



# Colima FLU Series Vane Flow Switches

**7A.330-E**  
Issue 1 - 2012

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## Description

Magnetically activated vane type flow switches for monitoring gas or liquid flow rates are present in most industrial applications. When installed at the point of operation, they work as on /off switches and are used as automatic controls and process security systems allowing operations such as starting / stopping of pumps, opening / closing of solenoid valves and activation of alarm systems. The flow switches can be equipped with electrical contacts, SPDT or DPDT micro switches along with different protective housings and with optional two-colour visual indicator to suit most environmental and safety conditions. Flu A is the gas flow detection version while Flu O is dedicated to liquid flow applications.



**Flu type O**  
with two-colour visual indicator and weather-proof housing

## Available types

<p><b>FLU A</b></p>  <p>Gas flow switch, with IP 67 aluminum housing.</p> <p style="text-align: right;"><b>A</b></p>	<p><b>FLU O</b></p>  <p>Liquid flow switch, with IP 67 aluminum housing and two-colour visual indicator (optional).</p> <p style="text-align: right;"><b>O</b></p>
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## Operating principle

Two oscillating magnets on the same axis, one integral with the vane and one integral with the electrical equipment, repel each other reciprocally through a non-magnetic material flange. The flange separates the housing, containing the electrical equipment, from the vane that is inserted in the pipe. The vane in absence of flow is maintained in its resting position by balance weight and repulsion between the two magnets that face each other with the same polarity. When the flow pushes the vane, the integral vane magnet moves and the magnetic field pushes the integral switch magnet. The switching of the electrical contact is quick and reliable.

## Mounting

The Flu flow switches can be installed vertically or horizontally directly in a pipe, or in a dedicated chamber connected between two pipes. Several type of flanges are available upon customer request.

**Wetted parts**

Flange				Vane			
Steel	304SS	1	316SS	2	304SS	A	316SS

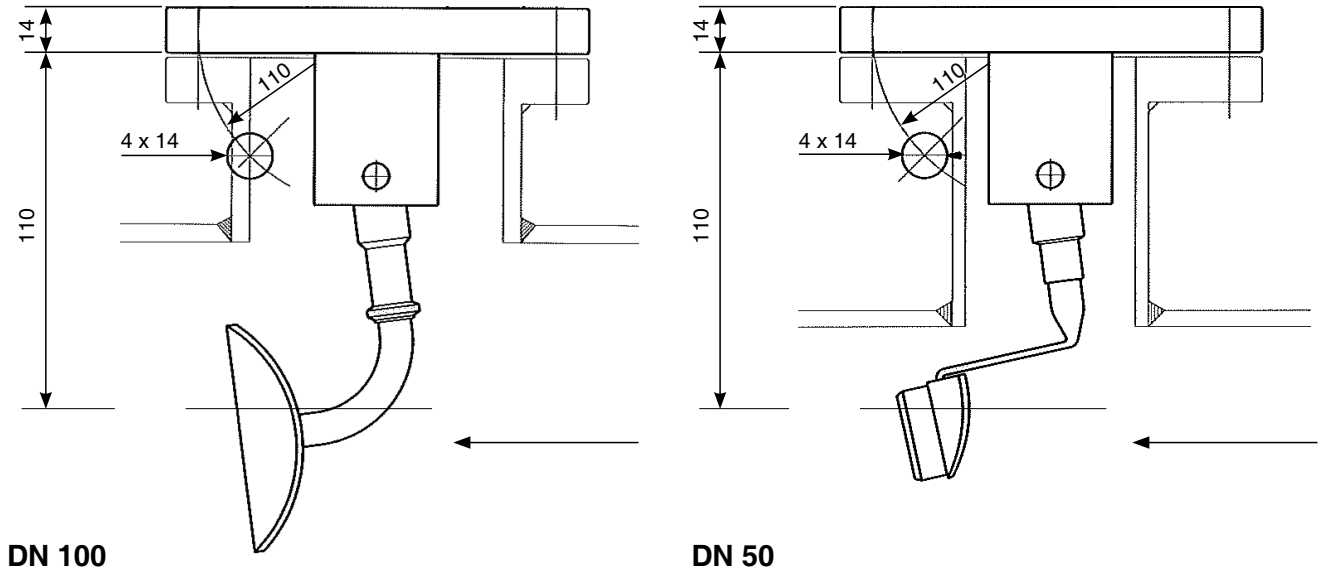
**Vane dimensions**

Steel	Ø 22	Ø 50	Ø 150

**Note:** customized vanes can be provided upon request. In case of Flu A the vane has a square geometry.

**Process connections**

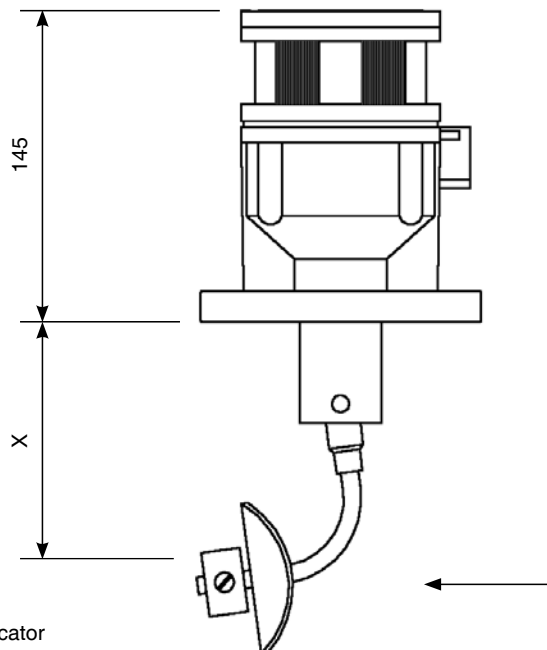
Depending on pipe diameter different solutions can be provided, utilizing with customized vane arms.



**Note:** several types of flanges can be provided upon customer request

**Design conditions**

TMA - Maximum allowable temperature	Steel	-20 to +150 °C up to 350 °C with cooling extension
TMA - Maximum allowable pressure	Steel	< 16 bar g



**Flu type O** with two-colour visual indicator

# Electrical equipment and housings for Colima FLU series flow switches

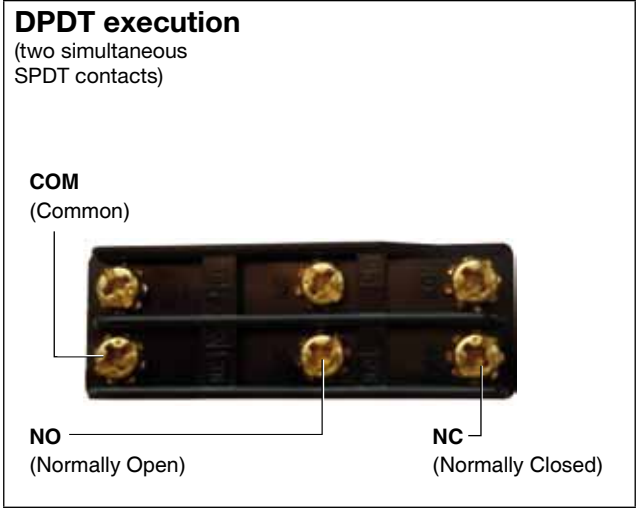
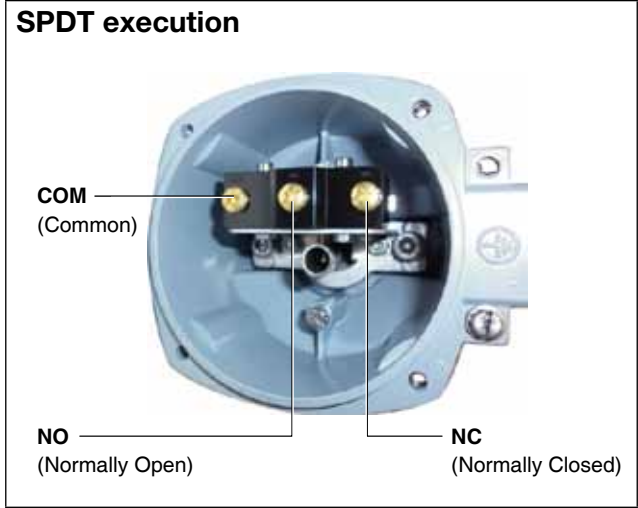
## Description

The electrical equipment on the FLU series level switches comprises a support and a contact. The oscillating element includes a magnet whose south pole points towards the flange that separates the electrical equipment from the liquid or gas contained in the pipe. According to the pressure on the vane provided by the liquid or gas flow in the pipe, the vane works by pivoting a sealed cartridge containing a magnet, with south polarity on the end towards the flange. As the two magnets on the two oscillating devices repel each other, they are never in line on the same axis. Consequently, the status of the electrical equipment switches from the normally open (NO) to normally closed (NC) position or vice versa.



## Electrical contact characteristics

Standard SPDT Contact				
Standard microswitches are recommended for general purpose Contact resistance: 15 mOhm Max (Initial value) Mechanical life: >106 Electrical life: >105				
V	~	A	=	Load
250	15		0,25	Resistive
	15		0,03	Inductive
125	15		0,5	Resistive
	15		0,05	Inductive
30	NA		6	Resistive
	NA		5	Inductive



## Housings

The FLU series flow switch housings are available in the weatherproof version for general use. The weatherproof housing is also available with a two-colour visual indicator to directly check the presence of flow: the indicator is white in absence of flow and it becomes red when the flow is present.

### Weatherproof housing



Type for general purpose, used in most industrial applications.  
In pressure die-cast aluminium and protected with polyamide paint.  
Protection degree IP67.  
One cable entry point.



Two-colour visual flow indicator (Optional)

## Electrical connections

The housings allow for two cable entry points which are available as follows:

Standard	G ½" F
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## Dimensions (approximate) in mm

