



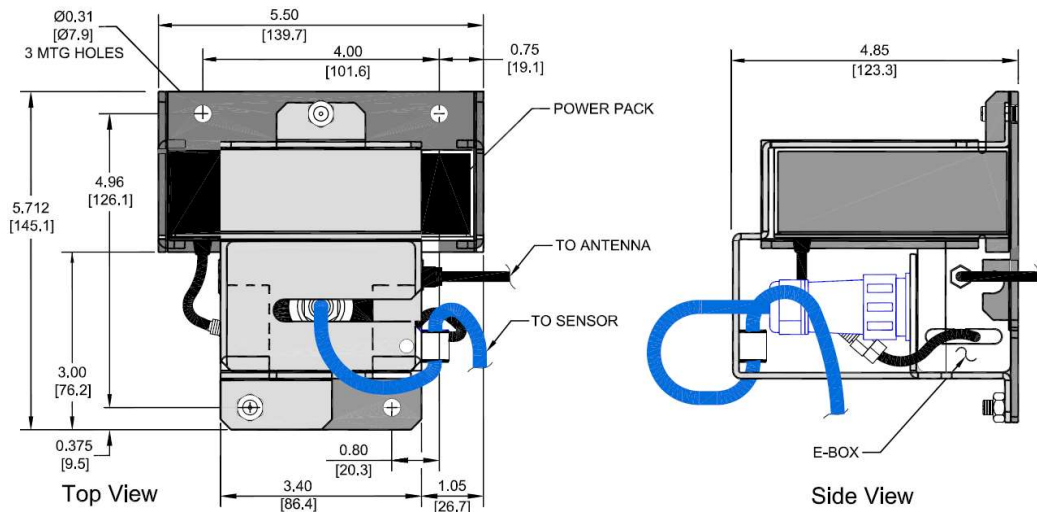
SmartCover System Specifications

System Components

- E-Box
- Distance Sensing Module (DSM) for Level or FLOE, N/A for UnderCover®
- PowerPack™
- E-Series Antenna
- Mounting Brackets

Total Weight 5.1 lb [2.3 kg]

Installation Size (not including DSM) 5.5 in x 5.7 in x 4.9 in [14 cm x 14.5 cm x 12.5 cm]



Distance Sensing Module (see pages 2 and 3 for details) Total dynamic range 40 ft

Power Source 3.6 VDC PowerPack™

Operating Lifetime* (Standard Timing) 2 years

**Dependent on timing, signal quality, number of alarms and environmental conditions*

Communications

Network Iridium® NEXT Low-Earth-Orbit Satellite w/Global Coverage

Transmit/Receive Two-way Communications

Radio Frequency 1616 to 1626.5 MHz

Typical Latency* 10 sec to 10 min

**Dependent on antenna's view of the sky.*

Environmental

Net Operating Temperature Range 14 °F to 140 °F [-10 °C to 60 °C]

Ingress Protection IP68

Mounting

Standard Manhole Mounting Brackets

Optional Side Mount Bracket, NEMA Enclosure

Component Specifications

E-Box

Tilt Detection Angle (SmartCover [®] & UnderCover [®])	10° ±3°
Operating Voltage	3.3 to 4.5 VDC
Dimensions (not including pigtail)	3.2 in x 2.3 in x 2.1 in [8.2 cm x 5.8 cm x 5.3 cm]
Weight	0.7 lb [0.32 kg]
Environmental	IP68
Temperature Range	14 °F to 140 °F [-10 °C to 60 °C]
Humidity Range	0 % to 100% RH
External Connectors	
• SMA female bulkhead (Antenna)	
• 3-pin male pigtail (Power)	
• 12-pin female bulkhead (Sensor)	

Sensor: SubSonic[™] Dual Sensor Distance Sensing Module (DSM)

Type	Dual: Ultrasonic and Pressure
Ultrasonic:	
Frequency	143 kHz
Beam Angle (from center)	9°
Operating Resolution	0.1 in [2.5 mm]
Dynamic Range	4 in to 79 in [100 mm to 2000 mm]
Pressure:	
Sensing resolution	0.5 in [12.7 mm]
Submersion level maximum depth	34.5 ft at sea level
Sensor type	Sealed pressure transducer
Additional:	
Dead zone between sensors	8 in to 9 in [203 mm to 229 mm]
Operating Voltage	5 VDC
Environmental	IP68
Temperature Range	-22 °F to 140 °F [-30 °C to 60 °C]
External Dimensions (sensor head)	3.1 in x 3.1 in x 4.5 in [8 cm x 8 cm x 11.4 cm]
Weight (w/15 ft cable)	1.3 lb [0.59 kg]
Sensor Housing	Polycarbonate/PET Blend
Mounting Configurations	Free Hanging (Optional: Stabilizer Platform)

Component Specifications, continued

Sensor (Optional): Long Range Distance Sensing Module (DSM)

Type Ultrasonic
 Frequency 69 kHz
 Beam Angle (from center) 9°
 Operating Resolution 0.1 in [2.5 mm]
 Dynamic Range 12 in to 240 in [304 mm to 6096 mm]
 Operating Voltage 5 VDC
 Environmental IP68
 Temperature Range 22 °F to 140 °F [-30 °C to 60 °C]
 External Dimensions (sensor head) 3.1 in x 3.1 in x 4.5 in [8 cm x 8 cm x 11.4 cm]
 Weight (w/25 ft. cable) 2.0 lb [0.91 kg]
 Sensor Housing Polycarbonate/PET Blend
 Mounting Configurations Free Hanging
 (Optional: Stabilizer Platform)

PowerPack™

Output Voltage 3.6 VDC
 Power Source 3.6 VDC lithium thionyl chloride cells
 Lithium Metal Content 0.872 oz [24.8 grams]
 Total Capacity 95 Ah @ 25 mA @ 25 °C
 Environmental IP68
 Temperature Range 14 °F to 149 °F [-10 °C to 65 °C]
 Humidity Range 0% to 100% RH
 Dimensions (not including pigtail) 5.2 in x 4.1 in x 1.6 in [13.3 cm x 10.5 cm x 4.0 cm]
 Weight 1.8 lb [0.82 kg]
 Connector 3-pin female pigtail
 Shelf Life (from date of manufacture) 8 years @ 25 °C

E-Series Antenna

E-Square (Street Reflector)

Dimensions 4.0 in x 3.5 in x 0.65 in [10.2 cm x 9.0 cm x 1.6 cm]
 Construction Embedded in street reflector
 Weight 4.2 oz [0.12 kg]
 Environmental Traffic compatible, weatherproof
 Connector SMA male, 17 in [43 cm] pigtail

E-Dot (Low Profile)

Dimensions Circular 1.5 in [3.8 cm] diameter x 0.4 in [1.0 cm] height
 Construction Polyurethane and brass cup
 Weight 2.1 oz [0.06 kg]
 Environmental Traffic compatible, weatherproof
 Connector SMA male, 17 in [43 cm] pigtail

Component Specifications, continued

Mounting

Standard Brackets for Manhole Mounting (Side Mount optional)

Material	Aluminum 5052-H32
Weight	1 lb [0.45 kg]
Finish	Dark gray hard anodized
Bracket thickness	0.125 in thick [0.318 mm thick]
Mounting Hardware	316 SS ¼-20 hardware

NEMA Enclosure (optional)

Rating	NEMA Type 3R, 4, 4X, 12 and 13
Dimensions	12 in x 10 in x 6 in [305 mm x 254 mm x 152 mm]

Technical Specifications

Certifications - RF

US/FCC Regulations:	47 CFR Part 15, Subpart B
Canada:	ICES-003 Issue 6, 2016
US/FCC Regulations:	47 CFR Part 25, FCC ID: Q639603N (radio)
US/FCC Regulations:	47 CFR Part 15B, FCC ID: Q639603N (radio)
Canada:	Certified under RSS-170 of the Canadian Radio standards as IC: 4629A 9603N (radio)

Standard System and Event Timings

Standard System Timing:

Level Measurement Interval	5 min
Level Data Recording Interval	10 min
Data Transmission Reporting Interval	1 hr
Status Reporting Interval	14 hr

Optional System Timing*

Level Measurement Interval	1 min, 5 min, 15 min, 24 min
Level Data Recording Interval	1x or 2x Measurement Interval
Data Transmission Reporting Interval	5 min to 48 hr Depending on Record Timing
Status Reporting Interval	4 hr to 48 hr

*Non-standard timing will affect PowerPack™ lifetime

REPRESENTED BY:



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