MAGNET-MOTOR

A RENK GROUP COMPANY

ELECTRIFICATION

Power Generation System

/ Integrated Starter Generator and Integrated Power Supply Unit

Features

- Magnet-Motor's Power Generation System, comprised of an Integrated Starter Generator (ISG) and Integrated Power Supply (IPS) unit, is designed to meet on board and exportable electric power requirements.
- This system provides engine startup and power generation and includes easily realized performance boost and power upgrade capabilities. The system is suitable for military applications with high electric power demand, as well as hybrid electric vehicles.

Hawkei photo courtesy of Thales

Technical Information (dependent on variant)

Integrated Starter Generator specifications

General	
Engine flange/gear flange	SAE3/SAE3
Length between engine and gear	92 mm
Total length	159 mm
Outer diameter (excluding terminal box)	470 mm
Weight	65 kg
Rated voltage	3-phase 316 VRMS
Nominal speed	4,300 rpm
Max speed short time (2 min.)	4,700 rpm
Maximum cranking torque	beyond 500 Nm
Continuous torque	230 Nm
Performance @ IPS	
Continuous generator power @ 1,600 to 3,000 rpm	35 kW
Continuous generator power @ 800 to 4,300 rpm	> 20 kW
Peak generator power @ 800 to 4,300 rpm	35 kW
Cranking torque @ 200 rpm	400 Nm
Electrical Interface	
Signal and power connections	MIL-DTL-38999 Series III or technically equivalent
Cooling	
Cooling medium	water/glycol 50/50
Nominal flow rate	3.5 l/min
Working pressure	max 3 Bar
Maximum inlet temperature	75°C
Pressure drop	0.19 Bar
Connectors	G $^{3}/_{4}$ in.

Integrated Power Supply specifications

General	
Dimensions excluding connectors	716 L x 567 W x 138 H mm
Weight	79 kg
Electrical Data – 28 V Interface	
Continuous power output @ 28 V	17 kW
Continuous output current	607 A
Output voltage quality	MIL-STD-1275D
Maximum current draw from battery for cranking	800 A
Electrical Data – 180 V Interface	
Continuous power output @ 180 V	13 kW
Output voltage quality	MIL-STD-704F
Customer specific power output (depending on voltage quality)	up to 30 kW
Electrical Connectors	
All signal and power connections	MIL-DTL-38999 Series III or technically equivalent
Cooling	
Cooling medium	water/glycol 50/50
Nominal flow rate	13 l/min
Working pressure	max 2 Bar
Inlet temperature	-32 to +70°C
Pressure drop	0.34 Bar
Connectors	2 x G $^{3}/_{4}$ in.
Signal Interface	
CAN bus	J1939

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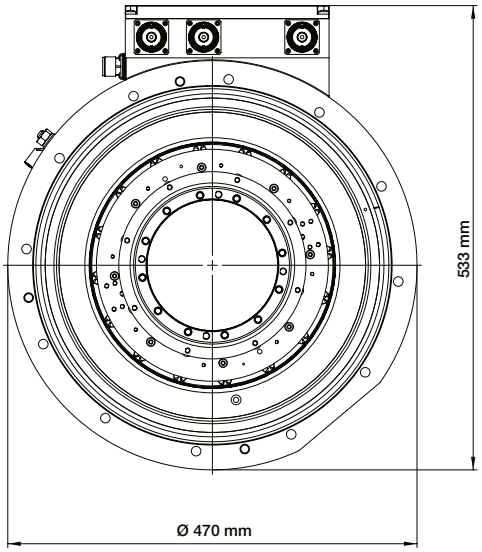
Power Generation System

Technical Characteristics

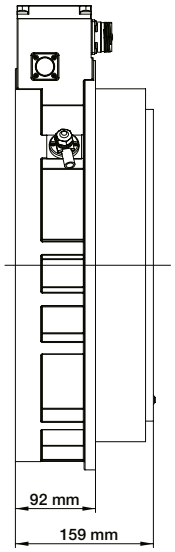
- Engine start and onboard power supply
- Replaces starter motor and alternators, belts, fixtures, wiring and flywheel
- Integrated design, compact, water cooled
- Developed and qualified to MIL-STDs
- Engine cranking 400 Nm
- Continuous 30 kW power generation already at low engine speeds
- CAN J1939 interface
- IP 66/67 — 1m fording depth + water spray proof
- Compliant with MIL-STD 461F, 1275D, 810G, 704F
- Robust and reliable — full environmental protection, tested to harsh military standards
- Maintenance-free — no belts, brushes, bearings, lubricants
- High and efficient power generation at low engine speeds

Dimensions
Integrated Starter Generator (ISG)

Front View

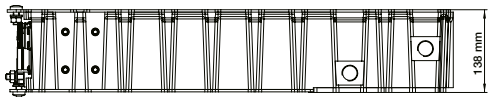


Side View

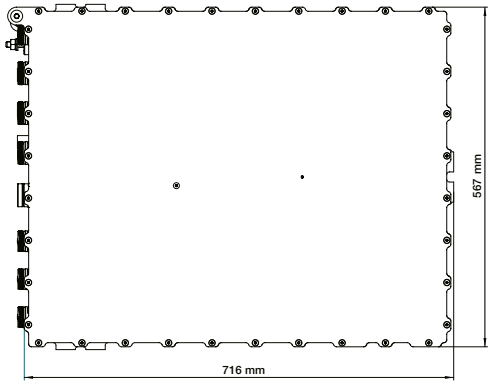


Dimensions
Integrated Power Supply (IPS)

Side View



Top View



Trusted Partner.

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