


**MODEL | MSA22-65**

- > DEUTZ Diesel engine.
- > Air cooling system.
- > Industrial muffler.
- > Complete with engine and battery liquids.




MODEL		MSA22	MSA30	MSA42	MSA65
CODE		SG200TDA	SG280TDA	SG400TDA	SG600TDA
<b>PRIME POWER PRP</b>	kVA (kW)	19,0 (15,2)	29,0 (23,2)	39,9 (31,9)	61,0 (48,8)
<b>Emergency power LTP</b>	kVA (kW)	20,1 (16,1)	30,0 (24,0)	41,0 (32,8)	62,1 (49,7)
Voltage	Volt	400/230	400/230	400/230	400/230
Frequency	Hz	50	50	50	50
Power factor	Cos φ	0,8	0,8	0,8	0,8
Fuel capacity	Litres	90	90	90	240
Autonomy ( 100% load PRP)	h	18,7	12,9	9,6	17,1
Dimensions (LxWxH)	mm	1.400x750x1.700	1.400x750x1.560	1.800x750x1.710	2.200x1.000x1.620
Weight	kg	510	655	776	954
<b>DIESEL ENGINE</b>	<b>DEUTZ</b>	<b>F3L 2011</b>	<b>F4L 2011</b>	<b>F4L 912</b>	<b>F6L 912</b>
Cooling system	Type	Air	Air	Air	Air
Speed	rpm	1.500	1.500	1.500	1.500
Displacement	c.c.	2.330	3.110	3.770	5.650
Cylinders and disposition	n° disp.	3 L	3 L	4 L	6 L
Aspiration	Type	Natural	Natural	Natural	Natural
Engine power PRP	kWm	19,0	27,6	37,0	55,0
Fuel consumption (100% load)	l/h	4,8	7,0	9,4	14,0
Specific consumption PRP	g/kWh	230	216	214	214
Engine governor (standard)	Type	Mechanical	Mechanical	Mechanical	Mechanical
<b>SYNCHRONOUS ALTERNATOR</b>	<b>Brand/Type</b>	<b>Linz-E1S 13M/4-19</b>	<b>Stamford-BCI 184F</b>	<b>Stamford-BCI 184J</b>	<b>Stamford-UCI 224E</b>
Insulation	Class	H	H	H	H
Mechanical degree of protection	Type	IP23	IP23	IP23	IP23
Voltage regulation	Type	Compound	Electronic	Electronic	Electronic

TECHNICAL FEATURES


MANUAL CONTROL PANEL (MCP)		MSA22	MSA30	MSA42	MSA65
 <p>Manual control panel mounted on the genset, complete with digital control unit <b>BE23</b> for monitoring, control and protection of the generating set.</p>	<b>Digital instrumentation</b> through BE23 control unit.	<ul style="list-style-type: none"> <li>• Generating set voltage (3 phases).</li> <li>• Generating set frequency.</li> <li>• Generating set current (3 phases).</li> <li>• Battery voltage.</li> <li>• Power ( kVA - kW - kVAr).</li> <li>• Power factor Cos φ.</li> <li>• Hours-counter.</li> <li>• Fuel level (%).</li> </ul>			
	<b>Commands and others</b>	<ul style="list-style-type: none"> <li>• DC supply selector switch.</li> <li>• Push-buttons: start/stop.</li> <li>• Emergency stop button.</li> <li>• Remote starting availability.</li> </ul>			
	<b>Protections with alarm</b>	<ul style="list-style-type: none"> <li>• Engine protections: low fuel level, low oil pressure, high engine temperature.</li> <li>• Genset protections: over-frequency, battery voltage out of limits.</li> </ul>			
	<b>Protections with shutdown</b>	<ul style="list-style-type: none"> <li>• Engine protections: low fuel level, low oil pressure, high engine temperature.</li> <li>• Genset protections: under/over voltage, over-load, under/over frequency, under/over battery voltage.</li> <li>• Circuit breaker protection: IV poles (for GSA20-30-40) and III poles (for GSA60).</li> <li>• Differential protection.</li> </ul>			
	<b>Output</b>	<ul style="list-style-type: none"> <li>• Power cables connection directly from circuit breaker.</li> </ul>			

MANUAL CONTROL PANEL (MCP)

**AUTOMATIC CONTROL PANEL (ACP)**

AUTOMATIC CONTROL PANEL (ACP)		MSA22	MSA30	MSA42	MSA65
 <p>Automatic control panel mounted on the genset, complete with digital control unit AC01 for monitoring, control and protection of the generating set.</p>	<b>Digital instrumentation</b> through AC01 control unit.	<ul style="list-style-type: none"> <li>• Generating set voltage (3 phases).</li> <li>• Mains voltage.</li> <li>• Generating set frequency.</li> <li>• Generating set current (3 phases).</li> <li>• Battery voltage.</li> <li>• Power (kVA - kW - kVAr).</li> <li>• Power factor Cos φ.</li> <li>• Hours-counter.</li> <li>• Engine speed r.p.m.</li> <li>• Fuel level (%).</li> </ul>			
	<b>Commands and others</b>	<ul style="list-style-type: none"> <li>• Selector switch with six positions: Automatic test - Automatic starting - Engine locked - Mains contactor forced - Manual starting - Genset contactor forced.</li> <li>• Push-buttons: start/stop, up/down selection, reset.</li> <li>• Emergency stop button.</li> <li>• Remote starting availability.</li> <li>• Acoustic alarm.</li> <li>• Automatic battery charger.</li> </ul>			
	<b>Protections with alarm</b>	<ul style="list-style-type: none"> <li>• Engine protections: low fuel level, low oil pressure, high engine temperature.</li> <li>• Genset protections: under/over voltage, overload, under/over frequency, starting failure, under/over battery voltage, battery charger failure.</li> </ul>			
	<b>Protections with shutdown</b>	<ul style="list-style-type: none"> <li>• Engine protections: low fuel level, low oil pressure, high engine temperature,</li> <li>• Genset protection: under/over voltage, overload, under/over battery voltage, battery charger failure.</li> <li>• Circuit breaker protection: IV poles (for GSA20-30-40) and III poles (for GSA60).</li> <li>• Differential protection.</li> </ul>			
	<b>Output</b>	<ul style="list-style-type: none"> <li>• Plinth row for connection from ACP to LTS panel.</li> <li>• Power cables connection directly from circuit breaker.</li> </ul>			


**AUTOMATIC CONTROL PANEL (AMF)**

AUTOMATIC CONTROL PANEL (AMF)		MSA22	MSA30	MSA42	MSA65
 <p>Automatic control panel for automatic starting by Mains failure. Delivered loose from the genset, and complete with digital control unit AC01 for monitoring, control and protection of the generating set.</p>	<b>Digital instrumentation</b> through AC01 control unit.	<ul style="list-style-type: none"> <li>• Generating set voltage (3 phases).</li> <li>• Mains voltage.</li> <li>• Generating set frequency.</li> <li>• Generating set current (3 phases).</li> <li>• Battery voltage.</li> <li>• Power (kVA - kW - kVAr).</li> <li>• Power factor Cos φ.</li> <li>• Hours-counter.</li> <li>• Engine speed r.p.m.</li> <li>• Fuel level (%).</li> </ul>			
	<b>Commands and others</b>	<ul style="list-style-type: none"> <li>• Selector switch with six positions: Automatic test - Automatic starting - Engine locked - Mains contactor forced - Manual starting - Genset contactor forced.</li> <li>• Push-buttons: start/stop, up/down selection, reset.</li> <li>• Emergency stop button.</li> <li>• Remote starting availability.</li> <li>• Acoustic alarm.</li> <li>• Automatic battery charger.</li> </ul>			
	<b>Change over contactors Mains/Genset</b>	IV poles - 32A.	IV poles - 45A.	IV poles - 60A.	IV poles - 90A.
	<b>Protections with alarm</b>	<ul style="list-style-type: none"> <li>• Engine protections: low fuel level, low oil pressure, high engine temperature.</li> <li>• Genset protections: under/over voltage, overload, under/over frequency, starting failure, under/over battery voltage, battery charger failure.</li> </ul>			
	<b>Protections with shutdown</b>	<ul style="list-style-type: none"> <li>• Engine protections: low fuel level, low oil pressure, high engine temperature,</li> <li>• Genset protection: under/over voltage, overload, under/over battery voltage, battery charger failure.</li> </ul>			
	<b>Output</b>	<ul style="list-style-type: none"> <li>• Plinth row for connection from pre-wired panel (mounted on the genset) to AMF panel.</li> <li>• Power cables connected to terminals board (internal).</li> </ul>			


**GENSET SUPPLEMENTS (ONLY AVAILABLE WHEN ORDERED)**

<b>GENSET SUPPLEMENTS</b>	> <b>APM: PMG FOR STAMFORD ALTERNATOR + MX321 AVR.</b> Only available for GSA60.
	> <b>PMK: PARALLEL KIT FOR SYNCHRONIZING WITH OTHER ALTERNATOR.</b> Only available for GSA60.
	> <b>PWF: PARALLEL KIT FOR SYNCHRONIZING WITH THE MAINS.</b> Only available for GSA60.
	> <b>EEG: ENGINE ELECTRONIC SPEED GOVERNOR.</b>
	> <b>PHS: COOLANT PREHEATING SYSTEM.</b>

**CONTROL PANEL SUPPLEMENTS (ONLY AVAILABLE WHEN ORDERED)**

<b>CONTROL PANEL SUPPLEMENTS</b>	<b>&gt; MAP: MANUAL ANALOGUE CONTROL PANEL.</b>	
		<p><b>Instrumentation (analogue)</b></p> <ul style="list-style-type: none"> <li>• Voltmeter with selector switch (3 phases).</li> <li>• Frequency meter.</li> <li>• Ammeter with selector switch (3 phases).</li> <li>• Hours-counter.</li> <li>• Fuel level indicator.</li> <li>• Oil pressure indicator.</li> <li>• Engine temperature indicator.</li> </ul>
		<p><b>Commands and others</b></p> <ul style="list-style-type: none"> <li>• Start/stop selector switch with key.</li> <li>• Emergency stop button.</li> </ul>
		<p><b>Protections with alarm</b></p> <ul style="list-style-type: none"> <li>• Engine protections: low fuel level, low oil pressure, high engine temperature, battery charger failure.</li> </ul>
	Manual control panel mounted on the genset, with analogue instrumentation, and protected through door with lockable handle.	<p><b>Protections with shutdown</b></p> <ul style="list-style-type: none"> <li>• Circuit breaker protection: IV poles (for GSA20-30-40) and III poles (for GSA60).</li> <li>• Differential protection.</li> <li>• Engine protection unit: low fuel level, low pressure oil, high engine temperature, battery charger failure.</li> </ul> <p><b>Output</b></p> <ul style="list-style-type: none"> <li>• Power cables connection directly from circuit breaker.</li> </ul>
<b>&gt; RSS: REMOTE START/STOP.</b> Only for MAP.		
<b>&gt; TIF: IV POLES CIRCUIT BREAKER INSTEAD OF III POLES.</b> Only for GSA60.		

**ACCESSORIES**

<b>ACCESSORIES</b>	<b>&gt; LOAD TRANSFER SWITCH PANEL.</b>		<b>MSA22</b>	<b>MSA30</b>	<b>MSA42</b>	<b>MSA65</b>
		<p><b>Change over contactors</b></p> <p>IV poles - 32A.</p>	IV poles - 45A.	IV poles - 60A.	IV poles - 90A.	
		<p><b>Connections</b></p> <ul style="list-style-type: none"> <li>• Plinth row for connection from ACP to LTS panel.</li> <li>• Terminals board for power cables connection (Genset-Mains-Load).</li> </ul>				
		<p><b>Protections</b></p> <ul style="list-style-type: none"> <li>• Contactors mechanically and electrically interlocked.</li> <li>• Emergency stop button.</li> </ul>				
	Load transfer switch panel built in a metal cabinet and supplied loose from the genset.	Automatic control panel + LTS panel measures the Mains voltage and starts automatically the genset within few seconds in case of Mains failure. It transfers immediately the load again to the genset when the Mains voltage returns within the rated values.				
<b>&gt; FEC: FLEXIBLE EXHAUST COMPENSATOR.</b>						
<b>&gt; RES: RESIDENTIAL SILENCER.</b>						
<b>&gt; RCG: REMOTE CONTROL BY GSM KIT</b> (kit for genset management and control by remote PC; communication available by means of RS232 directly to PC or through GSM modem). Available only on the automatic versions.			