

The purpose of the Autonomous Diesel Power Station is to provide single-phase AC 220V/50Hz power supply to the lighthouses or to other users of nominal power up to 3kW. The 220V/50Hz mains and the diesel generator will be used as energy sources. The station is fully automated and, its operation can be controlled remotely by the monitoring system. The AC controller of the station is continuously testing the mains voltage.. When the voltage will become less of a minimal acceptable level, the diesel generator will be started and it will take over the power supply. When the mains voltage level is restored, the diesel generator will be stopped and, energy will be taken from the mains again.

System components

- Diesel Generaator "Yanmar"
- AC controller E176
- Diesel Generator Interface E177, controlling the electromechanical interface "Servo"
- RS-485 Interface (optionally RS-232 or ECHELON)
- Diesel battery charger E146
- Equipment cabinet
- GSM Communication Controller E924 (optionally)



Features

- Continuous testing of the mains voltage . When the mains voltage drops below the acceptable level, the diesel generator will be started and the users will be switched over to it. Switching the users back to the mains and stopping the diesel generator occurs when the mains voltage is restored. The starting and stopping procedures can be initiated after a time delay, determined by the user.
- Automatic heating of the diesel engine in the case, when the ambient temperature is below the acceptable level (in winter conditions).
- Control of the amount of the fuel (optionally)
- Oil pressure drop below 1 bar stops the diesel engine
- Setting up the control parameters:
 - minimal acceptable level of the mains voltage (up to 200V)
 - time delays (0...900min) of starting and stopping of the diesel generator
 - temperature of switching ON of the diesel heating, (-30 ...0 C)
- Getting following diagnostic information in case, when the station is integrated into the remote monitoring system
 - warning: no mains voltage
 - voltage of the mains and of the diesel generator
 - temperature of diesel generator
 - emergency messages about the failures of the diesel generator



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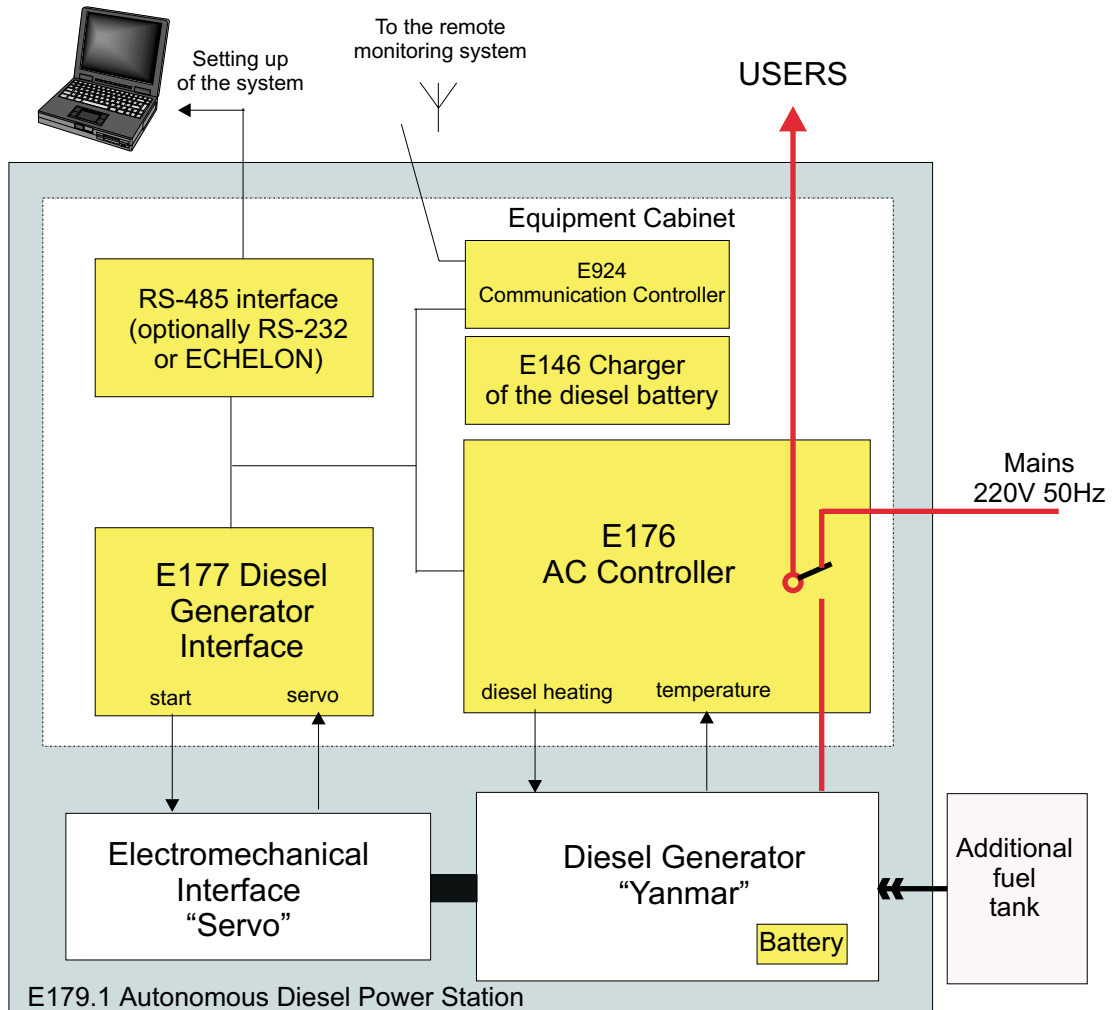
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Specification

	Min.	Nom.	Max.	Unit
Mains voltage	187	220	242	VAC
Diesel Generator voltage	187	220	242	VAC
Diesel Generator current			20	A
DC power supply voltage	12		14.5	V
DC power supply current		90		mA
Diesel battery voltage	11.5		14.5	V
Duration of starting*	15		300	s
Fuel amount	0,5		13	l
Motor oil amount	0.7		1.1	l
Diesel heater power**	1kW			
Ambient temperature	from -25°C to +55°C (IEC 60068-2-1, 2, 14)			
Relative humidity	up to 98% at temperature +35°C (IEC 60068-2-3)			
Application in salt mist conditions	allowed (IEC 60068-2-11)			
Mechanical vibration	10-500Hz, with acceleration up to 2,2g (IEC 60068-2-6)			

*) duration of starting of the diesel generator in the case, the time delay is zero
 **) in the case, the diesel engine is equipped with the heater and with the temperature sensor



Block diagram of the Autonomous Power Station E179.1