



FR Series

Ricardo Engine



15 kVA

35 kVA

200 kVA

2500 kVA

SPECIFICATIONS

ENGINE

- RICARDO heavy duty diesel engine
- 12V / 24V starter and charge alternator
- Replaceable air, fuel and oil filters
- Mechanical or electronic governor control
- Tropical type radiator
- Flexible fuel hose
- Oil drain valve and extension hose
- Industrial type silencer and steel compensator
- Maintenance-free starter battery
- Water jacket heater
- 1500 rpm engine speed

ALTERNATOR

- IP 21-23 Protection Standard
- H Insulation Class
- 50 Hz Frequency
- 4 pole brushless synchronous type alternator
- Automatic Voltage Regulator (AVR)
- 400/230V AC Output Voltage - 1500 rpm

SOUND PROOF CANOPY AND CHASSIS

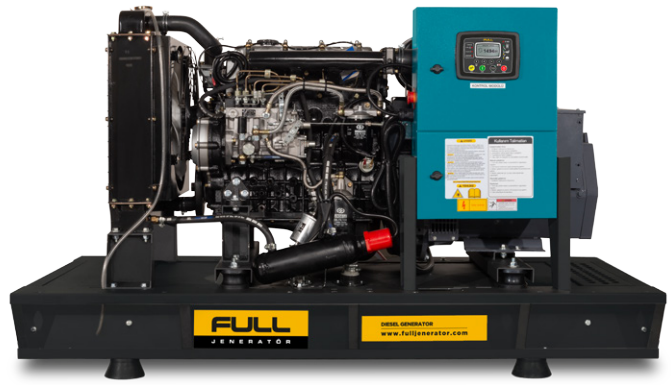
- Convenient design for easy lifting and carrying
- High standard sound proof canopy design
- Modular design with easily removable nuts - bolts
- Lockable doors
- Transparent window for watching Control Panel
- Electrostatic powder painted, providing protection against harsh weather conditions
- Emergency STOP button
- Fuel tank inside the chassis
- Anti-vibration wedges (engine - chassis and chassis - ground)

OPTIONAL

- Thermal magnetic CB (for automatic models)
- Super Silent Canopy
- Mobile Generator Sets
- Automatic fuel filling system
- Synchronization panel
- 3 Pole and 4 Pole ATS (Automatic Transfer Switch)
- Fuel Heater, Oil Heater
- External fuel tank and automatic fuel filling system
- Fuel - water separator filter
- Remote monitoring and control system

FR Series

Ricardo Engine



MODEL				FR 35	FR 44	FR 50	FR 60	FR 77
GROUP		Stand By	kVA	35	44	50	60	77
			kW	28	35.2	40	48	61.6
		Prime	kVA	31.8	40	45.5	54.5	70
			kW	25.4	32	36.4	43.6	56
	Rated Current		A	45.79	57.6	65.5	78.5	100.8
ENGINE	Engine			RICARDO				
	Engine Model			K4100-D	K4100-ZD	WD100-45	D4105-ZD	D4105-IZLD
	Number of Cylinders			4 - Inline				
	Injection System			Direct				
	Compression Ratio			19 : 1	19 : 1	19 : 1	17 : 1	16 : 1
	Bore		mm	100	100	100	105	105
	Stroke		mm	115	115	115	115	115
	Displacement		lt	3.61	3.61	3.61	3.93	3.93
	Air Intake			Natural Aspiration	Turbocharged			Turbocharged Inter Cooler.
	Speed (RPM)		rpm	1500				
	Oil Capacity		lt	13	13	13	13	15
	Standby Power		Kw / Hp	33 / 44.2	44 / 58.98	49.5 / 66	60.5 / 81	72.6 / 95.5
	Prime Power		Kw / Hp	30.1 / 40.3	40 / 53.6	45 / 60.3	56 / 75	66 / 88.4
	Fuel Type			Euro Diesel				
	Governor System			Mechanical				
	Cooling System			Water Cooling				
	Coolant Capacity		lt	15	15	15	18	20
	Fuel Consumption (lt / h)		Full Load	9	12.2	13	14.5	17.5
			75% Load	6.5	9.1	9.8	11	15.2
			50% Load	4.7	6.4	6.5	7.6	9
ALTERNATOR	Alternator Model			FLYS184G	FLYS184J	FLYS224D	FLYS224E	FLYS224F
	Frequency		Hz	50				
	Power		kVA	35	44	55	66	80
	Voltage		V	400				
	Number of Phases			3				
	Aut. Voltage Regulator (AVR)			AS440				
	Voltage Regulation			±1%				
	Insulation Class			H				
	Protection Standard			IP23				
	Power Factor		Cos	0.8				
DIMENSIONS	Weight Silent (Open)		Kg	860 (700)	895 (770)	990 (820)	1100 (900)	1180 (990)
	Width Silent (Open)		mm	900 (900)	900 (900)	950 (950)	1000 (1000)	1000 (1000)
	Length Silent (Open)		mm	2200 (1850)	2200 (1850)	2300 (1900)	2400 (2000)	2400 (2000)
	Height Silent (Open)		mm	1350 (1500)	1350 (1500)	1400 (1600)	1500 (1700)	1500 (1700)
	Fuel Tank Capacity		lt	125	125	140	170	170

- 1) Standby power: The max power available during a variable electrical power sequence, under the stated operating conditions, for which a generating set is capable of delivering in the event of a utility power outage. Overloading isn't permissible.
- 2) Prime Power: The maximum power which a generating set is capable of delivering continuously whilst supplying a variable electrical load. Average load should be 70%. The generator can be overloaded 10% for 1 hour per 12 hrs.

Topçular A.Ş. reserves the right to make changes in model, technical specifications, color, equipment & accessories without prior notice.



MODEL			FR 94	FR 110	FR 125	FR 150	FR 175	FR 200	
GROUP		Stand By	kVA	94	110	125	150	175	200
			kW	75.2	88	100	120	140	160
		Prime	kVA	85.4	100	113	136	160	181
			kW	68.36	80	90	108	128	145
	Rated Current		A	122.9	144	162.72	195.84	230.4	260
ENGINE	Engine			RICARDO					
	Engine Model			R4105-IZLD	R6105-ZD	R6105-ZLD	R6105-AZLD	R6105-IZLD	R6110-IZLD
	Number of Cylinders			4 - Inline	6 - Inline				
	Injection System			Direct					
	Compression Ratio			16 : 1	16 : 1	16 : 1	16 : 1	16 : 1	16 : 1
	Bore		mm	105					
	Stroke		mm	125	130	130	130	135	135
	Displacement		lt	4.33	6.49	6.49	6.49	7.1	7.70
	Air Intake			Turbocharged Inter Cooler	Turbocharged		Turbocharged Inter Cooler.		
	Speed (RPM)		rpm	1500					
	Oil Capacity		lt	15	18	18	18	18	18
	Standby Power		Kw / Hp	82 / 109.9	92.4 / 123.8	110 / 147.45	121 / 162.1	145.2 / 194.6	182 / 244
	Prime Power		Kw / Hp	75 / 100.5	84 / 112.5	100 / 134	110 / 147.45	132 / 176.9	165 / 821
	Fuel Type			Euro Diesel					
	Governor System			Mechanical					
	Cooling System			Water Cooling					
	Coolant Capacity		lt	23	23	23	23	25	25
	Fuel Consumption (lt / h)		Full Load	19.1	22.2	25.6	31	33.5	39.5
			75% Load	15	16.7	19.2	23.3	25.2	29.6
			50% Load	13	11.1	12.8	15.5	17	19.8
ALTERNATOR	Alternator Model			FLYS224G	FLY274C	FLYS274D	FLYS274E	FLYS274F	FLYS274G
	Frequency		Hz	50					
	Power		kVA	94	110	125	150	175	198
	Voltage		V	400					
	Number of Phases			3					
	Aut. Voltage Regulator (AVR)			AS440					
	Voltage Regulation			±1%					
	Insulation Class			H					
	Protection Standard			IP23					
	Power Factor		Cos	0.8					
DIMENSIONS	Weight Silent (Open)		Kg	1250 (1050)	1496 (1230)	1540 (1290)	1595 (1350)	1660 (1410)	1660 (1410)
	Width Silent (Open)		mm	1000 (1000)	1000 (1000)	1000 (1000)	1000 (1000)	1000 (1000)	1000 (1000)
	Length Silent (Open)		mm	2800 (2350)	3150 (2550)	3150 (2550)	3150 (2550)	3150 (2550)	3150 (2550)
	Height Silent (Open)		mm	1500 (1750)	1700 (1600)	1700 (1850)	1700 (1850)	1700 (1850)	1700 (1850)
	Fuel Tank Capacity		lt	195	220	220	220	220	220

D 300

Web based Next Generation Controller



SPECIFICATIONS

- Diesel and gas genset support
- 400Hz operation support
- 400 event logs, full snapshot
- All parameters front panel editable
- 3 level configuration password
- 128x64 graphical LCD display
- Downloadable languages
- Waveform display of V & I
- Harmonic analysis of V & I
- 16Amp MCB & GCB outputs
- 8 configurable digital inputs
- 6 configurable digital outputs
- 3 configurable analog inputs
- Both CANBUS-J1939 & MPU
- 3 configurable service alarms
- Multiple automatic exerciser
- Weekly operation schedule
- Dual mutual standby with equal aging of gensets
- Manual "speed fine adjust" on selected ECUs
- Automatic fuel pump control
- Disable protections feature
- Excess power protection
- Reverse power protection
- Overload IDMT protection
- Load shedding, dummy load
- Multiple load management
- Current unbalance protection
- Voltage unbalance protection
- Fuel filling & fuel theft alarms
- Battery back-up real time clock
- Idle speed control
- Battery charge run enabled
- Combat mode support
- Multiple nominal conditions
- Contactor & MCB drive
- 4 quadrant genset power counters
- Mains power counters
- Fuel filling counter
- Fuel consumption counter
- Modem diagnostics display
- Configurable through USB, RS-232 and GPRS
- Free configuration program
- Allows SMS controls
- Ready for central monitoring
- Mobile genset support
- Automatic GSM geo-location
- GPS connectivity (RS232)
- Easy USB firmware upgrade
- IP65 rating with optional gasket

MEASUREMENTS

- Mains & genset PN/PP voltages
- Mains & genset frequency
- Mains & genset phase currents
- Mains & genset neutral currents
- Mains & genset, phase & total, kW, kVA, kVAR, pf
- Engine speed
- Battery voltage

FUNCTIONALITIES

- AMF unit
- ATS unit
- Remote start controller
- Manual start controller
- Engine controller
- Remote display panel

COMMUNICATION

- USB Device
- RS-232 (2400-57600baud)
- J1939-CANBUS
- Geo-locating through GSM
- GPS support (RS-232)
- Internet Central Monitoring
- SMS message sending
- E-mail sending
- Free PC software: Rainbow Plus
- Modbus RTU
- Modbus TCP/IP

