



Automated test solutions for the entire product lifecycle



Common Engine Software Loader (CESL) 2G

FEATURES

Compatible with all models of the PW1000G Engine Family

- Ability to verify EEC type prior to powering control to prevent damage to EEC
- Utilizes the Siemens SIMATIC ITP1000 Industrial Tablet PC with Microsoft Windows 10
- Custom cradle to hold Siemens tablet while in use
- Storage area for cables under custom cradle
- Enhanced case ruggedization features
 - Two press & pull latches
 - Lightweight, strong HPX® Resin
 - Watertight, crushproof, and dustproof
 - Trolley handle & wheel system
 - Double-layered, soft-grip handle
- No specialized shipping container required
- Direct ethernet connection from the Siemens tablet to the loader allowing swapping of Siemens tablets
- Incorporates built-in-diagnostics for the National Instruments modules
- Field serviceable / repairable to the module level

Rugged and Portable

The Common Engine Software Loader (CESL) second generation, referred to as the CESL2G, is compatible with all NGPF engine models. The CESL2G capabilities include testing and loading flight software to the Electronic Engine Control (EEC), the Prognostic Health Management Unit (PHMU), and the Data Storage Unit (DSU). Cable testing can be performed by running a cable loopback diagnostic.

The CESL2G is portable allowing for on-wing maintenance as well as off-wing and includes a separate on board DSU interface to enable DSU read and modification when the DSU is uninstalled from the EEC.

The CESL2G utilizes commercially available National Instruments modules allowing locally procurable replacement modules.

Supports engine variants PW1100, PW1200, PW1400, PW1500, PW1700, and PW1900.



OPERATIONAL CAPABILITIES

- Reprogramming the EEC and PHMU
- Read and update thrust ratings in DSU
- Update N1 modifier for fan blade replacement
- Update DSU installed on EEC or installed directly on CESL2G
- Engine on-wing / off-wing compatible

- Download / dump engine fault data for enhanced troubleshooting support
- Perform self-test / wrap-around test of CESL2G cables
- Fully incorporated cybersecurity restricting users to run only authorized software
- Compatible with new engine logic encryption methods
- Compatible with standard USB drives for offloading of engine data

SPECIFICATIONS

UNIT DIMENSIONS	
Width	21 in. / 54 cm
Depth	16 in. / 41 cm
Height (closed)	11 in. / 27 cm
Weight	61 lbs / 28 Kg
Cable Length	20 ft / 6 m
ENVIRONMENT	
Min. Operating Temperature	32°F / 0°C
Max. Operating Temperature	113°F / 45°C
Min. Storage Temperature	32°F / 0°C
Max. Storage Temperature	140°F / 60°C
Upper Operating Altitude	6,561 ft above sea level
Relative Humidity	55% (nominal)
Vibration	3g
Shock	30g
Transit Drop Height	36 in. / 92 cm
SUPPLY VOLTAGE	
Input Voltage	120-240 VAC
Frequency	50-60 Hz
Current Rating	10 amp

Tested to Industry and International Electrotechnical Commission (IEC) Standards:

- CE mark
- MIL-T-28800E Section 4.5.5.3.1 Class 2 Sinusoidal Vibration
- MIL-T-28800E Section 4.5.5.4.1 Functional Shock
- MIL-T-28800E Section 4.5.5.4.2 Transit Drop (3 feet)
- EN 61000-3-2 Limits for Harmonic Current Emissions
- EN 61000-3-3 Limitation of Voltage Changes, Voltage Fluctuations, and Flicker in Public Low-Voltage Supply Systems
- EN 61000-4-2 Electrostatic Discharge (ESD)
- EN 61000-4-3 Radiated Electromagnetic Fields
- EN 61000-4-4 Electrical Fast Transient/Burst (EFT)
- EN 61000-4-5 Surge Immunity Requirements
- EN 61000-4-6 Conducted Immunity Requirements
- EN 61000-4-11 Voltage Dips, Short Interruptions, and Voltage Variations
- EN 61326-1:2013 Electrical Equipment for Measurement, Control, and Laboratory Use

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