DYNAMIS
POWER SOLUTIONS

# Model DY22P-T1000-HT

Powered by PERKINS

Perkins

LEROY SOMER DSE

## Generator Specification

| Service | PRP(1) | ESP(2) |
|---|---|---|
| Power (KVA) | 20 | 22 |
| Power (KW) | 16 | 18 |
| Rated Speed (r.p.m) | 1500 | |
| Standard voltage (V) | 400/230V | |
| Rated at power factor (cos phi) | 0.8 | |

Dynamis Power gensets are compliant with ISO9001 and CE standard, which include the following directives:

- - 2006/42/EC Machinery safety.
- - 2008/95/EC Low voltage
- - EN 60204-1:2006+A1: 2009, EN ISO 12100: 2010, EN ISO13849-1: 2008, EN 12601:2010

PRP (Prime Power):

According to ISO8528-1, prime power is the maximum power available during a variable power sequence, which may be run for an unlimited number of hours per year, between stated maintenance intervals. The permissible average power output during at 24 hours period shall not exceed 80% of the prime power. 10% overload available for governing purposes only.

ESP (Standby Power):

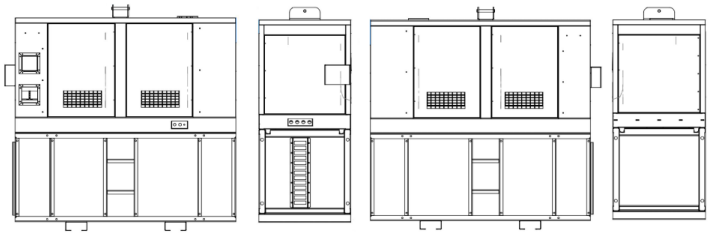
According to ISO8528-1, It is defined as the maximum power available, under the agreed operating conditions, for which the generating set is capable of delivering for up to 500 hours of operation per year (of which no more than 300 hours for continuative use) with the maintenance intervals and procedures being carried out as prescribed by the manufacturers. No overload capability is available.

| Power Voltage | ESP | | PRP | | Standy Amps |
|---|---|---|---|---|---|
| | KVA | KW | KVA | KW | |
| 415/240 | 22 | 18 | 20 | 16 | 30,6 |
| 400/230 | 22 | 18 | 20 | 16 | 31,8 |
| 380/220 | 22 | 18 | 20 | 16 | 33,4 |

| Performance Data | |
|---|---|
| Model | DY22P-T1000-HT |
| Engine Brand | PERKINS |
| Engine model | 404D-22G |
| Speed Control type | Mechanical |
| Phase | 3 |
| Control system | Digital |
| Starter motor voltage | 12V |
| Frequency | 50HZ |
| Engine Speed (RPM) | 1500 |

Standard Reference Condition

Note: Standard reference condition 25°C [77°F] air inlet temperature, 1000 m (328 ft) A.S.L 30% relative humidity. Fuel consumption data using diesel with a specific gravity of 0.85 and conforming to BS 2869: 1998, Class A2



### WEIGHT AND DIMENSIONS

| | Length | Width | Height | Weight | Fuel tank | sound level |
|---|---|---|---|---|---|---|
| | (mm) | (mm) | (mm) | (kg) | (L) | (dB(@7m)) |
| Anti-theft Type | 2050 | 900 | 1950 | 1272 | 1000 | ≤75 |

Note: This Parameters Allow for some acceptable Deviations

## Model Specification :

**Canopy**

- Double-wall 1000L tank
- No openings that could provide direct access to the tank
- No drain hole in the tank; cleaning is done from the inside through a cleaning inspection hole with a bolted cover
- Internal baffles to prevent sloshing when moving the genset full
- Diesel suction tube positioned exactly 2 cm from the bottom of the tank
- Gooseneck fuel filling tube with a perforated grill to prevent theft
- Roof hooks capable of lifting the genset when full of fluids
- Alloy plate with lifting instructions
- Forklift pockets
- Metal grid installed to securely fasten and organize cables using tubing and cable ties
- No window in front of the control panel; the main door is plain with a lockbox
- Lateral doors open via a mechanical latch from the front door
- Opening for coolant filler with a metal lip to prevent water ingress, featuring non-removable screws and a steel hinge
- Mechanical door lock compass to keep doors open when working on the genset
- Exhaust pipe up to 2.5m with a gooseneck and metallic clamp; the genset will be shipped with a plugged exhaust
- V-shaped structure designed to collect and channel potential leaks outward for disposal
-Strong cover above the fuel entry and fuel sensor
-External fuel filling with a lockable plate and 11.5mm hole

**Engine**

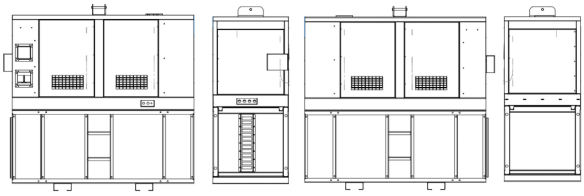
- Inside collector and exhaust fitted with a "HOT" protection grill
- **Low coolant sensor: S285 Fozmula Rochester** (1-minute delay before shutdown)
- **Fuel sensor: TLL155 Fozmula Rochester** (Ohms output)
- Temperature reading + temperature switch
- Oil pressure reading + oil switch
- **FF5011 Fleetguard fuel prefilter on fuel line** (**same as Baldwin BF915**, P551915 Donaldson, depending on availability)

**Electrical**

- **AMF: 7420MKII** – latest update of the controller at the date of shipment
- **ATS: GAVE Y-series internal**
- **SPD: GAVE internal**
- External emergency stop button protected at the rear by a cover box
- Same routing for all cables into ATS / connection panel
- All terminations centralized in one location
- Ethernet cable is the only cable that needs to be routed all the way to the rear of the DeepSea controller
- Current transformers installed in the ATS panel, fitted to the output of the ATS
- Door switches required for ALL doors, wired to alarm terminals for external alarm
- 5 x alarm relays added, plus door alarms – total of 6 relays
- 2 x separate relays required for grid on/grid off and DG running/not running, wired to separate terminals
- All main components in the ATS labeled using small Traffolyte labels or similar

## Anti-theft design :

Sleek design with no visible handles or hinges.

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**Engine Specification :** 404D-22G

# 400 Series 404D-22G ElectropaK

20.3 kWm @ 1500 rpm
23.9 kWm @ 1800 rpm
32.7 kWm @ 3000 rpm

The Perkins® 400 Series engine family continues to set new standards in the compact engine market. Developed alongside customers to fulfill their needs in the generator set, compressor, agricultural and general industrial markets.

These new ElectropaKs provide compact power, from a robust family of 3 and 4 cylinder diesel engines designed to provide economic and durable operation at prime and standby duties, hitting the key power nodes required by the power generation industry.

## Powered by your needs

- The 404D-22G ElectropaK is a powerful but quiet 2.2 litre naturally aspirated 4-cylinder compact package

## Compact, clean, efficient power

- Design features on the 400D range of ElectropaKs ensures clean rapid starting in all conditions whilst delivering impressive performance with low operating costs in a small, efficient package size

## Lower operating costs

- Approved for operation on biodiesel* concentrations of up to 20%
- Oil and filter changes are 500 hours, dependent on load factor

## Product support

- With highly trained Perkins distributors in thousands of communities in over 180 countries, you are never far away from expert product knowledge, genuine parts and a range of advanced diagnostic technology for keeping your engine in peak condition

### Warranties and Service Contracts

We provide one-year warranties for constant speed engines and two-year warranties for variable speed models, as standard. These are supported by multilevel Extended Service Contracts that can be bought additionally

Discover more

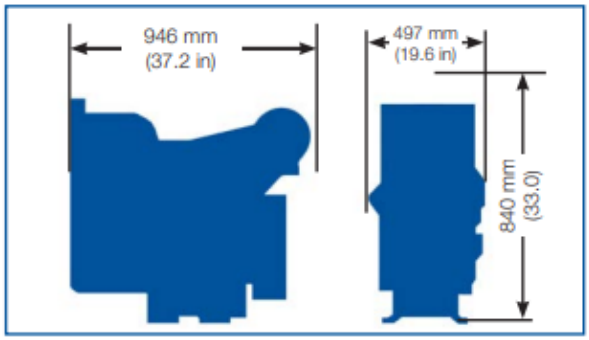
| Engine speed | Type of Operation | Typical Generator Output (Net) | | Engine Power | | | | Low Idle |
|---|---|---|---|---|---|---|---|---|
| | | | | Gross | | Net | | |
| | | kVA | kWe | kWm | hp | kWm | hp | |
| 1500 | Prime power | 20.3 | 16.2 | 18.7 | 25.1 | 18.4 | 24.7 | n/a |
| | Standby power | 22.3 | 17.8 | 20.6 | 27.6 | 20.3 | 27.2 | n/a |
| 1800 | Prime power | 24.2 | 19.3 | 22.0 | 29.5 | 21.7 | 29.1 | n/a |
| | Standby power | 26.6 | 21.3 | 24.3 | 32.6 | 23.9 | 32.1 | n/a |
| 3000 | Prime power | 33.1 | 26.5 | 31.2 | 41.8 | 29.7 | 39.9 | 1600 ± 25 |
| | Standby power | 36.4 | 29.1 | 34.4 | 46.1 | 32.7 | 43.9 | 1600 ± 25 |

DYNAMIS
POWER SOLUTIONS

**Engine Specification :** 404D-22G

# 400 Series 404D-22G ElectropaK

20.3 kWm @ 1500 rpm
23.9 kWm @ 1800 rpm
32.7 kWm @ 3000 rpm




| Fuel Consumption | | | | |
|---|---|---|---|---|
| Engine Speed | 1500 rpm | | 1800 rpm | |
| | g/kWh | l/hr | g/kWh | l/hr |
| Standby | 244 | 6.1 | 235 | 6.9 |
| Prime power | 237 | 5.3 | 233 | 6.2 |
| 75% of prime power | 238 | 4.0 | 240 | 4.8 |
| 50% of prime power | 258 | 2.9 | 262 | 3.5 |

## Standard electropaK specification

### Air inlet
- Mounted air filter

### Fuel system
- Mechanically governed cassette type fuel injection pump
- Split element fuel filter

### Lubrication system
- Wet steel sump with filler and dipstick
- Spin-on full-flow lub oil filter

### Cooling system
- Thermostatically-controlled system with belt driven coolant pump and pusher fan
- Mounted radiator, piping and guards

### Electrical equipment
- 12 volt starter motor and 12 volt 65 amp alternator with DC output
- Oil pressure and coolant temperature switches
- 12 volt shut-off solenoid energised to run
- Glow plug cold start aid and heater/starter switch

### Flywheel and housing
- 1500/1800 rev/min
- High inertia flywheel to SAE J620 Size 7½ Heavy
- Flywheel housing SAE 4 Long
- 3000 rev/min
- High inertia flywheel to SAE J620 Size 7½ Light
- Flywheel housing SAE 4 Short

### Mountings
- Front and rear engine mounting bracket

### Optional equipment
- Parts book

## General Data

Number of cylinders ..... 4
Cylinder arrangement ..... Vertical in-line
Cycle ..... 4 stroke
Aspiration ..... Naturally aspirated
Combustion system ..... Indirect injection
Compression ratio ..... 23.3:1
Bore and Stroke ..... 84 x 100 mm (3.3 x 3.9 in)
Displacement ..... 2.216 litres (135.2 cubic in)
Direction of rotation ..... Anti-clockwise viewed on flywheel
Cooling system ..... Water cooled
Total coolant capacity ..... 7.0 litres (1.8 US gals)
Total lubrication system capacity ..... 10.6 litres (2.8 US gals)
Dimensions
- Length ..... 946 mm (37.2 in)
- Width ..... 497 mm (19.6 in)
- Height ..... 840 mm (33.0 in)

Total weight (dry) ..... 242 kg (533 lb)

Final weight and dimensions will depend on completed specification.

## Option groups

A selection of optional items is available to enable you to prepare a specification precisely matched to your needs.

## Emissions statement

**Constant Speed Engines** for use in Industrial, IOPU and ElectropaK applications: Certified against the requirements of EU Stage IIIA (Directives 97/68/EC, as last amended, for mobile applications).

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## Alternator Specification : TAL-A40-F

# TAL 040

LEROY-SOMER™

### The best of performance

The Leroy-Somer™ TAL 040 alternator has been designed to offer you the best power generation performances. With its meticulous design and optimized architecture, the TAL 040 strikes the perfect balance between compactness, reliability, performance and longevity.
Whatever your application, the Leroy-Somer™ TAL 040 alternator will meet your needs and will adapt to all situations.





### Standards

The Leroy-Somer™ TAL 040 alternator meets all key international standards and regulations, including IEC 60034, NEMA MG 1.32-33, ISO 8528-3, CSA C22.2 n°100-14 and UL 1446 (UL 1004 on request).
Also compliant with IEC 61000-6-2, IEC 61000-6-3, IEC 61000-6-4, VDE 0875G, VDE 0875N and EN 55011, group 1 class A for European zone.
The Leroy-Somer™ TAL 040 alternator can be integrated in EC marked generator set, and bears EC, UKCA and CMIM markings.
It is designed, manufactured and marketed in an ISO 9001 and ISO 14001 quality assurance environment.

### Electrical characteristics and performances

- Class H insulation
- Shunt excitation
- Low voltage winding:
  - Three-phase 50 Hz: 220V - 240V and 380V - 415V (440V)
    60 Hz: 208V - 240V and 380V - 480V
  - Single-phase 50 Hz: 115V - 230V
    60 Hz: 120V - 240V
- 4-terminal plates in 6-wire version
- Optimized performance

### General characteristics

| | | | |
|---|---|---|---|
| Insulation class | H | Excitation system 6-wire | SHUNT / AREP+ |
| Winding pitch | 2/3 (wind.6S - 6-wire / wind.6 - 12-wire) | AVR type | R120 / R180 |
| Number of wires | 6 (12 option) | Excitation system 12-wire (option) | SHUNT / AREP+ |
| Protection | IP 23 | AVR type | R120 / R180 |
| Altitude | ≤ 1000 m | Voltage regulation (**) | ± 1 % / ± 0.5 % |
| Overspeed | 2250 R.P.M. | Total Harmonic Distortion THD (***) in no-load | < 3.5 % |
| Air flow 50 Hz | 0.06 m³/s | Total Harmonic Distortion THD (***) in linear load | < 5 % |
| Air flow 60 Hz | 0.07 m³/s | Waveform: NEMA = TIF (***) | < 50 |
| AREP+ Short-circuit current = 2.7 In: 5 seconds (*) | | Waveform: I.E.C. = FHT (***) | < 2% |

(*) D350: 10 seconds (**) Steady state (***) Total harmonic distortion between phases, no-load or on-load (non-distorting)

### Ratings 50 Hz - 1500 R.P.M.

**kVA / kW - P.F. = 0.8**

| Duty / T° C | | Continuous / 40 °C | | | | | Continuous / 40 °C | | | | | Stand-by / 40 °C | | | | | Stand-by / 27 °C | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Class / T° K | | H / 125° K | | | | | F / 105° K | | | | | H / 150° K | | | | | H / 163° K | | | | |
| Phase | | 3 ph. | | | | 1 ph. | 3 ph. | | | | 1 ph. | 3 ph. | | | | 1 ph. | 3 ph. | | | | 1 ph. |
| Y | | 380V | 400V | 415V | 440V | | 380V | 400V | 415V | 440V | | 380V | 400V | 415V | 440V | | 380V | 400V | 415V | 440V | |
| Δ | | 220V | 230V | 240V | | 230V | 220V | 230V | 240V | | 230V | 220V | 230V | 240V | | 230V | 220V | 230V | 240V | | 230V |
| YY (*) | | | 200V | | 220V | | | 200V | | 220V | | | 200V | | 220V | | | 200V | | 220V | |
| ΔΔ (*) | | | | | | 230V | | | | | 230V | | | | | 230V | | | | | 230V |
| TAL 040 B | kVA | 10 | **10** | 10 | 9 | 7 | 9 | **9** | 9 | 8 | 6.5 | 10.5 | **10.5** | 10.5 | 9.5 | 7.5 | 11 | **11** | 11 | 10 | 7.5 |
| | *kW* | *8* | *8* | *8* | *7* | *5.5* | *7* | *7* | *7* | *6.5* | *5* | *8.5* | *8.5* | *8.5* | *7.5* | *6* | *9* | *9* | *9* | *8* | *6* |
| TAL 040 C | kVA | 12.5 | **12.5** | 12.5 | 11 | 9 | 11.5 | **11.5** | 11.5 | 10 | 8 | 13.5 | **13.5** | 13.5 | 11.5 | 9.5 | 14 | **14** | 14 | 12 | 10 |
| | *kW* | *10* | *10* | *10* | *9* | *7* | *9* | *9* | *9* | *8* | *6.5* | *11* | *11* | *11* | *9* | *7.5* | *11* | *11* | *11* | *9.5* | *8* |
| TAL 040 D | kVA | 15 | **15** | 15 | 13 | 10.5 | 14 | **14** | 14 | 12 | 9.5 | 16 | **16** | 16 | 14 | 11 | 16.5 | **16.5** | 16.5 | 14.5 | 11.5 |
| | *kW* | *12* | *12* | *12* | *10.5* | *8.5* | *11* | *11* | *11* | *9.5* | *7.5* | *13* | *13* | *13* | *11* | *9* | *13* | *13* | *13* | *11.5* | *9* |
| TAL 040 E | kVA | 17.5 | **17.5** | 17.5 | 16 | 12.5 | 16 | **16** | 16 | 14.5 | 11.5 | 18.5 | **18.5** | 18.5 | 17 | 13.5 | 19.5 | **19.5** | 19.5 | 17.5 | 14 |
| | *kW* | *14* | *14* | *14* | *13* | *10* | *13* | *13* | *13* | *11.5* | *9* | *15* | *15* | *15* | *13.5* | *11* | *15.5* | *15.5* | *15.5* | *14* | *11* |
| TAL 040 F | kVA | 20 | **20** | 20 | 18 | 14 | 18 | **18** | 18 | 16.5 | 13 | 21 | **21** | 21 | 19 | 15 | 22 | **22** | 22 | 20 | 15.5 |
| | *kW* | *16* | *16* | *16* | *14.5* | *11* | *14.5* | *14.5* | *14.5* | *13* | *10.5* | *17* | *17* | *17* | *15* | *12* | *17.5* | *17.5* | *17.5* | *16* | *12.5* |

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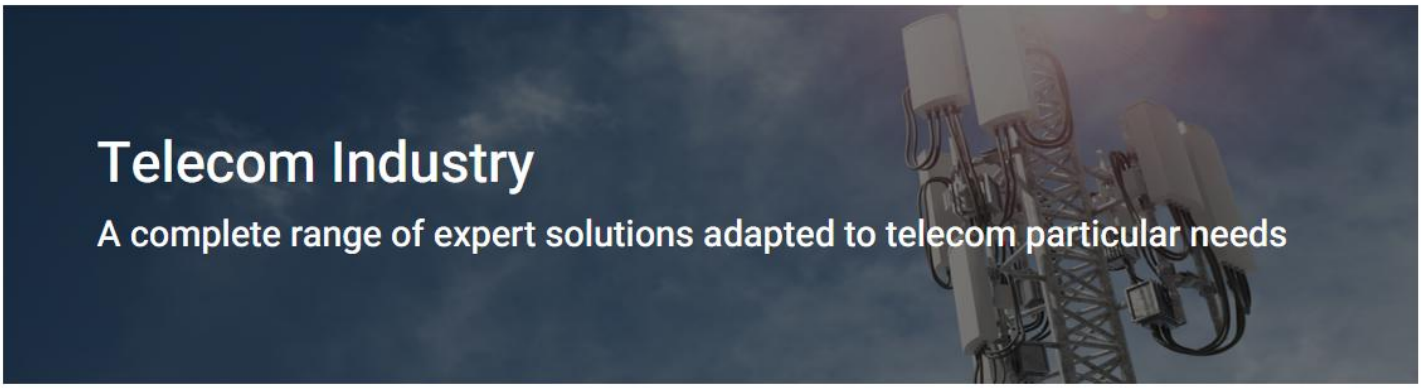
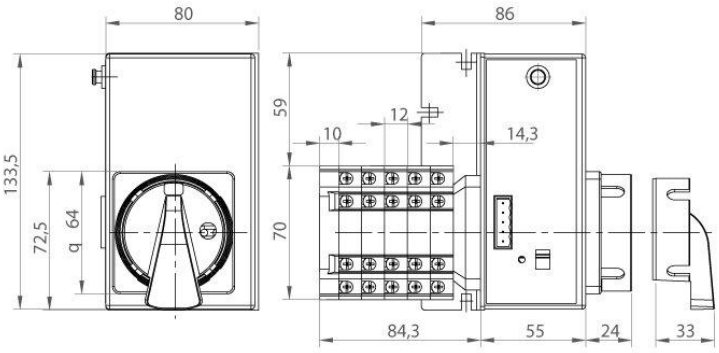
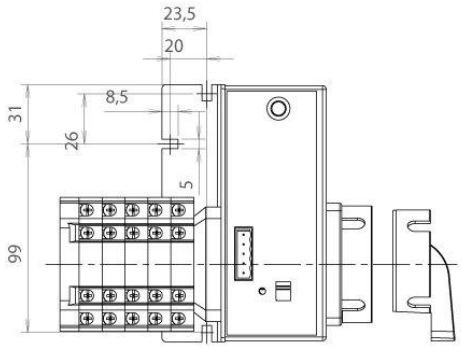
## Internal ATS : GAVE Telecom line 63A

Gave Telecom




Gave Electro has become a leading supplier providing components and solutions to the tower telecom industry. The fast evolution of telecom technologies emphasizes the need for a supplier that understands present and future needs, spotting market trends and developing advanced products that offer real added value solutions.

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## Control Panel: DEEPSEA 7420MKII

# DSE7410/20 MKII

## AUTO START & AUTO MAINS FAILURE CONTROL MODULES

DSE7420 MKII

DSE7410 MKII

### KEY FEATURES

- 4-Line back-lit LCD text display
- Multiple Display Languages
- Five key menu navigation
- LCD alarm indication
- Heated display option available
- Customisable power-up text and images
- DSENet expansion compatibility
- Data logging facility upto 20 parameters
- Internal PLC editor
- Protections disable feature
- Fully configurable via PC using USB, RS232, RS485 and ethernet communication
- Front panel configuration with multi-level PIN protection
- Power save mode
- 3 phase generator sensing and protection
- 3 phase mains (utility) sensing and protection (DSE7420 MKII only)
- Automatic load transfer control (DSE7420 MKII only)
- Generator current and power monitoring (kW, kvar, kVA, pf)
- Mains current and power monitoring (kW, kvar, kVA, pf) (DSE7420 MKII only)
- kW and kvar overload and reverse power alarms
- Over current protection
- Unbalanced load protection
- Independent earth fault protection
- Breaker control via fascia buttons
- Fuel and start outputs configurable when using CAN
- 6 configurable DC outputs
- 2 configurable volt-free relay outputs
- 6 configurable analogue/digital inputs
- Support for 0 V to 10 V & 4 mA to 20 mA sensors
- Support for 3 kΩ resistive sensors
- 8 configurable digital inputs
- Configurable 5 stage dummy load and load shedding outputs
- CAN, MPU and alternator frequency speed sensing in one variant
- Real time clock
- Manual and automatic fuel pump control
- Engine pre-heat and post-heat functions
- Engine run-time scheduler
- Engine idle control for starting & stopping
- Fuel usage monitor and low fuel level alarms
- Simultaneous use of RS232, RS485 & ethernet communication ports
- True dual mutual standby using RS232 or RS485 for accurate hours balancing.
- MODBUS RTU & TCP support with configurable MODBUS pages.
- SNMP GET, SET and TRAP support built in.
- Advanced SMS messaging (additional external modem required)
- Start & stop capability via SMS messaging
- 3 configurable maintenance alarms
- Compatible with a wide range of CAN engines, including tier 4 engine support
- J1939-75 support & CAN alarm ignore function
- Uses DSE Configuration Suite PC Software for simplified configuration
- Licence-free PC software
- IP65 rating (with supplied gasket) offers increased resistance to water ingress
- Modules can be integrated into building management systems (BMS) using MODBUS RTU & TCP
- Configurable CAN parameters to read and display CAN information from external CAN devices.

### KEY BENEFITS

- Automatically transfers between mains (utility) and generator (DSE7420 MKII only) for convenience.
- Hours counter provides accurate information for monitoring and maintenance periods
- User-friendly set-up and button layout for ease of use
- Multiple parameters are monitored & displayed simultaneously for full visibility
- The module can be configured to suit a wide range of applications for user flexibility
- PLC editor allows user configurable functions to meet user specific application requirements.

### SPECIFICATIONS

**DC SUPPLY**
**CONTINUOUS VOLTAGE RATING**
8 V to 35 V Continuous
5 V for up to 1 minute

**CRANKING DROPOUTS**
Able to survive 0 V for 100 mS, providing supply was at least 10 V before dropout and supply recovers to 5 V. This is achieved without the need for internal batteries. LEDs and backlight will not be maintained during cranking.

**MAXIMUM OPERATING CURRENT**
510 mA at 12 V, 240 mA at 24 V

**MAXIMUM STANDBY CURRENT**
330 mA at 12 V, 160 mA at 24 V

**CHARGE FAIL/EXCITATION RANGE**
0 V to 35 V

**GENERATOR & MAINS (UTILITY)**
**VOLTAGE RANGE**
15 V to 415 V AC (Ph to N)
26 V to 719 V AC (Ph to Ph)

**FREQUENCY RANGE**
3.5 Hz to 75 Hz

**MAGNETIC PICKUP**
**VOLTAGE RANGE**
+/- 0.5 V to 70 V

**FREQUENCY RANGE**
10,000 Hz (max)

**INPUTS**
**DIGITAL INPUTS A TO H**
Negative switching

**ANALOGUE INPUTS A, B, E & F**
Configurable as:
Negative switching digital input
0 V to 10 V sensor
4 mA to 20 mA sensor
Resistive sensor

**ANALOGUE INPUTS C & D**
Configurable as:
Negative switching digital input
Resistive sensor

**OUTPUTS**
**OUTPUT A & B (FUEL & START)**
15 A DC at supply voltage

**OUTPUTS C & D**
8 A AC at 250 V AC (Volt-free)

**AUXILIARY OUTPUTS E, F, G, H, I & J**
2 A DC at supply voltage

**DIMENSIONS**
**OVERALL**
245 mm x 184 mm x 51 mm
9.6" x 7.2" x 2.0"

**PANEL CUT-OUT**
220 mm x 160 mm
8.7" x 6.3"

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Dynamis Power Solutions by NETIS

NETIS Group

www.dynamispower.com

Distributed by

# DSE7410/20 MKII

## AUTO START & AUTO MAINS FAILURE CONTROL MODULES

The DSE7410 MKII is an Auto Start Control Module and the DSE7420 MKII is an Auto Mains (Utility) Failure Control Module suitable for a wide variety of single, diesel or gas, gen-set applications.

Monitoring an extensive number of engine parameters, the modules will display warnings, shutdown and engine status information on the back-lit LCD screen, illuminated LEDs, remote PC and via SMS text alerts (with external modem).

The DSE7420 MKII will also monitor the mains (utility) supply. The modules include USB, RS232, RS485 and Ethernet ports as well as dedicated DSENet® terminals for system expansion.

Both modules are compatible with electronic (CAN) and non-electronic (magnetic pick-up/alternator sensing) engines and offer an extensive number of flexible inputs, outputs and extensive engine protections so the system can be easily adapted to meet the most demanding industry requirements.

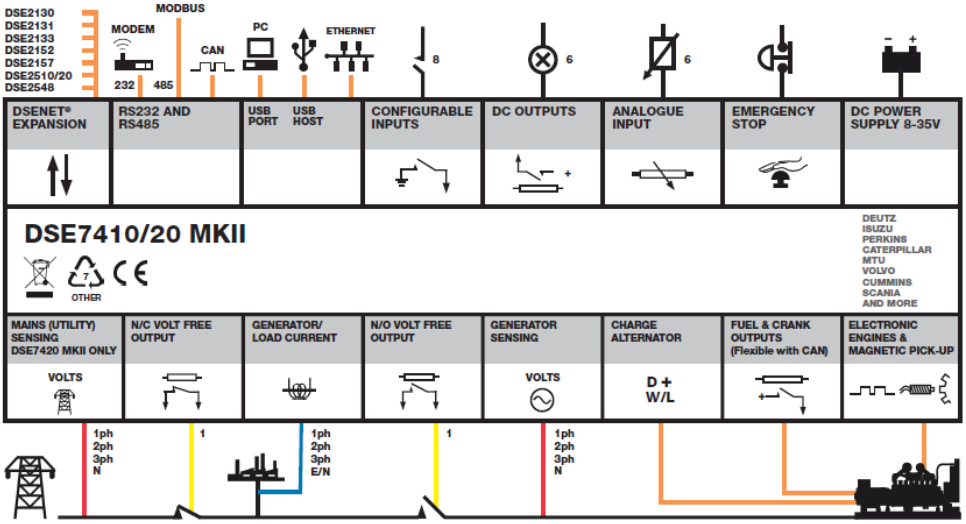
The extensive list of features includes enhanced event and performance monitoring, remote communications & PLC functionality.

Dual mutual standby is now available on both the DSE7410 MKII & DSE7420 MKII using RS232 or RS485 communications. This provides for a simpler and more convenient installation with more advanced features such as true hours balancing.

The modules also feature SNMP functionality for connection to SNMP systems.

The modules can be easily configured using the DSE Configuration Suite PC software. Selected front panel editing is also available.

### COMPREHENSIVE FEATURE LIST TO SUIT A WIDE VARIETY OF GEN-SET APPLICATIONS

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