

# Generator Test Stand >LMP60-407<



The test stand is developed to test oil-cooled AC-generators and IDGs up to 30,000rpm without the use of a gearbox.

It is possible to adapt and extend this test stand.

- > The test stand acquires and records measurement data for voltage, current, frequency, power, drive, vibration, pressure, temperature, flow, PMG, excitation, solenoid, sensor technology (UUT), servo valve, CT, magnetic trim, etc.
- > In order to fulfil UUT test requirements, the following features are provided: open and closed hydraulic circuits, lubrication ports, scavenge and return connections as well as cooling of the UUT
- > Tests can be carried out manually or automatically. The test stand is operated via a control console which is located in a separate control room.

## RANGE OF APPLICATION

Aircraft	Description	Test specification	Part number
TORNADO	IDG	FAER 8A6-8LUC1-3	AE8906 902
TORNADO	AC-GEN	FAER 8A6-8LUC1-3	AE2130 802

## GENERAL INFORMATION

- > The test stand consists of a drive unit with hydraulic power unit, a control console, switch and measurement cabinet as well as an ohmic and inductive load decade
- > The generator drive (adjustable rpm) is ensured by a high-performance engine, without using a gearbox
- > Heating of test medium up to a max. of 150°C (302°F)
- > Delta P - measuring and control circuit to simulate contamination of filters in the UUT
- > A wide range of accessories e.g. mechanical adapters, test hoses and cables complete this test equipment

## FIGURES



Switch cabinet



Inductive and ohmic load decade

## TECHNICAL DATA

<p><b>&gt; Hydraulic supply:</b></p> <p>Main reservoir: Content max. 140l (37.0USgal)</p> <p>Medium: TURBONYCOIL 699</p> <p>Flow: max. 85l/min (22.5USgpm)</p> <p>Temperature range: max. 150°C (302°F) (supply line) max. 170°C (338°F) (return)</p> <p>Pressure: max. 25bar (362.6psi)</p> <p>Electrical heater: 28kW</p> <p>Filter (supply line): 6 micron</p> <p>Filter (return): 20 micron</p> <p>Circuit: open / closed</p>	<p><b>&gt; Drive motor:</b></p> <p>Power: 120kW</p> <p>Rotational speed: max. 30,000rpm</p>
<p><b>&gt; Closed cooling water circuit (for drive motors and frequency converters):</b></p> <p>Flow: approx. 70l/min (18.5USgpm)</p> <p>Pressure: 3.5bar (50.8psi)</p> <p>Power: 1.1kW</p> <p>Antifreeze: MAINTAIN FRICOFIN G12 PLUS (30%)</p>	<p><b>&gt; Sealing air (for drive motor):</b></p> <p>Pressure: 0.9 to 1.1bar (13.1 to 16.0psi)</p>
<p><b>&gt; Scavenge:</b></p> <p>Flow: approx. 80l/min (21.1USgpm)</p> <p>Filter: 20 micron</p>	<p><b>&gt; Oil-mist lubrication (for drive motors):</b></p> <p>Pressure: 0.8bar (11.6psi)</p>
<p><b>&gt; Infrastructural requirements:</b></p> <p><u>Electrical supply:</u> Mains connection: 3/N/PE AC 50Hz 400V Nominal current: 210A Power: 145kVA</p> <p>Computer and maintenance supply are tapped by the mains</p> <p><u>Cooling water supply:</u> Temperature: min. 6°C (42.8°F), max. 20°C (68.0°F) Flow: 100l/min (26.4USgpm) Pressure: min. 2bar (29.0psi) max. 8bar (116.0psi) Cooling capacity: max. 35kW</p> <p><u>Compressed air supply:</u> Pressure: min. 6bar (87.0psi) max. 10bar (145.0psi)</p>	<p><b>&gt; AC-load:</b></p> <p>Voltage: 3 x 200V / 3 x 400V</p> <p>Frequency: 370Hz to 2kHz (to 30kVA) 370Hz to 1kHz (&gt;30kVA)</p> <p>Power: 90kW, 66kVA 50% overload for 10min 100% overload for 10sec</p>
	<p><b>&gt; Dimensions and weight:</b></p> <p><u>Power train:</u> Width: approx. 1,550mm (61.0in) Length: approx. 4,600mm (181.1in) (without crane) Length: approx. 5,720mm (225.2in) (incl. crane) Height: approx. 2,320mm (91.3in) (without crane) Height: approx. 3,400mm (133.9in) (incl. crane) Weight: approx. 3,400kg (7,496lb)</p> <p><u>Control console:</u> Width: approx. 1,650mm (65.0in) Depth: approx. 900mm (35.4in) Height: approx. 1,350mm (53.1in) Weight: approx. 350kg (772lb)</p> <p><u>Load decade:</u> Width: approx. 1,700mm (66.9in) Length: approx. 2,500mm (98.4in) Height: approx. 2,300mm (90.6in) Weight: approx. 1,900kg (4,189lb)</p> <p><u>Switch cabinet:</u> Width: approx. 2,500mm (98.4in) Depth: approx. 700mm (27.6in) Height: approx. 2,200mm (86.6in) Weight: approx. 1,100kg (2,425lb)</p>

## MEASUREMENTS

<p>&gt; <b>Pressure (7-off):</b></p> <p>Range: 0 to 25bar (0 to 362.6psi) Tolerance: <math>\pm 0.25\%</math> of full scale</p> <p>to</p> <p>Range: 0 to 40bar (0 to 580.2psi) Tolerance: <math>\pm 0.25\%</math> of full scale</p> <p>Range: 0 to 4bar abs. (0 to 58.0psi abs.) Tolerance: <math>\pm 0.25\%</math> of full scale</p>	<p>&gt; <b>Direct current (9-off):</b></p> <p>Range: -200 to +200mADC Tolerance: <math>\pm 1\text{mADC}</math> abs.</p> <p>to</p> <p>Range: 0 to 30ADC Tolerance: <math>\pm 0.25\%</math> of full scale</p>
<p>&gt; <b>Temperature (9-off):</b></p> <p>Range: 0 to 100°C (32 to 212°F) Tolerance: <math>\pm 1.0^\circ\text{C}</math> (<math>\pm 1.8^\circ\text{F}</math>)</p> <p>to</p> <p>Range: 0 to 200°C (32 to 392°F) Tolerance: <math>\pm 2.0^\circ\text{C}</math> (<math>\pm 3.6^\circ\text{F}</math>)</p>	<p>&gt; <b>Alternating current (9-off):</b></p> <p>Range: 0 to 200AAC Tolerance: <math>\pm 0.25\%</math> of full scale</p> <p>to</p> <p>Range: 0 to 1.500AAC Tolerance: <math>\pm 0.5\%</math> of full scale</p>
<p>&gt; <b>Flow and volume (4-off):</b></p> <p>Range: 0 to 100l/min (0 to 26.4USgpm) Tolerance: <math>\pm 0.45\%</math> of full scale</p> <p>Range: 0 to 50l (0 to 13.2USgal) Tolerance: <math>\pm 0.5\%</math> of full scale</p>	<p>&gt; <b>Effective power (6-off):</b></p> <p>Range: 0 to 50kW Tolerance: <math>\pm 0.5\%</math> of full scale</p> <p>to</p> <p>Range: 0 to 175kW Tolerance: <math>\pm 0.5\%</math> of full scale</p>
<p>&gt; <b>Direct current voltage (9-off):</b></p> <p>Range: -20 to +20VDC Tolerance: <math>\pm 0.25\%</math> of full scale</p> <p>to</p> <p>Range: -600 to +600VDC Tolerance: <math>\pm 0.5\%</math> of full scale</p>	<p>&gt; <b>Apparent power (6-off):</b></p> <p>Range: 0 to 50kVA / phase Tolerance: <math>\pm 0.5\%</math> of full scale</p> <p>to</p> <p>Range: 0 to 175kVA / phase Tolerance: <math>\pm 0.5\%</math> of full scale</p>
<p>&gt; <b>Alternating current voltage (20-off):</b></p> <p>Range: 0 to 1VAC Tolerance: <math>\pm 0.5\%</math> of full scale</p> <p>to</p> <p>Range: 0 to 500VAC Tolerance: <math>\pm 0.2\%</math> of full scale</p> <p>Range: 0 to 10Vrms Tolerance: <math>\pm 0.5\%</math> of full scale</p> <p>Range: 0 to 40Vpp Tolerance: <math>\pm 0.5\%</math> of full scale</p>	<p>&gt; <b>Resistance (12-off):</b></p> <p>Range: 0 to 200Ohm Toleranz: <math>\pm 0.25\%</math> of full scale</p> <p>to</p> <p>Range: 0 to 200kOhm Toleranz: <math>\pm 0.25\%</math> of full scale</p>
<p>&gt; <b>Vibration (1-off):</b></p> <p>Range: 0 to 30mm/s (1.2in/s) Tolerance: <math>\pm 1\text{mm/s}</math> (0.039in/s)</p>	<p>&gt; <b>Frequency (4-off):</b></p> <p>Range: 200 to 2,000Hz Tolerance: <math>\pm 0.1\text{Hz}</math></p> <p>to</p> <p>Range: 200 to 20,000Hz Tolerance: <math>\pm 1\text{Hz}</math></p>
	<p>&gt; <b>Rotational speed (1-off):</b></p> <p>Range: 0 to 35,000rpm Tolerance: <math>\pm 15\text{rpm}</math> abs.</p>

## OPTIONS

Various options available to meet our customers' requirements  
e.g.: adaption for various UUTs, requirement to the test program, dimensioning,...

>LMP60-407<

Technical data are subject to change!