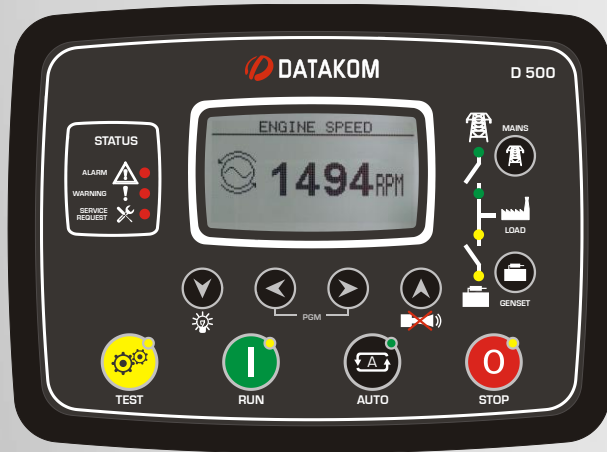


MODERN TECHNOLOGY FOR EVERYONE



WEB BASED D-500LITE

The D-500 is a cost effective genset controller ready for BMS integration and 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
- 8 configurable digital inputs
- Inputs expandable to 40
- 6 configurable digital outputs
- Outputs expandable to 38
- 3 configurable analog inputs
- Both CANBUS-J1939 & MPU
- 3 configurable service alarms
- Multiple automatic exerciser
- Weekly operation schedule
- 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
- Battery back-up real time clock
- 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 through USB, RS-485 and GPRS
- Free configuration program
- Allows SMS controls
- Ready for central monitoring
- Mobile genset support
- Automatic GSM geo-location
- GPS connectivity (RS232)
- Easy USB firmware upgrade
- IP65 rating with standard gasket

COMMUNICATIONS

- 4-band GPRS modem (optional)
- USB Device
- RS-485 (2400-57600baud)
- RS-232 (2400-57600baud)
- J1939-CANBUS
- Geo-locating through GSM
- GPS support (RS-232)
- 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
- Remote display panel
- Harmonic analysis of V & I

MEASUREMENTS

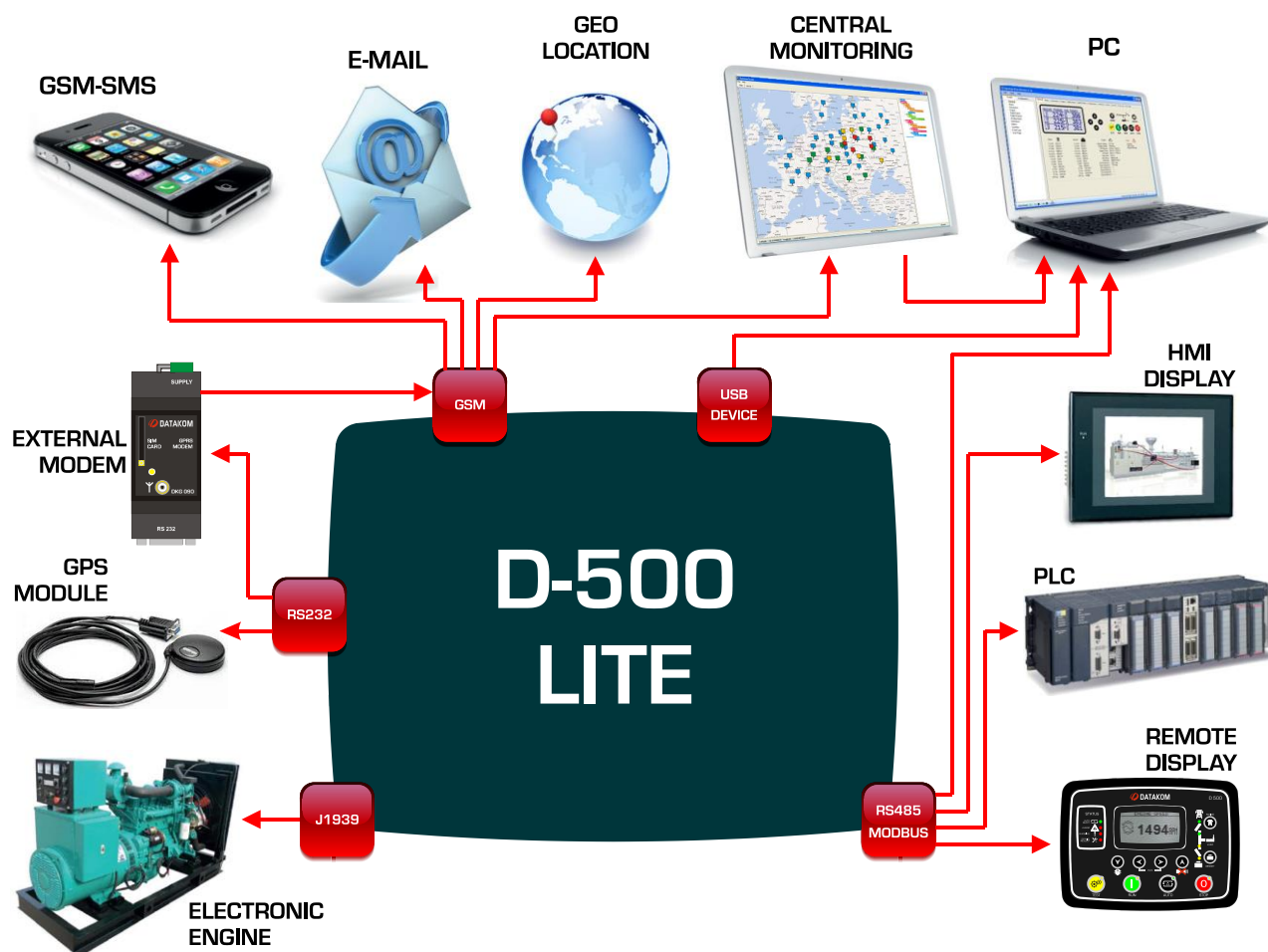
- Mains & genset PN/PP voltages
- Mains & genset frequency
- Mains & genset phase currents
- Mains & genset neutral currents
- Mains & genset, phase & total, kW, kVA, kVAr, pf
- Engine speed
- Battery voltage

TOPOLOGIES

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



COMMUNICATIONS



TECHNICAL SPECIFICATIONS

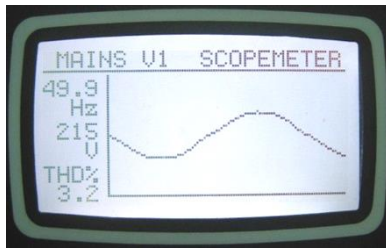
Alternator voltage: 0 to 300 V-AC (Ph-N)
Alternator frequency: 0-600 Hz.
Mains voltage: 0 to 300 V-AC (Ph-N)
Mains frequency: 0-600 Hz.
Topology: 1-2-3 phases, with or without neutral
DC Supply Range: 8.0 to 36.0 V-DC.
V-A-cos Accuracy: 0.5% + 1 digit
kW-kVA-kVAr Accuracy: 1.0% + 1 digit
Current consumption: 500 mA-DC max.
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
RS-485 Port: selectable baud rate (2400-57600baud)
RS-232 Port: selectable baud rate (2400-57600baud)
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: 200 x 148 x 46mm (WxHxD)
Panel Cut-out Dimensions: 176 x 121 mm minimum.
Weight: 450 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

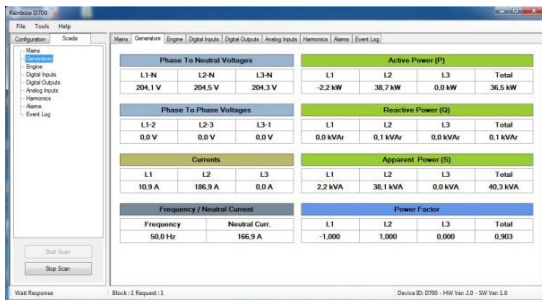


Graphical Harmonics

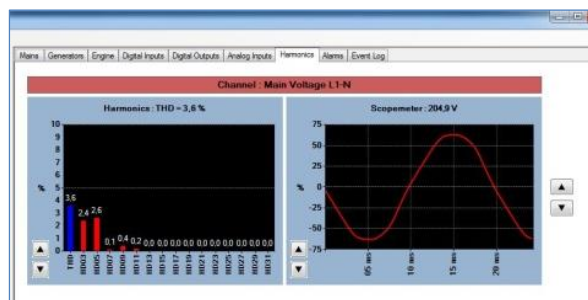


Digital Harmonics Display

RAINBOW PLUS PROGRAM

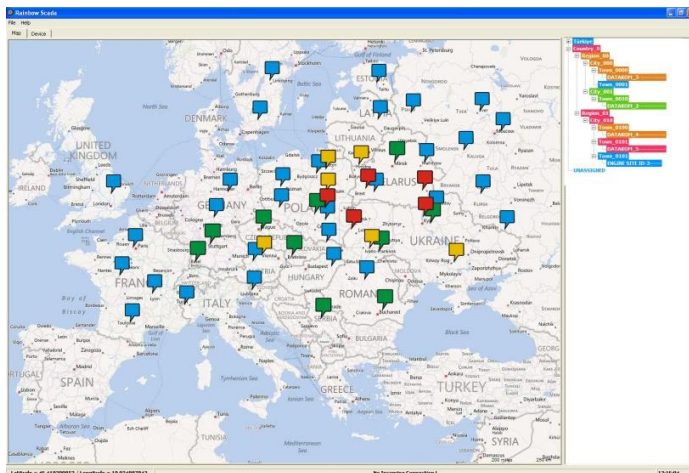


Scada



Harmonic analysis & Waveform

RAINBOW SCADA CENTRAL MONITORING



Fleet Display on Map, online monitoring



Smartphone Support

Summary Information Genset Mains Engine Alarms Control Outputs

Mains L1 : 224.8 V	Genset L1 : 224.6 V	Battery Voltage : 13.50 Vdc
Mains L2 : 224.2 V	Genset L2 : 224.3 V	Engine RPM : 1500 RPM
Mains L3 : 226.1 V	Genset L3 : 226.0 V	Oil Pressure : N/A Bar
Mains L1-L2 : 389.0 V	Genset L1-L2 : 388.8 V	Coolant Temp : N/A °C / °F
Mains L2-L3 : 389.8 V	Genset L2-L3 : 389.8 V	Oil Temp : 69.3 °C / 156.7 °F
Mains L3-L1 : 390.3 V	Genset L3-L1 : 390.1 V	Fuel Level : 51.1 %
Mains I1 : 0.0 A	Genset I1 : 160.9 A	Engine Run Hours : 802.17 Hrs
Mains I2 : 0.0 A	Genset I2 : 275.4 A	Total kWh : 332311.1 kWh
Mains I3 : 0.0 A	Genset I3 : 118.7 A	Total kVARh (Ind) : 0.1 kVARh
Mains Freq : 50.02 Hz	Genset Freq : 50.01 Hz	Total kVARh (Cap) : 46245.2 kVARh
Mains P Total : 0.0 kW	Genset P Total : 124.2 kW	Hours to Srv1 : 9512003.35 Hrs
Mains Q Total : 0.0 kVAR	Genset Q Total : -8.0 kVAR	Days to Srv1 : -2684277.95 Day
Mains S Total : 0.0 kVA	Genset S Total : 124.5 kVA	
Mains Pwr Factor : 1.000	Genset Pwr Factor : 0.997	

Real time monitoring

TYPICAL CONNECTIONS

