CF22AC/ CF22DC

Thermal Dispersion: Flow, Level & Interface Monitor

A multi-function switch for various industrial applications

Features

- Flow, Level or Interface Switch (2X SPDT relay)
- Set-Point Adjustment
- Sensitivity Adjustment
- Factory Adjustment Feature
  (Set the electronics based on the medium; Water, Oil or Gas)
- Corrosion resistant 316SS Body
- Quick response time 1-10 seconds
- Protection Class:
  IP66 (IEC 60529)
- Protection: Reverse Polarity and Voltage Surge
- Set-Point Range:
  3cm/s to 3m/s (Liquids)
  5cm/s to 5m/s (Gas)

Description

The CF22 Thermal Dispersion Flow Switch provides several industrial process monitoring and control features.

The unit can be used as a flow or level switch and also allows field parameterization for the specific medium, be it water, oil or gas.

All models can be manufactured with a wide variety of process connections such as: thread,flange or sanitary, as well as with a defined length according to the pipe diameter.

All models comes with a glass window that allows you to view the status of the switch and comes with certifications for installation in hazardous environments.

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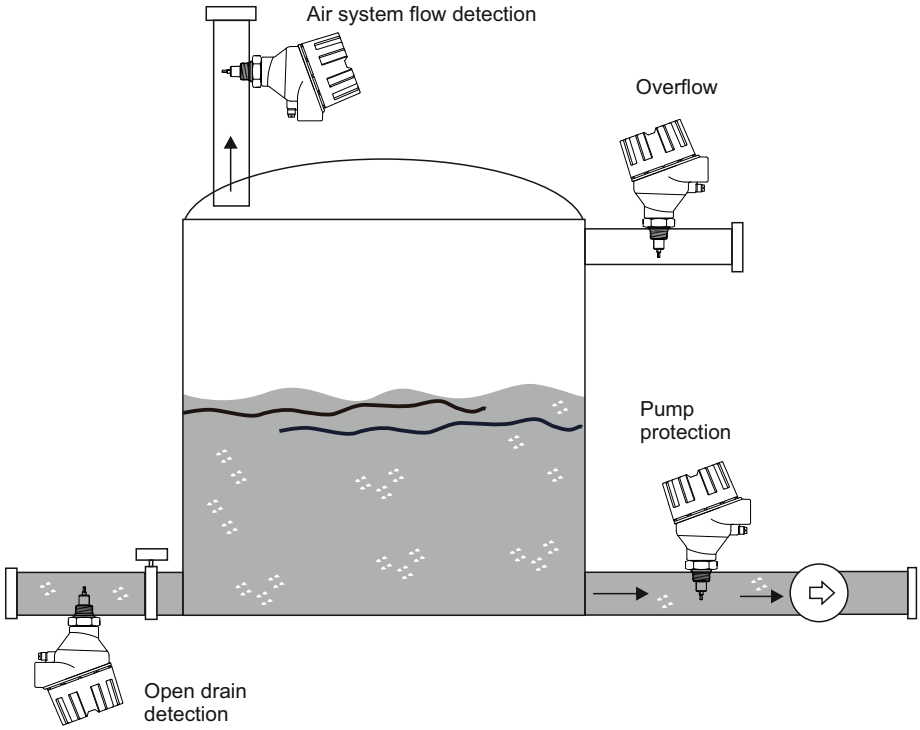
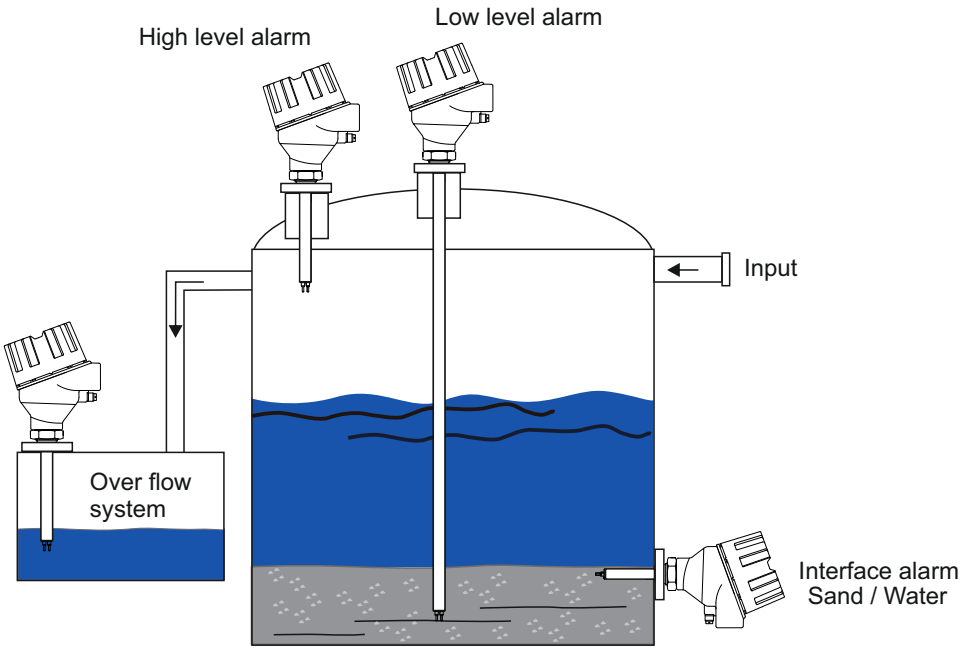
Flow Detection Example



Level Detection Example



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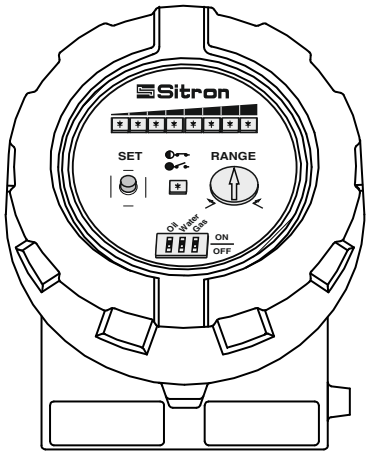
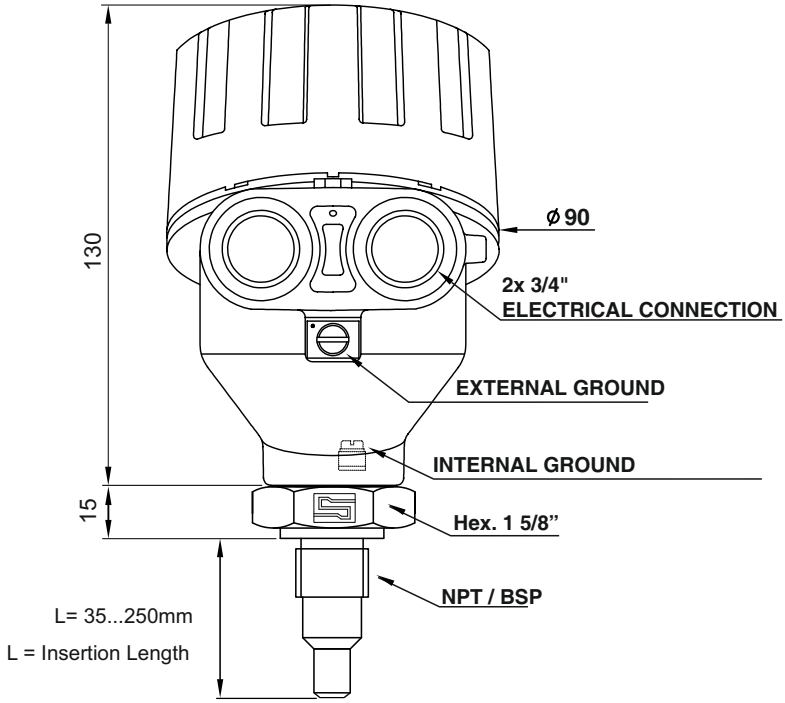
Dimensions (mm) PX2 housing with 1 tip sensor

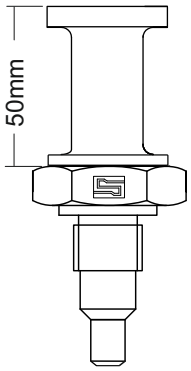
1 tip for Flow Switch



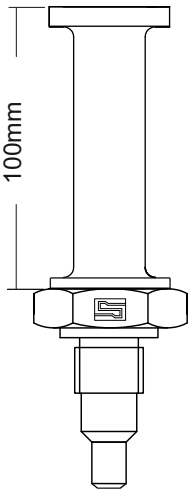


Extended neck for High temperatures

MT (100°C)



AT (120°C)



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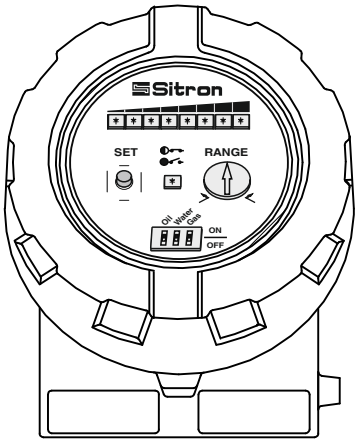
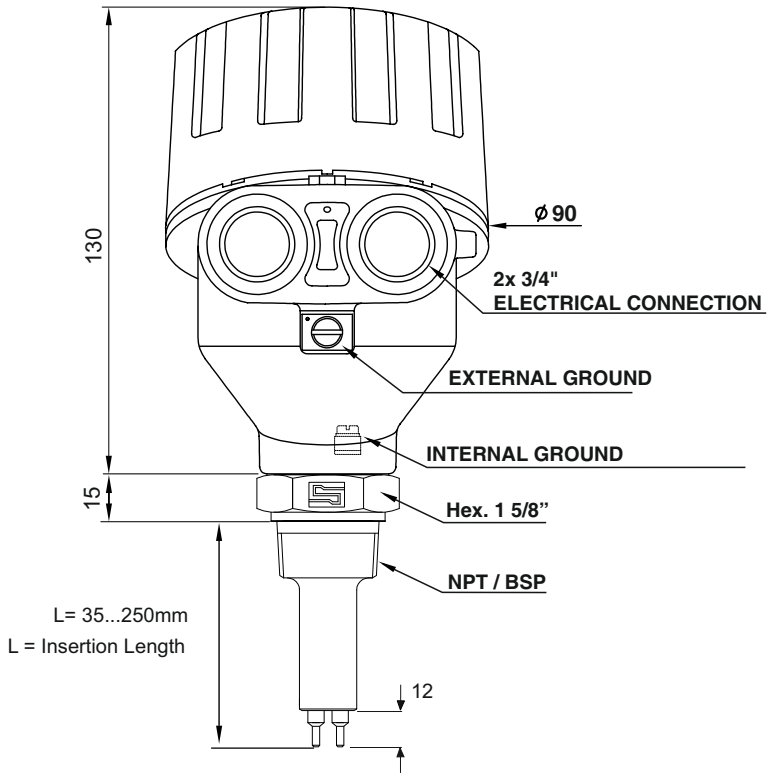
Dimensions (mm) PX2 housing with twin tip sensor

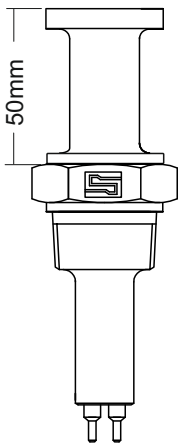
Twin tip for Flow, Level & Interface monitor



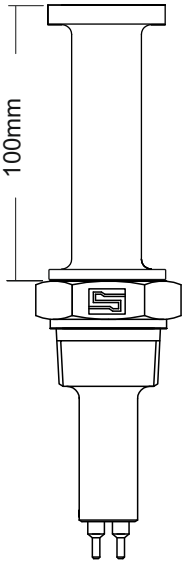


Extended neck for High temperatures

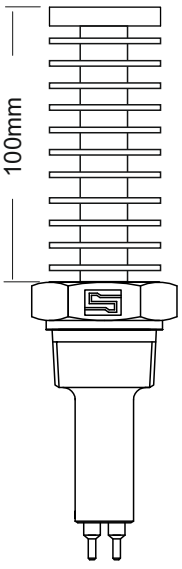
MT (100°C)



AT (120°C)



HT (200°C)
HT/3 (350°C)



High temp. neck
Heat dissipating coil

CF22AC/ CF22DC

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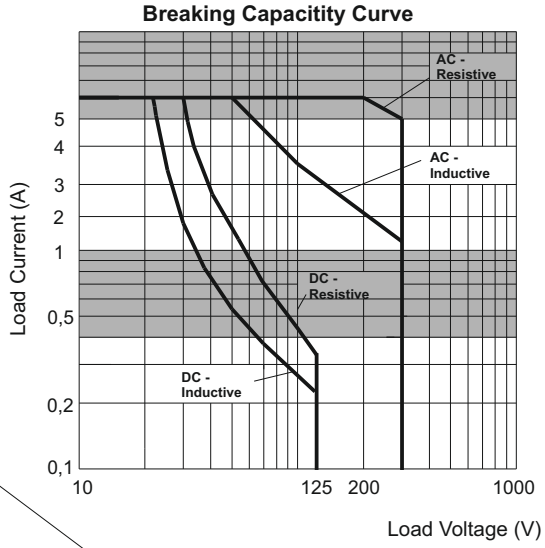
Technical Specifications

Power Supply: DC: 18~30V
AC: 85~264V (50/60Hz) / 125Vdc
Consumption: <120mA
Relay 2X (SPDT):
Nominal switching current: 6A @ 250VAC / 6A @ 30VDC
Max. Voltage: 277VAC / 125VDC



Connector
Flexible Conductor: 0.2 … 1.5 mm² / 24 … 14 AWG
Fine-stranded Conductor with Insulated Ferrule: 0.25 … 0.75 mm²
Stripping Length: 8 … 9 mm / 0.31 … 0.35 inches

Gain Adjustment: Switch for Gas / Oil / Water flow
Measuring Range: Liquids: 3 cm/s...3m/s / Gas: 5 cm/s...5m/s
Accuracy: ± 10%
Reponse Time: 1...10 sec
Temperature Gradient: 15°C/min
Indication: Bargraph 8 Led's
Housing: Aluminum Painted (blue) with glass viewing window
Electrical Connections (cable entry): 2x 3/4" NPT or 1/2" NPT
Process Connection: BSP,NPT, Flange or Sanitary
Body Material: 316 S.S / Halar coating for agressive medium
Ambient Temperature: -25...+60°C
Work Temperature: -10...+80°C up to -10...+350°C (w/ extended neck and twin tip sensor)
Max Pressure: 100 Bar
Class Protection: IP66

DC power supply
Isolation: Input / output - 1500Vdc / test 1min / leakeage current max.1mA
Insulation Resistance: at 500Vdc - 1000M (ohms)

AC power supply
Isolation: Input / Output - 3000VAC / Electric Strength Test for 1min.,leakage current <5mA

CF22AC/ CF22DC

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Housing Approvals

HOUSING	CERTIFICATIONS	STANDARDS	HAZARDOUS AREAS
PX2 Aluminum	FM APPROVED	FM 3600 FM 3615 FM 3810 ANSI/NEMA 250	Class I, Groups A, B, C, D Class II, Groups E, F, G Class III NEMA 4x
	FM APPROVED	ANSI/ISA - 12.00.01 ANSI/ISA - 12.22.01 ANSI/IEC 60529	Class I, Zone 1, AEx d II C, T6, IP66
		CSA C22.2 No.0.4 CSA C22.2 No.0.5 CSA C22.2 No.25 CSA C22.2 No.30 CSA C22.2 No.94	Class I, Groups A, B, C, D Class II, Groups E, F, G Class III Type 4x
		CSA E60079-0 CSA E60079-1 CSA E60529	Class I, Ex d II C, IP66
	Directive 2014/34/EU	EN IEC 60079-0:2018 IEC 60079-1:2014 IEC 60079-31:2014	**II 2G** Ex db IIC Gb **II 2D** Ex tb IIIC Db
AX2 316 SS		EN IEC 60079-0:2017 IEC 60079-1:2014 IEC 60079-31:2013	Ex db IIC Gb Ex tb IIIC Db

USA and Canada		Europe	
Division	**Protection Code**	**Zone**	**Protection Code**
Division 1 Division 2	Explosion proof	Zone 1 , Zone 21	Ex d
		Zone 2 , Zone 22	Ex d

CF22AC/ CF22DC

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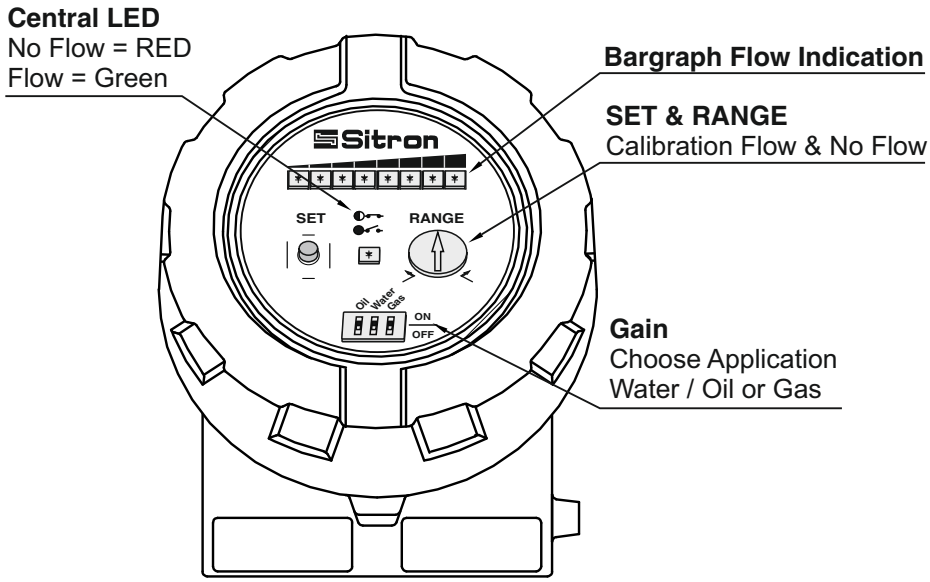
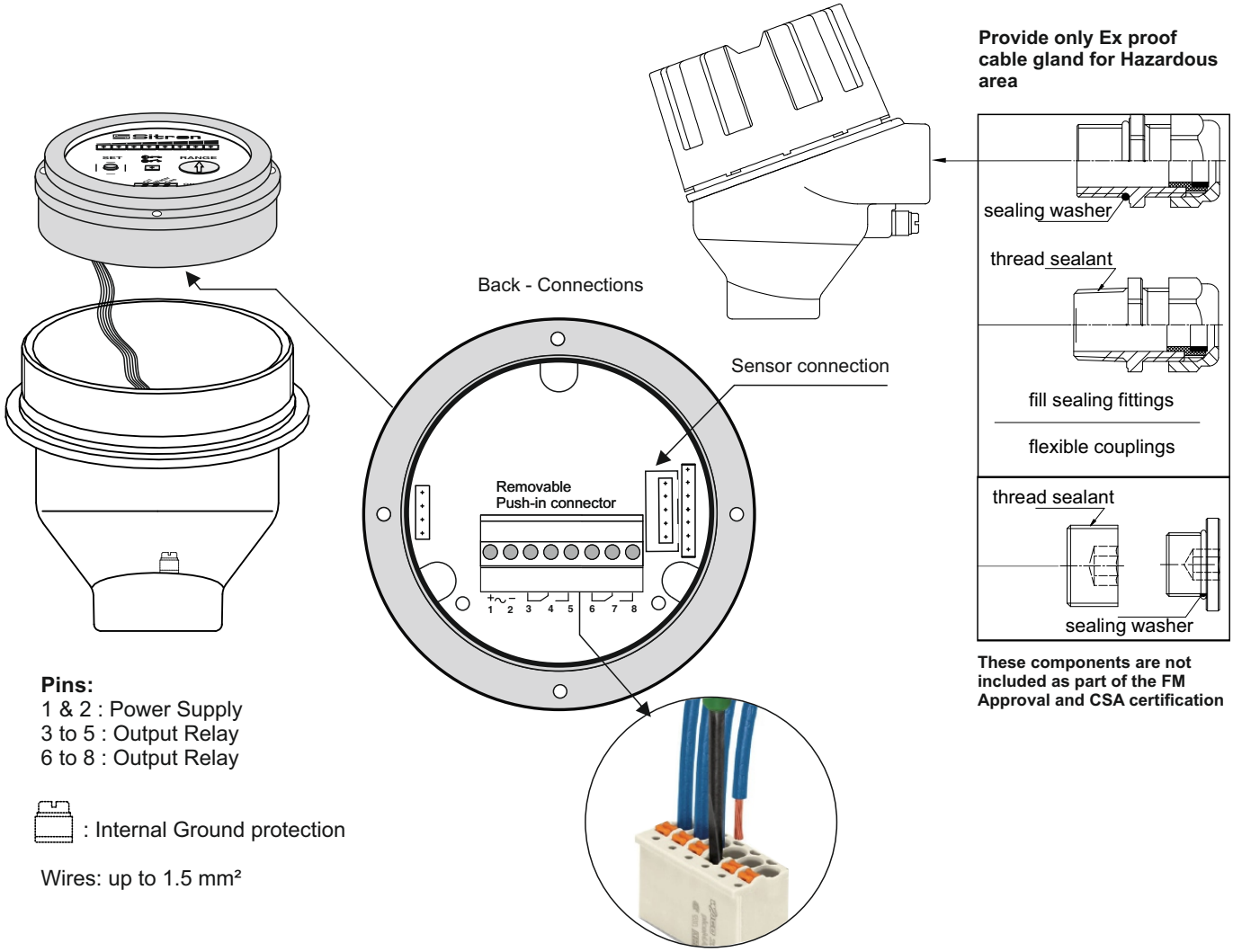
Overview



CF22 Module and Connections



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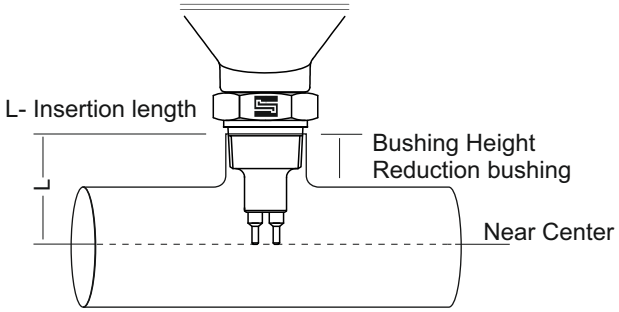
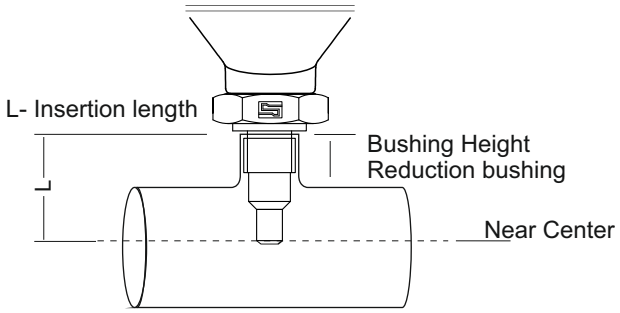
Insertion Length

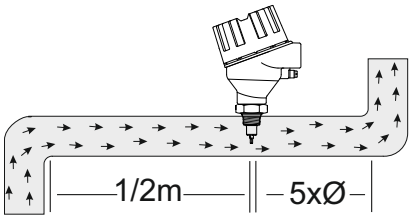
Provide the Measurement (L):





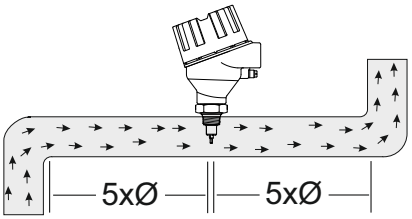
Recommended distances for install in different pipe diameter

Pipe diameter: <100mm



1/2 meter after the flow bend and 5xØ (diameter) before the flow bend.

Pipe diameter: >100mm

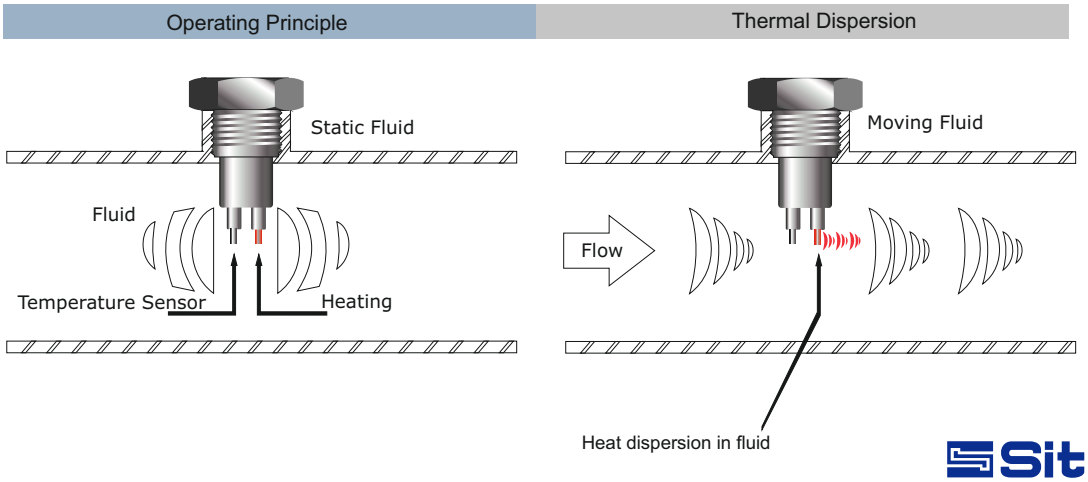


5xØ (diameter) both after and before the flow bends.

Technology

The CF22 flow switch line employs the principle of thermal dispersion. A typical configuration for this technology incorporates at least two resistance temperature detectors (RTDs), installed at the tip of the sensor. One of the sensors is heated, while the other is used as a reference to monitor the fluid temperature. As the medium (air or fluid) flows over the sensor tip, there is a dispersion of thermal energy that is inversely proportional to the flow.

The CF22 electronics record and measure the temperature change, indicating the presence or absence of flow through LED indication, as well as a SPDT relay alarm output.



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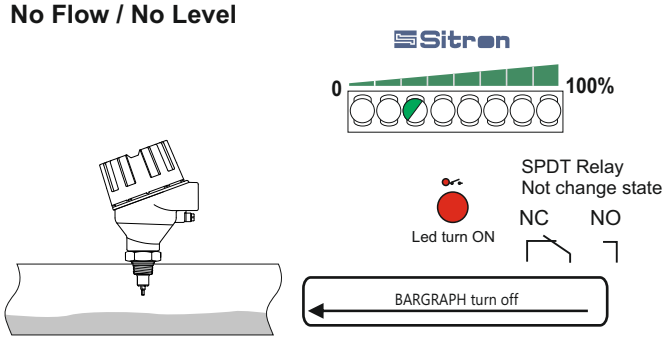
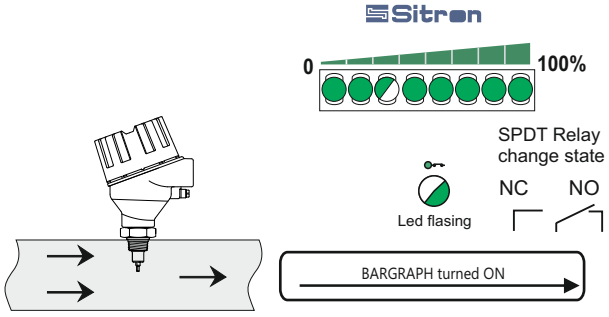
Switch Output and Bargraph Status

No Flow / No Level

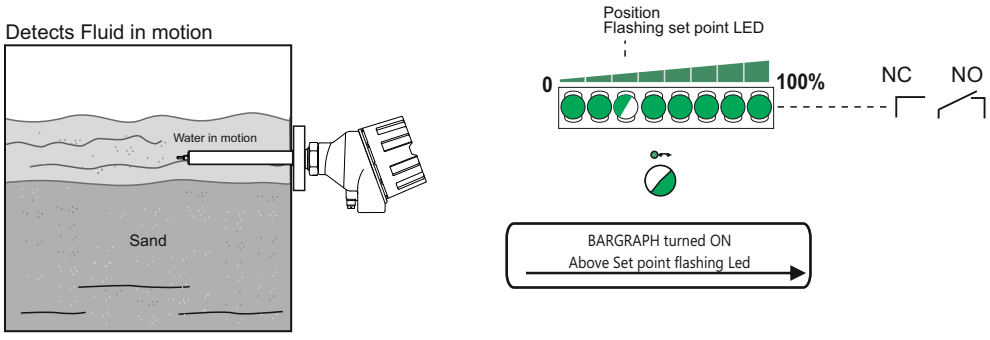


Flow / Level Detection

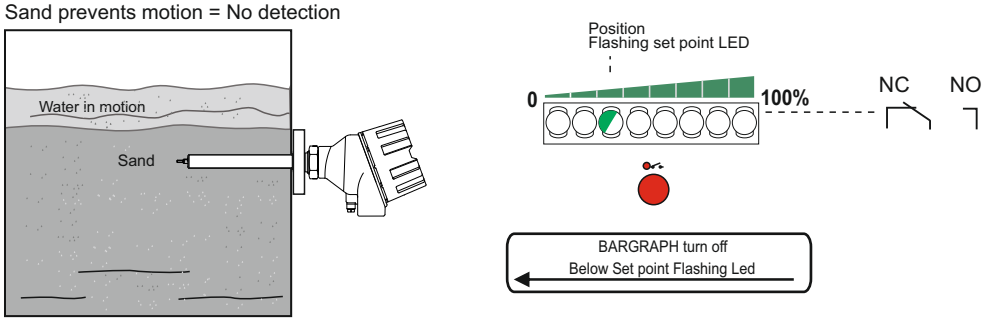


Interface Switch Status

Detects Fluid in motion



Sand prevents motion = No detection



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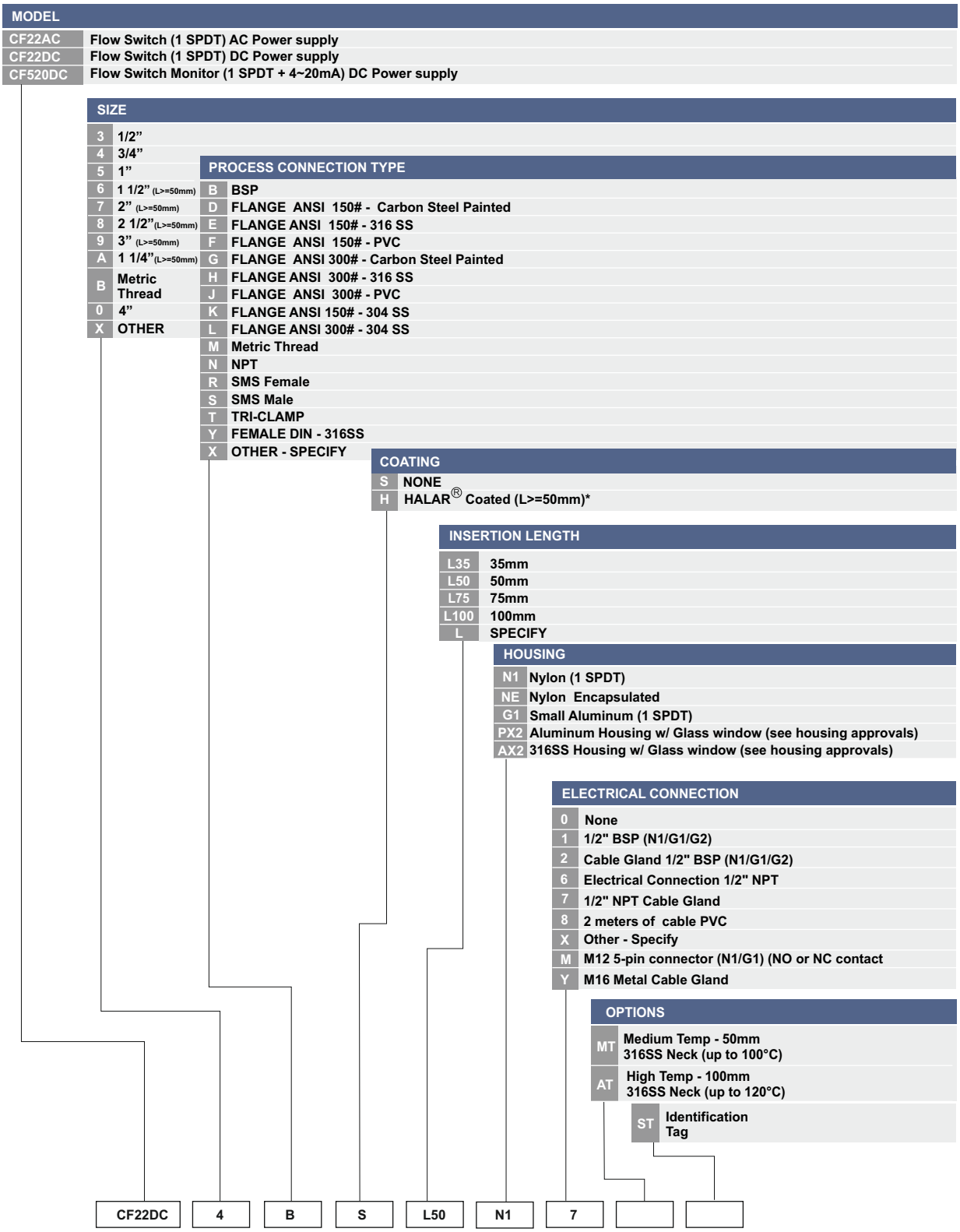
Order Code



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

e.g. CFFDC / 3/4" BSP / Coating: NONE / Insertion Length 50mm / PX2 aluminum Housing / 3/4 NPT Cabe entry / Medium Temp / Tag

Terms & Conditions

Sitron's TERMS & CONDITIONS

Design: Sitron reserves the right to make any alterations or changes necessary to improve the Products, correct defects or to make the Products safer, without prior notice or consent by Buyer.

Pricing: All stipulated amounts shall be in US dollars and all prices quoted are valid for thirty (30) days from date of offer, unless otherwise stated.

Safety and Instructions: The Buyer ensures that it and all its representatives and agents will observe all safety and technical instructions in Sitron's operating manuals, catalogs or other directions or instructions (either written or verbal).

Delivery and Freight: All goods are sold FOB point of shipment, Brasil. Transportation to the destination is the Buyer's responsibility and Buyer alone shall bear the cost of freight, optional or other shipping requirements, and or insurance. Sitron shall not be liable for loss or damage to the Products after said Products are delivered to or received by the shipper/carrier, and all risk of damage or loss shall immediately pass to Buyer.
Receiving, unloading and storing of Products will be the responsibility of the Buyer.
Buyer also accepts that courier may choose to return Products to Sitron if any local taxes or duties are not paid by Buyer at point of delivery. Buyer must make any and all claims for corrections or deductions within ten days of the delivery of the Products.

Shipment Delays: Sitron has no control over the length of time shipments may be held at customs, etc. For this reason, Sitron commits only to a "shipment date", not a "delivery date". Buyer shall not hold Sitron liable for claims resulting from delay in shipment except in cases where these terms are accepted in writing by Sitron. Acceptance of delivery of Products by Buyer shall constitute a waiver of all claims for delay.

Partial Deliveries: While Sitron strives to deliver all orders on time and complete, Sitron reserves the right to make partial deliveries when necessary.

Changes: Any changes initiated by the Buyer which affects the products specifications; quantities ordered; delivery schedule; method of shipment or packing; or delivery location, must be made in writing and signed by both parties.
In this case, Sitron reserves the right to adjust the pricing and or delivery of the order, which will be agreed to by both parties before further work is performed on the order. Any such requests will be priced according to the scope of changes and the status of the current order. Customer must sign and return or acknowledge approval of drawings along with any Purchase Order. If approval drawings are not returned with order, the delivery date may be held or pushed back until Customer has acknowledged approval.

Cancellation: Any cancellation of the Contract by the Buyer shall be effective only if made in writing and accepted, in writing by the Sitron. In such a case, Sitron is entitled to reasonable cancellation charges including but not limited to labor, material and other related expenses.

Termination Fee Schedule:

Order entered but not released for manufacturing	**10%**
Order in any stage of production	**75%**
Order complete and ready for shipment	**100%**

Warranty: Sitron warrants its product against manufacturing defects in material and workmanship, when installed in applications approved by Sitron, for a period of one year from the date of original shipment, unless otherwise stated in writing by Sitron.
Sitron is not responsible for damage to Sitron's Products or other equipment or products because of improper installation or misapplication of the Products by Buyer. Installation or startup of Sitron's equipment must be performed under the guidelines set forth in Sitron's instruction manuals, wiring diagrams, etc., or performed under the direct supervision of Sitron's field technicians or Sitron's authorized Sales Representatives, in order to be covered by Sitron's warranty.
Sitron shall be under no liability in respect to any defect from fair wear and tear, willful damage, negligence, abnormal working conditions, failure to follow Sitron's instructions (whether written or verbal), misuse, modification or alteration or attempted repair of the Goods without Sitron's approval.
Sitron shall not be liable under the above warranty (or any other warranty, condition or guarantee) if the total price for the Products or the payment of Services rendered has not been paid by the due date for payment.
The Buyer must make all tools, resources or personnel available to help Sitron to diagnose the defect without any back charge. In absence of Buyer's cooperation in this regard, there shall be no liability under the above Warranty.
Sitron's liability under this warranty shall be limited to repair or replacement at Sitron's option of such defective Products, FOB factory, upon proof of defect satisfactory to Sitron. Warranty does not include transport.

Return Goods: No goods may be returned without Sitron's permission and an RMA number. Sitron assumes no responsibility for return shipments made without permission. In issuing credit for such shipments, Sitron reserves the right to charge a restocking fee dependent on Sitron's ability to recondition and resell the returned equipment.

Insurance: The responsibility for insuring the Goods after the risk in them has passed to the Buyer shall be that of the Buyer.

Confidential Information: All drawings, specifications, and technical information provided by either Buyer or Sitron shall be treated as confidential and shall not be disclosed to anyone other than those who require it as part of the fulfillment of the order. Buyer agrees that the designs and/or any other related material provided are and remain Sitron's exclusive property and that the Buyer acquires no right, title or interest to this intellectual property, whether in whole or in part.

Errors: Sitron reserves the right to correct all typographical or clerical errors or omissions, in its prices or specifications.

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