilled in the pipe. There is no fouling or scale build-up on the sensor.

**Controls Flow with:**

- No pressure drop
- No sensor fouling
- No maintenance

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# Non-Contacting Flow Control Pump protection... High or Low flow control Overfill alarm... Bargraph flow rate indication.

**No pipe cutting, No pressure drop,**
**No sensor fouling, No maintenance!**

It takes just a few minutes to install and calibrate a UF DS200 Flow Switch. The UF DS200 controls flow of most liquids in closed pipes. The ultrasonic sensor mounts on the outside of any pipe from 12.5 mm to 4.5 m (1/2" to 180") I.D.

### Easy to Calibrate

The UF DS200 control relay can be set to turn ON and OFF at any flow rate between 0.075 to 3 m/sec (0.25 and 10 ft/sec). Insert two links for separate ON/OFF set points or just one link for a Hi or Lo flow alarm. Set relay actuation time delay from 0 to 80 seconds.

### Ideal for Pump Protection

Avoid expensive pump repairs and downtime. The UF DS200 strap-on Sensor can be installed in minutes without shutting down flow or cutting pipe. Use the adjustable relay time delay to eliminate relay "chatter" and reduce pump wear.

### Reliable and Repeatable

Repeatability is ±0.1% of full scale (0.003 m/sec or 0.1ft/sec). There are no moving parts and no maintenance is required.

The clamp-on ultrasonic sensor cannot be damaged or fouled by contact with the liquid it measures. Sealed in a stainless steel housing, the UF DS200 sensor withstands moisture or accidental submersion in water up to 10 psi (69 Kpa).

### Self-tunes to Extended Sensor Cable

Up to 150 m (500 ft) extra sensor coaxial cable can be added. Extended cable and junction box can be ordered from Micronics. The cable can be cut or extended as required during installation. The flow switch automatically tunes to the cable length. No circuit adjustment or calibration is required.

### Designed for "difficult" liquids

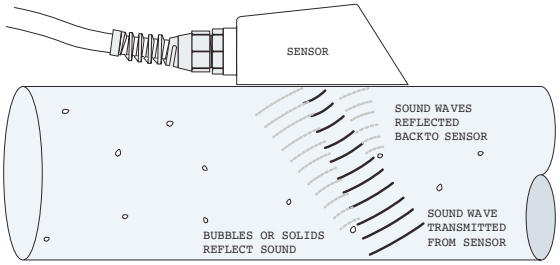
The UF DS200 Doppler Flow Switch is recommended for flow control of liquids containing gas bubbles or solids: chemicals, slurries, sewage, sludge, viscous liquids, wastewater, caustics and abrasives. The ultrasonic sensor injects high frequency sound through the pipe wall into the flowing liquid. Acoustic pulses are continuously reflected back to the sensor and the UF DS200 measures a frequency shift to calculate flow velocity.

### Each UF DS200 Flow Switch Includes:

- Adjustable ON and OFF relay set points
- Adjustable time delay
- Flow rate bargraph
- Relay LED

### Install in these Applications:

- Sewage
- Viscous liquids
- Acids
- Slurries
- Solvents
- Treated wastewater
- Sludge
- Pulp stock
- Food products
- Oil
- Paint
- Chemicals
- Aerated Water
- Cooling Water

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# Micronics UF DS200 Doppler Flow

## SPECIFICATION:

**Shipping Weight:** 3.6kg (8 lbs)
**Enclosure:** Watertight, dust tight NEMA4X (IP67) polycarbonate with a clear shatter-proof face
**Power Input:** 100-240VAC 50-60Hz (±10%), 2 Watts
**Control Relay:** 5 ampere DPDT
**Set Points:** ON/OFF adjustment from 0.075 to 3 m/sec (0.25 to 10 ft/sec)
**Sensor:** Single-head ultrasonic with 6 m (20 ft) shielded cable
**Pipe Size:** Any pipe ID from 12.5 mm to 4.5 m (½" to 180")
**Sensor Operating Temperature:** -40° to 150°C (-40° to 300°F)
**Electronics Operating Temperature:** -23° to 60°C (-10° to 140°F)
**Accuracy:** ±2%, requires solids or bubbles minimum size of 100 microns, minimum concentration 75 ppm.
**Repeatability:** ±0.1%

## STANDARD FEATURES:

**Set-point:** Field-adjustable with separate ON/OFF set-points or select Hi flow alarm or Lo flow alarm mode
**Indication:** Flow rate LED bargraph, relay status LED
**Time Delay:** Adjustable 0 to 80 seconds
**Electrical Surge Protection:** AC power input and sensor
Sensor mounting bracket, clamp and coupling compound included

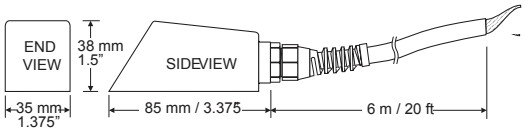
## OPTIONS:

**Sensor Cable:** Up to 150 m (500 ft) shielded coaxial pair with cable Junction Box
**Sensor mounting clamp:** Stainless steel, adjustable
**Power input:** 12-24 VDC (±10%), 3W Max

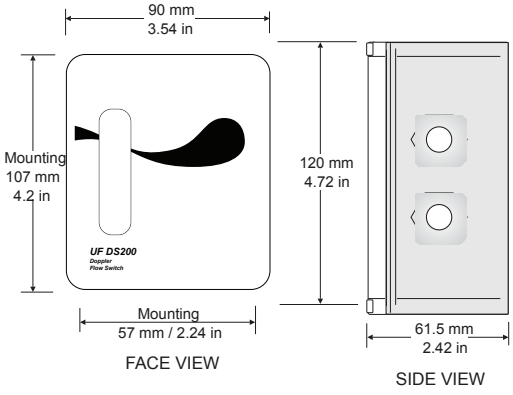
## APPLICATIONS:

- Recommended for liquids containing suspended solids or bubbles minimum size of 100 microns, minimum concentration 75 ppm
- Sensor mounts on Vertical or Horizontal pipes
- Sensor Mounting Location:
- 6-10 pipe diameters from elbows, tees (turbulence increasing devices) >30 pipe diameters from pumps, controlling valves and pipe discharge
- Pipe Materials: steel, stainless steel, cast iron, PVC, fiberglass, any contiguous pipe material that conducts sound, including lined pipes with liner bonded to pipe wall. Avoid pipes with loose insertion liners and pipe materials which contain air pockets (concrete, wood etc.)

## DIMENSIONS:




SE4 ULTRASONIC DOPPLER SENSOR




ENCLOSURE

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# Easy-to-install, Automatic Flow Control. Recommended for Pump Protection and FlowAlarms

**UF DS200 Doppler Flow Switch:**
The UF DS200 flow sensor installs without cutting the pipe. It takes just a few minutes to mount on the outside of any pipe. The switch/electronics enclosure can be mounted 6 m (20 ft) away from the sensor (optional up to 152 m / 500 ft ) to simplify wiring to pumps, alarms, valves or other equipment.

Switch adjustments and electrical connections are fast and easy.
The UF DS200 relay time delay is adjustable from 0 to 80 seconds to prevent nuisance alarms and relay "chatter" in turbulent flow. Includes switch selectable "normal" and "failsafe" operating modes.

**UF DS200 Doppler Flow Switch for:**

- No contact with the measured liquid
- No obstruction to flow – No pressure drop
- Sensor mounts easily on the outside of the pipe
- Can be installed while pipe line is in use
- Insensitive to pressure, specific gravity and conductivity
- Does not require pipe metering sections
- Does not require consideration of material compatibility with the liquid

**Repeatable, Reliable Flow Control:**
Use the UF DS200 for pump protection, valve control and flow/no-flow alarms. It is ideal for "difficult" liquids like wastewater, slurries, abrasives and chemicals, or any liquid which contains gas bubbles or solids. The standard Sensor mounts on any pipe 12.5 mm (1/2") diameter or larger.

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