

TECHNICAL DATA SHEET



PHASE 9
ESB4-48/120

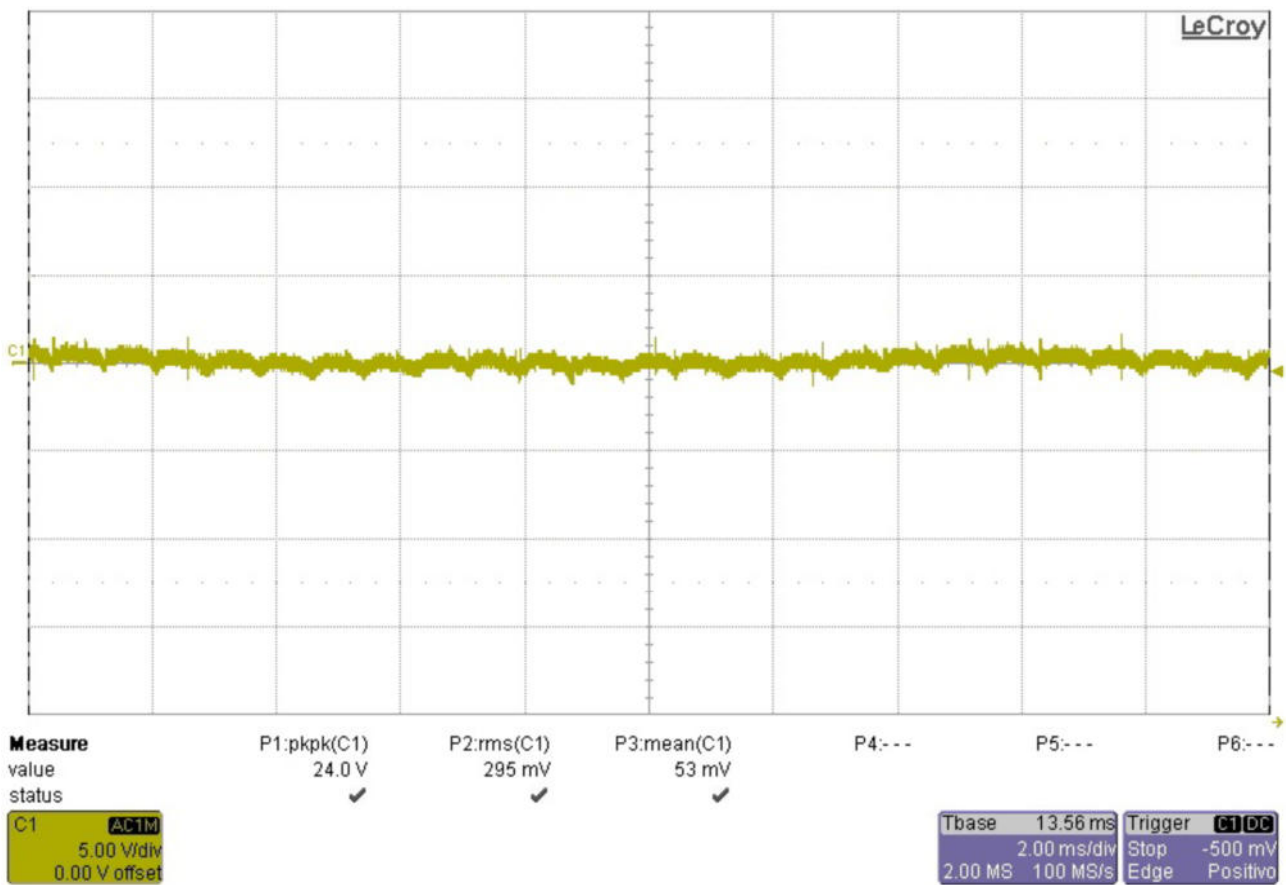
9 phases low voltage DC alternators

KEY FEATURES

- Very low output ripple: < 1% without battery (see picture 1)
- Output voltage: 48V_{DC}
- Max. power output: 6.7kW @ 1500RPM (see picture 2)
- Max. rectified current: 120A_{DC}
- From 1300 to 2100 RPM
- AVR output voltage:
 - ±0,5% of voltage accuracy
 - Over-excitation protection
 - Under-speed protection
- Brushless alternator with auxiliary winding
- Nine Phases AC source
- Oversized and reliable built-in DC power rectifier: up to 140A without fan
- Protection of stator winding and rectifier with thermal trips
- DINSE socket to guarantee simple, safe and durable connections.
- IP23

TECHNICAL DATA

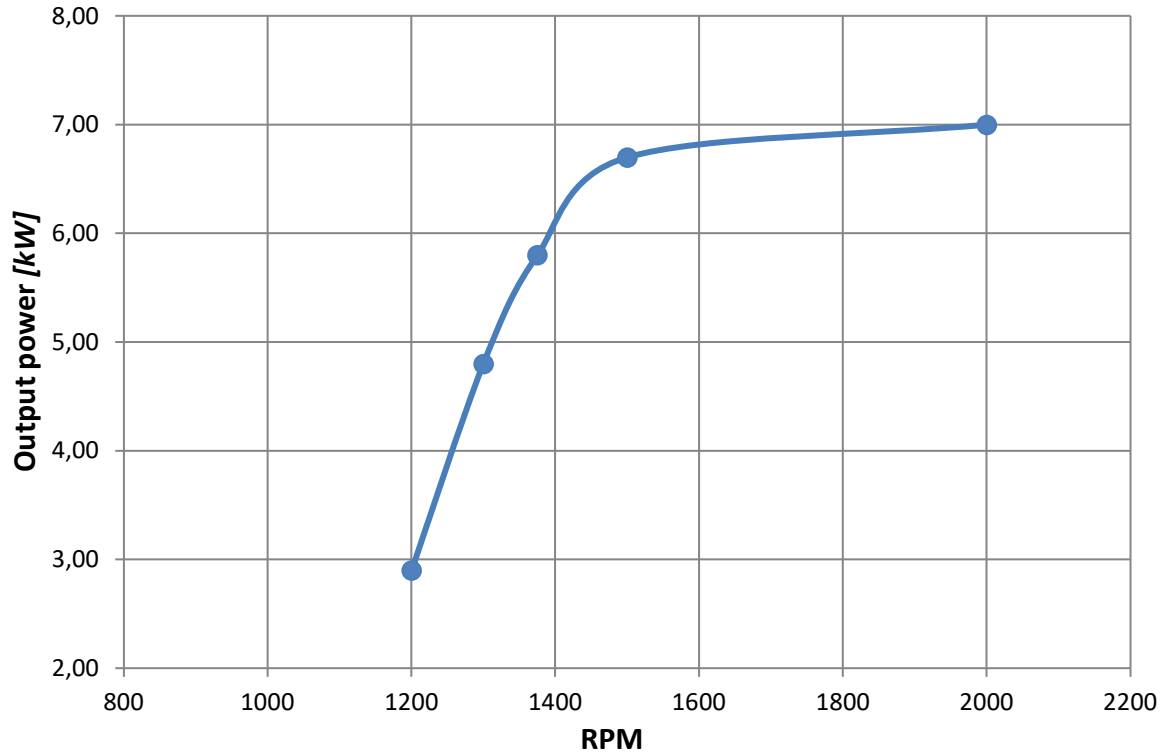
DC Output (Vdc)	45 ÷ 60
Power Outlet @ 1500RPM & 56Vdc	6.7 kW
DC Output Current @ 1500RPM	Up to 120A
Efficiency	> 84%
RPM	From 1300 to 2100 RPM
Output Ripple	< 1% Without Battery (see picture 1)
Output Accuracy	± 0,5%



Picture 1: AC ripple waveform @ 55Vdc and full load. The RMS value of the ripple is 295mV that is 0.54% of the nominal output voltage.

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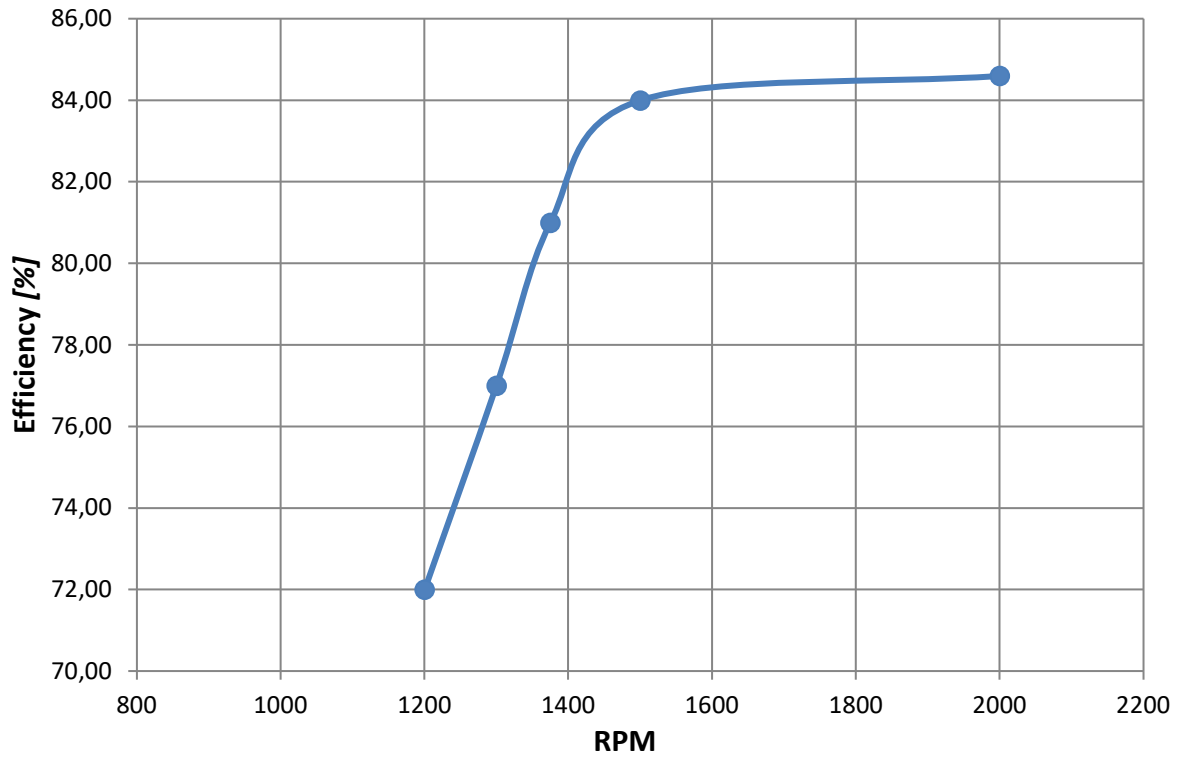
OUTPUT POWER



Picture 2: output power at different RPM.

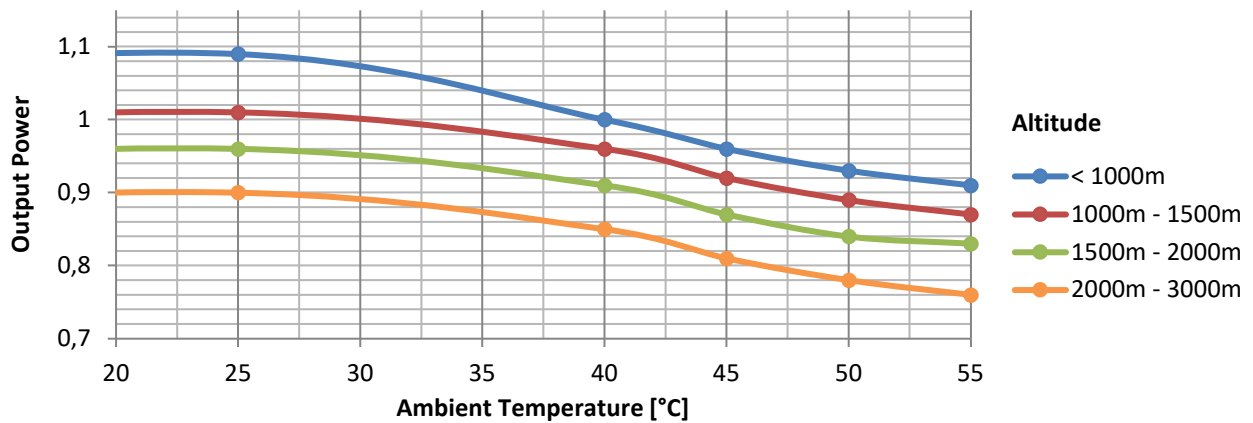
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EFFICIENCY @ 6.5kW 56Vdc



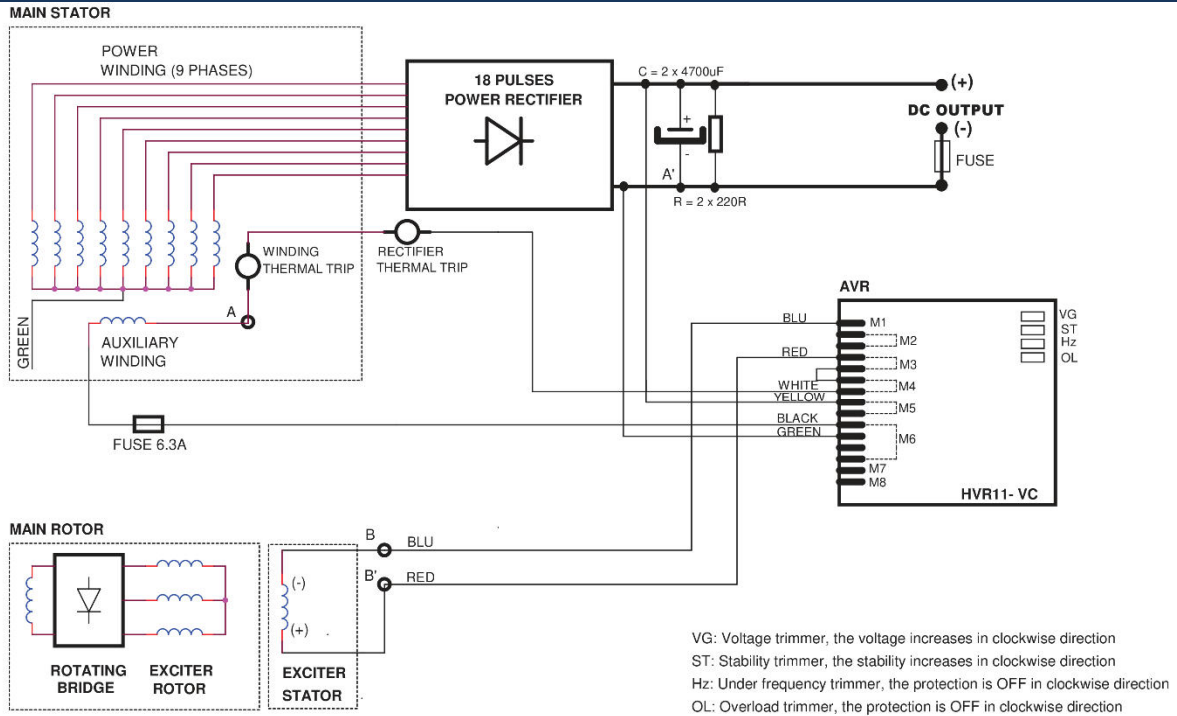
Picture 3: Efficiency at different RPM.

DERATING CURVES



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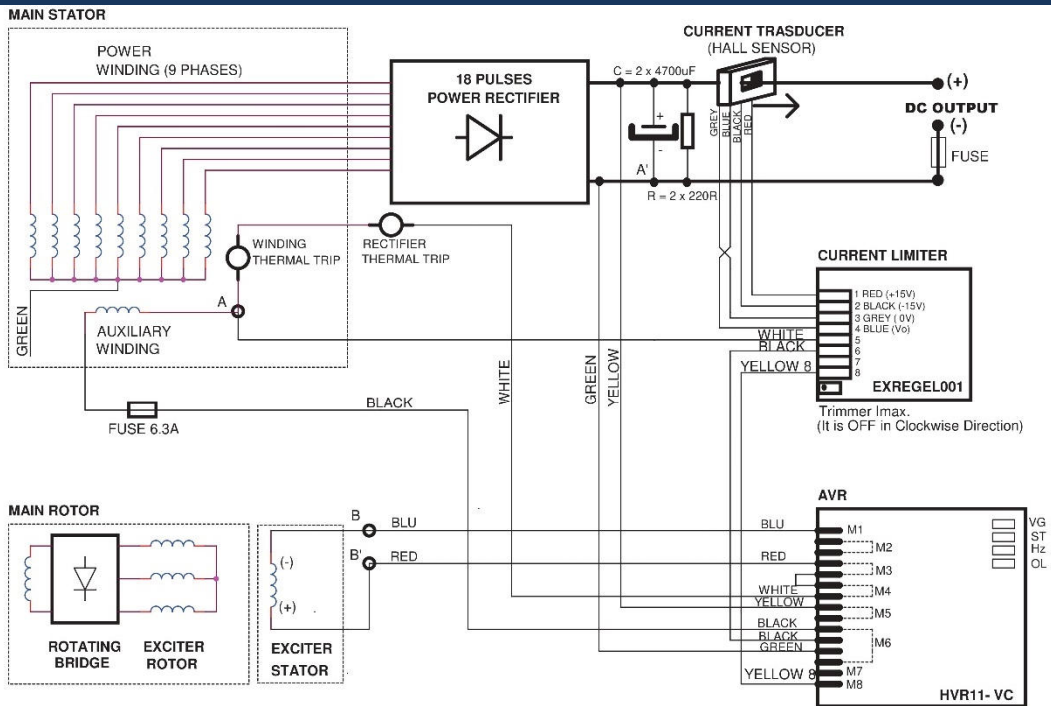
ELECTRIC DIAGRAM STANDARD VERSION



NOTES:

A-A: FEEDING VOLTAGE TESTING POINTS
 B-B: EXCITATION VOLTAGE TESTING POINTS

ELECTRIC DIAGRAM WITH CURRENT LIMITER



NOTES:

A-A: FEEDING VOLTAGE TESTING POINTS
 B-B: EXCITATION VOLTAGE TESTING POINTS

VG: Voltage trimmer, the voltage increases in clockwise direction
 ST: Stability trimmer, the stability increases in clockwise direction
 Hz: Under frequency trimmer, the protection is OFF in clockwise direction
 OL: Overload trimmer, the protection is OFF in clockwise direction

