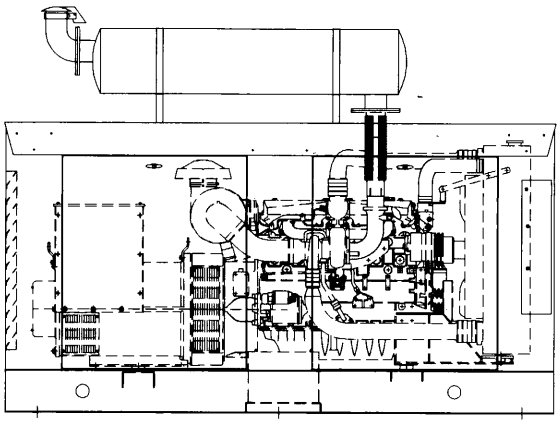
TAYLOR®
POWER SYSTEMS

Model: DS140

Ratings Range:

		50Hz	60Hz
Standby:	**kw**	**104 - 112**	**112 - 140**
	kva	**130 - 140**	**140 - 175**
Prime:	**kw**	**94.4 - 100**	**102 - 126**
	kva	**118 - 125**	**127.5 - 157.5**



DRAWING DEPICTS UNIT WITH OPTIONAL EQUIPMENT

Features

- **Single source responsibility for the generator set and accesories.**
- **Prototype and production tested to insure one step load acceptance per NFPA 110.**
- **Two year limited warranty on generator sets and accessories.**
- **Unit conforms to CSA, NEMA, EGSA, ANSI and other standards.**
- **Microprocessor based control system providing digital metering and monitoring.**
- **Heavy duty 4 cycle industrial engine for reliability and fuel efficiency.**
- **Brushless rotating field generator with class H insulation.**
- **Heavy duty steel base with integral vibration isolators.**
- **Electronic Isochronous Governor**

Generator	Voltage	PH	Hz	125°C Rise Standby Rating kW/kVA	125°C Rise Standby Rating Amps	105°C Rise Prime Rating kW/kVA	105°C Rise Prime Rating Amps
UCI274E311	277/480	3	60	140/175	210.5	126/157.5	189.4
	139/240	3	60	140/175	421	126/157.5	378.9
	254/440	3	60	134/167.5	219.8	115/143.75	188.6
	127/220	3	60	134/167.5	439.6	115/143.75	377.3
	240/416	3	60	128/160	222.1	112/140	194.3
	120/208	3	60	128/160	444	112/140	388.6
	120/240	3	60	128/160	384.9	112/140	336.8
	219/380	3	60	112/140	212.7	102/127.5	193.7
	120/240	1	60	96/96	400	84/84	350
	254/440	3	50	104/130	170.6	94.4/118	154.8
	127/220	3	50	104/130	341.2	94.4/118	309.7
	120/208	3	50	112/140	388.6	100/125	347
	240/415	3	50	112/140	194.8	100/125	173.9
	219/380	3	50	112/140	212.7	100/125	189.9
	110/190	3	50	112/140	425.4	100/125	379.8
	110/220	1	50	85/85	386.4	75/75	340.9
UCI274F311	277/480	3	60	140/175	210.5	126/157.5	189.4
	139/240	3	60	140/175	421	126/157.5	378.9
	254/440	3	60	140/175	229.6	126/157.5	206.7
	127/220	3	60	140/175	459.3	126/157.5	413.3
	240/416	3	60	140/175	242.9	126/157.5	218.6
	120/208	3	60	140/175	485.8	126/157.5	437.2
	120/240	3	60	140/175	421	126/157.5	378.9
	219/380	3	60	132/165	250.7	118/147.5	224.1
	120/240	1	60	108.8/108.8	453.3	97.5/97.5	406.3
	254/440	3	50	112/140	183.7	100/125	164
	127/220	3	50	112/140	367.4	100/125	328
	120/208	3	50	112/140	388.6	100/125	347
	240/415	3	50	112/140	194.8	100/125	173.9
	219/380	3	50	112/140	212.7	100/125	189.9
	110/190	3	50	112/140	425.4	100/125	379.8
	110/220	1	50	96/96	436.4	87/87	395.5
UCI274E06	120/240	1	60	115/115	479.2	100/100	416.7
UCI274F06	120/240	1	60	135/135	562.5	125/125	520.8
UCI274G06	120/240	1	60	140/140	583.3	125/125	520.8

RATINGS: All three-phase units are rated at 0.8 power factor. All single-phase units are rated at1.0 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 in 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 in accordance with ISO-8528/1, overload power in accordance with ISO-3046/1, BS5514, AS2789, and DIN 6271. For limited running time and base load ratings consult the factory. 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 0.5% per 100m (328 ft.) elevation above 1000m (3279 ft.) Temperature: Derate 1.0% per 10°C (18°F) temperature above 40°C (104°F).

APPLICATION & ENGINEERING DATA

ENGINE

Engine Specifications	60 Hz	50 Hz
Manufacturer	Perkins	
Engine, model, type	1006-6TA 4 Cycle	
Cylinder arrangement	6 vertical, in-line	
Displacement, cu. in. (L)	365 (5.99)	
Bore and stroke, in. (mm)	3.937 (100) x 5 (127)	
Compression ratio	17.3:1	
Piston speed, ft/sec. (m/sec)	25 (7.62)	20.8 (6.35)
Rated rpm	1800	1500
Max. power at rated rpm, hp (kw)	216.5 (161.5)	187.7 (141)
Cylinder head material	Cast iron	
Crankshaft material	Forged steel	
Governor type	electronic	
Frequency regulation, no load to full load	0.25%	
Frequency regulation, steady state	±0.01%	
Air cleaner type, all models	Dry paper element	
Combustion air, cfm (m^3/min.)	394.3 (11.2)	310.1 (8.8)

EXHAUST

Exhaust System	60 Hz	50 Hz
Exhaust flow at rated kW, cfm (m^3/min.)	1109.1 (31.4)	907.9 (25.7)
Exhaust temperature at rated kW, dry exhaust, °F (°C)	1023.8 (551)	1085 (585)
Maximum allowable back pressure, in. Hg (kPa)	1.77" HG (6 KPA)	
Exhaust outlet size at hookup, in. (mm)	3.1" (78)	

ENGINE ELECTRICAL

Engine Electrical System	60 Hz	50 Hz
Battery charging alternator: Ground (negative/positive) Volts (DC) Ampere rating	Negative 12 45	
Starter motor rated voltage (DC)	12	
Recommended battery cold cranking amps (CCA) rating for 5°F (-15°C)	800	
Quantity of batteries	1	
Battery voltage (DC)	12	

FUEL

Fuel System	60 Hz	50 Hz
Fuel supply line, min. ID, in. (mm)	5/16 (7.93)	
Fuel return line, min. ID, in. (mm)	1/4 (6.35)	
Max. lift, engine-driven fuel pump, ft. (m)	6' (1.8)	
Max. fuel flow, gph (Lph)	41 (133.7)	37.5 (122.4)
Fuel prime pump	manual	
Fuel filter	(2) spin on	
Recommended fuel	#2 diesel	

FUEL CONSUMPTION

Fuel Consumption	60 Hz	50 Hz
Diesel, gph (Lph) at % of load		
100%	9.9 (37.5)	8.3 (31.5)
75%	7.7 (29.1)	6.4 (24.1)
50%	5.5 (20.8)	4.4 (16.5)

COOLING

Cooling System	60 Hz	50 Hz
Ambient temperature °F (°C)	125.6 (52)	
Radiator system capacity, including engine, gal. (L)	9.8 (37.2)	
Engine jacket water flow, gpm (Lpm)	45.4 (172)	37 (140)
Heat rejected to cooling water at rated kW, dry exhaust Btu/min.	4362	3981
Water pump type	centrifugal	
Fan diameter, including blades, in. (mm)	25 (635)	
Fan hp (kW)	15.4 (11.5)	10.1 (7.5)
Max. restriction of cooling air, intake and discharge side of rad., in. LBF in^2(kPa)	5.0 (35)	
Radiator-cooled cooling air, cfm (m^3/min.)	6427 (182)	5438 (154)

LUBRICATION

Lubricating System	60 Hz	50 Hz
Type	Full Pressure	
Oil pan capacity with filter, qts. (L)	20 (19)	
Oil filter, quantity, type	2 spin on	
Oil cooler	integral water cooled oil cooler	

CONTROL PANEL

DGC-500 Digital Genset Controller utilizes microprocessor based technology to provide a versatile system for genset control, protection and monitoring. This microprocessor design allows customization of the controller's functions to fit virtually every application's needs. DGC-500 accepts conventional engine sender inputs. These can be customized via the BESTCOMS PC software to allow virtually any sender to be used.

TOTAL MONITORED PARAMETERS

- **GENERATOR**
  - Voltage (A & B phases and A & B phases to neutral)
  - Current (A & B phases)
  - kVA total and per phase
  - Frequency
- **ENGINE**
  - Oil pressure
  - Coolant temperature
  - Fuel Level
  - Battery voltage
  - Hours to next service
  - Total run time
  - Engine RPM
- **TIMERS**
  - Eng. cooldown: 0 to 60 minutes
  - Eng. maint.: 0 to 5000 hours
  - Pre-Alarm time delays:
    Weak batt. & low batt. volt: 1-10 seconds
  - Alarm time delays:
    Overspeed: 0-500ms
    Sender failure: 0-10 seconds
  - Arming delays after crank disconnect:
    Low oil pressure: 5-15 seconds
    High coolant temp.: 50-150 seconds
  - Pre-crank delay: 0-30 seconds

- **GENERATOR SET PROTECTION**

ALARMS:

- Low oil pressure
- Overspeed
- Overcrank
- Emerg. Stop button input
- High coolant temp.
- Sender failure
- Low coolant level
- Low fuel level

PRE-ALARMS:

- Low oil pressure
- Low battery voltage
- Maintenance interval timer
- High coolant temp.
- Low coolant temp.
- High battery voltage
- Fuel leak
- Weak battery
- Low fuel level
- Battery charger failure

GENERATOR SPECIFICATIONS

STANDARDS

UC224 and UC274 industrial generators meet the requirements of BS5000, VDE0530, UTE5100, NEMA MG1–22, CEMA, IEC34–1, CSA22.2 AND AS1359.

EXCITATION SYSTEMS

SX440 & SX460 AVRs

With these self–excited systems the main stator provides power via the automatic voltage regulator (AVR) to the exciter stator. The high efficiency semiconductors of the (AVR) ensure positive build up from initial low levels of residual voltage.

The exciter rotor output is fed to the main rotor through a three phase full wave bridge rectifier. The rectifier is protected by a surge suppressor against surges caused, for example, by short circuit or out of phase paralleling. The SX440 will support a range of electronic accessories, including a 'droop' Current Transformer (CT) to permit parallel operation with other ac generators.

MX341 AVR

This sophisticated AVR is incorporated into the permanent magnet generator (PMG) system, and is fitted as an option on industrial generators.

The PMG provides power via the AVR to the main exciter, giving a source of constant excitation power independent of generator output. The main exciter output is then fed to the main rotor, through a full wave bridge, protected by a surge suppressor. The AVR has built–in protection against sustained over–excitation, caused by internal or external faults. This de–excites the machine after a minimum of 5 seconds.

The two phase average voltage sensed MX341 provides voltage regulation of ± 1.0%. If three phase sensing is required with the PMG system the MX321 AVR must be used. We recommend three phase sensing for applications with greatly unbalanced or highly non–linear loads. An engine relief load acceptance feature can enable full load to be applied to the generator in a single step.

MX321 AVR

The most sophisticated of all our AVRs combines all the features of the MX341 with, additionally, three phase rms sensing, for improved regulation (0.5%) and performance. Over voltage protection is built–in and short circuit current level adjustment is an optional facility.

INSULATION / IMPREGNATION

The insulation system is Class 'H'.

All wound components are impregnated with materials and processes designed specifically to provide protection against the harsh enviroments encountered in generator applications. Varnishes and resins are selected and developed to provide the high build required for static windings and the high mechanical strength required for rotating components.

WINDINGS & ELECTRICAL PERFORMANCE

All generator stators are wound to 2/3 pitch. This eliminates triplen (3rd, 9th, 15th...) harmonics on the voltage waveform and is found to be the optimum design for trouble–free supply of non linear loads. The 2/3 pitch design avoids excessive neutral currents, sometimes seen with higher winding pitches, when in parallel with the mains.

A fully connected damper winding reduces oscillations during paralleling. This winding, with 2/3 pitch and carefully selected pole and tooth designs, ensures very low waveform distortion.

TELEPHONE INTERFERENCE

THF (as defined by BS4999 Part 40) is better than 2%. TIF (as defined by ASA C50.12) is better than 50.

RADIO INTERFERENCE

The absence of brushgear and the high quality AVR ensure low levels of interference with radio transmissions.
Additional RFI suppression may be supplied if required.

ENCLOSURE

IP22 (NEMA 1) is standard for all industrial generators Protection to IP23 (60 degrees from vertical) is available as an option at reduced ratings (5% derate).

Inlet air filters are available as an option on all generators, at reduced ratings (5% derate).

SHAFT

All generator rotors are dynamically balanced to better than BS6861: Part 1 Grade 2.5 for minimum vibration in operation.

QUALITY ASSURANCE

Generators are manufactured using production procedures having a quality assurance level to BS EN (ISO9001).

STANDARD FEATURES AND ACCESSORIES

Standard Features

- Heavy duty steel base
- Vibration isolators
- Oil drain valve with extension
- Flex exhaust connector
- Battery rack
- Battery cables
- Water jacket heater
- Owners manual
- Electronic isochronous governor

Accessories

- ❑ Generator strip heater
- ❑ Line circuit breaker
- ❑ DGC 500 Multifunction Protection
- ❑ DGC 1000 controls
- ❑ Standard Dial Out Modem
- ❑ Extended Temperature Modem
- ❑ Enhanced Communication
- ❑ Auxiliary Contacts
- ❑ Surface Mount Remote Annunciator
- ❑ Flush Mount Remote Annunciator

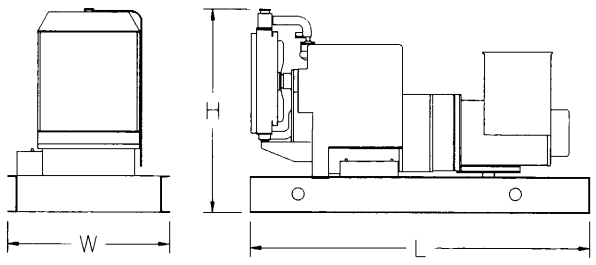
Accessories

- ❑ Exhaust silencer
- ❑ Silencer mounting kit for enclosure
- ❑ Weather enclosure
- ❑ Sound attenuated enclosure
- ❑ Sub–base fuel tank
- ❑ Flexible fuel lines
- ❑ Day tank
- ❑ Oil pan heater
- ❑ Battery
- ❑ Battery heater
- ❑ Battery charger
- ❑ PMG exciter

WEIGHTS AND DIMENSIONS **DS140**

Overall Size, L x W x H, in.: (102" x 40" x 54")

Weight (wet): 2725 Lbs.



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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