

## DESCRIPTION

The GTR series automatically starts and stops generators during mains power failure when user defined criteria are met. Operating status as well as fault readout is clearly visible on the front panel LED's and or LCD display (GTR-8x GTR-9x)

Network connectivity is provided no matter how long the distance. Monitoring and servicing to a much larger clientele base. Instant monitoring services and parameter setup to get your customers up and running in the shortest possible time without even leaving the office. An advantage for the service industry is the real-time and simplified functionality and maintenance of the GTR series controller. These features provide fast and professional service.

Power source connectivity protection; a protective circuit LED readout will indicate when reverse power source connection is made. System protection is assured. Anti-Crash watchdog circuitry and software programming provide a real-time operating system that corrects itself in case of unwanted interference in program processing. Quick-Snap connectors prevent wrong cable connections. Auto self-recovery fuses protection for input/output current. (No replacement necessary)

GTR units are constructed with a strong and appealing cast aluminum casing. The sand blasted aluminum finish creates a long lasting hard finish. Oxidation treatment prevents rust and deterioration. Special slide tray design protects the vital internal components.

The GTR series is a versatile generator/engine controller equipped with all of the basic vital functions found in most controllers on today's market. The major difference in our systems is the accessibility of the system either from the control panel or from a remote site via telephone line or broadband connection.

Easy real-time monitoring and parameter setup are accomplished through a network connection to the control center. The GTR-85 controller is designed for real-time generator/engine monitoring and control. Both Analog and Digital readouts of system information are visible on a personal computer through an RS-485 communication port. The GTR-85 is one model in a series of GTR controller systems made by Monicon Technology. It's multi-functionality, compact size, easy maintenance and lightweight make it possible to meet your specific application requirements.

### **Analog Readout:**

- ◆ Water Temperature (°C, °F)
- ◆ Oil Pressure (PSI, Bar)
- ◆ Fuel Level (%)
- ◆ 3 Φ AC Ampere
- ◆ 3 Φ AC Volts (phase to phase, and phase to neutral)
- ◆ PF, KVA, KW, KWH
- ◆ Battery Volts
- ◆ RPM (Generated from battery charger "W" output terminal.)



### **Digital Detection:**

- ◆ High Water Temperature Switch
- ◆ Low Oil Pressure Switch
- ◆ Low Water Level Switch
- ◆ Low Fuel Level Switch
- ◆ Emergency Stop Switch
- ◆ Frequency Value

### **Panel**

#### **Rotary Switch Function:**

- ◆ **Off:** Generator shutdown (no action).
- ◆ **Manual:** Operator controlled engine start up.
- ◆ **ATS:** Auto start function will be activated by detecting shorted signal of terminal 17, 18.
- ◆ **Network:** Allows online authorized user entry for monitoring and control. (Note: ATS is also functional in this mode).

#### **Push-Button Function:**

- ◆ **Info. Page:** Change LCD page for reading more information.
- ◆ **Light Test:** Test lights for solid, clear, brightness and alarm.
- ◆ **Reset:** First time "Reset" shutdown the alarm. Second time "Reset" clears fault lights. Holding down for a longer period will produce 1<sup>st</sup> and 2<sup>nd</sup> time "Reset" functions

### **Protective Functions**

#### **Engine:**

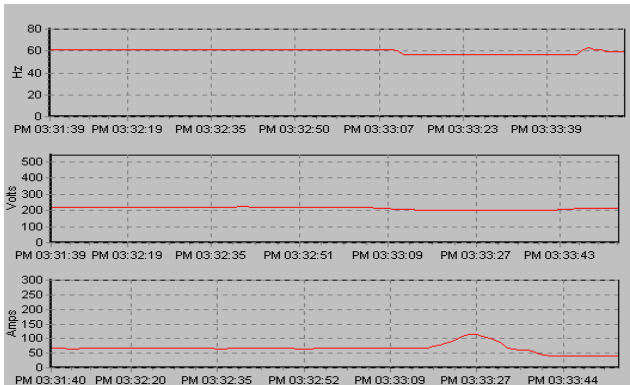
- ◆ Over Crank
- ◆ Low Oil Pressure
- ◆ High Water Temperature
- ◆ Low Water Level\*
- ◆ Over Speed
- ◆ High Frequency

## Generator:

- ◆ Over Load
- ◆ Short Circuit
- ◆ Low Voltage
- ◆ High Voltage
- ◆ Low Frequency
- ◆ Battery Fault
- ◆ Emergency Stop\*
- ◆ Low Fuel Level\*

\* Indicates that function is user definable.

## Data Log:



## Specifications

### DC Supply:

8 ~ 36 VDC (Over 36 VDC the system will shutdown DC input.)

### Power Consumption:

Max. 10 W

### Measuring Voltage:

10 ~ 300 VAC (Phase to Neutral, Accuracy 1 %)

### Measuring Current:

..15 A (secondary detection readings below 0.15 A show zero display reading, Accuracy 1 %)

### Measuring Frequency:

0 ~ 80 Hz (Min AC Volts: 8 V, Accuracy 0.25 %)

### Charger AC Output Voltage Sensitivity:

1 V ~ 70 V Peak to Peak

### Charger AC Output Frequency Sensitivity:

62 Hz ~ 10,000 Hz at rated engine speed

### Relay Output:

10 A /30 VDC

### Software Platforms:

Windows 98, Windows ME, Windows 2000, Windows XP

### Communication Protocol:

RS-485 (Dynamic encryption by Monicon Instruments)

### Operating Temperature Range:

-30 °C ~ +70 °C

### Dimension (W x H x D):

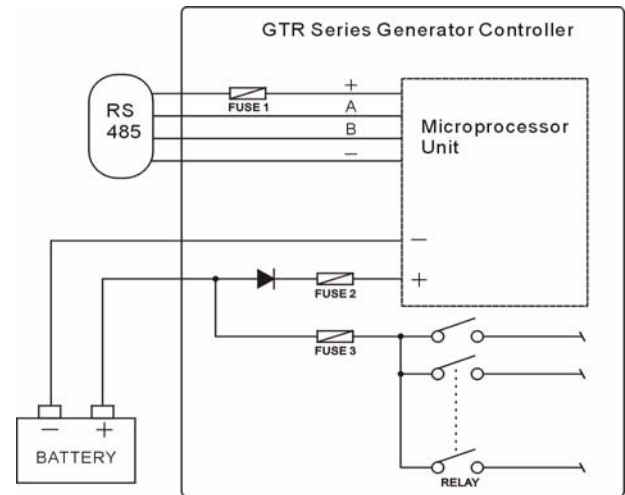
144 mm x 144 mm x 74 mm

### Panel Cut-out (W x H):

138 mm x 138 mm

### Weight:

1.4 Kg (3.08 lb.)



Fuse1: 100 mA

Fuse2: 750 mA

Fuse3: 6 A

The GTR-85 also provides **metering and alarm facilities** via the LCD display which is accessed via the 'Inf. Page' push button. The following instrumentation displays are available:

- ◆ 3  $\Phi$  AC Ampere.
- ◆ 3  $\Phi$  AC Volts.
- ◆ Generator R-N · S-N · T-N Volts.
- ◆ Generator Frequency Hz.
- ◆ Engine Speed RPM.
- ◆ Engine Oil Pressure (PSI).
- ◆ Engine Temperature (°C).
- ◆ Engine Fuel (%).
- ◆ Plant battery Volts.
- ◆ Engine Hours Run.
- ◆ Power Factor
- ◆ KW
- ◆ KWH
- ◆ KVA
- ◆ Emergency Stop Input - N/C DC
- ◆ 4 Fully configurable Warning / Alarm / Trip, or Shutdown inputs

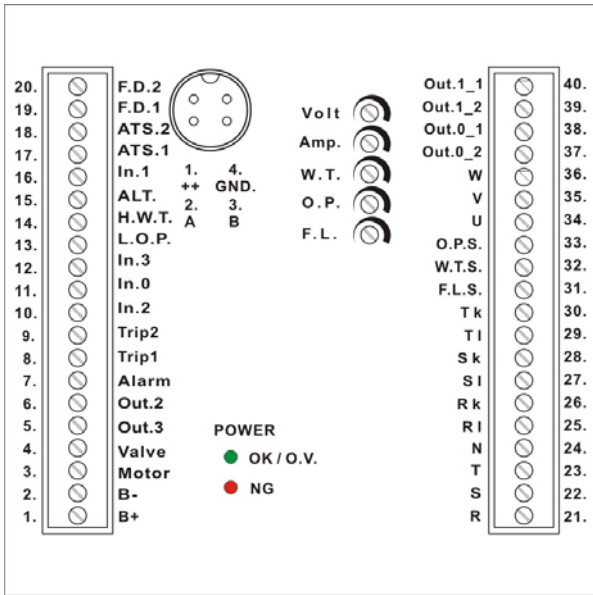
**Trip: High Voltage**  
 R-S Volt. : 242 V  
 S-T Volt. : 242 V  
 T-R Volt. : 242 V

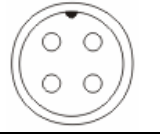


## Timers AND Functions

- ◆ Start Delay timer
- ◆ Stop Delay timer
- ◆ Crank/Crank Rest timers
- ◆ Safety On Delay timer
- ◆ Energize to Stop hold timer
- ◆ Pre-heat timer
- ◆ Over-speed Overshoot timer
- ◆ LCD Back-lighting for low light level Operation
- ◆ Alternator Under/Over Volts Warning / Alarm / Trip, or Shutdown
- ◆ Alternator Low/High Freq. Warning / Alarm / Trip, or Shutdown

# GTR-85 GENERATOR CONTROLLER

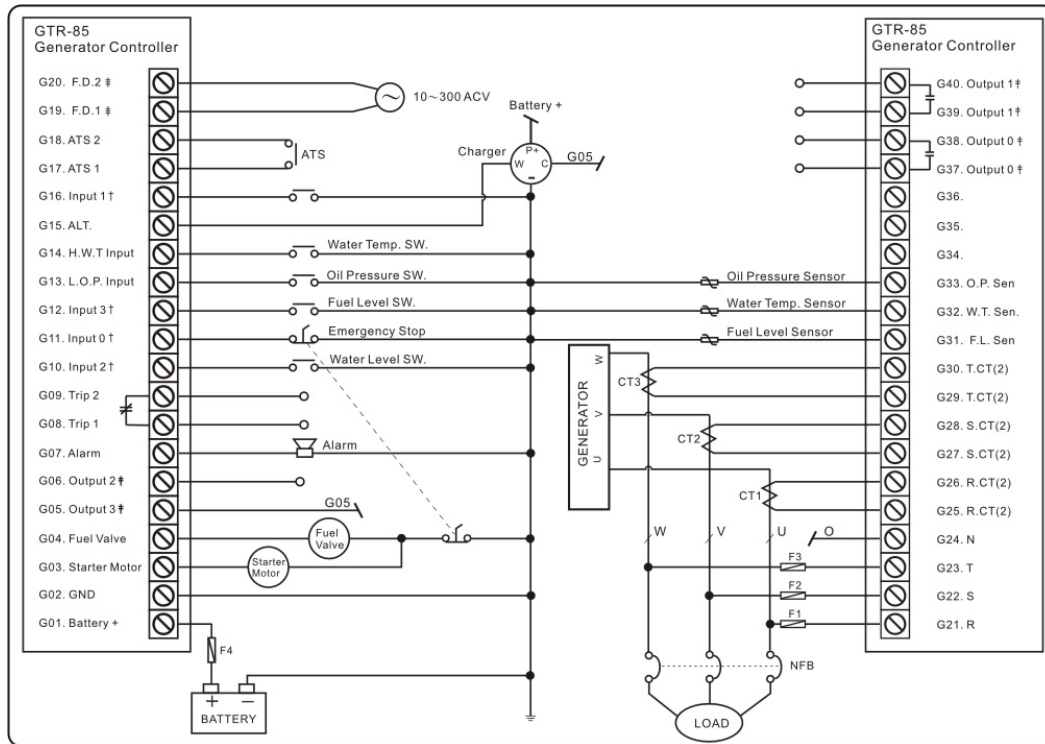
- ◆ Under/Over Speed Warning / Alarm / Trip, or Shutdown
- ◆ Low Oil Pressure Shutdown
- ◆ High Engine Temp Shutdown
- ◆ Low Battery Volts Warning / Alarm
- ◆ Generator Over/short Current Warning / Alarm / Trip, or Shutdown
- ◆ Under/Over Generator Volts Warning / Alarm / Trip, or Shutdown
- ◆ Charge Fail Warning
- ◆ Emergency Stop
- ◆ Over Crank
- ◆ Crank Attempts
- ◆ Three fixed function output (DC12V/24V depend on Battery Voltage): Valve, Motor, Alarm
- ◆ Three fixed function relay: Trip, Aux. Output 0, Aux. Output 1
- ◆ Two configurable function output: Aux. Output 2, Aux. Output 3



Volt - ⊕	AC Voltage VR
Amp. - ⊕	AC Ampere VR
W. T. - ⊕	Water Temp. VR
O. P. - ⊕	Oil Pressure VR
F. L. - ⊕	Fuel Level VR
	RS-485 Communication Port
 OK / O.V.	OK: Solid "green" LED display O.V.: Solid "red" LED display
 Reverse	Polarity fault

Note: VR adjustment for matching tolerance between external and internal measuring meter readout

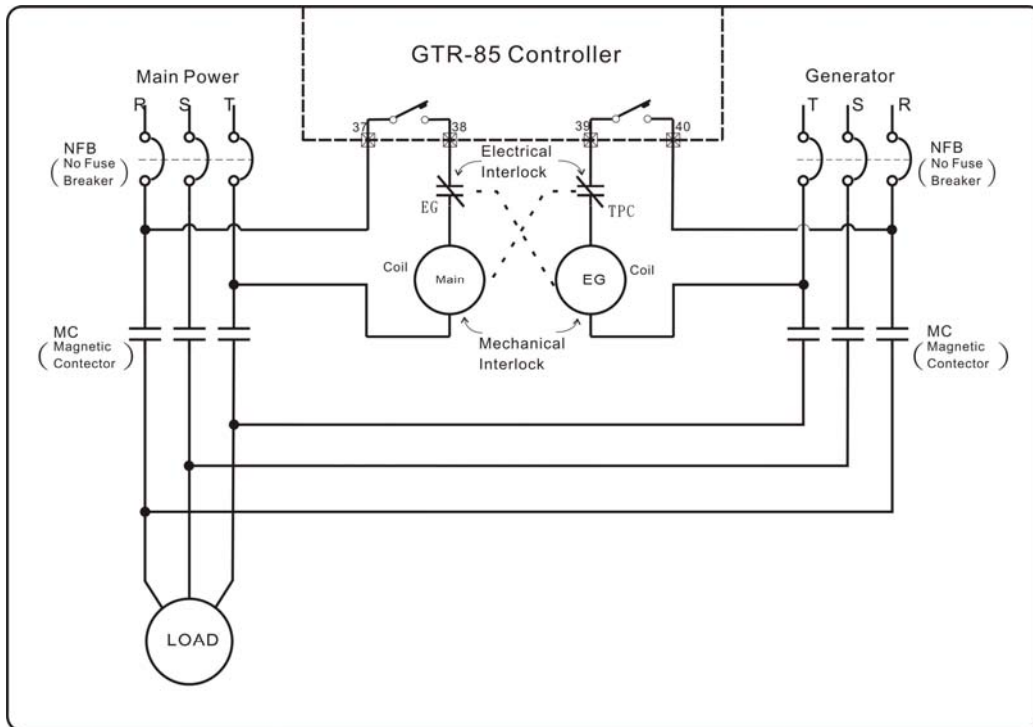
## TYPICAL CONNECTIONS



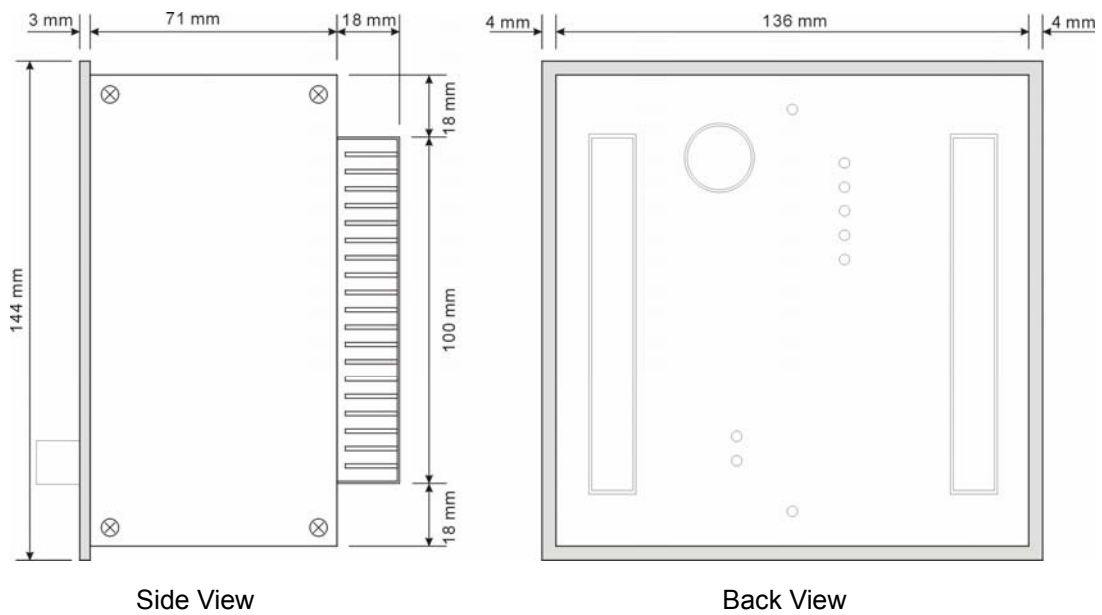
Remarks :

- † Input 0~3 are user Configurable
- ‡ Output 2~3 are user Configurable
- ‡ Frequency Input (FD.1, FD.2): Generator output power

## ATS CONNECTIONS



## CASE DIMENSIONS



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