

Grid Edge Power Quality Monitor

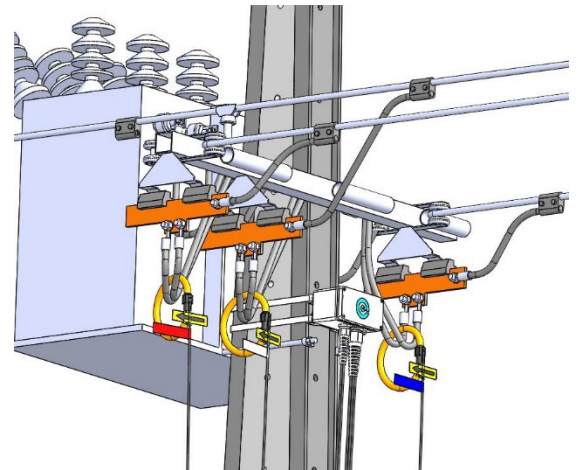
EdgeSensor (600 Series) - Grid and Transformer Monitoring Unit
Models: EE-405



FEATURES

Compact Smart EdgeSensor (600 Series)

- Monitors and Transmits Grid Full Power Quality Data.
- Grid or Transformer Status Monitoring Unit
- For both Single or Three Phase Installations
- Wide Voltage Input - 100-520VAC
- High Temperature Polycarbonate IP67 enclosure
- Monitors and Transmits Full Grid or Transformer Status including Full Power Quality Data.
- Full Alarms including - Power Outages and Recovery, Overloading, Overvoltage, Undervoltage, PF min., Reverse Current.
- Remote Firmware Upload to add upgrade Custom Options and modify Alarm Limits.
- Intelligent Software Control: Network compatible Unit that is Programmable over Internet.
- Encryption AES128 & SHA256 over private APN.
- Quick install Utility Grade Rogowski Current Transformers.
- Events Logging 90 days (4GB) – Store and Forward.
- EMI Electrical Noise Suppression Networks.
- Line Surge protected - IEC 61000-4-5 to 6KV / 3KA
- Data Comms – Cellular (4G Cat-1 and LTE CAT-M1) and LoRa Mesh for redundancy.
- Unit Ingress Protection: IP67 / UL Type Rating 4
- IEC 61010-1, 61010-2-030
- Patents Pending.



DESCRIPTION

The EdgeSensor (600 Series) is a Compact Grid Edge Power Quality Monitor that incorporates Edge Electronics Power Quality Grid Edge Technology. It is an intelligent, software-driven, full Power Quality Grid Monitoring Sensor, installed on Pole or Pad Transformers that monitors Status and Alarms. The EdgeSensor (600 Series) is specifically designed to be an Intelligent Network Device that monitors and transmits secure full Power Quality Data with additional Status Alarms for Grid Edge Applications and remote Software updates for additional Custom Features and setting Alarm Limits.

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Electrical Specifications	
Available Configurations	1 Phase, 2 Wire configurations 2 Phase, 3 Wire configurations 3 Phase, 4 Wire configurations
Electrical Frequency	50/60Hz
Rated Voltage	100 – 277 Vac (L1-to-N, Supply Voltage) 170 - 480 Vac 4-Wire/3 Phase Network (Line-to-Line) Plus Neutral for power quality data
Absolute Maximum Voltage Rating	300 Vac (L1-to-N) 520 Vac (Line-to-Line)
Current Full Scale Range	4000 Amps RMS
Lightning Strike	Power line surge protected - IEC61000-4-5
Voltage Accuracy	± 1% ± 0.3% with Manufacturing Sensor Calibration
Power & Energy Accuracy	± 3% + 0.5% of Current Full Scale ± 0.5% + 0.1% of Current Full Scale with Manufacturing Sensor Calibration
Power Factor Accuracy	± 1 degree
Power Quality Measurements	Voltage, Current, Power, Energy, vTHD, iTHD, individual harmonics
Reporting Interval	1min transmit time
Back Up Power/" Last Gasp" Hold-up Time	60 seconds
Power Consumption	4 Watts typical; < 10 Watts during startup
Alarms and Event Logging	
Grid Power Quality Alert	Power Outage, Power Restore, Current Imbalance, Maximum iTHD, Reverse Current Flow, Low Power Factor Voltage Imbalance, Maximum vTHD, Over-voltage, Under-voltage, Voltage Swell, Voltage Sag, Voltage Flicker Over-frequency, Under-frequency
Transformer Asset Management	Overload (Power), Peak demand Alert, Over-current, Fault Current Reading, No Current Reading No Voltage Reading
Measured Parameters	V, I, PF, kW, kVA, kVAR, Energy, vTHD, iTHD, up to 21 st harmonics
Connectivity	
Communications Options	Cellular Communications with embedded CAT-1 or CAT-M1 modem, Private APN with AES128 & SHA256 encryption IPsec tunnel. LoRa Mesh for data communication redundancy.
Communications Architecture	Periodic reporting to a central IoT Cloud server On demand reporting to a SCADA system
IoT Communications	Push notification on Alerts CoAP with DTLS security
Mechanical and Environmental	
Dimensions	L160 x W80 x H90 mm
Weight	2.6kg
IP Rating	IP67 / UL Type Rating 4
Power Supply Button	Phase 1 Power Supply Button to initialize the unit
Operating Humidity	0-95% RH non-condensing
Operating Temperature	-20°C to 60°C
Short Time Maximum Temperature	70°C for 1 hour

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Operating Temperature Tested by Design	-40°C to 60°C
Storage Temperature	-40°C to 80°C
Operating Altitude	2000m

SAFETY AND COMPLIANCE

1. E534462-D1006-A1C0-Informative
 - IEC 61010-1:2010/A1:2019 (Edition 3.1)
 - IEC61010-2-30:2017 (Second Edition)
2. EdgeZero UL20230503-001084 CIS-R01
 - IEC 61326-1: 2021/ IEC 61326-1:2020
 - EN 55011:2016 + A1:2017+ A11:2020 + A2:2021 / CISPR 11:2015 + A1:2016 + A2:2019
 - EN 61000-3-2:2019 / IEC 61000-3-2:2018 EN 61000-3-3:2013 + A1:2019 / IEC 61000-3-3:2013 + A1:2017
 - EN 61000-4-2:2009 / IEC 61000-4-2:2008
 - EN 61000-4-3: 2006 + A1: 2008 + A2: 2010 / IEC 61000-4-3:2006 + A1:2007 + A2:2010
 - EN 61000-4-4:2012 / IEC 61000-4-4:2012
 - EN 61000-4-5:2014 + A1: 2017 / IEC 61000-4-5:2014 + A1:2017
 - EN 61000-4-6:2014 / IEC 61000-4-6:2013
 - EN 61000-4-8:2010 / IEC 61000-4-8:2009
 - EN 61000-4-11:2004+A1:2017/ IEC 61000-4-11:2004, 2017, Ed 3.0:2020
3. EdgeZero UL20230503-001086 ETS-R01
 - ETSI EN 301 489-1 V2.2.3: 2019
 - ETSI EN 301 489-3 V.2.3.0: 2022 (Draft)
 - ETSI EN 301 489-52 V.1.2.1: 2021
 - EN 55032:2015 / CISPR 32:2015
 - EN 61000-3-2:2014 / IEC 61000-3-2:2014
 - EN 61000-3-3:2013 / IEC 61000-3-3:2013
 - EN 61000-4-2:2009 / IEC 61000-4-2:2008
 - EN 61000-4-3:2006 + A1:2008 + A2:2010 / IEC 61000-4-3:2006 + A1:2007 + A2:2010
 - EN 61000-4-4:2012 / IEC 61000-4-4:2012
 - EN 61000-4-5:2014 + A1:2017 / IEC 61000-4-5:2014 + A1:2017
 - EN 61000-4-6:2014 / IEC 61000-4-6:2013
 - EN 61000-4-11:2004+A1:2017/ IEC 61000-4-11:2004, 2017, Ed 3.0:2020
4. EdgeZero UL20230508-001091 FCC-ICES-R01
 - ICES-003:2020 ISSUE 7
 - FCC CFR 47 PART 15B
5. Informative-Final-2024-07-24-4790763461.3 UL Type 4
 - UL50E (Edition 3)
6. Edge FCC sDoC
7. CE DoC
8. UK DoC
9. NTC Approval
10. GNBS - ongoing

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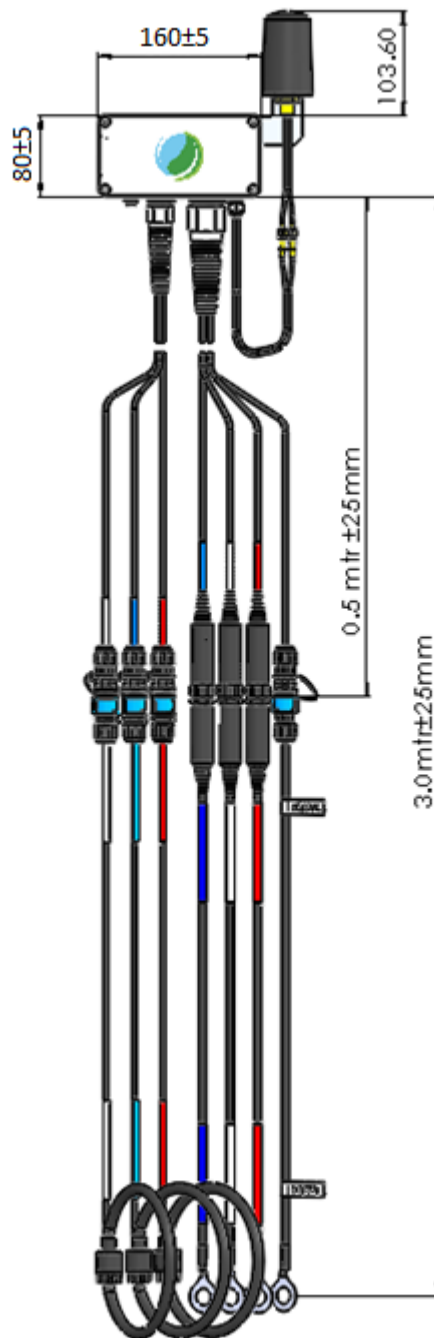


Figure: EdgeSensor (600 Series) with Detachable Accessories

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EdgeSensor (600 Series) Parts List Options for Detachable Sensors

Parts/Accessories	Options		
Current Sensor			
Current Range	4kA		
Phase Configuration	3-Phase 3 CTs	2-Phase 2 CTs	1-Phase 1 CT
Sensor Length	3m		
Internal Diameter (mm/in)	Ø140mm/5.5"		
Voltage Sensor			
Termination comes with Insulation Piercing Clamp (IPC)	Ring terminal (16mm bolt diameter) Ring terminal (16mm bolt diameter) with in-line fuse		
Phase Configuration	3-Phase 4 Wires (3 Line Sensing + N)	2-Phase 3 Wires (2 Line Sensing + N)	1-Phase 2 wires (1 Line Sensing + N)
Sensor Length	3m		
Sensor Wire Size	AWG 16		
Communications			
Communications	4G CAT-1 LTE CAT-M1 <i>With LoRa Mesh backup</i>		
Mounting			
Mounting Type	Pole mount belt & bracket Magnetic Pad mount		

Contact :
 EDGEZERO PTY LTD
<https://edgezero.co/>