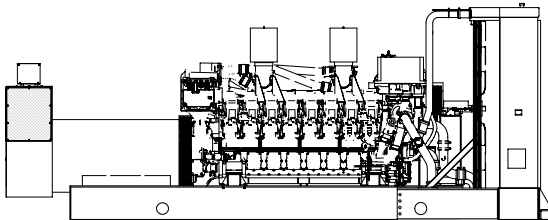




Ratings Range

60 Hz

Standby:	kW	1590-2100
	kVA	1988-2625
Prime:	kW	1440-1850
	kVA	1800-2313



Standard Features

- Your DDC/MTU Power Generation product distributor provides one-source responsibility for the generating system and accessories.
- The generator set and its components are prototype-tested, factory-built, and production-tested.
- The 60 Hz generator set offers a UL 2200 listing.
- At 60 Hz, the generator set accepts rated load in one step.
- The generator set complies with ISO 8528-5, Class G3, requirements for transient performance.
- The 60 Hz generator set engine is certified by the Environmental Protection Agency (EPA) to conform to Tier 2 nonroad emissions regulations.
- A one-year limited warranty covers all systems and components. Two-, five-, and ten-year extended warranties are also available.
- Alternator features:
 - The brushless, rotating-field alternator has broadrange reconnectability.
 - The pilot-excited, permanent-magnet (PM) alternator provides superior short-circuit capability.
- Other features:
 - Controllers are available for all applications. See controller features inside.
 - The generator set is direct-mounted to the skid.
 - Electronic engine controls manage the engine.

Generator Set Ratings

Alternator	Voltage	Ph	Hz	150°C Rise Standby Rating		130°C Rise Standby Rating		125°C Rise Prime Rating		105°C Rise Prime Rating	
				kW/kVA	Amps	kW/kVA	Amps	kW/kVA	Amps	kW/kVA	Amps
7M4054	220/380	3	60	1590/1988	3020	1590/1988	3020	1440/1800	2735	1440/1800	2735
	240/416	3	60	1840/2300	3192	1840/2300	3192	1800/2250	3123	1680/2100	2915
	277/480	3	60	2000/2500	3007	2000/2500	3007	1820/2275	2736	1820/2275	2736
7M4056	220/380	3	60	1850/2313	3513	1790/2238	3400	1680/2100	3191	1630/2038	3096
	240/416	3	60	2000/2500	3470	1950/2438	3383	1820/2275	3157	1780/2225	3088
	277/480	3	60	2100/2625	3157	2100/2625	3157	1850/2313	2782	1850/2313	2782
7M4058	220/380	3	60	2070/2588	3931	1950/2438	3703	1850/2313	3513	1790/2238	3400
	240/416	3	60	2100/2625	3643	2090/2613	3626	1850/2313	3209	1850/2313	3209
	277/480	3	60	2100/2625	3157	2100/2625	3157	1850/2313	2782	1850/2313	2782
7M4176	220/380	3	60	2000/2500	3798	2000/2500	3798	1820/2275	3457	1820/2275	3457
7M4292	347/600	3	60	2000/2500	2406	2000/2500	2406	1820/2275	2189	1820/2275	2189
7M4374	2400/4160	3	60	2050/2563	356	2050/2563	356	1850/2313	321	1850/2313	321

RATINGS: All three-phase units are rated at 0.8 power factor. *Standby Ratings:* Standby ratings apply to installations served by a reliable utility source. The standby rating is applicable to varying loads for the duration of a power outage. There is no overload capability for this rating. Ratings are in accordance with ISO-3046/1, BS 5514, AS 2789, and DIN 6271. *Prime Power Ratings:* Prime power ratings apply to installations where utility power is unavailable or unreliable. At varying load, the number of generator set operating hours is unlimited. A 10% overload capacity is available for one hour in twelve. Ratings are in accordance with ISO-8528/1, overload power in accordance with ISO-3046/1, BS 5514, AS 2789, and DIN 6271. For limited running time and base load ratings, consult the factory. Obtain the technical information bulletin (TIS-101) on ratings guidelines for the complete ratings definitions. The generator set manufacturer reserves the right to change the design or specifications without notice and without any obligation or liability whatsoever. GENERAL GUIDELINES FOR DERATION: *ALTITUDE:* Derate 1% per 100 m (328 ft.) elevation above 400 m (1312 ft.). *TEMPERATURE:* Derate 2.0% per 5°C (9°F) temperature above 40°C (104°F).

Alternator Specifications

Specifications	Alternator
Type	4-Pole, Rotating-Field
Exciter type	Brushless, Permanent-Magnet
Voltage regulator	Solid State, Volts/Hz
Insulation:	NEMA MG1
Material	Class H, Synthetic, Nonhygroscopic
Temperature rise	130°C, 150°C Standby
Bearing: quantity, type	1, Sealed
Coupling	Flexible Disc
Amortisseur windings	Full
Rotor balancing	125%
Voltage regulation, no-load to full-load (with <0.5% drift due to temp. variation)	3-phase sensing, ±0.25%
One-step load acceptance at 60 Hz	100% of Rating
Unbalanced load capability	100% of Rated Standby Current
Peak motor starting kVA:	(35% dip for voltages below)
380 V 7M4176 (4 bus bar)	5400
480 V 7M4054 (4 bus bar)	7000
480 V 7M4056 (4 bus bar)	7200
480 V 7M4058 (4 bus bar)	11000
600 V 7M4292 (4 bus bar)	4250
4160 V 7M4374 (6 lead)	6200

- NEMA MG1, IEEE, and ANSI standards compliance for temperature rise and motor starting.
- Sustained short-circuit current of up to 300% of the rated current for up to 10 seconds.
- Sustained short-circuit current enabling downstream circuit breakers to trip without collapsing the alternator field.
- Self-ventilated and dripproof construction.
- Superior voltage waveform from two-thirds pitch windings and skewed stator.
- Digital solid-state, volts-per-hertz voltage regulator with ±0.25% no-load to full-load regulation.
- Brushless alternator with brushless pilot exciter for excellent load response.

Application Data

Engine

Engine Specifications	
Manufacturer	Detroit Diesel/MTU
Engine: model	16V4000G43 (T163-8A36)
Engine: type	4-Cycle, Turbocharged, Intercooled
Cylinder arrangement	16V
Displacement, L (cu. in.)	76.27 (4654)
Bore and stroke, mm (in.)	170 x 210 (6.7 x 8.3)
Compression ratio	16.5:1
Piston speed, m/min. (ft./min.)	756 (2480)
Rated rpm	1800
Max. power at rated rpm, kWm (BHP)	2280 (3058)
Cylinder head material	Cast Iron
Crankshaft material	Forged Steel
Valve (exhaust) material	High Alloy Steel
Governor: type, make/model	ADEC Electronic Control
Frequency regulation, no-load to full-load	Isochronous
Frequency regulation, steady state	±0.25%
Frequency	Fixed
Air cleaner type, all models	Dry

Exhaust

Exhaust System	
Exhaust manifold type	Dry
Exhaust flow at rated kW, m ³ /min. (cfm)	454 (16033)
Exhaust temperature at rated kW, dry exhaust, °C (°F)	480 (896)
Maximum allowable back pressure, kPa (in. Hg)	5.1 (1.5)
Exhaust outlet size at engine hookup, mm (in.)	2 @ 254 (10)

Engine Electrical

Engine Electrical System		
Battery charging alternator:		
Ground (negative/positive)		Negative
Volts (DC)		24
Ampere rating		70
Starter motor rated voltage (DC)		Dual, 24
Battery, recommended cold cranking amps (CCA):		
Quantity, CCA rating each		Four, 1150
Battery voltage (DC)		12

Fuel

Fuel System	
Fuel supply line, min. ID, mm (in.)	20 (0.79)
Fuel return line, min. ID, mm (in.)	20 (0.79)
Max. fuel flow, Lph (gph)	1500 (396)
Min./max. fuel pressure at engine supply connection, kPa (in. Hg)	-10/50 (-3/14.8)
Fuel filter	One, Secondary
Recommended fuel	#2 Diesel

Lubrication

Lubricating System	
Type	Full Pressure
Oil pan capacity, dipstick mark max., L (qt.)	240 (254)
Engine oil capacity, initial filling, L (qt.)	300 (317)
Oil filter: quantity, type	4, Spin-On
Oil cooler	Water-Cooled

Application Data

Cooling

Radiator System	
Ambient temp., standby rating, °C (°F)	40 (104)
Engine water capacity, L (gal.)	310 (82)
Radiator system capacity, including engine, L (gal.)	708 (187)
Engine jacket water flow, Lpm (gpm)	1350 (357)
Charge cooler water flow, Lpm (gpm)	592 (156)
Heat rejected to cooling water at rated kW, dry exhaust, kW (Btu/min.)	840 (47770)
Heat rejected to charge cooling water at rated kW, dry exhaust, kW (Btu/min.)	610 (34690)
Water pump type	Centrifugal
Fan diameter, including blades, mm (in.)	2057 (81)
Fan, kWm (HP)	81 (108)
Max. restriction of cooling air, intake and discharge side of radiator, kPa (in. H ₂ O)	0.125 (0.5)

Remote Radiator System*	
Connection sizes:	Class 150 ANSI Flange
Water inlet, mm (in.)	191 (7.5) Bolt Circle
Water outlet, mm (in.)	191 (7.5) Bolt Circle
Intercooler inlet/outlet, mm (in.)	152 (6.0) Bolt Circle
Static head allowable above engine, kPa (ft. H ₂ O)	149 (50)

* Contact your local distributor for cooling system options and specifications based on your specific requirements.

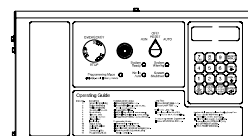
Operation Requirements

Air Requirements	
Radiator-cooled cooling air, m ³ /min. (scfm)†	2265 (80000)
Cooling air required for generator set when equipped with CWC or remote radiator, based on 14°C (25°F) rise, m ³ /min. (scfm)†	661 (23400)
Combustion air, m ³ /min. (cfm)	182 (6441)
Heat rejected to ambient air:	
Engine, kW (Btu/min.)	90 (5100)
Alternator, kW (Btu/min.)	95 (5403)

† Air density = 1.20 kg/m³ (0.075 lbm/ft³)

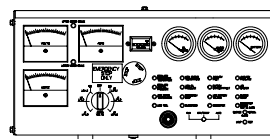
Fuel Consumption	
Diesel, Lph (gph) at % load	Standby Rating
100%	559.9 (147.9)
75%	428.0 (113.1)
50%	300.1 (79.3)
25%	170.9 (45.2)
Diesel, Lph (gph) at % load	Prime Rating
100%	488.9 (129.2)
75%	382.8 (101.1)
50%	265.9 (70.2)
25%	153.2 (40.5)

Controllers



Digital 550 Controller

Audiovisual annunciation with NFPA 110 Level 1 capability. Programmable microprocessor logic and digital display features. Safeguard circuit protection standard. 12- or 24-volt engine electrical system capability. Remote start, remote annunciation, and remote communication options. Refer to M6-46 for additional controller features and accessories.



Microprocessor-Plus, 16-Light Controller

Audiovisual annunciation with NFPA 110 Level 1 capability. Microprocessor logic, AC meters, and engine gauge features. 12- or 24-volt engine electrical system capability. Remote start, prime power, and remote annunciation options. Refer to M6-30 for additional controller features and accessories.

Additional Standard Features

- Alternator Protection (standard with 550 controller)
- Oil Drain Extension
- Operation and Installation Literature

Available Accessories

Open Unit

- Exhaust Silencer, Critical
- Exhaust Silencer, Hospital
- Flexible Exhaust Connector, Stainless Steel

Cooling System

- Block Heater
- Remote Radiator Cooling

Fuel System

- Flexible Fuel Lines
- Fuel/Water Separator

Electrical System

- Battery
- Battery Charger, Equalize/Float Type
- Battery Heater
- Battery Rack and Cables

Engine and Alternator

- Air Cleaner, Heavy Duty
- Air Cleaner Restriction Indicator
- Bus Bar Kits (standard on 7M alternators, 380-600 volt only)
- Closed Crankcase Breather
- Engine Fluids (oil and coolant) Added
- Alternator Strip Heater
- Line Circuit Breaker (NEMA type 1 enclosure)
- Line Circuit Breaker with Shunt Trip (NEMA type 1 enclosure)
- Optional Alternators
- Rated Power Factor Testing
- Safeguard Breaker (not available with 550 controller)
- Spring Isolators

Paralleling System

- Reactive Droop Compensator
- Remote Speed Adjust Control
- Voltage Adjust Control
- Voltage Regulator Relocation Kit

Maintenance and Literature

- General Maintenance Literature Kit
- Maintenance Kit
- NFPA 110 Literature
- Overhaul Literature Kit
- Production Literature Kit

Controller

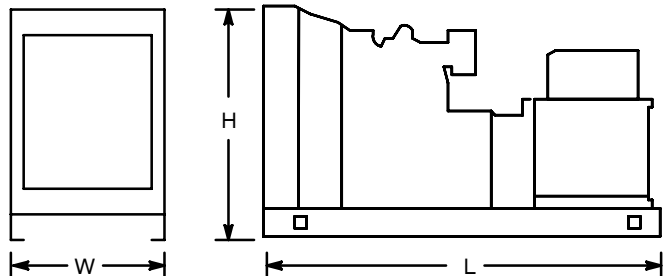
- Common Failure Relay Kit
- Communication Products and PC Software (550 controller only)
- Customer Connection Kit
- Dry Contact Kit (isolated alarm)
- Prime Power Switch (550 controller only)
- Remote Annunciator Panel
- Remote Audiovisual Alarm Panel
- Remote Emergency Stop Kit
- Remote Mounting Cable
- Run Relay Kit

Miscellaneous Accessories

- _____
- _____
- _____
- _____
- _____
- _____

Dimensions and Weights

Overall Size, L x W x H, max., mm (in.): 6439 x 2232 x 2559
 (253.52 x 87.88 x 100.76)
 Weight (radiator model), wet, max., kg (lb.): 15876 (35000)



NOTE: This drawing is provided for reference only and should not be used for planning installation. Contact your local distributor for more detailed information.

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