SolarEdge ONE Controller

For C&I

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An on-site manager that integrates local devices for maximized energy optimization

- Optimizes the use of locally generated energy to reduce electricity costs, enabled by the SolarEdge ONE for C&I optimization platform[1]
- Local communication gateway that connects the site's energy assets, including SolarEdge PV inverters, batteries, meters, and more
- Interfaces with selected third-party environmental sensors to enable in-depth analysis for O&M and energy optimization
- PPC platform, designed to comply with grid regulations to enable safe and reliable electricity generation
- Acts as a cyber secured gateway for external communications designed to protect against unauthorized access
- Includes extended local data retention in case of cloud connectivity interruptions
- Enables centralized safety management of SolarEdge systems with the integrated Firefighter Gateway solution, for automated or manual DC shutdown with visible confirmation of system voltage
- Supports secure over-the-air firmware upgrades

[1] Use of all software components, if any, shall be governed by and subject to the SolarEdge Software License Terms and Conditions.

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	CLC1			Units
COMMUNICATION I/O				
USB	2 x USB 2.0 ports and 1 x USB 3.0 port, type-A connectors			
RS485	2 x isolated, terminal-block connectors			
CAN Bus	1 x isolated, terminal-block connector			
Digital I/O	4 x digital outputs + 4 x digital inputs Isolated, 24 V compliant with EN 61131-2, terminal-block connector			
HDMI	1 x HDMI port for connection to external display (to support the integrated Firefighter Gateway solution)			
LAN	2 x RJ45 connectors 2 x 1000 Mbps			
Wireless	802.11ax WiFi and Bluetooth 5.3 BLE 2 x 2.4 GHz / 5 GHz antenna sockets (for rubber duck antenna)			
Security	TPM 2.0			
PROTOCOL				
Over RS485	Modbus RTU			
Over LAN	TCP/IP, Modbus TCP			
ELECTRICAL				
Power Supply	Included, 100 – 240 Vac, 50 / 60 Hz, EU / UK / US / AUS Interchangeable			
Supply Voltage	Unregulated 8 – 36			V
Typical Power Consumption	Linux Idle	Current	200	mA
		Power	2.4	W
	CPU, memory stress test, and connectivity activity	Current	450	mA
		Power	5.4	W
MECHANICAL				
Dimensions	132 x 84 x 25			mm
Weight	550			g
Button	1 x Power			
LED	3 x Power, Local, and Cloud Communication indicators			
Cooling	Passive cooling, fanless design			
ENVIRONMENTAL				
Operation Temperature	-40 to 80			°C
IP Rating	IP30			
Relative Humidity	10% to 90% (operation); 5% to 95% (storage)			
Maximum Altitude	3000			m
STANDARD COMPLIANCE				
Safety	US/Canada	UL 62368- 1:2019; CSA-C22.2 No.62368-1:19		
	EU/UK	EN 62368-1: A11:2020; IEC 62368-1:2018 (Ed.3)		
EMC	US/Canada	FCC 47CFR Part 15: 2021, Subpart B, Class B; ICES-003: 2020 Issue 7, Class B		
	EU/UK	EN 55032: 2015 + A1(20) + A11(20), Class B; EN 55035: 2017 + A11(20); EN 61000-3-2: 2014; EN 61000-3-3: 2013; EN IEC 61000-6-2: 2019; EN IEC 61000-6-3: 2021 Class B; EN 301 489-1: V2.2.3: 2019, Class B; EN 301 489-17: V3.2.4: 2020, Class B; EN 301 489-52: V1.2.1: 2021		
RED (RF) WiFi / BT	US/Canada	FCC ID: PD9AX210NG		
	EU/UK	EN 300 328 v2.2.2 (WLAN & BT); EN 301 893 v2.1.1; EN 300 440 v2.2.1; EN 303 687 V1.0.0		
INSTALLATION SPECIFICATIONS				
Mounting	DIN Rail or Wall Mount			
Kit Content	Power supply unit, 2 x WiFi / BT rubber duck antennas 2 x 11-pin dual-raw plug Wall mounting bracket DIN-rail mounting kit			
SUPPORTED DEVICES & APPLICATIONS				
Meters	For supported devices and applications, see the ONE Controller C&I User Guide			
Power Control				
Sensors				
Firefighter Gateway				

SolarEdge ONE Controller for C&I

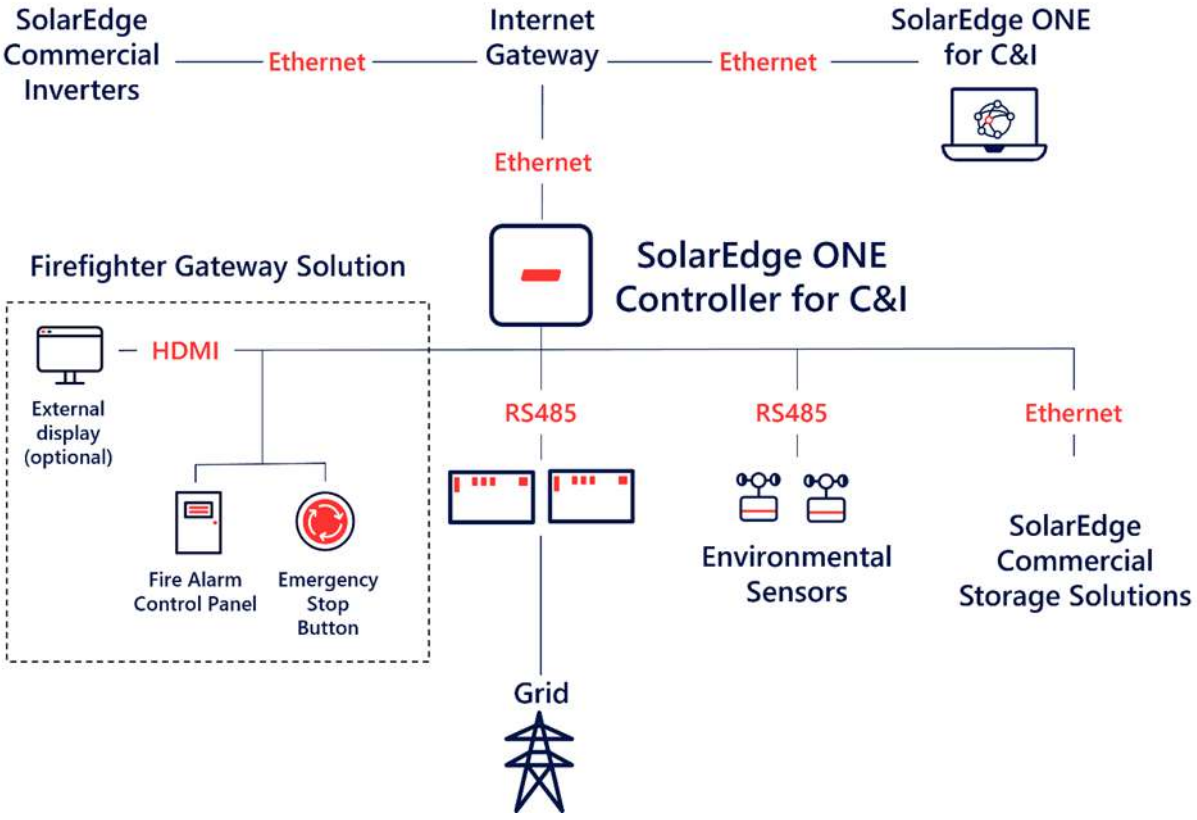
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Connection Scenarios

The following diagram illustrates a typical system architecture that includes the cloud-based SolarEdge ONE for C&I optimization platform, the local SolarEdge ONE Controller device, and connections to additional devices such as SolarEdge inverters, SolarEdge commercial storage solutions, and third-party energy meters and sensors.

Integrated Firefighter Gateway Solution

The ONE Controller also enables centralized safety management of SolarEdge PV systems via integrated Firefighter Gateway capabilities. By receiving input signals from connected fire alarm panels and emergency stop devices, the ONE Controller supports automatic or manual DC voltage shutdown across the PV array using SolarEdge's built-in SafeDC™ mechanism. Clear visual confirmation that high DC voltage has been safely reduced is also possible via an optional external display (sourced locally, not by SolarEdge).



SolarEdge is a global leader in smart energy technology. By leveraging world-class engineering capabilities and with a relentless focus on innovation, SolarEdge creates smart energy solutions that power our lives and drive future progress.

SolarEdge developed an intelligent inverter solution that changed the way power is harvested and managed in photovoltaic (PV) systems. The SolarEdge DC optimized inverter maximizes power generation while lowering the cost of energy produced by the PV system.

Continuing to advance smart energy, SolarEdge addresses a broad range of energy market segments through its PV, storage, EV charging, UPS, and grid services solutions.



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