CF22: Thermal Dipsersion Flow Switch

The CF22 thermal dispersion flow switch is a robust and maintenance free solution for detecting liquid or gas flow in ducts or pipe lines with an excellent cost-benefit .

Applications

- Food and Beverage Industry
- Water Treatment Plants
- PetroChemical Industry
- Pharmaceutical Industry
- Pulp and Paper Manufacturers

CF22
Thermal Dispersion Flow Switch

Characteristics

- **Ideal for different industrial environments as well as sanitary applications.**
- **Robust with no moving parts and easy maintenance.**
  316 stainless steel body
- **Excellent low flow sensitivity.**
- **Protection class IP65 / IP66(IEC 60529).**
- **Fast flow response time.**
- **Set-Point range.**
  In the range from 3cm/s to 3m/s (Liquids)
  5cm/s to 5m/s (Air)
- **Signal output.**
  SPDT relay
- **Several types of process connections.**
  Thread, Flange and Sanitary

Description

The CF22 Flow Switch models are designed to detect the flow of liquids and gases (air) in pipes or ducts.

It utilizes Thermal Dispersion flow detection technology, which makes it very effective for flow/no flow or ascending and decsending flow detection.

The housing with viewing window gives the operator a switch status as well as: an 8 LED bargraph with flow rate indication and a central LED that indicates the switch detection status.

The connection and body are made of 316 stainless steel.

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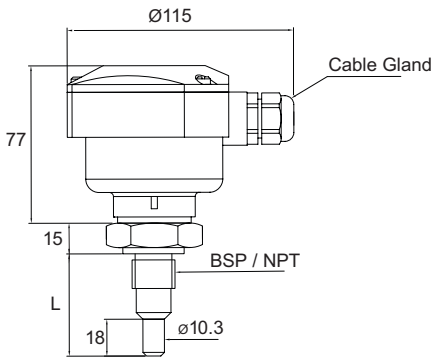
Thermal Dispersion Flow Switch

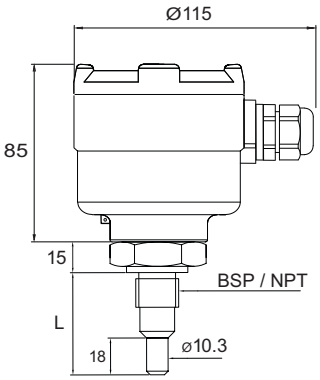
Dimensions (mm) / Process Connections Options

Thread

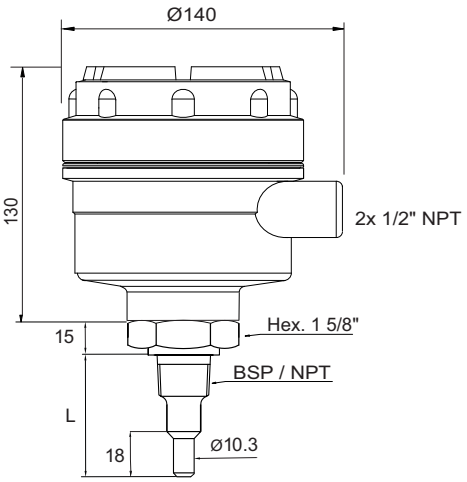
N1 - Nylon



G1 - Small Aluminum

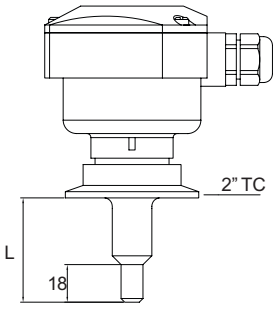


G1 - Large Aluminum

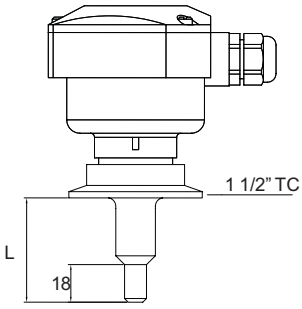


Sanitary

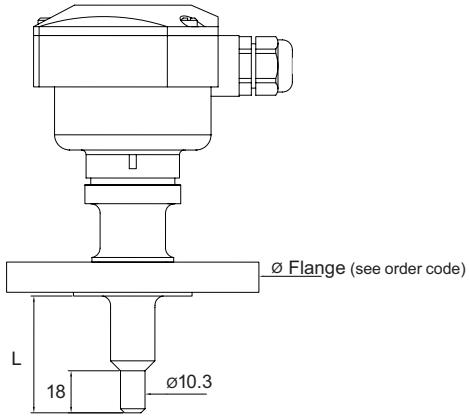
2"TC



1 1/2"TC



Flange



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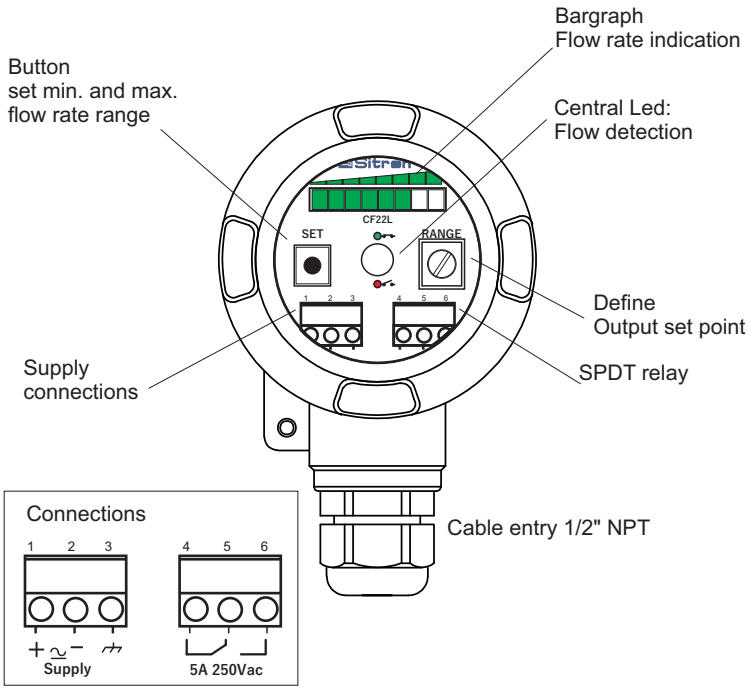
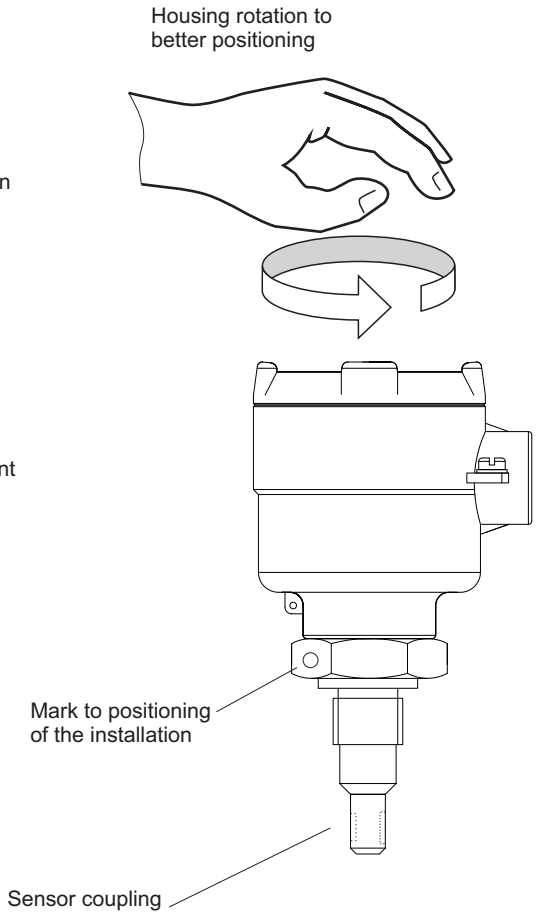
Thermal Dispersion Flow Switch

Overview CF22 - N1 / G1





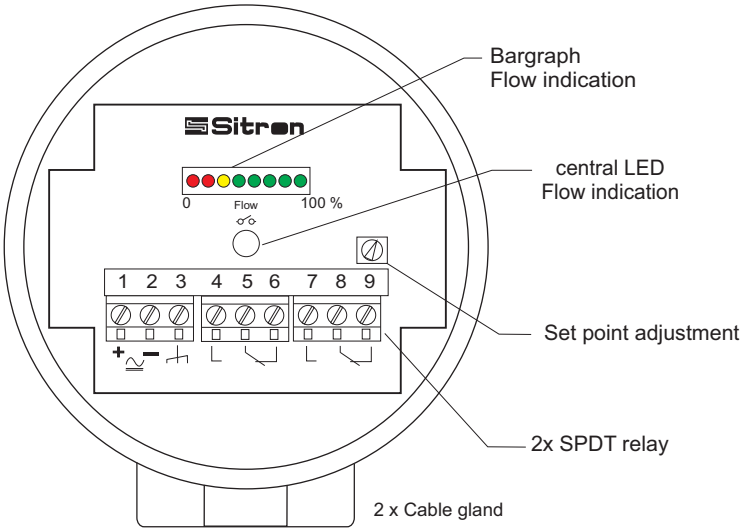
Technical Specifications

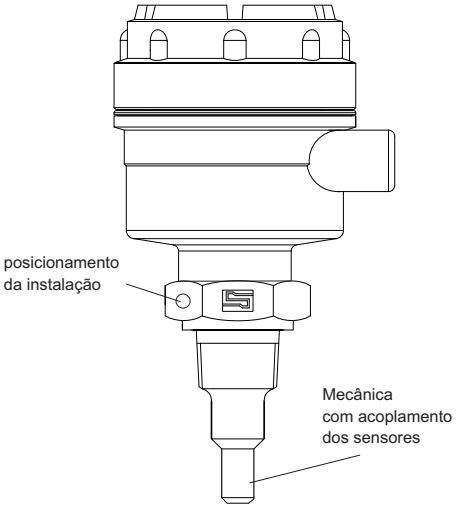
CF22AC/DC-X-X-X-X-X (SPDT)

Application: Flow detection
Supply: DC: 24V (± 10%)
AC: 100...240V (±10%) (50/60Hz) & 125Vdc
Consumption: <100mA
Output: Relay (1 SPDT) 5A - 250Vac
Set Point Range: Líquids: 3cm/s to 3m/s
Air: 5cm/s to 5m/s
Accuracy: ± 10%
Response Time: +/- 1 to 10s
Gradient Temperature: 15°C/min
Flow Rate Indication: Bargraph 8 led´s
Enclosure Material: Aluminum or Plastic (nylon fiberglass)
Electrical Connection: Cable galnd ½" NPT
Process Connection: BSP , NPT, Flange or Sanitary
Wetted Patrts: 316 SS (Halar coating for agressive medium upon request)
Ambient Temperature: -10 to 70°C
Process Temperature: -10 to + 80°C (extended neck up to 120°C)
Pressure: max. 100 Bar
Class Protection: N1 - Nylon IP65
G1 /G2 Aluminum IP66

CF22
Thermal Dispersion Flow Switch

Overview CF22 - G2





Technical Specifications

CF22AC/DC-X-X-X-G2-X (2x SPDT)

Application: Flow detection
Supply: DC: 24V (± 10%)
AC: 100...240V (±10%) (50/60Hz) & 125Vdc
Consumption: <100mA
Output: Relay (2 SPDT) 5A - 250Vac
Set Point Range: Líquids: 3cm/s to 3m/s
Air: 5cm/s to 5m/s
Accuracy: ± 10%
Response Time: +/- 1 to 10s
Gradient Temperature: 15°C/min
Flow Rate Indication: Bargraph 8 led´s
Enclosure Material: Aluminum painted or Plastic (polymer)
Electrical Connection: Cable galnd ½" NPT
Process Connection: BSP , NPT, Flange or Sanitary
Wetted Parts: 316 SS (Halar coating for agressive medium upon request)
Ambient Temperature: -10 to 70°C
Process Temperature: -10 to + 80°C (extended neck up to 120°C)
Pressure: max. 100 Bar
Class Protection: IP66

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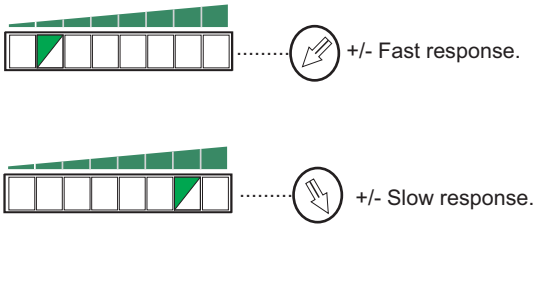
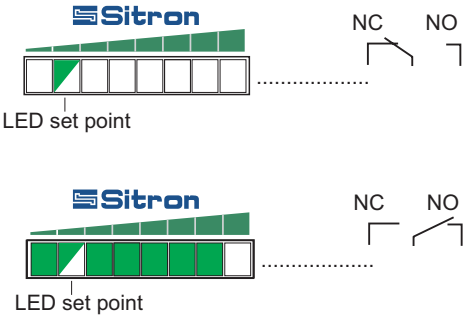
Thermal Dispersion Flow Switch

Set Point Definition

LED flashing.

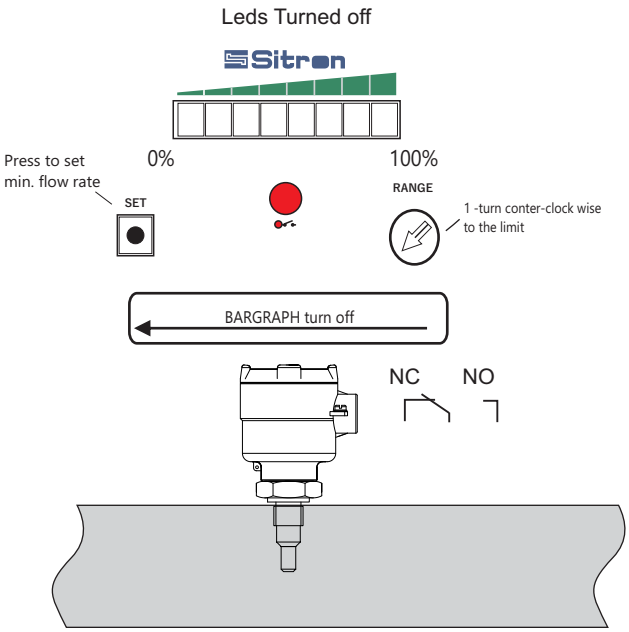


Example:
Switch status

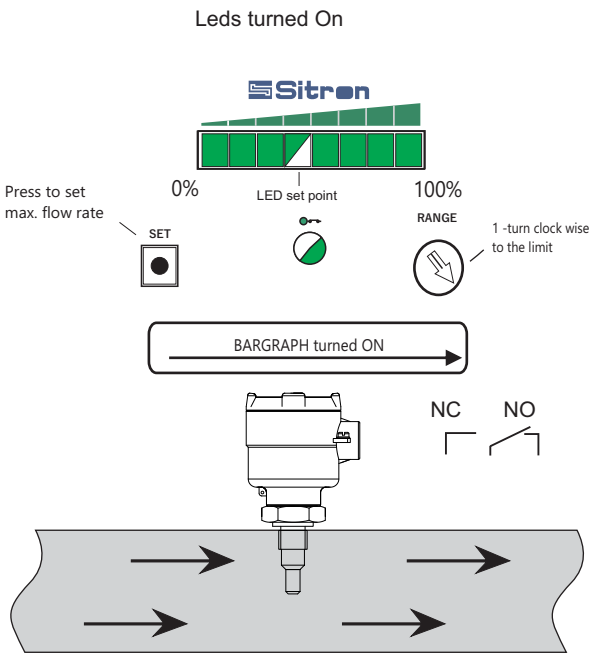


Flow detection example (CF22 N1/G1)

No Flow



Max Flow



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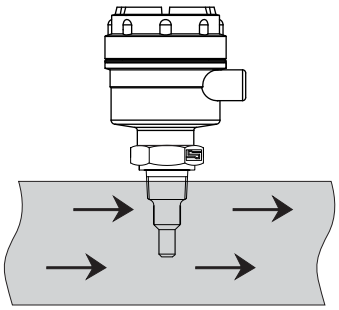
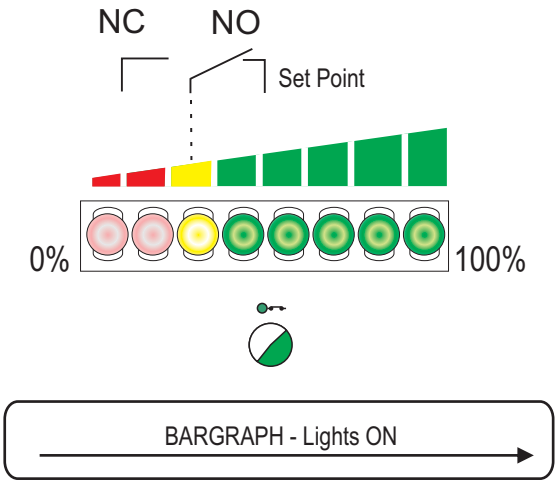
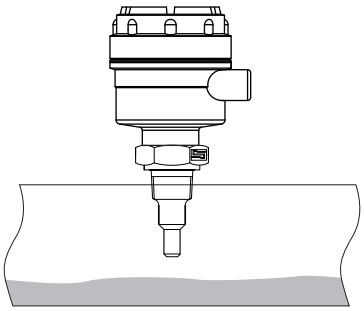
CF22 - G2 LED and Flow Indication

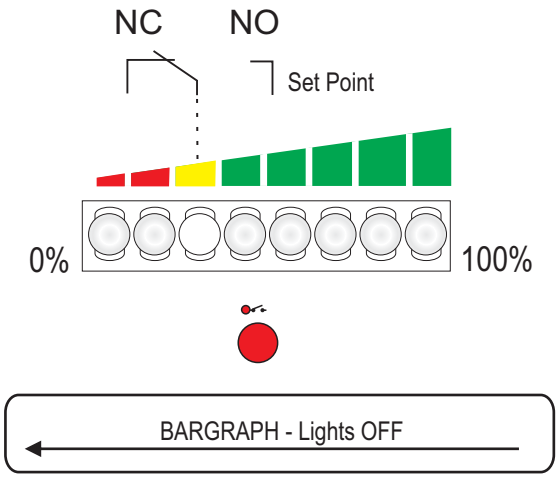
Flow Detection





No Flow





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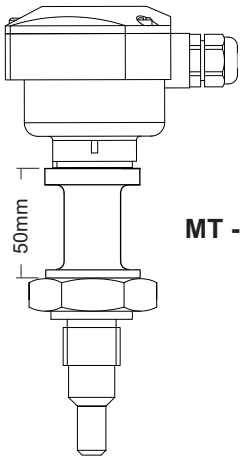
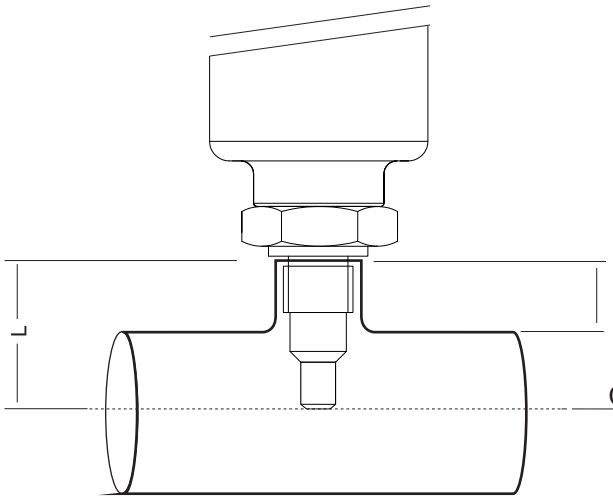
Extended Neck for Heat Dissipation



MT - up to 125ºC

Insertion Length Setting

Provide the measurement (L) as ilustrated



L- Insertion Length

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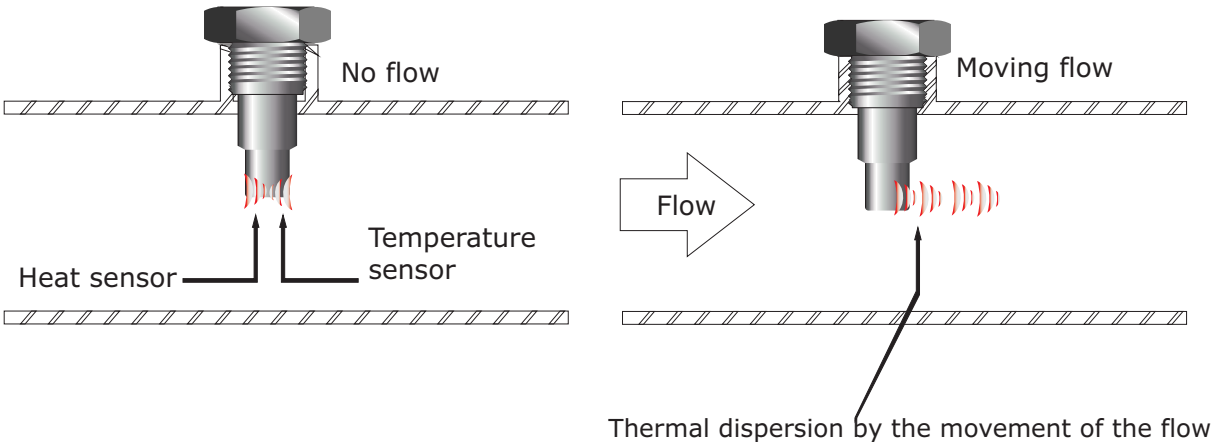
Thermal Dispersion Flow Switch

Technology

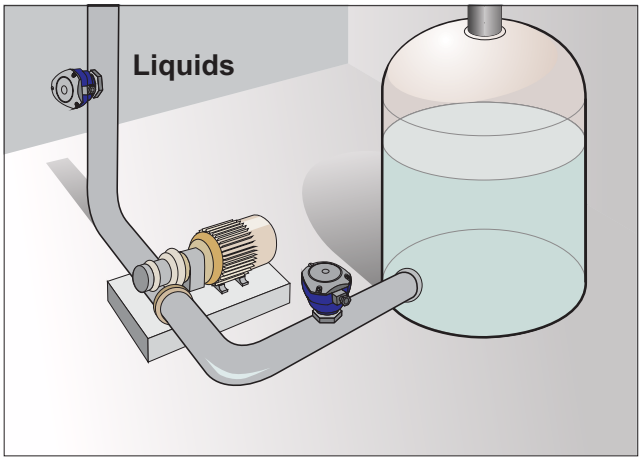
The CF22 line of flow switches utilize the principle of thermal dispersion. A typical configuration for this flow switch technology incorporates at least two temperature resistance detectors (RTD's), installed within the tip of the sensor. One of the sensors is heated and the other is used as a reference by monitoring the fluid temperature. As the medium (air or fluid) flows over the sensor tip, there is a dispersion of thermal energy which is inversely proportional to the flow. The electronics of the CF22 registers and measures the temperature change and indicates either the presence or absence of flow via LED indication as well as an SPDT relay alarm output.

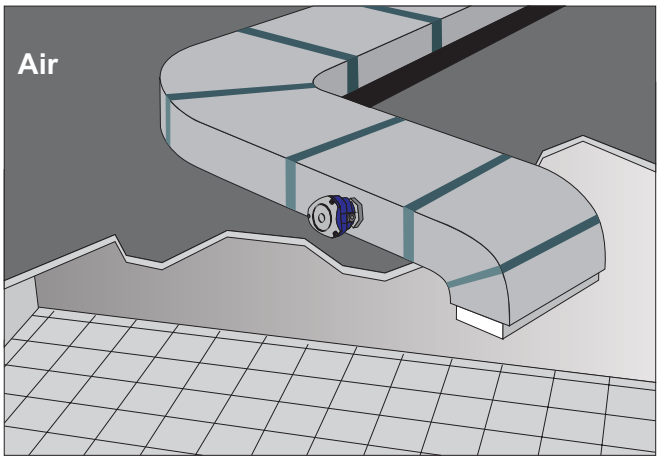
Operating Principle	Thermal Dispersion



Application

Hydraulic Pump Protection	Air Flow System Detection





CF22
Thermal Dispersion Flow Switch

How To Specify?

1 - What is the application?
- Detection of liquid media
- Air/Gas Detection

2 - What is the power supply?
(AC or DC)

3 - What is the size of the connection to the process?
ex (1/2”, 1”, 1 12” etc).

4 - What is the type of connection?
ex (BSP, NPT, Flange, Tri-Camp TC, etc.)

5 - What is the insertion length (L)?
See insertion length guide

6 - Is the Fluid aggressive to 316 stainless steel?
Aggressive - Sensor with Halar coating

7 - Is there a CIP (clean in place process)? What temperature and product?
Processes with CIP and high temperature require encapsulation in the housing so that long term durability is not affected.

8 - Process temperature?
Above 80° apply MT neck for heat dissipation
Temperature variation (15°C/min allowed)

9 - Is there a constant presence of radio communication?

We recommend aluminum housing to avoid interference condensation (NE)

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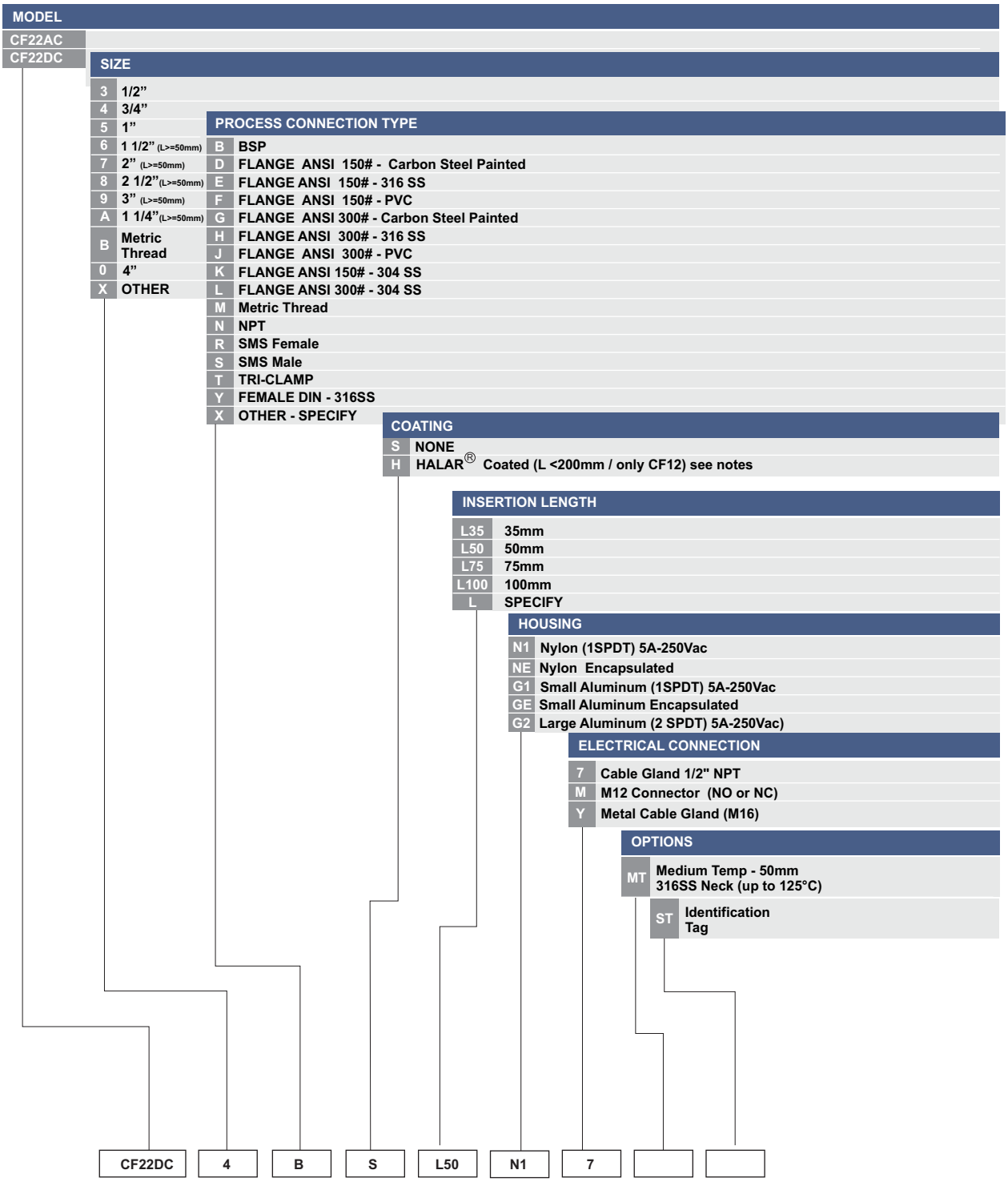
Thermal Dispersion Flow Switch

Order Code



Halar coating
Max. insertion length for Halar coating is 200mm
Insertion length over 100mm, process connection from 3/4" NPT/ BSP

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Thermal Dispersion Flow Switch

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Order in any stage of production	75%
Order complete and ready for shipment	100%

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