

# FT723 & FT743-FF (FLAT FRONT)

## ACOUSTIC RESONANCE WIND SENSOR



### UNIQUE ACU-RES® TECHNOLOGY

Acoustic Resonance (Acu-Res®) is fundamentally different to other ultrasonic wind sensors, delivering exceptionally high levels of data availability. Incorporating a design legacy of 25 years and guaranteeing enhanced survivability, the FT7 series is widely used in wind turbine control systems, onshore and offshore, measuring wind speeds up to 75 m/s. Now introducing Advanced Sensor Diagnostics for enhanced fault monitoring.

### HIGH DATA AVAILABILITY

The sensor is maintenance-free, reducing operational costs while delivering exceptionally high data availability. Industry-leading signal-to-noise ratio making it resistant to shock, vibration and EMI while ensuring reliable and accurate data acquisition. Additionally, the sensor is compact and lightweight for easy transport and handling.

### PROVEN PERFORMANCE

From freezing to lightning-prone areas across the world, the Flat Front sensor is designed for installation against a metal bar, easily aligned to the central axis of the turbine without error. Wind speed, direction, temperature and pressure data in a hard anodised aluminium body, highly resistant to corrosion, sand, dust, ice and solar radiation. The sensor is sealed to IP66, IP67 and IPX6K standard. Its lightning and surge protection safeguards against electrical disturbances, making it a reliable choice in the most demanding scenarios.



## SPECIFICATIONS AT A GLANCE

WIND SPEED

0-75 m/s

WEIGHT

320 g

AVAILABILITY

> 99.9 %

# FT723 & FT743-FF (FLAT FRONT)



## WIND SPEED

|                    |                                                       |
|--------------------|-------------------------------------------------------|
| Range (FT723)..... | 0-50m/s                                               |
| Range (FT743)..... | 0-75m/s                                               |
| Resolution.....    | 0.1m/s                                                |
| Accuracy.....      | ±0.3m/s (0-16m/s)<br>±2% (16-40m/s)<br>±4% (40-75m/s) |

## WIND DIRECTION

|                                    |           |
|------------------------------------|-----------|
| Range.....                         | 0 to 360° |
| Resolution.....                    | 1°        |
| Accuracy (within ±10° datum).....  | 2° RMS    |
| Accuracy (outside ±10° datum)..... | 4° RMS    |

## PRESSURE MEASUREMENT

|                 |               |
|-----------------|---------------|
| Range.....      | 260 - 1260hPa |
| Resolution..... | 0.0001hPa     |
| Accuracy.....   | 0.5% RMEA     |

## SENSOR PERFORMANCE

|                            |                                                                                                   |
|----------------------------|---------------------------------------------------------------------------------------------------|
| Measurement principle..... | Acoustic Resonance (automatically compensates for variations in temperature, pressure & humidity) |
| Units of measure.....      | Metres per second, kilometres per hour or knots                                                   |
| Altitude.....              | 0-4000m operating range                                                                           |
| Temperature range.....     | -40° to +85°C (operating and storage)                                                             |
| Humidity.....              | 0-100%                                                                                            |
| Ingress protection.....    | IP66, IP67 and IPX6K                                                                              |
| Heater settings.....       | 0° to 55°C. The heater set point can be configured.                                               |

## POWER REQUIREMENTS

|                                  |                                                                                                                                                                                                                                                                                       |
|----------------------------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Supply voltage.....              | 12V to 30V DC (24V DC nominal)                                                                                                                                                                                                                                                        |
| Supply current (heater off)..... | 31mA typical                                                                                                                                                                                                                                                                          |
| Supply current (heater on).....  | Limited to 4A (default), 6A (max) – configurable in software in 0.1A increments. Heater power consumption will depend on the energy required to keep the sensor's temperature at the user determined set point. The heater and sensor power consumption is limited by default to 99W. |

## PHYSICAL

|                      |                                                       |
|----------------------|-------------------------------------------------------|
| I/O connector.....   | 5-way (RS485 option)                                  |
| Sensor Weight.....   | 320g                                                  |
| Mounting Method..... | Flat-Front                                            |
| Material.....        | Aluminium alloy, external metal body is hard-anodised |

## DIGITAL SENSOR\*

|                       |                                                                             |
|-----------------------|-----------------------------------------------------------------------------|
| Interface.....        | RS485 (half-duplex), galvanically isolated from power supply lines and case |
| Format.....           | ASCII data, polled or continuous output modes, Polar and NMEA 0183          |
| Data update rate..... | Maximum 10 measurements per second                                          |

## EMC AND ENVIRONMENTAL TESTS

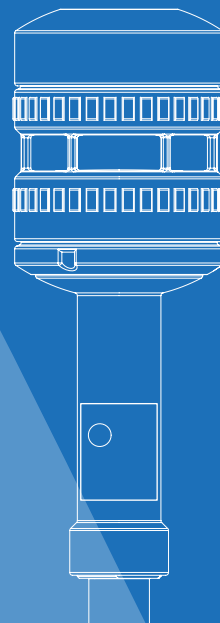
The FT7 Series have passed over 30 different environmental test certificates including Corrosion, Icing, De-Icing, Shock, Hail, Drop, ESD, power interruption and EMC. Further test details and full test reports available on request or via our website.

## ACOUSTIC TEMPERATURE

|                 |           |
|-----------------|-----------|
| Units.....      | °C, °F, K |
| Resolution..... | 0.1°      |
| Accuracy.....   | ±2°C      |

Under the following conditions:

|                      |                |
|----------------------|----------------|
| Speed Range.....     | 2m/s - 75m/s   |
| Operating Range..... | -20°C to +60°C |



\* For analogue output, see FT722/FT742-A-FF.

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