

A22K Auxiliary Power Unit (APU)



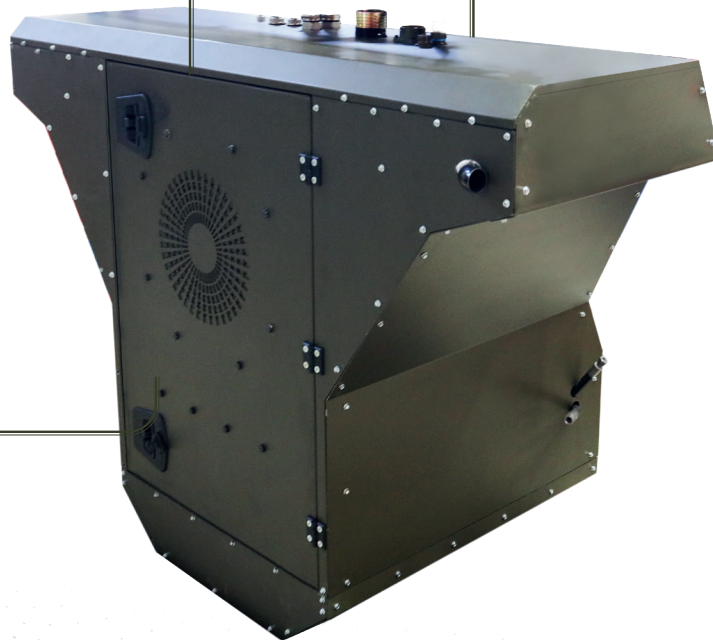
DC POWER
7 KW



RADIATOR
Water / Oil-Hydraulic



HYDRAULIC POWER
12 KW



A22K AUXILIARY POWER UNIT

APU (Auxiliary Power Units) are the systems which give energy so that the systems on the vehicle could operate actively when the vehicle ignition switch is off and provide climatization of the air within the vehicle by operating vehicle air conditioning system and the required energy for the vehicle on armoured military vehicle. These systems which are integrated to armoured vehicles, have the capability to carry on all the activities on the vehicle even when vehicle engine is out.

Different from generators, these systems which have no battery and fuel tank, could be embedded into the vehicle or could be assembled to outer shell. APU designs could be made between 2 kW and 100 kW as per customer's choice. By adding hydraulic pump and air conditioner compressor to these systems which gets the fuel from vehicle tank and first ignition electricity from vehicle battery, they can cool inside of the vehicle without operating the vehicle engine. By extending the vehicle engine life and saving fuel, it can actively operate weapon systems, vehicle computer, fire suppression systems, power distribution unit, CBRN systems on the vehicle.

Thanks to the remote-control unit; IP7 control unit with electronic card which provides the user with all the errors and information on digital screen, is designed and APUs have been turned into smart systems. On this control unit, the user can easily reach on digital screen the information such as overheating status, fuel level, pressure level, DC current, battery voltage status. Besides, there are 2 different starting options as automatic starting and manual starting on control unit.

GENERAL SPECIFICATIONS

| | |
|---|------------------------|
| Output Voltage | 28 VDC |
| Continuous Power | 20 KVA |
| Output Power | 20,3 KVA |
| Maximum Ampere | 330 A |
| Operating Temperature | -32°C - +55°C |
| Storage Temperature | -40°C - +60°C |
| Integrated Cooling System | Water Cooled |
| Noise Level | 85 dB @ 7m |
| Maximum Operating Elevation | 3000 m |
| Protection Level | IP64 |
| System Weight | 450 Kg ±20 |
| APU Fuel Consumption | 8 L/S |
| Dimensions (Main Motor Unit) (LengthxWidthxHeight) | 1168mmx1595mmx860mm ±5 |

ENGINE SPECIFICATIONS

| | |
|---------------------|------------------------------|
| Engine | Kubota |
| Engine Type | Water Cooled Vertical Diesel |
| Intake System | Turbo |
| Cooling | Liquid Cooled |
| Output Power | 20 KVA |
| Nominal Power | 33,3 KVA |
| Maximum Speed (rpm) | 3600 rpm |
| Starting | Starter Motor |
| Fuel Type | Diesel |

ENVIRONMENTAL TESTS

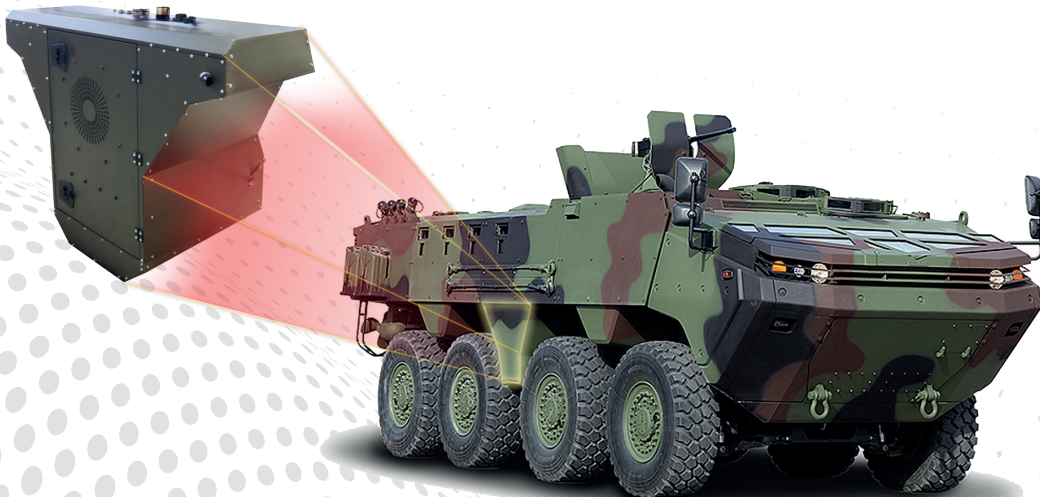
| | |
|-----------------------|--------------------------|
| High Temperature Test | MIL-STD-810G Metod 501.5 |
| Shock Test | MIL-STD-810G Metod 516.6 |
| Low Temperature Test | MIL-STD-810G Metod 502.5 |
| Rain Test | MIL-STD-810G Metod 506.5 |
| Humidity Test | MIL-STD-810G Metod 507.5 |

EMI-EMC TESTS

| | |
|--------------|-----------------|
| EMI-EMC Test | MIL-STD-461 E/F |
|--------------|-----------------|

ADVANTAGES

- It provides less engine wear on vehicle engine and less fuel consumption.
- It provides the vehicle to operate more efficiently.
- It provides electric energy for the vehicle even when main engine is off.
- It extends life period of the vehicle engine.
- It provides the vehicle to work silently during military operations.



NL-1628 AUXILIARY POWER UNIT CONTROL UNIT

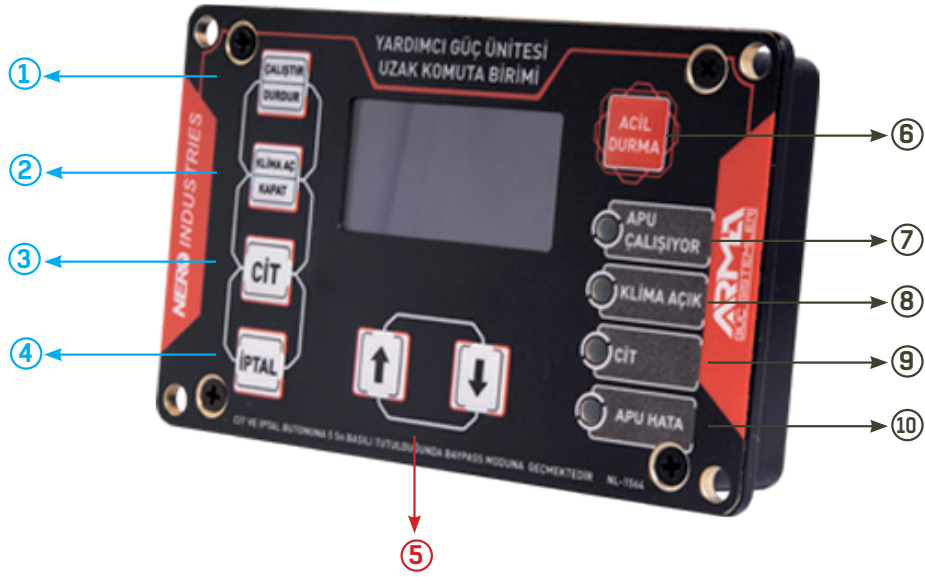


- It is located near APU so that user can easily interfere during maintenance.
- Present error status on APU can be observed.
- There are buttons to directly interfere in case there is a problem when APU is automatically activated.
- It is designed as per IP67 Standards. It also enables to access latest 500 detailed log records thanks to diagnostic.
- It is conformant to MIL-STD-810G and MIL-STD-461E/F standards.

| | |
|-------------------------------------|----------------------|
| Dimensions (WidthxLengthxHeight) | 140mmx213mmx160mm ±5 |
| Weight | 3,1 kg ±0.1 |
| Communication Protocol | CANBUS J1939 |
| Operating Voltage | 24 VDC |

| | | | |
|-----|---|-----|---|
| 1. | A/C CLUTCH: A/C CLUTCH: A/C system cannot be started when the corresponding LED is on | 12. | FUEL WATER FILTER: The corresponding LED glows when the water level in the fuel water filter increases. |
| 2. | HYDRAULIC SOLENOID: The corresponding LED glows when the hydraulic solenoid is activated. | 13. | EMERGENCY SHUTDOWN: When correspondent button is pressed, the emergency button is activated. |
| 3. | HYDRAULIC FAN PWM : Hydraulic LED light level decreases as the fan speed increases. | 14. | MANUAL ACTUATOR: The Actuator operates as long as correspondent button is kept pressed. |
| 4. | RADIATOR FAN PWM : The corresponding LED light level decreases while radiator fan speed increases. | 15. | MANUAL FUEL PUMP: The Fuel Pump operates as long as correspondent button is kept pressed. |
| 5. | EMERGENCY SHUTDOWN: The corresponding LED lights glow if any of the emergency shutdown buttons is activated. | 16. | MANUAL START: The Starter Motor operates as long as correspondent button is kept pressed. |
| 6. | ENGINE COOLING: The corresponding LED light glows when the engine water temperature is high. | 17. | MANUAL GLOW: The Glow operates as long as correspondent button is kept pressed. |
| 7. | OIL PRESSURE: The corresponding LED glows when the engine oil pressure is low. | 18. | ACT: The fuse of Actuator. |
| 8. | CABIN WATER LEVEL: The corresponding LED glows when there is no water in the cabin. If there is too much water, it is drained away. | 19. | FUEL PUMP: The fuse of Fuel Pump. |
| 9. | AIR FILTER: The corresponding LED glows if the air filter is clogged. | 20. | STARTER ENGINE: The fuse of Starter Engine. |
| 10. | RADIATOR WATER LEVEL: The corresponding LED glows when there is no water in the radiator. If there is too much water, it is drained away. | 21. | GLOW: The fuse of Glow. |
| 11. | FSS ALARM: The corresponding LED glows in the event of an alarm in APU engine compartment. | 22. | DIAGNOSTIC: Software installation socket. |

A20-F REMOTE COMMAND CONTROL UNIT



- It is used to remote control APU.
- Positioning the vehicle by driver, thanks to the information screen on it, it enables to get access to all the data on APU.
- Control unit gives opportunity to activate-cancel APU system, to activate-cancel air conditioning system.
- It is designed as per IP67 Standards.
- It is conformant to MIL-STD-810G and MIL-STD-461E/F standards.

| | |
|----------------------------------|--------------------|
| Dimensions (WidthxLengthxHeight) | 45mmx155mmx85mm ±5 |
| Weight | 0,48 kg ±0.1 |
| Communication Protocol | CANBUS J1939 |
| Operating Voltage | 24 VDC |

| | | | |
|----|--|-----|---|
| 1. | ON / OFF: APU on / off switch. | 6. | EMERGENCY SHUTDOWN: When corresponding button is pressed APU operation is immediately blocked. |
| 2. | AIR CONDITIONER ON/OFF: It is the button to switch on and off the air conditioning system. | 7. | APU ON: Occasions and LED colours; Glow-Yellow, During Normal Operation-Green, Stop-Yellow, When Engine is Off-Red, Engine Does Not Start-Red |
| 3. | CIT: When relevant button is pushed CIT test is made, when cancel button is pushed for 5 seconds this process is cancelled. | 8. | AIR CONDITIONER ON: It is the led showing activeness status of air conditioner. |
| 4. | CANCEL: When corresponding button is pressed, it exits constant screen. When BIT button is pressed for 5 seconds this action is cancelled. | 9. | CIT: When test fails CIT led glows in red. When cancel button is pushed the led dims out. |
| 5. | UPWARDS MENU BUTTON: When it is pressed error list is displayed. DOWNWARDS MENU BUTTON: When it is pressed, moves between pages. | 10. | ERROR: If there is any error in the system led glows in red. When cancel button is pushed led dims out. |