The DiFoam Range

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MEASUREMENT & CONTROL SYSTEMS

Let Charis Technology supply the answer to your expensive **non-water based foam problems** with the DiFoam range of Foam and Level Control Systems.....

- Suitable for all non-water based foam applications
- Efficient, microprocessor control
- Proven technology
- Cuts antifoam costs
- Increases throughput by reducing downtime
- Large range of fittings to suit all sizes and make of vessel
- Wall and Rack mounted controllers.
- Suitable for use in hazardous areas
- Both Foam Control and Level Control Systems available

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DiFoam Range
Foam Control Systems

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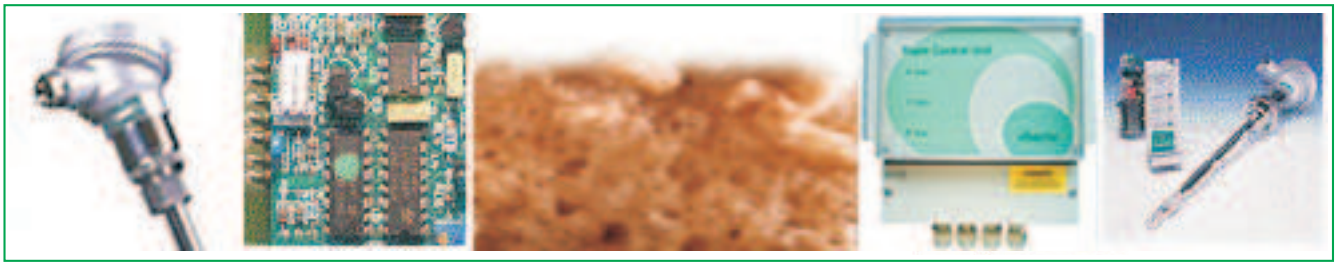

Charis Technology
DiFoam Range of Foam Control Systems
for use in non-water based foam applications

The DiFoam range of sensors and controllers are designed for the measurement and control of **non-water based foams**. However they can also be used for level measurement of liquids, but not foam and liquid level together. They provide an efficient, reliable and cost-effective solution to foam control in a diverse collection of industries where the production and control of foam causes a problem.

The system, which comprises a sensor and a controller, was initially designed for the control of foam in a resin manufacturing process for yacht varnish, but has since become a useful tool inmeasuring and controlling foam in a variety of other applications such as resins, oils, solvents, hydrocarbons and products such as cocoa butter.

The sensor is entered into the material to be measured e.g. a production vessel and then connected to the controller by special cables. The technology operates by measuring the dielectric constant of the material under test. The sensor resonates at a high frequency and responds to changes in the dielectric properties of the surrounding material.

The DiFoam range allows for the accurate control of foam by sensing when the foam reaches an unacceptable level and then signalling the necessary action to reduce or eliminate the foam. This not only increases the efficiency of the process it can increase throughput of product.

The same technology can also be used to measure liquid levels, but it will not measure both foam and liquid together using a single sensor and controller.

Each sensor is tailored to suit the application. The active part of the sensor is chosen to suit the dielectric constant of the material. The insertion length can be made to the customer's requirements.

DiFoam Control Systems are in use around the world to effectively control non-water based foam in applications as diverse as varnish production, solvents, resins, oil, paint and cocoa butter.

We hope you find the information in this file useful and should you wish to take your enquiry further please don't hesitate to contact Charis Sales on +44 (0)1622 751731.

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The DiFoam Range
Foam Sensors

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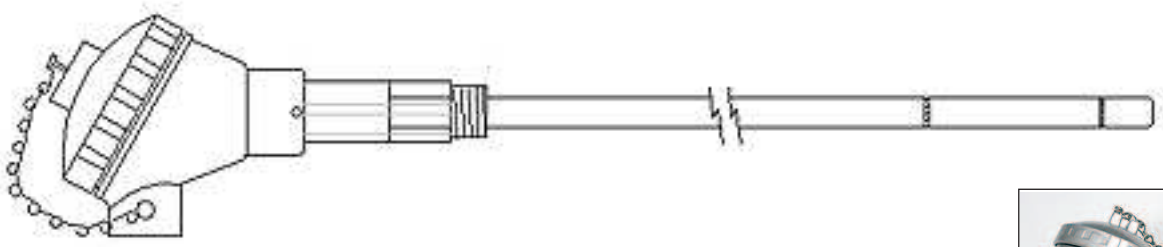
Charis Technology's **DiFoam Sensors**, when used with an appropriate Charis DiFoam Controller, provide efficient and cost effective foam control over a wide range of non-water based process applications.

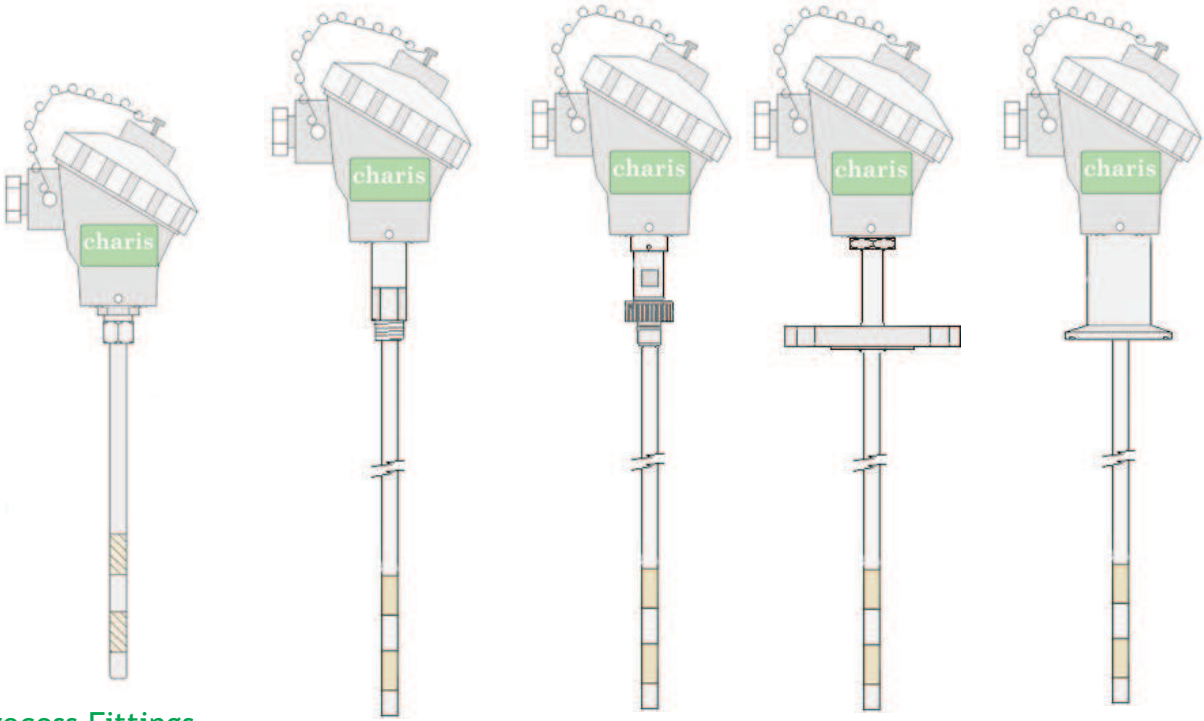
Although outwardly similar, each stainless steel sensor can be customised to suit the client's needs. Different heads, process fittings and lengths are available making Charis sensors the first choice for many applications throughout the world.



Heads
The standard head design used on Charis DiFoam sensors is seen in the picture right. It is available in aluminium or stainless steel.

Mechanical and Electrical Data

Body Material	316 Stainless Steel
Insulator Material	Vitrex Peek 450g Engineering Thermoplastic
Cable Entry	20mm ISO Conduit entry
Cable	Special multiway
Temperature	150°C typical, 200°C maximum
Pressure	25 Bars maximum as standard, higher pressures are available
Sensor Length	250mm to 3m
Sensor Diameter	12mm or 20mm



Process Fittings
With a wide range of applications our sensors are available with an equally wide range of process fittings. Fittings available for use with DiFoam sensors are ½" BSP, DN25, 1"ANSI 316 SS pipe flange, 2"ANSI 316 SS pipe flange, 1.5" Triclover, 2" Triclover. Sensors are available in 12mm and 20mm diameter depending on application

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Making Sense of DiFoam sensor part numbers.....

Given the variety of heads and process fittings available to customise our DiFoam sensors the part numbers can become a little confusing. To try to simplify things all DiFoam sensors follow a common part numbering scheme so hopefully this graphic may help.

All sensors Start with the Prefix FDiP

This figure is normally 0

Probe length In mms.

FDiP X 0 X / X X / A

Probe diameter in mms (12 or 20mm)

Head Type

1: Aluminium head
4: Stainless Steel head

Process Fitting

1: No Fitting
2: ½"BSP
3: DN25
4: 1"ANSI flange
5: 2"ANSI flange
6: not allocated
7: not allocated
8; 1"/1½"Triclover
9: 2"/2½"Triclover

Using the key above, the sensor to the right is a FP101/12/500 - which is a 500mm long sensor with aluminium head and no fitting.

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The DiFoam Range
Foam Controllers

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Although the DiFoam controllers are outwardly similar to the SureSense controllers they are very different in terms of electronics and connections. A DiFoam sensor will only work with an equivalent DiFoam Controller

FDiCW2 Controller

Designed with reliability in mind the FDiCW2 is an advanced wall mounted foam controller designed to control foam at a fixed level, or to reduce it to a minimum. Our unique IMA Sensing technology ensures the system will operate correctly even if the attached sensor becomes severely fouled.

To discriminate between foam and splashing or other spurious triggers the controller has an adjustable response time. A dosing or shot time can be set for the operation of a pump or valve for antifoam addition. Although the FDiCW2 can be used for stand alone control other control actions such as vacuum valves or gas control can be interfaced. Volt free contacts can be used for point detection and an analogue output for level indication.

Electrical Data

Power supply	110v, 240v AC., 50Hz, or 24v DC.	
Indicators	Power:	illuminates when unit connected to power supply
	Sense:	illuminates when foam is first sensed
	Activate:	illuminates when foam detected continuously for pre-set delay time and stays on until foam collapses
Response Time	1,2,4,8,12,16,20,24,28,32,36,40,44,52,60 seconds (set by dil switches)	
Shot Time	1,2,4,8,12,16,20,24,28,32,36,40,44,52,60 seconds (set by dil switches)	
Sensitivity	0.35K to 100K ohms impedance (set by dil switches)	
Fouling Immunity	Sensitivity to fouling <1% of sensitivity to foam using Charis sensor	
Interfaces	'Volt free' c/o contacts rated at 240v AC/30v DC., 2amps. 0-20mA, 4-20mA analogue output	

Enclosure Data

IP Rating	IP65 wall mounting
Dimensions	Height (including glands) 225mm, Width 240mm, Depth 115mm
Connections	Screw terminals. Cable entry via PG11 cable glands (4)

FDiCR2 Controller

Basically the FDiCR2 is a rack mounted version of the FDiCW2. Designed to fit into a 19" rack the controller is a standard eurocard size and has all the features of the FDiCW2.

Electrical Data

Same as for the FDiCW2

Enclosure Data

Format	8HP x 3U standard eurocard. Standard 19" rack mounting
Dimensions	pcb: 100x160mm. Overal; 130x190x40mm including panel and handle
Mating connector	Harting 0904 232 6823l

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