



# Product Sheet

## 940-000-0332-00

ThermIQ<sup>®</sup> SmartCap 850 IM<sup>™</sup>  
Isolated Media Pressure Sensor



### Main Features

Static Pressure Range	Up to 300 psi
Dynamic Pressure Frequency	Up to 39 KHz
Operational Temperature	Up to 850°C
Onboard processing	Temperature compensation, engineering unit, real time metrics
Output Signal	Ethernet, 0-5 V analog support

### Attributes

- Operates in extreme environments
- In-situ capabilities enable real-time, accurate measurements
- Eliminates need for stand-off pneumatic tubes
- Access to previously unavailable measurement data
- Converts data to useful prognostics
- Pressure and temperature outputs
- Modifiable packaging to meet most mounting specifications
- Smart line-replaceable unit (LRU) features
- Digital interface – Easy to install/setup

### Typical Applications

- Molten Salt Materials Manufacturing
- Thermal Energy Storage
- Chemical Processing & Manufacturing
- Energy Generation Systems
- Aerospace Propulsion
- Prognostic System Health Monitoring
- Oil & Gas
- R&D

### Description

Sporian's SmartCap 850 IM<sup>™</sup> is a high-temperature capacitive sensor for simultaneously measuring pressure and temperature in harsh environments for extremely demanding applications such as energy generation and propulsion systems. SmartCap 850 IM<sup>™</sup> Isolated Media Pressure Sensor measures directly in-situ, and is compatible for use in a range of harsh corrosive media (gasses and liquids). This technology serves applications including molten salt materials manufacturing, thermal energy storage, high temperature chemical processing, and energy generation systems control and monitoring. The sensor can survive and perform in extreme high temperature, oxidative, and corrosive environments.



## Technical Specifications

### Performance

Pressure Measurement Accuracy	+/- 0.2%FS to 600°C, +/- 1%FS to 850°C
Temperature Measurement Accuracy	+/- 1°C, integrated K-type thermocouple
Pressure Measurement Resolution*	Down to 0.05 psi
Temperature Measurement Resolution	0.1°C
Proof Pressure	1.5x max measurement pressure, nominally 450 psi
Sensing Element Mechanical Resonance	>100 kHz
Burst Pressure	3000 psi minimum

\* Dependent upon temperature and pressure measurement range design

### Physical

Weight*	210 grams nominal
Inline Electronics Temperature	-30°C to 105°C
Signal Conditioning Temperature	-30°C to 70°C
Inertial Vibration	MIL-STD-810F, additional test/OEM specified profiles
Media	All media (oxidizing, reducing, corrosive)

\* Nominal weight for just the probe assembly, actual weight dependent upon package configuration.

### Electrical

Output Signal Type	Digital
Communications	Ethernet (UDP, 320 kbps max)
Power	12-24 VDC, 1.8 W max
Max Sampling Rate	78 ksps
EMI	MIL-STD-461F, RE102
Electronics Input under/over voltage	<16VDC, >60VDC - MIL-STD-704F
Available Optional Interfaces	USB, RS-485, CAN, 0-5 V analog

## Contact US

SPORIAN MICROSYSTEMS IS READY TO HELP YOU WITH OFF-THE-SHELF OR CUSTOM SOLUTIONS TO MEET YOUR SENSING NEEDS.

EMAIL: [INFO@SPORIAN.COM](mailto:INFO@SPORIAN.COM)

TEL: 303-516-9075

Sporian Microsystems Inc.  
515 Courtney Way, Suite B  
Lafayette, CO, 80026