



Cert. No. LRQ 0963008

ISO 9001



7A.330-E
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Colima FLU Series Vane Flow Switches

Description

Magnetically activated vane type flow switches for monitoring air or liquid flow rates are present in most industrial applications. Designed specifically to be used with air or water/condensation, FLU vane flow switches are also suitable for oil application. In that case, please confirm relevant specific gravity and viscosity (in addition to the design and operating conditions), to double check feasibility.

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.

Versions

Flu A is the air flow detection version while Flu O is dedicated to liquid flow applications.

Applications

- Protects pumps, motors and other equipment against low or no flow
- Controls sequential operation of pumps
- Automatically starts auxiliary pumps and engines
- Stops liquid cooled engines, machines and processing when coolant flow is interrupted
- Shuts down burner when air flow through heating coil fails

DN	Approximate actuation / Deactuation Flow rates for cold water (m³/h)		Approximate actuation / Deactuation Velocity for cold water (m/s)	
50	7,2	2,8	1,02	0,40
65	8,9	2,7	0,75	0,22
80	8,8	3,5	0,48	0,19
100	9,0	3,9	0,32	0,14
125	14,0	6,0	0,32	0,14
150	22,9	8,1	0,36	0,13
200	40,6	14,3	0,36	0,13

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 horizontally, directly into a pipe, or in a dedicated chamber connected between two pipes. Several type of flanges are available upon customer request.



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

Available types

<p>FLU A</p> 	<p>Air flow switch, with IP 67 aluminum housing. Can not be fitted directly on the pipes but before the the cooling battery. Standard version with square flange 90x90 mm and vane 100x100 mm available only.</p>	A
<p>FLU O</p> 	<p>Liquid flow switch, with IP 67 aluminum housing and two-colour visual indicator (optional).</p>	O

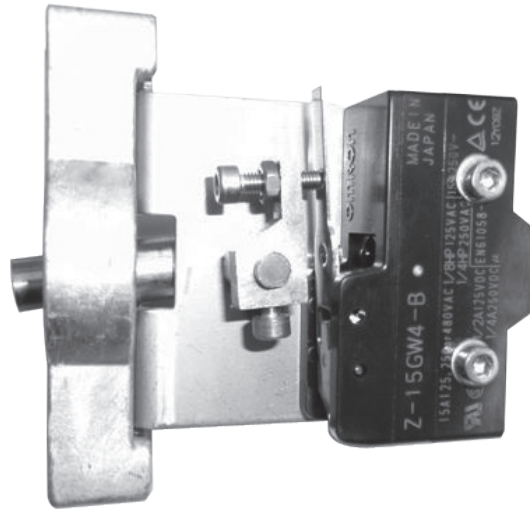
Electrical equipment and housings for Colima FLU series flow switches

Description

The electrical equipment for the FLU series level switches comprises a support and a contact.

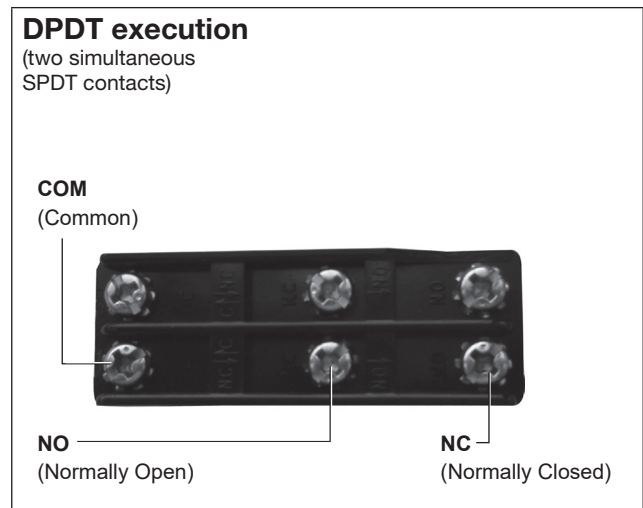
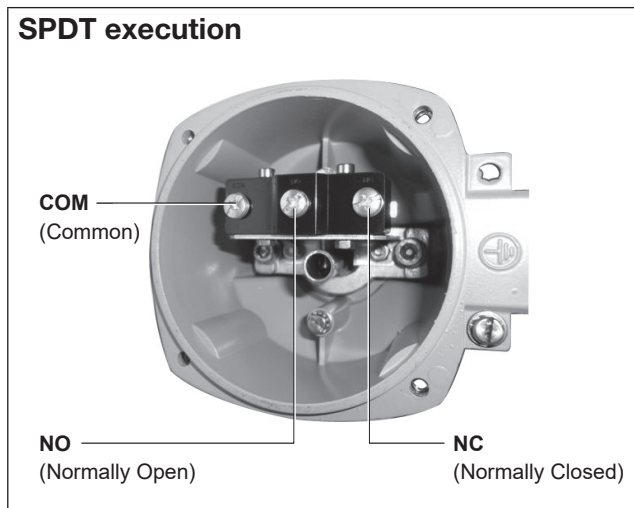
The oscillating element includes a magnet whose south pole points towards the flange that separates the electrical equipment from the liquid or air contained in the pipe. According to the pressure on the vane provided by the liquid or air flow in the pipe, the vane works by pivoting a sealed cartridge 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

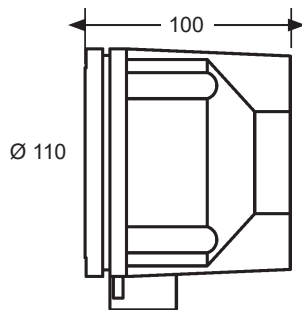
The FLU series flow switch housings are available in the weatherproof version for general use. The weatherproof housing is also available with a two-colour visual indicator to directly check the presence of flow: the indicator is white in absence of flow and it becomes red when the flow is present.

<p>Weatherproof housing</p> 	<p>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.</p>	2
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Two-colour visual flow indicator

Dimensions (approximate) in mm



Product selection and order placement

Each unit is identified by a unique alphanumeric code that defines the manufacturing characteristics that best suits the application. Please confirm the following information before commencement of the product configuration.

Process pressure = _____ Specific gravity of fluid = _____
 Design pressure = _____ Viscosity of fluid = _____
 Fluid type = _____ Process temperature = _____
 (mandatory) Design temperature = _____

Range	Colima	Colima
Model	FLU	F
Type	A Air (standard version as per picture shown at page 1 available only) O Liquid < 150°C OT With extention cooling (from 151°C to max 350°C)	O
Mounting type	O Horizontal mounting V Vertical mounting	O
Housing	1 IP67 General purpose two-color visul flow indicator 2 IP67 General purpose without two-color visul flow indicator	1
Electrical connections	1 G ½"F 2 Gk ½"F 3 ½"NPT F 4 M20 x 1.5 5 PG 13.5	1
DN Pipe (only type FO and FOT)	D See page 2	D3
Flange material	1 304 Stainless steel 2 316 Stainless steel	1
Vane material	A 304 Stainless steel B 316 Stainless steel	B
Electrical equipment	A1 Standard SPDT A2 Standard DPDT	A1

How to order example: 1 off Spirax Sarco Colima F-O-O-1-1-D3-1-B-A1.