

Autostart 700

Automatic Engine & Generator Controller

A proven industry standard, the Autostart 700 control module provides fully automatic start up, load transfer, fault monitoring and shutdown for stationary, mechanical (non-ECU/CAN) engines, generators & pumps.

Features

- Keyswitch selectable auto or manual start/stop
- Automatic fault shutdown protection
- LED fault/status indicators
- Fully configurable inputs, timers and control options
- Front-of-panel mounted case, 96 x 96mm DIN

Operation

A four-position, front panel keyswitch is used to select Autostart's operating mode. Green and red LEDs around the switch indicate the selection of Auto or Test (manual) modes. The key is common to all units and is removable in the Off and Auto positions only.

Off/reset

Removes all power from the unit and resets all alarms.

Lamp test

Lights all LEDs and activates a lamp test output. Operation is otherwise as for Auto mode.

Auto mode

When the Autostart and generator are required to be on standby, positive DC must be applied to the mains failure terminal (pin 23).

When a mains failure occurs, power is removed from pin 23 and Autostart waits for an adjustable 'start delay'. If mains is restored in this period, the timer resets and the system returns to standby.

If the mains supply remains failed, Autostart initiates an automatic start sequence, consisting of up to 9 engine crank/rest attempts, with each crank/rest 'pulse' period adjustable to give a maximum of 0.5 to 30 seconds.

If a successful engine start is detected (engine speed above 40%), Autostart disengages and latches out the starter motor. If Autostart does not detect that the engine is running after the set number of start attempts, a 'start fail' fault is indicated. Once the engine is fully running – with speed above 90%, AC voltage above 66%, and oil pressure good – Autostart attempts to load the generator by activating its Load Relay.

A mains return is signalled by re-applying battery positive to pin 23. The generator continues to run on load until the end of the user adjustable 'change-back' delay. Autostart then takes the generator off load, but allows it to run on for an adjustable 'cool' time before stopping the engine and returning the system to standby.

If the mains fails again during the 'change-back' or 'cool' delays, both these timers reset and Autostart either maintains or re-activates the load relay output.



Specifications

Power Supply

Operating voltage:

9 - 16 V DC (12V setting) or 18 - 32 V DC (24V setting).

A fully charged battery backup allows total loss of supply for > 1 minute

Current consumption: typically 200mA

Inputs

Generator AC input:

operating voltage range: 50 - 300 V AC rms

nominal frequency range: <50 Hz to >400 Hz at rated engine speed.

Magnetic pickup:

operating voltage range: 5 - 100 V AC rms

nominal frequency range: < 600 Hz to > 6 kHz

Low Oil Pressure (LOP) & High Engine Temperature:

for use with fault switches, inputs opening or closing to +DC or -DC on fault conditions (switch selectable).

Outputs

Crank & Fuel relays:

+ DC (switched SPNO contact), 16 A max @ 24 V DC

Alarm relay: + DC (switched SPNO contact), 5 A max @ 24 V DC

Load relay: volt-free SPCO contacts, 16 A max @ 240 V AC

Auto mode: + DC (switched), 250 mA max.

Lamp Test: + DC or - DC (switch selectable), 250mA max.

Tachometer/Calibration: to suit moving coil meter, 0 - 1mA fsd, 75 Ohm coil. Output at rated speed = 0.75mA.

Adjustable Settings

Start delay: 1 - 60 seconds

Change-back delay: 1 - 60 minutes

Cool delay: 0.2 - 5 minutes

Crank pulse/dwell: 0.5 - 30 seconds

Override time: 0.5 - 30 seconds.

Overspeed trip level: 100 - 120% of calibrated nominal speed.

Physical

Overall dimensions: 96 x 96 x 150 mm / 3.8 x 3.8 x 5.9 in.

Panel cut-out size: DIN standard 92 x 92 mm

Weight: approx. 700 g / 1.55 lb

Operating temperature: -10 to +55 °C / 14 to +131 °F

Test mode

Autostart may be configured to give an immediate, automatic engine start when Test mode is selected. Alternatively, operator controlled start and stop can be achieved using remotely wired panel push buttons. In test mode, Autostart will run the engine indefinitely until the key is switched to Off/reset (causing the engine to stop) or to Auto mode (Autostart goes through controlled 'changeback' and/or 'cool' times before shutting down the engine).

Autostart may be set to allow or inhibit the loading of the generator if the mains should fail while the engine is running in Test mode.

Fault protection and alarm system

Autostart's engine fault protection and alarms operate in both Auto and Test modes. 7 LEDs give indication of faults and mains status.

Dedicated inputs are provided for use with low oil pressure (LOP) and high engine temperature (HET) fault switches. Top fascia switches allow set-up for use with fault switches that open or close during fault, with wiring to positive or negative DC. These inputs are inhibited while the engine is at rest, during starting and until the end of the override time (adjustable up to 30 seconds). After that time, a LOP or HET fault causes an immediate engine shutdown.

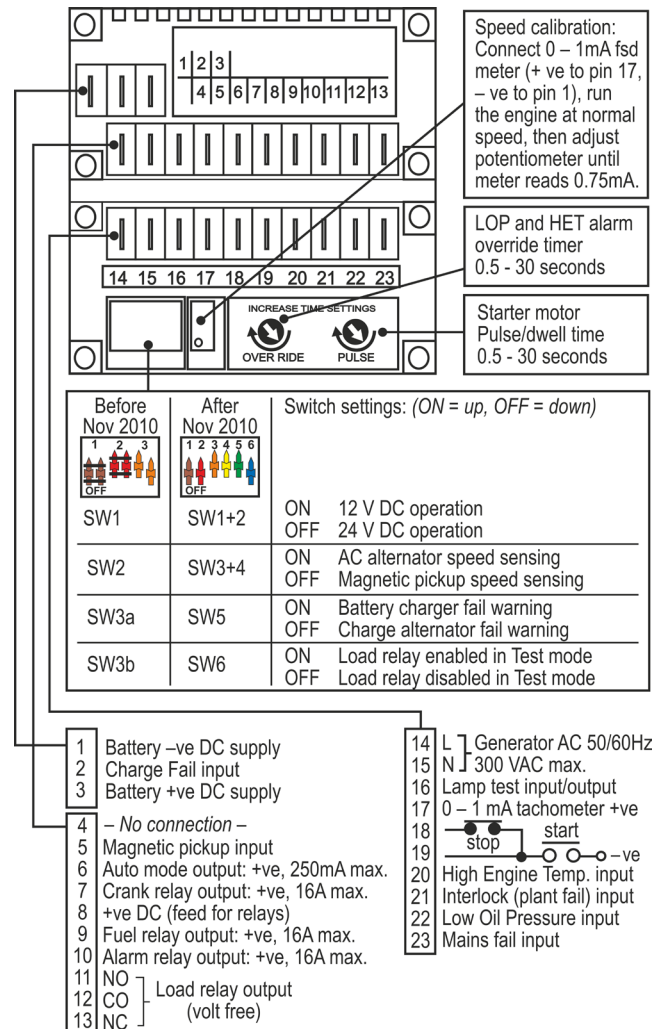
An overspeed condition, measured through the generator AC or magnetic pickup inputs, also results in an engine shutdown. This trip will operate at any time after the engine has started. (It is not inhibited by the override timer.) The overspeed trip level may be adjusted between 100% and 120% of the (calibrated) normal running speed.

A 'plant fail' fault may be activated at any time by connection of battery negative to pin 21, shutting down the engine or preventing it from starting. This fault input is non-latching.

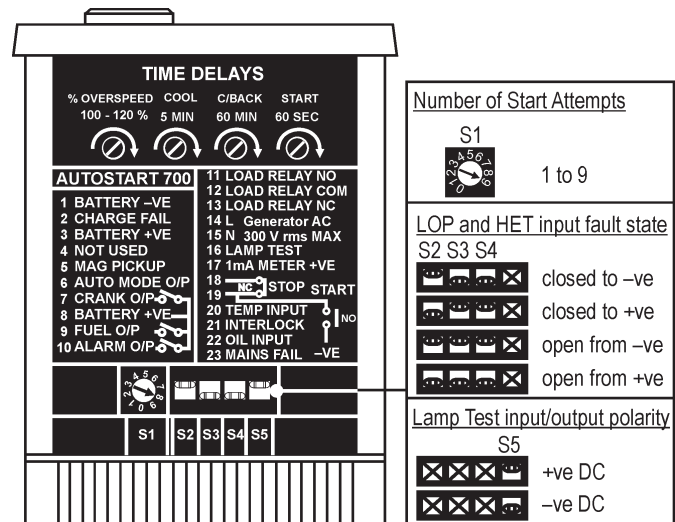
The charge fail warning LED lights (but Autostart takes no other action) when the voltage on pin 2 falls to negative DC. This input can be set to operate at any time (when using mains battery chargers) or only once the engine is running (for charge alternators). When connected to a charge alternator, pin 2 also provides excitation current.

Autostart's common 'alarm' relay operates during LOP, HET, overspeed, plant fail and start fail faults.

Rear View Settings & Connection



Top View & Settings



How to Order

Stock code	Model	Description
76.70.0025	AS3/E230	Autostart 700, 230VAC, standard settings
76.70.0286	AS3/E230SPCL	Autostart 700, 230VAC, customer specified settings