



MICROSENSE FLOW SWITCH

(DC)

HYCMWSDP3-24C

FOR SOLIDS, GRANULES AND POWDERS

MICROSENSE FLOW SWITCH

The **Microsense microwave switch** provides an effective way of detecting the flow or no flow of a wide range of particulate materials. The flow switch uses a microwave Doppler effect and is **non-invasive**.

During operation, the sensing head transmits a continuous low power microwave beam towards the flowing product. Some microwaves reflect to the sensing head, which then analyses whether they are moving or stationary. The microwaves detect only flowing, moving material in front of the sensor, ignoring static objects.

The highly penetrating microwave signal **passes through any build-up on the transmitter face** and will even detect through pipes of non-conducting materials such as plastic and ceramics. The switch is best suited for detecting **dry solids, granules, flakes and powders**. Typical applications include **grain, flour, cement, ore, stone, coal and animal feed**. In addition, the probe can detect flow in **pipelines, chutes, conveyors, transfer bins or free air**.

MICROWAVE FEATURES

Non-contact principle: Users can install the Microsense switch behind various window materials such as PTFE or polypropylene to maintain the integrity of the pipe or chute and prevent any restriction to material flow. This option is ideal for vacuum lines or lined pipes.

High penetration and surface coating immunity: The microwaves easily penetrate any surface contaminants, making the switches ideal for applications with high build up on the pipe or chute walls. This switch is also immune to problems with airborne contaminants such as dust or steam.

Simple installation and set-up: Simple visual adjustment and set-up of the flow switch with an indication of the output and signal received, with selectable flow or no-flow detection modes.

Total safety for operators and site personnel: This device requires no special procedures for its operation as power limitations are well below required industry standards.

New Doppler detection principle: The advanced Doppler screening filter eliminates false signals from issues such as vibrating pipes or conveyors, improving the signal-to-noise ratio to provide reliable flow indication.

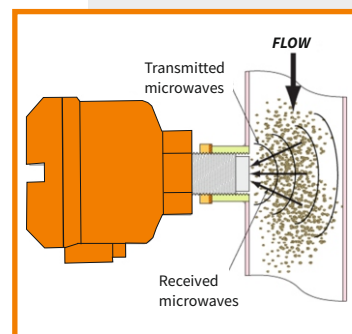
Easy retrofit to existing installations: A wide range of flanges and a standard 1" BSPP process thread make this range extremely easy to retrofit to old installations utilising existing process connections.

Advanced test facility: The integral test facility provides an output LED indication of the flow switch status and the internal alarm for the instrument's temperature.

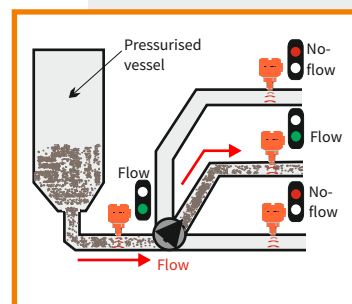
Range of output options: Alarm output options for switch status, system failure or internal instrument temperature warning are all available.

ADVANTAGES AND BENEFITS

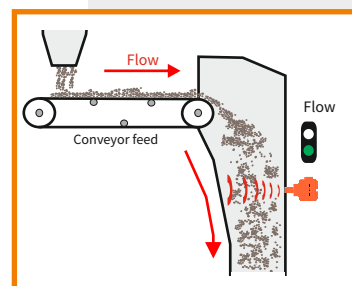
- ◆ **Improved plant efficiency**
- ◆ **Reduced operating costs**
- ◆ **Early detection of plant problems**
- ◆ **Reduced plant down time**
- ◆ **Increased productivity**
- ◆ **Reduced product waste**



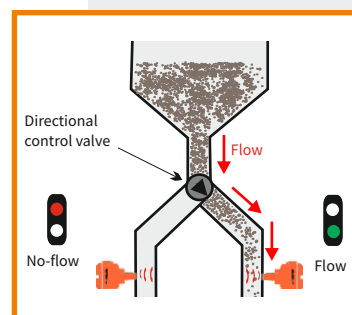
Microsense Principle



Pneumatic Transfer Lines

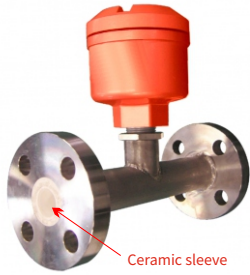


Conveyor Feed Flow



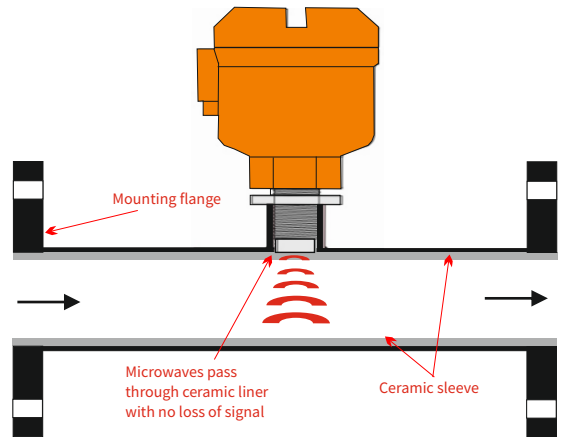
Silo Outlet Directional Flow

CLOSED PIPE APPLICATIONS



Microwaves will pass through low dielectric materials such as plastic or ceramic, making it possible to monitor the contents of closed pipes. The diagram shows a stainless steel pipe with a sensor process connection halfway along. This pipe section also has an inner sleeve made of durable chemical resistant ceramic. The microwaves from the flow sensor will pass through the ceramic sleeve, which is enclosed, providing a non-invasive flow solution.

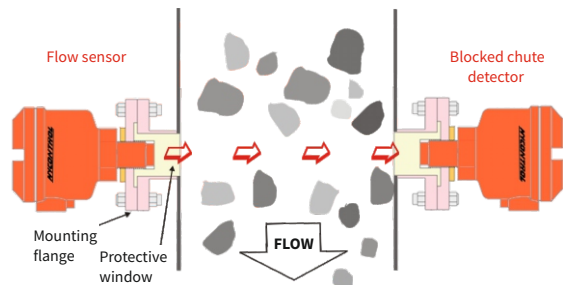
This non-invasive mounting ensures the process remains closed, allowing easy removal of the sensor if required. **This design drastically reduces wear and tear on the sensor, allowing easy access without shutting down the process.**



COMBINED BLOCKED CHUTE AND FLOW SWITCH

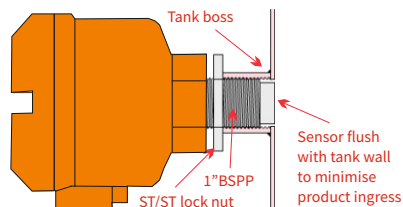
Combining the Microsense blocked chute detector with the Hycontrol microwave flow switch provides a unique solution for two applications with one installation. The flow switch is mounted on one side of the channel, and the blocked chute switch receiver is mounted opposite, *as shown in the diagram opposite*. Thus, this application will first detect flow in the chute or pipe and secondly if the line has been blocked.

This use of two different microwave sensors can differentiate between a blocked chute, an empty chute and a flowing chute.



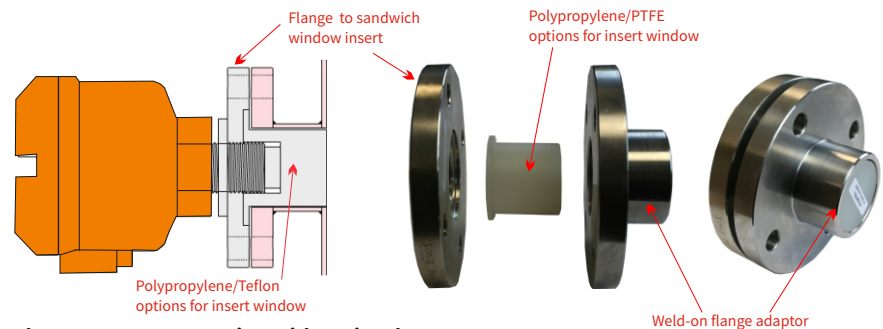
MOUNTING OPTIONS

STANDARD



Standard 1" BSPP process connection directly into the pipe socket. Suitable for low abrasion applications.

FLANGE WITH INSERT



Flange process connection with optional polypropylene plug sandwiched between flanges but flush with pipe wall. This provides additional sensor protection.

APPLICATIONS FOR SOLIDS



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HYCONTROL - THE COMPLETE LEVEL SOLUTION

Hycontrol has been at the forefront of level control and measurement technology for over thirty-five years, providing effective solutions for diverse applications across a wide range of industries ranging from quarrying to food; from nuclear power to chemical; and from animal feed to waste recycling. From our manufacturing base in Redditch, Worcestershire, we have been trusted to oversee thousands of applications across the UK and around the world.

At Hycontrol, we pride ourselves on providing a 'complete solution' service to our UK customers. We provide a turnkey solution for level equipment requirements, with the experience and skill to design, manufacture, install and maintain bespoke measurement and control systems that are crafted to suit the particular needs of each individual customer.

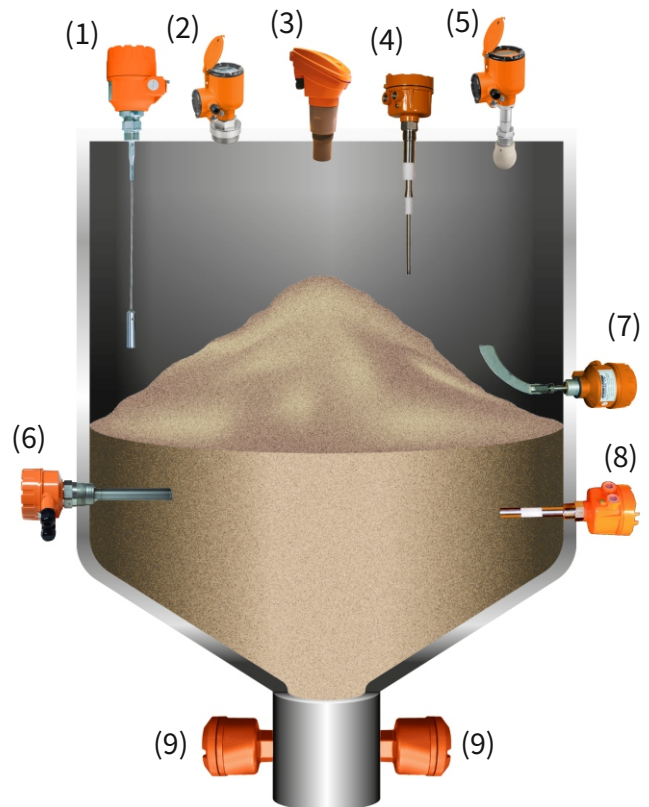
We understand the consequences of inaccurate or unreliable level systems, and therefore each Hycontrol installation is tailored precisely to match your application. Our goal is simple: to provide the best-engineered solution - *without compromise*.

With one of the widest ranges of level measurement technologies on the market including award-winning silo pressure safety systems and a patented range of foam detection and control equipment, backed up by a team of highly experienced engineers and technicians, Hycontrol is a leading force in the manufacture and supply of advanced level solutions.



Product Range for Solids:

- (1) TDR radar
- (2) 80 GHz FMCW radar
- (3) 2-wire ultrasonic transmitter
- (4) RF admittance level switch
- (5) 24 GHz FMCW radar
- (6) Vibrating level probe
- (7) Rotary paddle switch
- (8) Capacitance level switch
- (9) Microwave flow & blockage switch



Product Range for Liquids:

- (1) Bypass level indicator
- (2) 80 GHz FMCW radar
- (3) Foam control system
- (4) 24 GHz FMCW radar
- (5) 2-wire ultrasonic transmitter
- (6) TDR radar
- (7) Capacitance level switch
- (8) RF admittance level switch
- (9) Tuning fork vibrating level switch

