Automatic Engine Controller

Model AEC101

The AEC101 Automatic Engine Controller provides simple, yet sophisticated engine automation. It features basic automatic start/stop capabilities plus other features found on more advanced and expensive controllers, all in an easy-to-install panel.

The AEC101 operates from 12- or 24-volt systems. It includes crank and rest cycles, sensing circuits for crank disconnect and overspeed, overcrank and re-crank on false starts. The top LED for engine running indicates when crank disconnect occurs. Four of the up to six shut-down LEDs are dedicated for low oil pressure, high engine temperature, overspeed and underspeed. Two remaining LEDs can be established for first-out shut-down indication through auxiliary inputs 1 and 2.

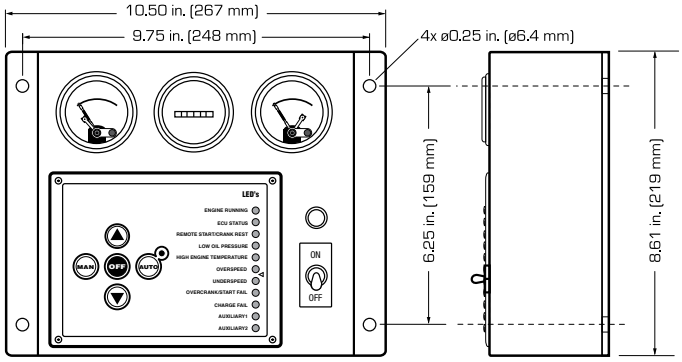
The built-in oil pressure and water temperature Swichgage® instruments provide visual indication and can be set to initiate shutdown.

The electromechanical quartz-based hourmeter can record up to 9,999.9 hours. It is housed in a shock-proof case and built to be rugged and durable for a long life.

The Cascade controller allows manual or automatic selection of the operation sequence.

Additional features of the AEC101 are an adjustable shutdown lockout delay, engine running indication LED, advanced microprocessor technology and a convenient hat bracket design for simple engine mounting.

Dimensions



Specifications

Operating Voltage: 9-35VDC – operates during total blackout for 2 seconds minimum

Environmental

Operating Temperature: -40 to 85°C (-40 to 185°F)
Storage Temperature: -40 to 85°C (-40 to 185°F)
Humidity: 0-100%, non-condensing
Inputs: dedicated digital inputs for low oil pressure, high engine temperature, remote call to run, DC charge fail/Alternator fail. Two auxiliary inputs are configurable for multiple functions.
Outputs: (7 total): Four configurable auxiliary sinking outputs (1A DC protected), three dedicated outputs for crank, fuel, alternator excitation.

Crank Attempts: 3, 5, 10, Continuous
Crank Rest: 5-60 seconds, Adjustable
Shutdown lockout time delay: 5, 10, 15, 20, 25, 30 sec.
Speed sensing input:
Magnetic pickup (5-120VAC RMS / 0-10 kHz)
AC frequency (30-600VAC RMS / 16-80 Hz)
Crank disconnect speed setting: Field programmable 0-9999 RPM (16-60 Hz AC freq input)
Housing: Powder-coated 14 gage cold rolled steel
Shipping Weights: 7 lb. (3175 g) approximately
Shipping Dimensions: 12 x 12 x 5.5 in. (305 x 305 x 140 mm) approximately

How to Order

Part Number	Model	Notes
30700861	AEC101	

Sequence of Operation

The following sequence is pre-programmed into the AEC101:

Operation sequence with panel in Auto:

When the AEC101 receives an automatic start signal, the engine will begin to crank and the Shutdown Lockout time delay will begin. The Shutdown Lockout Delay has two functions: 1) it allows the AEC101 to disregard signals from the low oil pressure and high temperature Swichgage® at engine start-up, and 2) if the engine false starts, the recrank will be delayed to allow the engine to stop moving before engaging the starter. If the engine fails to start after the set number of crank and rest attempts, the AEC101 will indicate an Overcrank LED. The engine will be locked out from any further start attempts.

NOTE: All shutdown conditions can be reset by pressing the OFF button followed by pressing the Auto button to initiate auto sequence.

Once Crank disconnect speed is reached the Engine Running LED will turn on steady. The engine will also run at full governed speed while in operation. If the speed exceeds the Overspeed set point, the AEC101 will initiate an engine shutdown, and the Overspeed LED will turn on. The engine will be locked out from any further start attempts.

If low oil pressure or high temperature conditions occur while the engine is running, the AEC101 will shutdown the engine, and the appropriate LED will turn on. The engine will be locked out from any further start attempts.

NOTE: The Shutdown Lockout Delay must have expired to get a shutdown on low oil pressure or high engine temperature.

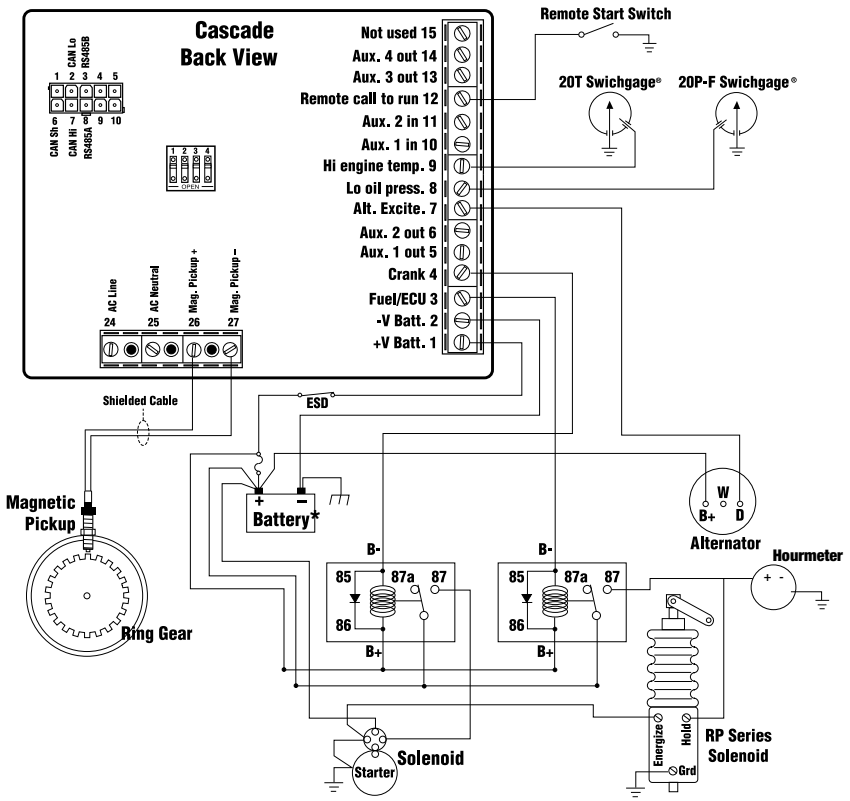
Operation sequence with panel in Manual:

When the Manual button on the Cascade controller is pressed, an automatic start signal is simulated. Therefore, the controller will operate the same as it does in Auto. However, it will continue to run as long as there are no signals from monitored conditions or until the Off or Auto buttons are pushed. Keep in mind, it will still shutdown the engine if a monitored condition occurs such as low oil pressure, high engine temperature or loss of speed signal.

Typical Wiring Diagram

Cascade – Basic Mechanical Engine MPU Sensing Speed

NOTE: This diagram represents a typical wiring scenario and is not the schematic to the panel. Everything shown except Cascade module, 20T, 20P and Hourmeter are customer supplied.



*Always provide proper circuit protection with fuses or circuit breakers.