

# Sensor Data Sheet



OPTIFY™ Sensor



OPTIFY Performance Sensor

| Part number                                    | 750000   | 820000   |
|--|--|--|
| <b>Intrinsically safe</b>                      |  |  |
| Certificate                                    | CSA 80157383, IECEx SIR 17.0060X, Sira 17ATEX2237X, CSAE 21UKEX2441X   | UL C/US E529294, IECEx UL 22.0066X, UL22 ATEX 2822X, UL22 UKEX2629X  |
| EX (hazardous areas)                           | II 1 GD  | II 1 GD  |
|  | I M1   | I M1   |
|  | Ex ia I Ma   | Ex ia I Ma   |
|  | Ex ia IIC 150 °C (T3) Ga   | Ex ia IIC 155 °C (T3) Ga   |
|  | Ex ia IIIC T146 °C Da  | Ex ia IIIC T155 °C Da  |
|  | Class I, Zone 0, AEx ia IIC T150 °C Ga   | Class I, Zone 0, AEx ia IIC T155 °C Ga   |
|  | Class I, Division 1, Groups A, B, C, D   | Class I, Division 1, Groups A, B, C, D   |
|  | Zone 20, AEx ia IIIC T146 °C Da  | Class II, Zone 20, AEx ia IIIC T155 °C Da  |
| IP (ingress protection) class                  | Class II, Division 1, Groups E, F, G   | Class II, Division 1, Groups E, F, G   |
|  | Class III, Division 1  | Class III, Division 1  |
| IP (ingress protection) class                  | IP66   | IP66, IP69   |
| <b>Temperature</b>                             |  |  |
| Measurement range                              | -22 °F to 257 °F (-30 °C to 125 °C)  | -40 °F to 257 °F (-40 °C to 125 °C)  |
| Resolution                                     | ± 1 °C   | ± 1 °C   |
| Accuracy                                       | ± 2 °C   | ± 2 °C   |
| <b>Vibration</b>                               |  |  |
| Accelerometer                                  | Tri-axis, 1.6 kHz bandwidth  | Tri-axis, 16 kHz bandwidth   |
| Amplitude range                                | Up to ± 16 G   | Up to ± 16 G   |
| Acceleration                                   | Yes  | Yes  |
| Velocity                                       | Yes  | Yes  |
| Accelerometer enveloping                       | Yes, via OPTIFY  | Yes, via OPTIFY  |
| Frequency range                                | 60 cpm to 96,000 cpm (1 Hz–1.6 kHz)  | 60 cpm to 960,000 cpm (1 Hz–16 kHz)  |
| Sample rate                                    | Up to 3.2 kHz  | Up to 32 kHz   |
| Maximum FFT frequency                          | 1.6 kHz  | 16 kHz   |
| Waveform data points                           | 4,096  | 1,024–64,000 (user selected)   |
| Frequency response                             | 3 dB cut-off frequency 900 Hz  | 3 dB cut-off frequency 1.3 kHz   |
| Detection type                                 | Peak, RMS  | Peak, RMS  |
| Resolution                                     | 12-bit   | 16-bit   |
| Vibration spectrum                             | FFT, waveform, peak, RMS   | FFT, waveform, peak, RMS   |
| Sensor type                                    | Tri-axis MEMS  | Tri-axis MEMS  |
| <b>Magnetometer (rotation speed detection)</b> |  |  |
| Frequency range                                | -  | Up to 1 kHz  |
| Resolution                                     | -  | 16-bit   |
| <b>Wireless communication</b>                  |  |  |
| Network standard                               | Bluetooth® Low Energy (4.2)  | Bluetooth Low Energy (4.2 and 5.0)   |
| Radio standard                                 | IEEE 802.15.1C   | IEEE 802.15.1C   |
| Frequency                                      | 2,402–2,480 MHz  | 2,402–2,480 MHz  |
| Range (nominal)                                | Up to 70 ft (21 m) via mobile device line of sight   | Up to 70 ft (21 m) via mobile device line of sight   |
|  | Up to 800 ft (244 m) via gateway line of sight   | Up to 800 ft (244 m) via gateway line of sight   |
| <b>Environmental</b>                           |  |  |
| Optimal storage temperature                    | 68 °F to 86 °F (20 °C to 30 °C)  | 68 °F to 86 °F (20 °C to 30 °C)  |
| Operating temperature                          | -22 °F to 185 °F (-30 °C to 85 °C)   | -40 °F to 220 °F (-40 °C to 105 °C)  |
| Mounting surface temperature                   | Up to 220 °F (105 °C)  | Up to 248 °F (120 °C)  |
| <b>Power</b>                                   |  |  |
| Battery type                                   | 1x 1/2-AA lithium thionyl chloride 3.6V (not rechargeable or replaceable)<br>-22 °F to 122 °F (-30 °C to 50 °C)  | 2x AA lithium thionyl chloride 3.6V (not rechargeable or replaceable)<br>-40 °F to 130 °F (-40 °C to 54 °C)  |
| Battery life                                   | Up to 2 years, estimated based on measurements taken once per hour and data collected once per day via mobile device                                     | Up to 4 years, estimated based on measurements taken once per hour and data collected once per day via mobile device                                       |
|  | 123 °F to 185 °F (51 °C to 85 °C)<br>Up to 1 year, estimated based on measurements taken once per hour and data collected once per day via mobile device | 131 °F to 220 °F (55 °C to 105 °C)<br>Up to 2 years, estimated based on measurements taken once per hour and data collected once per day via mobile device |
| <b>Physical</b>                                |  |  |
| Weight   | 2.15 oz (61 g), 2.61 oz (74 g) with silicone dust cover  | 6.35 oz (180 g), 7.58 oz (215 g) with silicone dust cover  |
| Case material                                  | Stainless steel, thermoplastic, silicone   | Stainless steel, thermoplastic, silicone   |
| Dimension                                      | 2.38 in x 1.04 in (60.5 mm x 26.4 mm)  | 3.15 in x 1.51 in (80.1 mm x 38.4 mm)  |
| Mounting                                       | Male 1/8"–27 PTF SAE   | Male 1/8"–27 PTF SAE   |
| <b>Additional characteristics</b>              |  |  |
| Data storage                                   | 6,400 measurements   | 64,000 measurements  |
| Measurement interval                           | 15 minutes–12 hours (1 hour default measurement interval)  | 15 minutes–12 hours (1 hour default measurement interval)  |