AUTO START GENERATOR CONTROL PANEL

Model UCS 200

Typical UCS 200 B Control Panel

- **30-1600 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**
- **Unit or Wall Mountable**
- **Oil Pressure and Water Temperature Sensors Included**
- **Quality Assurance System ISO 9001**
- **Optional expansion output module for fault output contacts**
- **Optional remote communication feature**

GENERAL DESCRIPTION

The **UCS 200** series auto start generator control panel is the most cost effective full featured control system available. 25 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 four basic models:

- **Version "B"** – enclosure with factory installed generator molded case circuit breaker
  – factory wired AC fuses and current transformers
  – customized factory programming and options
- **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. All models up to 1200 amps are certified to applicable UL, CSA and IEC standards. Optional features are available in the **UCS 200 B** and **C** models to meet your custom application requirements. The **UCS 200 S** version is available from stock with standard configuration.

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STANDARD FEATURES

Electrical Rating: - Single or Three Phase, 600Vac maximum, 50/60Hz, 4 wire △4
- 12 or 24Vdc (nominal) supply, negative ground

Enclosure: - Black NEMA/EEMAC 1, vibration isolated

Circuit Breaker: - 3 pole molded case (Version "B" only) (4 pole - Optional - Consult Factory)

Neutral Block: - Fully rated (3 pole Version "B" only)

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:

- **Digital AC Metering**: 3 phase voltage, 3 phase current, frequency
- **Digital Engine Gauge Display**: Oil pressure, Engine temperature, DC Voltage, Hourmeter, Tachometer
- **Backlit MEC 20 LCD Display:** 2 line by 16 character LCD display with LED backlighting
- **15 Standard Fault Circuits**:

Shutdowns	Alarms	
• Overcrank	• Switch Not in Auto	• Low Battery Voltage
• Overspeed	• Low Fuel Level △2	• High Battery Voltage
• Loss of Speed Signal	• Low Engine Temperature	• Weak Battery
• Low Oil Pressure △2	• Low Oil Pressure Pre-Alarm	• Battery Charger Input Fail △2△3
• High Engine Temperature △2	• High Engine Temp. Pre-Alarm	
• Emergency Stop		

- **Timers**: Engine Start, Cooldown, Oil Bypass, Overcrank, 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
- **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 and Crank Output Contacts:** (10A/240Vac, 8A/24Vdc resistive, Form A)
- **Common Fail Output Contact:** (10A/240Vac, 8A/24Vdc resistive, Form C)
- **1 Programmable Output Contact:** (10A/240Vac, 8A/24Vdc resistive, Form C)
  User configured function (refer to programming functions available)
- **Remote Communication Capability:** Every standard MEC 20 controller can be field upgraded.
  Consult factory for additional information.

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

△2 Requires customer-supplied sensing contact.

△3 For CSA C282 applications, Low Coolant Level Shutdown is supplied in place of Battery Charger Input Fail alarm.

△4 Generator supply must utilize a solidly grounded neutral system for standard panel connections.
(For other system types refer to option list).

NOTES: – Customer to supply and install engine-mounted crank pilot relay and magnetic pickup.
– Customer to supply and install current transformers with Version "C" & "S" panels.

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OPTIONAL FEATURES

- **COM** MEC 20 remote communication port for use with external Communication Interface Module (CIM module not included). Must order in conjunction with CIM option.*
- **CIM** Communication Interface Module with internal 14.4Kbaud modem, RS232/422/485 ports and multiple interface protocols. One CIM module provides communication interface for up to ten MEC 20 controllers with COM per system.*
- **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 fault circuits, two modules required for standard and optional fault circuits). Relay contacts are configurable (normally open or closed) and are rated 0.5A 120Vac, 1.0A 30Vdc resistive (maximum).
- **DF** **Additional Digital Fault Circuits:** (specify name and quantity, maximum 8) to operate from customer-supplied contacts (All fault circuits programmable as alarm or shutdown)
- **PO** **Additional Programmable Output Contacts:** (10A/240Vac, 8A/24Vdc resistive, Form C)
  Specify function(s) and quantity (maximum 3):

Switch Not in Auto	Engine Run Alarm	Common Alarm
Ready Alarm	Oil Bypass Delay Expired	Common Fail
Transfer Switch Load Test	Overcurrent Alarm	Common Shutdown

- **UV** **Undervoltage alarm/shutdown & indication** (3 phase, programmable)
- **OV** **Overvoltage alarm/shutdown & indication** (3 phase, programmable)
- **OC** **Overcurrent (definite time) alarm/shutdown & indication** (3 phase, programmable)
- **UF** **Underfrequency alarm/shutdown & indication** (programmable)
- **OF** **Overfrequency alarm/shutdown & indication** (programmable)
- **CT** **Current transformers** (specify ratio and quantity; CT's supplied loose for generator mounting)
- **BCM** **BCM 1230 Battery Trickle Charger** (2A – specify 12 or 24Vdc, 120Vac 60Hz or 240Vac 50Hz)
- **GOV** **Provision for governor mounting**
- **3W** **Voltage sensing transformers** for 3 phase 3 wire and resistance grounded systems
- **MPU** **Magnetic pickup speed sensor** (pigtail type, 5/8"- 18 thread; supplied loose for engine mounting)
- **CR** **Crank pilot relay** (specify 12 or 24Vdc; supplied loose for engine mounting)
- **IC** **Engine Idle Control** (complete with one programmable output contact, one digital fault input switch)
- **CL** **Cycle Lube** ⚠1
- **PH** **Preheat Pilot Relay** (specify 12 or 24Vdc; supplied loose for engine mounting) ⚠1
- **RR** **Run Pilot Relay** (20A, 24Vdc resistive; specify 12 or 24Vdc; supplied loose for engine mounting)
- **BHR** **Block Heater Disconnect Relay** (20A, 250Vac resistive contact; specify 12 or 24Vdc; factory wired)
- **AFR** **Air Flap Pilot Relay** (20A, 24Vdc resistive contact; specify 12 or 24Vdc; factory wired) ⚠1
- **ETS** **Energize to Stop Relay** (20A, 24Vdc resistive contact; specify 12 or 24Vdc; factory wired) ⚠1
- **ANM** **Analog voltmeter & ammeter** (3 1/2", 2%) c/w phase selector switch
- **AFM** **Analog frequency meter** (3 1/2", 2%)
- **VAMS** **Individual voltmeter & ammeter switches** (for analog metering option)
- **VMSN** **Voltmeter switch to read line-neutral** (for analog metering option) (Include VAMS option)
- **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)
- **BVM** **Analog Battery Voltmeter** (specify 8-18Vdc or 16-36Vdc)
- **MSG** **Murphy "Swichgages":** oil pressure & coolant temperature
- **PL** **Panel illumination light**
- **CS** **Coordination Study** for Generator Breaker settings (may require optional breaker trip type for coordination – consult factory)
- **PM** **Additional Product Manuals** (Two manuals are included with each unit shipped)
- **PC** **Power Cables** – to suit, (Consult Factory for information; UCS 200B only)

** (Refer to separate literature for additional information)*

⚠1 *Includes one programmable output contact.*

Contact TTI for further information.

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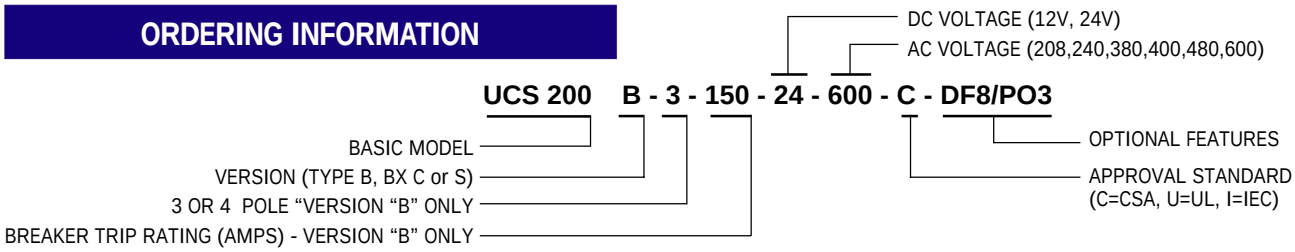
ORDERING INFORMATION



VERSION "B" – c/w Generator breaker, Current transformers (Options Available)

BASIC MODEL	BREAKER TRIP RATING (Amps)	TRIP TYPE ⚠1	CABLE TERMINALS (for CU/AL)	ENCLOSURE CODE
UCS 200 B ⚠2	32, 40, 50, 63	T.M.	#18 -#4 AWG	E1
UCS 200 BX ⚠2	80, 100, 125	T.M.	#18 -#4 AWG	E1
UCS 200 B	70, 80, 90, 100	T.M.	#14 AWG-1/0	E2
UCS 200 B	125, 150	T.M.	#2 AWG-4/0	E2
UCS 200 B	250 (Adj. 100-250)	L.I.	#6 AWG-350kcmil	E2
UCS 200 B	400 (Adj. 160-400)	L.I.	(2) 3/0-250kcmil	E3
UCS 200 B	600 (Adj. 240-600)	L.I.	(2) 250-500kcmil	E3
UCS 200 B	800 (Adj. 320-800)	L.I.	(3) 2/0-400kcmil	E3
UCS 200 B ⚠3	1000 (Adj. 400-1000)	L.I.	(3) 2/0-400kcmil	E4
UCS 200 B ⚠3	1200 (Adj. 480-1200)	L.I.	(4) 4/0-500kcmil	E4
UCS 200 BX ⚠2 ⚠3	1600 (Adj. 560-1600)	L.I.	(4) 2/0-600kcmil	E4

Larger amperage sizes available on request.

⚠1 TM = Fixed thermal-magnetic trip, LI = Solid state trip, adjustable long time & instantaneous. (Optional breaker trip units available - Consult factory)

⚠2 Model built to IEC standards, not CSA/UL approved.

⚠3 UCS 200 C panel and separate generator breaker enclosure.

NOTE: Ensure standard cable terminals are adequate (Consult factory for cable termination options).

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.

DIMENSIONS

ENCLOSURE CODE	HEIGHT	WIDTH	DEPTH **
E1 (Unit or wall mount)	11.2" (295mm)	16.0" (406mm)	13.3" (338mm)
E2 (Unit or wall mount)	22.0" (560mm)	20.0" (508mm)	8.5" (216mm)
E3 (Unit or wall mount)	44.0" (1118mm)	20.0" (508mm)	8.5" (216mm)
E4 (Unit or wall mount)	Consult Factory	Consult Factory	Consult Factory

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

Note: Specifications subject to change without notice.

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