

Avalon Edge Gateway

Performant and Security Hardened

Avalon Edge Gateway

The Avalon Edge Gateway (AEG) is a connectivity solution that enables remote data acquisition, monitoring, surveillance and control via the Avalon IOT Platform.

This versatile, easy-to-deploy industrial IOT solution connects field devices and instruments so that operators can improve monitoring, surveillance, and efficiency of their remote and distributed oil and gas assets.

The gateway connects to virtually any Modbus RTU or Modbus TCP device via two-wire RS-485, RS-232, or Ethernet and comes standard with integrated cellular connectivity.



Cybersecurity

The AEG hardware and software have been designed with security in mind. Our hardened Operating System coupled with modern hardware security features enable:

- + Hardened operating system supporting secure boot
- + TLS encrypted data transmission
- + Role-based access control
- + Multi-factor authentication for remote devices
- + Private APN for cellular service

Retrofit Package

Retrofit Kits include the loose parts necessary to install the AEG into an existing enclosure. Kits include:

- + Avalon Edge Gateway
- + Sensia SIM – Global Roaming
- + DIN rail and mounting bracket for AEG
- + AEG power plug
- + Power Supply, 24-48 VDC, 60W Output, 100/240V AC, 110-300V DC Input, Compact
- + Combination GPS and LTE antenna
- + Must specify LTE router separately for kit PN 50386758

RETROFIT KITS		
Part Number	Description	Wireless Operation in Country*
50386758	KIT, RETROFIT, GATEWAY, AVALON EDGE (NO LTE MODEM)**	Africa, Australia, Latin America, Middle East, New Zealand, Taiwan, Thailand
50389991	ROUTER, SENSIA SIM GLOBAL (use with 50386758)	
50386759	KIT, RETROFIT, GATEWAY, AVALON EDGE, INTEGRATED LTE MODEM	USA, Canada, EU

*Certification listings subject to change as new certifications are obtained. Contact Sensia Sales for availability in your area

Standard Package with Enclosure

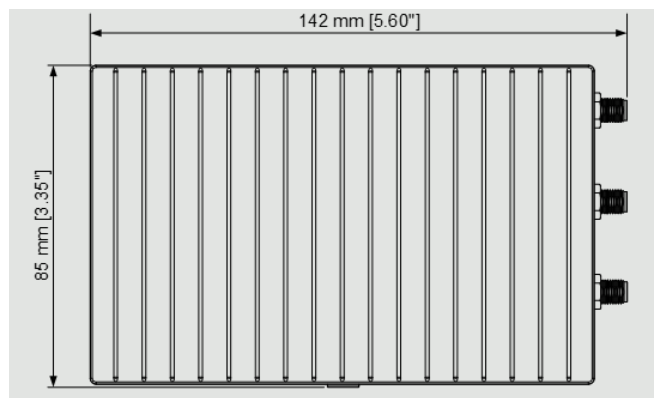
Enclosures are fully assembled and ready to be mounted to a wall or pole. Mounting and cable penetration are not included. Kits include:

- + Avalon Edge Gateway
- + Sensia SIM – Global Roaming
- + DIN Rail and Mounting Bracket for AEG
- + AEG power plug
- + Power Supply, 24-48 VDC, 60W Output, 100/240V AC, 110-300V DC Input, Compact.
- + Combination GPS and LTE antenna mounted on the top of the enclosure (excluded in kit 50386770)
- + Terminal blocks for field wire terminations
- + Outdoor rated fiberglass enclosure with two locks
- + Must specify external LTE router separately for kit PN 50389994

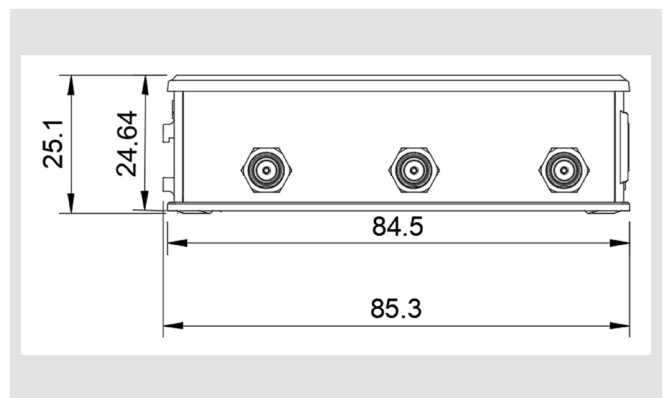
ENCLOSURE KITS		
Part Number	Description	Wireless Operation in Country
50386770	ASSEMBLY, GATEWAY, AVALON EDGE, OUTDOOR ENCLOSURE, WITHOUT LTE OR ANTENNA (for 3rd party supplied communications)	N/A - Check with Sensia to verify 3rd party communication method is supported.
50389994	ASSEMBLY, GATEWAY, AVALON EDGE, OUTDOOR ENCLOSURE, WITHOUT LTE, WITH ANTENNA	Africa, Australia, Latin America, Middle East, New Zealand, Taiwan, Thailand
50389991	ROUTER, SENSIA SIM GLOBAL (use with 50389994)	
50386771	ASSEMBLY, GATEWAY, AVALON EDGE, OUTDOOR ENCLOSURE, WITH INTEGRATED LTE MODEM	USA, Canada, EU

*Certification listings subject to change as new certifications are obtained. Contact Sensia Sales for availability in your area

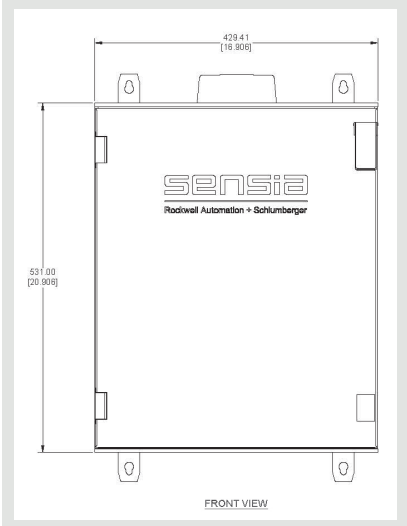
Dimensions



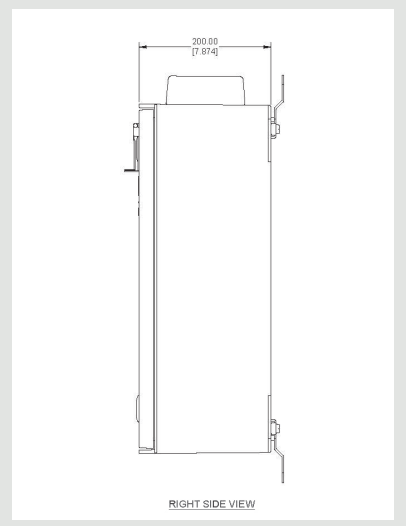
AEG Top Dimensions (mm)



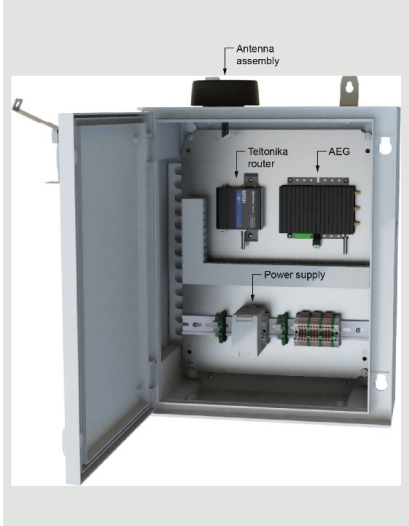
AEG Side Dimensions (mm)



Enclosure Front Dimensions (mm)



Enclosure Side Dimensions (mm)



Specifications

Environmental

Altitude	0 - 16,400 ft (0 - 5,000m)
Humidity	10% to 90% (Operation) 5% to 95% (Storage)
Operating Temperature	-40°F to 167°F (-40°C to 75°C)
Storage Temperature	-40°F to 167°F (-40°C to 75°C)
EMC (2014/30/EU)	ETSI EN 301 489-52 V1.2.1(2021-11) ETSI EN 301 489-52 V1.2.1(2021-11)
Wireless (FCC/ IC)	FCC Standard ISED Standard
Safety	EN/UL/IEC 62368-1
RED (2014/53/EU)	Article 3.1(a) Safety Standards Article 3.1(b) EMC Standards Article 3.2 Radio Standards
RoHS3 (2011/65/EU, amended by Directive (EU) 2015/863)	RoHS-EU
WEEE (2012/19/EU, amended by Directive (EU) 2018/849, Article 3)	WEEE
IoT Network Certification	Test Requirements for Evaluating Network Ready Devices for IoT.
PTCRB Certification	ETSI TS 102 230-1 3GPP TS 36.124 3GPP TS 36.523-1

Mechanical

Mount Style	Panel Mount DIN Rail (Optional)
General Dimensions (W x D x H)	5.2 x 3.3 x 1 in. (132 x 84 x 25 mm)
Weight	1.2 lb (550 g)
Housing	Aluminum

Gateway

CPU	i.MX8M Plus Quad, quad-core ARM Cortex A53, 1.8GHz
Real-Time Co-processor	ARM Cortex-M7, 800MHz
RAM	4GB, LPDDR4
Storage	64GB eMMC
Add-on Module	Module A: RS-485 Module B: RS-485 Module C: RS-232

System Power and I/O

Power Supply Input	8 - 30 Vdc Reverse Voltage Protection 2.5 - 8.0 W, depends on system load and configuration
Real-Time Clock	Backup by a BR1632 120 mAh coin cell LiCF battery (not field replaceable)

Communication Port

Ethernet (ETH1 and ETH2)	Two RJ-45 connectors ETH1 & ETH2 1000 Mbps
USB	Two USB 2.0 Type-A (back panel) One USB 3.0 Type-A (front panel)
RS-232	3-wire (TX, RX, 0V) up to 250 kbps
RS-485	Two 2-wire half-duplex up to 921.6 Kbps. Software-controlled 120 Ω termination resistor

Wireless Cellular

GNSS	Integrated with LTE module GPS L1 Galileo QZSS
Cellular	LTE Cat 4 Module Downlink max. 150 Mbps Uplink max. 50 Mbps LTE-FDD: B1/2/3/4/5/7/8/12/13/18/19/20/25/26/28 LTE-TDD: B38/39/40/41 WCDMA: B1/2/4/5/6/8/19; GSM: B2/3/5/8

Antenna

GNSS	GPS L1 Frequency Range: 1575 +/-3 MHz
Cellular	LTE Frequency Range: 700 to 2700 MHz

Outdoor Enclosure

Dimensions	Height: 20.87 in. (530 mm) Width: 16.93 in. (430 mm) Depth: 7.87 in. (200 mm)	
Enclosure Mounting: Wall Mounted	Lock type: (x2)	3 mm double-bar lock
Material	Polyester reinforced with fiberglass	
Color	Gray (RAL 7035)	

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Material	Polyester reinforced with fiberglass	
Color	Gray (RAL 7035)	
Standards	IEC 62208 NEMA classification 13 NEMA classification 4X	
Product Certifications	UL	
Electrical Insulation Class	Class II	
Ingress Protection Rating	IP66 IEC 60529	
Impact Resistance Rating	IK10 IEC 62262	
Fire Resistance	1760 °F (960 °C) IEC 62208	
Ambient Air Temperature for Operation	-40 to 176 °F (-40 to 80 °C)	