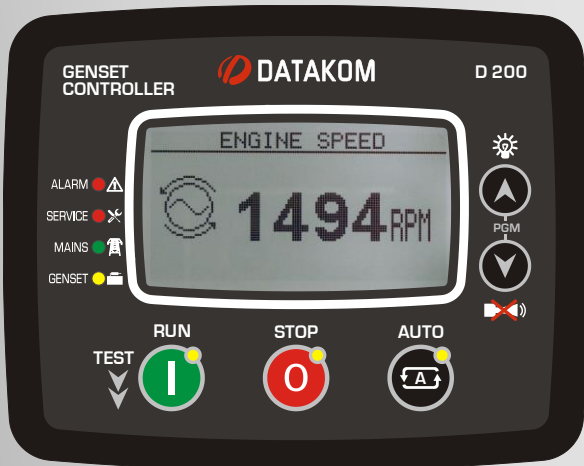




TST CO.

www.TST-CO.com

# COST EFFECTIVE MODERN TECHNOLOGY



## WEB BASED D-200

The D-200 is the lowest cost genset controller with full set of features, ready for internet monitoring.

### FEATURES

- Diesel and gas genset support
- 400Hz operation support
- 400 event logs, full snapshot
- All parameters front panel editable
- 3 level configuration password
- 128x64 graphical LCD display
- Downloadable languages
- Waveform display of V & I
- Harmonic analysis of V & I
- 16Amp MCB & GCB outputs
- 6 configurable digital inputs
- 5 configurable digital outputs
- 3 configurable analog inputs
- Standard MPU input
- Optional CANBUS-J1939
- 3 configurable service alarms
- Dual mutual standby with equal aging of gensets
- Manual "speed fine adjust" on selected ECUs
- Automatic fuel pump control
- Disable protections feature
- Excess power protection
- Reverse power protection
- Overload IDMT protection
- Load shedding, dummy load
- Multiple load management
- Current unbalance protection
- Voltage unbalance protection
- Fuel filling & fuel theft alarms
- Idle speed control
- Battery charge run enabled
- Combat mode support
- Multiple nominal conditions
- Contactor & MCB drive
- 4 quadrant genset power counters
- Mains power counters
- Fuel filling counter
- Fuel consumption counter
- Modem diagnostics display
- Configurable from USB & GPRS
- Free configuration program
- Allows SMS controls
- Ready for central monitoring
- Mobile genset support
- Automatic GSM geo-location
- Easy USB firmware upgrade
- IP65 rating with optional gasket

### COMMUNICATION

- 4-band GPRS modem (optional)
- USB Device
- J1939-CANBUS (optional)
- Geo-locating through GSM
- Internet Central Monitoring
- SMS message sending
- E-mail sending
- Free PC software: Rainbow Plus
- Modbus RTU

### FUNCTIONALITIES

- AMF unit
- ATS unit
- Remote start controller
- Manual start controller
- Engine controller

### MEASUREMENTS

- Mains & genset PN/PP voltages
- Mains & genset frequency
- Mains & genset phase currents
- Mains & genset neutral currents
- Mains & genset, phase & total, kW, kVA, kVA<sub>r</sub>, pf
- Engine speed
- Battery voltage

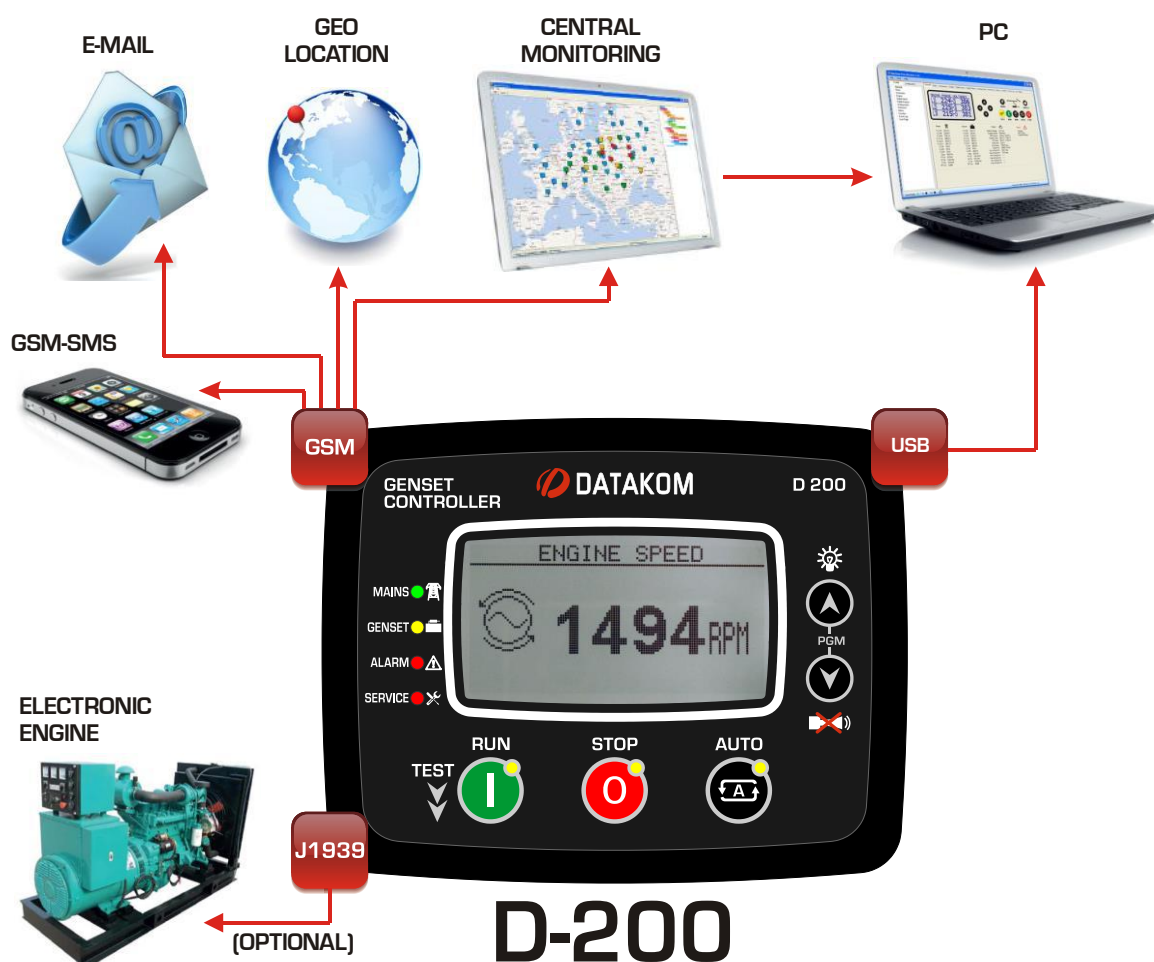
### TOPOLOGIES

- 3 ph 4 w, star & delta
- 3 ph 3 w, 2 CTs
- 2 ph 3 w
- 1 phase 2 wires



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## COMMUNICATIONS



## TECHNICAL SPECIFICATIONS

**Alternator voltage:** 0 to 300 V-AC (Ph-N)  
**Alternator frequency:** 0-600 Hz.  
**Mains voltage:** 0 to 300 V-AC (Ph-N)  
**Mains frequency:** 0-600 Hz.  
**Topology:** 1-2-3 phases, with or without neutral  
**DC Supply Range:** 8.0 to 36.0 V-DC.  
**V-A-cos Accuracy:** 0.5% + 1 digit  
**kW-kVA-kVAr Accuracy:** 1.0% + 1 digit  
**Current consumption:** 500 mA-DC max @ 12V-DC  
**Current Inputs:** from current transformers. .../5A.  
**Digital inputs:** input voltage 0 to 36 V-DC.  
**Analog input range:** 0-5000 ohms.  
**Mains and genset contactor outputs:** 16Amps@250V  
**DC Outputs:** Protected mosfet semiconductor outputs, rated 1Amp@28V-DC  
**Cranking dropouts:** survives 0V for 100ms.  
**Magnetic pickup voltage:** 0.5 to 50Vpk.  
**Magnetic pickup frequency:** 0 to 20000 Hz.  
**Charge Alternator Excitation:** 2W.  
**Display Screen:** 2.9", 128x64 pixels  
**USB Device:** USB 2.0 Full speed  
**Operating temperature:** -20°C to 70°C (-4 to +158 °F)  
**Storage temperature:** -40°C to 80°C (-40 to +176°F)  
**Maximum humidity:** 95% non-condensing.

**IP Protection:** IP65 from front panel, IP30 from the rear (with gasket)  
**Dimensions:** 133 x 107 x 46mm (WxHxD)  
**Panel Cut-out Dimensions:** 117 x 87 mm minimum.  
**Weight:** 250 g (approx.)  
**Case Material:** High Temperature, non-flammable ABS/PC  
**Installation:** Flat surface mounting on a Type 1 enclosure. Rear retaining plastic brackets.

## CONFORMITY

**EU Directives Conformity**  
 -2006/95/EC (low voltage)  
 -2004/108/EC (electro-magnetic compatibility)  
**Norms of reference:**  
 EN 61010 (safety requirements)  
 EN 61326 (EMC requirements)  
**UL & CSA Compatibility:**  
 -UL 6200, Controls for Stationary Engine Driven Assemblies (Certificate # - 20140725-E314374)  
 -CAN/CSA C22.2 No. 14-13 – Industrial Control Equipment

## WAVEFORM DISPLAY & HARMONIC ANALYSIS



Waveform Display



Graphical Harmonics

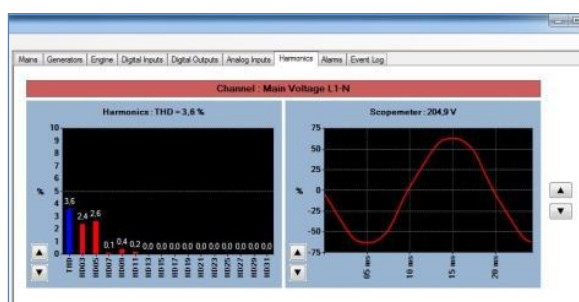


Digital Harmonics Display

## RAINBOW PLUS PROGRAM

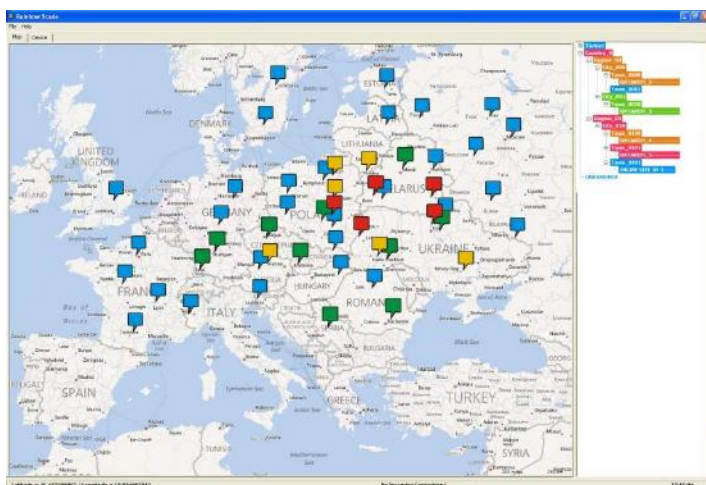


Scada



Harmonic analysis & Waveform

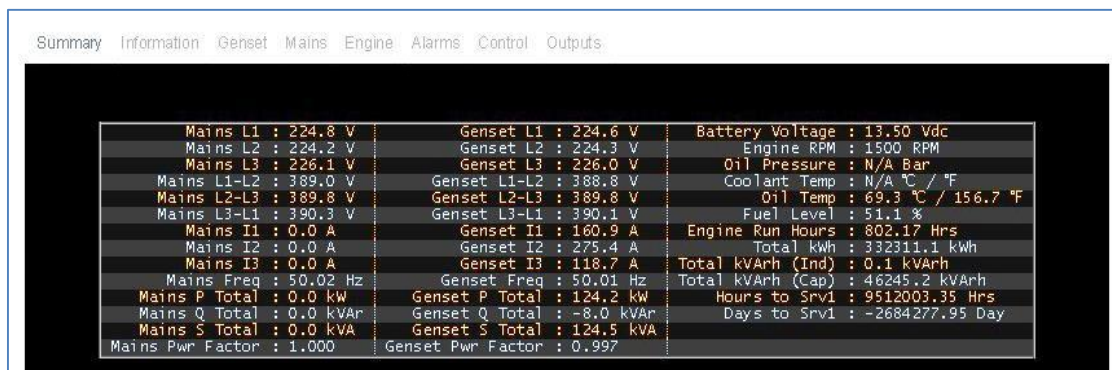
## RAINBOW SCADA CENTRAL MONITORING



Fleet Display on Map, online monitoring



Smartphone Support



Real time monitoring

## TYPICAL CONNECTIONS

