

AUTO START GENERATOR CONTROL PANEL



- 80-1600 Amps
- 208-600Vac, 50/60Hz rated
- MEC 20 Microprocessor-based Engine/Generator Controller
- Digital AC/DC Instrumentation
- Certified to UL#508, CSA C22.2#14 Industrial Control Equipment Standards
- In compliance with NFPA Level 1 or 2
- Unit or Wall Mount
- Oil Pressure and Water Temperature Sensors included
- Optional expansion output module for fault output contacts
- Standard remote communication feature
- Optional remote annunciator



GENERAL DESCRIPTION

The **UCS 200** series auto start generator control panel is the most cost effective full featured control system available. Over 30 years of design and manufacturing experience have led to the creation of the **UCS 200** panel family. One control panel can now meet your generator set control requirements throughout the world. The control center of the **UCS 200** system is the **MEC 20 Microprocessor based Engine/Generator Controller**. The **MEC 20** gives the customer a compact, user friendly, field programmable control package. The **MEC 20's** complement of standard features has previously only been available with costly and complicated PLC based control systems or as an expensive option from engine/generator packagers.

The **UCS 200** family of control panels is available in three basic models:

- **Version "C"** – (Control only version, no breaker, no current transformers)
– customized factory programming and options available
- **Version "S"** – (Control only version, no breaker, no current transformers)
– available from stock, programming by customer
- **Version "KD"** – Knockdown (unassembled)

All models are designed to meet or exceed NFPA 110 Level 1, CSA C282 and IEC generator set requirements without adding optional features. Optional features are available in the **UCS 200 C** model to meet your custom application requirements. The **UCS 200 S** version is available from stock with standard configuration.

STANDARD FEATURES

- Electrical Rating:** - Single or three phase, 600VAC maximum, 50/60Hz, 4 wire 
 - 12 or 24Vdc (nominal) supply, negative ground
- Enclosure:** - Black NEMA/EEMAC 1, vibration isolated
- Engine Senders:** - Oil pressure (1/8" NPT), Temperature (1/4" NPT) (Supplied loose for engine mounting)
- Miscellaneous:** - AC & DC fuses, vibration isolators, terminal blocks

MEC 20 Microprocessor Engine/Generator Controller – c/w the following standard features:

- **Alpha-Numeric Readout:** Display and programming
- **Digital AC Metering:** 3 phase voltage (phase to phase and phase to neutral) , 3 phase current, KVA, frequency
- **Digital Engine Gauge Display:** Oil pressure, Engine temperature, Battery Voltage, Hourmeter, Tachometer
- **28 Standard Fault Circuits:**

Shutdowns	Alarms	
• Over Crank	• Under Frequency	• Low Oil Pressure
• Under Voltage	• Over Frequency	• Low Fuel Level 
• Over Voltage	• Over Current	• Switch Not in Auto
• High Engine Temperature  	• Weak Battery	• Digital Faults #5-#12 
• Low Oil Pressure  	• Low Battery Voltage	(User programmed)
• Over Speed	• High Battery Voltage	
• Loss of Speed Signal	• Battery Charger Fail 	
• Emergency Stop	• Low Engine Temperature	
	• High Engine Temperature	

- **Timers:** Engine Start, Cooldown, Oil Bypass, Over Crank, Cycle Crank
- **Control Switches:** Run/Off/Auto/Load Test, Horn Silence, Lamp Test, Fault Reset
- **Emergency Stop:** Faceplate mounted push-button and provision for remote contact input
- **LCD Display Menus:** AC metering, timer countdown functions, alarm/shutdown indication, engine parameters
- **LED Indicators:** Switch position (run, off, auto, load test), Common alarm, Common shutdown, Ready, Speed signal, Emergency stop
- **AMF (Auto Mains Failure):** Control outputs and timers to control external transfer mechanism
- **Diagnostic LED Indicators:** Watchdog (CPU running), run output energized, crank output energized, remote start signal initiated, common fail output energized
- **Audible Alarm Horn:** Programmable continuous or auto silence feature
- **Run & Crank Output Contacts:** (10A/240VAC, 8A/24Vdc, Form A)
- **Common Fail Output Contact:** (10A/240VAC, 8A/24Vdc, Form C)
- **4 Programmable Output Contacts:** (10A/240VAC, 8A/24Vdc, Form C): User configured function (refer to programming functions available)
- **Provision for Remote Contact Inputs:** Emergency Stop, Remote Reset
- **Engine Senders:** Oil pressure (1/8" NPT), Temperature (1/4" NPT) supplied loose for engine mounting
- **COM** MEC 20 remote communication port (RS422). Can be used in conjunction with external TT Communication Interface Module (CIM module not included).*

 Standard features meet or exceed requirements as defined by NFPA 110 Level 1 & CSA C282.

 Requires customer-supplied sensing contact.

 For CSA C282 applications, Battery Charger Input Fail alarm is reconfigurable as Low Coolant Level Shutdown.

 Generator supply must utilize a solidly grounded neutral system for standard panel connections.

 High Engine Temperature and Low Oil Pressure shutdowns are factory programmed to utilize both digital contact and analog sender inputs.

NOTE: Customer to supply and install engine-mounted crank pilot relay, magnetic pickup and current transformers.

OPTIONAL FEATURES

- **3W** Voltage sensing transformers for 3 phase 3 wire and resistance grounded systems
- **AEG** Analog engine gauges: (gauge senders supplied loose for engine mounting)
– Temperature Gauge (100-280°F) & Sender (1/4" NPT)
– Pressure Gauge (0-150 PSI) & Sender (1/8" NPT)
- **AFM** Analog frequency meter (3 1/2", 2%)
- **AFR** Air flap pilot relay (20A, 24Vdc resistive contact; specify 12 or 24Vdc; factory wired) 
- **ANM** Analog voltmeter & ammeter (3 1/2", 2%) c/w phase selector switch
- **BCM** BCM 1230 battery trickle charger (2A – specify 12 or 24Vdc, 120VAC 60Hz or 240VAC 50Hz)
- **BHR** Block heater disconnect relay (20A, 250VAC resistive contact; specify 12 or 24Vdc; factory wired)
- **BVM** Analog battery voltmeter (specify 8-18Vdc or 16-36Vdc)
- **CED** Custom engineered drawings
- **CIM** Communication Interface Module with internal 14.4Kbaud modem, RS232/422/485 ports and Modbus™ protocol c/w 6' communication cable.
One CIM module provides communication interface for up to ten MEC 20 controllers per system.*
- **CL** Cycle lube 
- **CR** Crank pilot relay (specify 12 or 24Vdc; supplied loose for engine mounting)
- **CS** Coordination study for Generator Breaker settings (may require optional breaker trip type for coordination – consult factory)
- **CT** Current transformers (specify ratio and quantity; CT's supplied loose for generator mounting)
- **DF** Additional digital fault circuits (maximum 8)
- **EAP 110** Remote annunciator with data communication link. 20 light annunciator for NFPA 110 (Level 1) & CSA282-00 faults*
- **ETS** Energize to stop relay (20A, 24Vdc resistive contact; specify 12 or 24Vdc; factory wired) 
- **EXP** 16 point relay expansion module for individual fault output contacts on MEC 20. Specify number of expansion modules required (one module required for standard C282 or NFPA110  fault circuits, two modules required for all additional fault circuits).
Relay contacts are configurable (normally open or closed) and are rated 0.5A 120VAC, 1.0A 30Vdc resistive (maximum).
- **GOV** Provision for governor mounting
- **IC** Engine idle control (complete with one programmable output contact, one digital fault input switch)
- **MEC-O&M** Additional product manuals (two manuals are included with each unit shipped)
- **MPU** Magnetic pickup speed sensor (pigtail type, 5/8"- 18 thread; supplied loose for engine mounting)
- **MSG** Murphy "switchgages": oil pressure & coolant temperature
- **PH** Preheat pilot relay (specify 12 or 24Vdc; supplied loose for engine mounting) 
- **PL** Panel illumination light
- **PO** Additional programmable output contacts (10A/240VAC, 8A, 24Vdc resistive, Form C – Maximum 3)
- **PRG** Custom programming of features (provides up to 6 custom fault labels)
- **RR** Run pilot relay (20A, 24Vdc resistive; specify 12 or 24Vdc; supplied loose for engine mounting)
- **VAMS** Individual voltmeter & ammeter switches (for analog metering option)
- **VFD** Vacuum fluorescent display for extended low temperature operation (-40°C)
- **VMSN** Voltmeter switch to read line-neutral (for analog metering option) (Include VAMS option)

* (Refer to separate literature for additional information)

 Includes one programmable output contact.

 C282 or NFPA110 standard faults exclude analog faults - Over/Under voltage, Over/Under frequency, over current, spare digital fault inputs #5 - #12 and programmable output #6 (i.e. must specify second expansion module to obtain contacts for these faults).

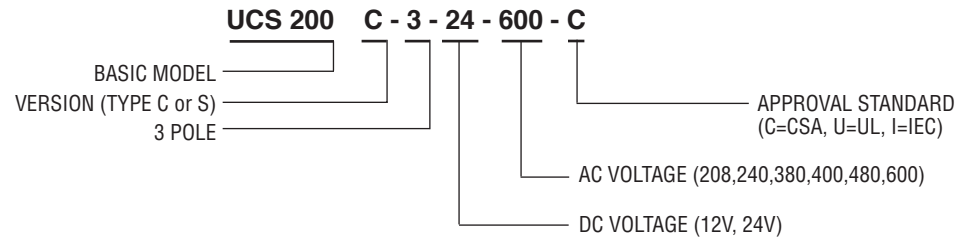
Contact Thomson Technology for further information.

™ Trademarks belong to their respective parties.

THOMSON TECHNOLOGY • 9087A - 198th STREET, LANGLEY, BC CANADA V1M 3B1

TELEPHONE: (604) 888-0110 • FAX: (604) 888-3381 • E-MAIL: info@thomsontechnology.com • www.thomsontechnology.com

ORDERING INFORMATION



Note: Specify optional features separately from the UCS MODEL CODE when ordering.

VERSION "C" – Controls only – no generator breaker or current transformers (Options Available)

Enclosure Code: E1

VERSION "S" – Controls only – no generator breaker or current transformers (NO OPTIONS AVAILABLE)

Enclosure Code: E1, Available from stock. MEC 20 programming by customer.

ENCLOSURE DIMENSIONS

ENCLOSURE CODE	HEIGHT	WIDTH	DEPTH **
E1 (Unit or wall mount)	11.2" (295mm)	16.0" (406mm)	13.3" (338mm)

**Enclosure depth includes 1.5" (38mm) drip visor.

Note: Specifications subject to change without notice.

CL 038 REV 6 05/07/01

THOMSON TECHNOLOGY • 9087A - 198th STREET, LANGLEY, BC CANADA V1M 3B1

TELEPHONE: (604) 888-0110 • FAX: (604) 888-3381 • E-MAIL: info@thomsontechnology.com • www.thomsontechnology.com