



OUR FACTORIES

NERO Endüstri Savunma Sanayi A.Ş. which operates in United States of America, Bulgaria and Turkey at Ankara headquarters, is one of the largest subsystem manufacturers in Defence Industry in Turkey. Our company which is located on a plot of 12.000 m2 in Anatolia Organized Industrial Zone; has been performing hundred percent domestic design, manufacture and provide system solutions since its foundation in 2009. More than 100 engineers are assigned within its staff of 210 people. Besides, it imports 29 different countries in the world. While our group companies operate in Space Aviation field, Defence Industry, it also comprises one of the largest test centres of Turkey regarding Defence Industry













By combining design, production, monitoring, control and improvement methods conforming to ISO9001 and AS9100 standards with quality engineering and test infrastructure, it successfully competes with its global competitors and accomplishes outstanding projects together with world leaders of the sector.

Nero Industry has started project designing phase of the factory for the project which is worth 1.6 billion TL together with project-based investment incentive support on Presidential decree published in official gazette on 20th April, 2020 in order to establish Turkey's first semiconductor production factory. Turkey's first semiconductor serial production facility which will be established on 300.000 m2 plot, will bring our country to the level where we will be able to compete with semiconductor companies at global level. Nero Industry, together with its high qualified employees will create first investment phase of Turkey in this field with this project.

Within the scope of designed and qualified systems,

ARES - Fire Suppression Systems,

MARS - CBRN Detection and Filtration Systems,

ARMA - Power Systems,

UMAY - Laser Detection/Warning and Smoke Grenade Launcher Systems are included.



NERO INDUSTRY SYSTEMS IMPORT TO 29 COUNTRIES



• Israel

Ukraine

Brasil

• USA

Azerbaijan

• Bahrain

China

Indonesia

Koweit

Malaysia

Oman

Pakistan

Katar

Singapore

• France

Spain

England

• Peru

• Suadi Arabia

Turkmenistan

United Arab Emirates

Canada

India

Thailand

Kazakstan

Latvia

Esthonia

Lithuania









AIR CONDITIONING, CBRN FILTRATION AND DETECTION SYSTEMS

CBRN Filtration Systems has the function of filtrating war and toxic gas agents so as to ensure healthy respiration of the crew against Chemical, Biological, Nuclear and Radioactive threats which are today's war methods.

CBRN Filtration Systems has 3 different usage options. These are CBRN Filtration Systems with Positive Pressure, Masked Type CBRN Filtration Systems and Positive Pressure and Independent Masked CBRN Filtration Systems. These systems are used in civilian and military fields. CBRN systems are designed and qualified as per Nato AEP 54 standards.

CBRN Filtration Systems have 3 main structures. These are Control Units, CBRN Filters and CBRN Cabin. CBRN Filtration systems have successfully passed high temperature, low temperature, high humidity, shock-vibration and EMI/EMC tests as per MIL STD 810 and MIL STD 461 standards. Besides, CBRN systems produced by Nero Industry has the capability to be mechanically integrated to air conditioning system of the vehicle.

CBRN Filtration systems which heats the air by the heaters it includes, can provide conditioned air to the user according to present conditions and circumstances by integrating into vehicle air-conditioner for cooling the air. CBRN Filtration Systems produced by Nero Industry are used on military, civilian vehicles, safety facilities, command shelters at ships and planes and armoured vehicles of the armies of total 29 countries.



FILTER FAMILY



Page-8 GF-90 Filte



Page-8 CV90 Compatible Filter



Page-9 CF-60 Filter



Page-9 GF-20 Filter

CONTROL UNIT FAMILY



Page-11 Mars-1 Analog Control Unit



Page-11 Mars-2 Digital Pressure Difference Control Unit



Page-12 Mars-3 Digital Control Unit

AUXILIARY PRODUCTS



Page-13 Gas Masks



Page-14
Adjustable Pressure
Relief Valve



Page-14
Fixed Pressure

METEOROLOGICAL STATION AND SENSORS



Page-15 Meteorological Station



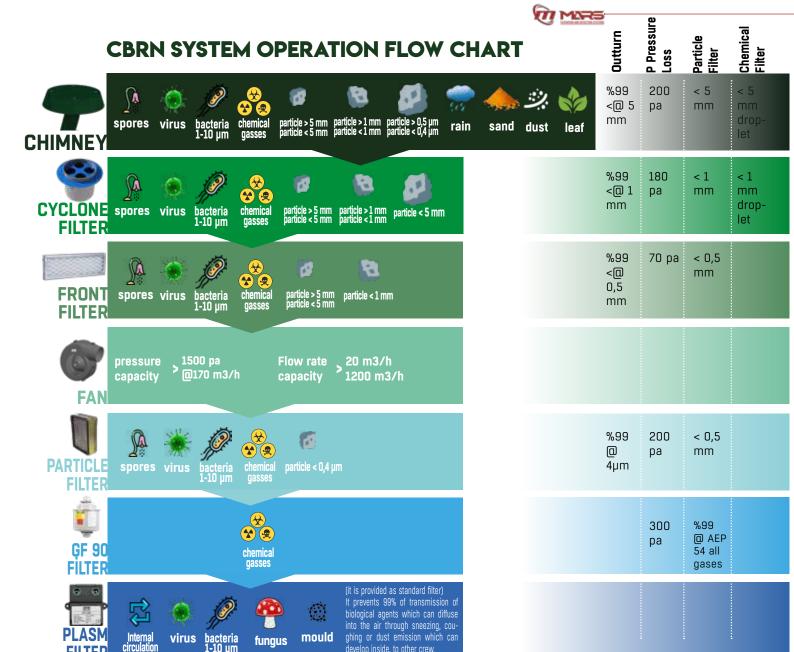
Page-16
System Combination



Page-20



Page-21 Biological Detection



CBRN Filters that Nero Industry produces by domestic and national resources, have been tested by real war agents as per NATO AEP 54 standards by international and local test institutions and have been successful at these tests.

develop inside, to other crew.



Nero Industries Activated Carbon 12°30 Mesh NR-MARS-001



19 PQA 1716

Sample code ProGares Description by customer

FILTER



Conformant to NATO AEP54 standards

CBRN FILTER
GENERAL
SPECIFICATIONS

The filters produced as per NATO AEP54 standard can filter gases such as sarin, soman which are described as war gases

It provides safety of the crew against chemical, biological, nuclear and radiological attacks which are today's war methods.

Air flow rate between 20 m3/h and 300 m3/h

Special filtration by Hepa and Carbon filters

Filtration of coarse particles by fixing front filter

10 years of packed shelf life

90-180 Minutes of war agent filtration period

10 years of packed shelf life

Packaging as per MIL – PRF 131 standard

Usage period of 1 to 12 months for daily uses

Particle filtration up to 0,3 millimeter

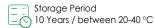




GF-90 FILTER



🔑 Air Flow Rate 90 m3/h







Weight 23 lbs / 10,5 kgs(+0,5kg) Dimensions (length x diameter) 11,8" x 5,20" 300 x 132 mm

> NSN: 4240-27-062-0954 TSK NSN: 4240-KK-020-9189





CV-90 COMPATIBLE **GAS FILTER**



🔑 Air Flow Rate 170 m3/h

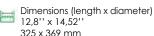


10 Years / between 20-40 °C





Weight 37 lbs / 17 kgs(+0,8kg)



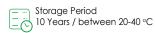
NSN: 4240-99-250-3437

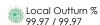


NATO TYPE 1 FILTER













NSN: 4240-99-176-1162

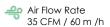
STANDARDS NATO AEP54



CF-60 FILTER







Air Flow Resistance 3 IWG / 750 Pa

🚵 Local Outturn % 99.97 / 99.97

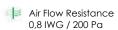
Weight 11 lbs / 5,1 kg (±0,3 kg)

Dimensions (width x length x diameter) 9,05" x 14,45" x 4,10" 230mm x 367mm x 104mm

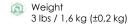
> NSN: 4240-12-147-4791 NSN: 4240-27-052-4026

GF-20 GAS FILTER







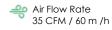


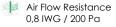
Dimensions (width x length x diameter) 5,54" x 6,96" x 2,95" 138,5mm x 177mm x 75mm

> NSN:4240-01-365-0981 / 4240-00-203-3999 NSN: 4240-27-068-4199



HF-20 PARTICLE FILTER







1,59 lbs / 0,710 kg (±0,1 kg) imensions (width x length x diameter) 5,54" x 6,96" x2,31" 138,5 X 177 X 58,8 mm

NSN: 4240-00-368-6291











FRONT FILTER

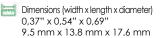














CYCLONE FILTER

- On CBRN filtration system the dust particles within the drawn air are separated by giving "spin motion" (both circular and vertical motion) to air flow.
- When it is used before the filters, it extends the filter life.
- High capacities can be provided by parallel connection.

Cyclone filter separates the particles from the air by forcing the air with ''spin method''. The spinning air ''pushes'' solid particles to outer side of the air flow and provides the particles to fall outside the air flow and settle there. Cyclone collectors are generally used as separator for coarse dust from ait flow and often as pre-cleaner before an efficient filter and/or a product separator.

The polluted air getting in from the entrance on upside of the cyclone with high speed, is forwarded to cyclone internal walls with centrifugal force of particles whose density is higher than the conveyer atmosphere, by giving it a helical flow form through cyclone construction.

Cyclones also reduces dust load reaching the filter by operating as first stage dust ejector before the filter on systems where dust load is high. By this means, it becomes possible to used filter unit more efficiently. These filters can be connected in series according to capacity calculations when it is necessary.



Filter Type	Filter Dimensions (diameterxsize)	Usage Type	Efficiency
Small Type	19mm x 66mm	Single	92-96%
	0.75" x 2.6"	Serial	95-99%
Wide Short Type	38mm x 102 mm	Single	88-94%
	1.5" x 4"	Serial	90-96%
Wide Long Type	38mm x 152 mm	Single	92-95%
	1.5" x 6"	Serial	96-98%





FEATURES

Communication	Analog Control Unit
Communication	Dry Contact
Pressure Indicator	Analog
Buzzer	Available
Fan Speed Adjustment	Single Stage
Warnings	Filter, Low Pressure
Manuel Test	Available
AEP54	Conformant

MARS-1 CONTROL UNIT WITH ANALOG INDICATION

CBRN Analog Control Units are used only in positive pressure CBRN Systems. This CBRN control unit is used to switch on and off the whole CBRN Filtration System and show the positive pressure within the vehicle to the user with the analog indicator on it. It can be checked if the system is working correctly thanks to the power and error indicators on the analog control unit. A pneumatic line integrated into Analog Control units can calculate positive pressure while opening out on the atmosphere. CBRN Control Units have successfully passed high temperature, low temperature, high humidity, shock – vibration and EMI / EMC tests as per MIL-SDT-810 and MIL-STD-461 standard.





FEATURES

Communication	Canbus
Filter Pre-Counter	Available
Pressure Indicator	Dijital
Buzzer	Available
Fan Speed Adjustment	3 Stages
Low Pressure Warning	Available
BUILT-IN Test	Available
AEP54	Conformant

MARS-2 DIGITAL PRESSURE DIFFERENTIAL CONTROL UNIT

It digitally measures the pressure difference between the external and internal pressure. It gives a warning if the pressure difference is below the determined threshold value.





MARS-3 DIGITAL CONTROL UNIT

Mars CBRN control unit with digital indicator, provides full control and monitoring opportunity by checking fan speed, filtration period and mechanism errors. It provides the most suitable air for the crew by automatically warming and cooling the air sending signals to air-conditioning systems.



FEATURES



Communication	Canbus
Filter Pre-Counter	Available
Pressure Indicator	Digital
Buzzer	Available
Fan Speed Adjustment	3 Stages
Low Pressure Warning	Available
Fan Error Warning	Available
Manuel Test	Available
AEP54	Conformant
Warming Active Warning	Available
Air Conditioner On/Off Instruction	Available
No Filter Warning	Available
Change Filter Warning	Available
Built-In Test	Available
Dimout Function	Available
Weight	0,5 kg (±0,1 kg)









CBRN GAS MASKS

Protective mask, together with a suitable filtration system or respiration system, protects user's face, eyes and respiratory organs; against gaseous, vapourish and solid or liquid aerosol chemical, biological, radiological and nuclear (CBRN) agents. Protective mask is produced in universal dimensions. The structure of sealing side, provides perfect sealing for all face shapes and sizes of adult population except for extremely small faces. Inhalation rooms for filter connection are equipped with Rd 40x1 / 7 '' screw thread as per EN 148-1 standard (NATO standard).

ADVANTAGES

- All kinds of chemical, biological, radiological and nuclear agents, industrial toxic gases, riot control gases, etc.
- High user comfort
- Easy attach and removal
- Low breathing resistance
- Wide field of vision
- Protected visor against misting
- Corrective eyeglass application
- Easy decontamination and disinfection
- Easy liquid penetration (optional)
- Sweat drainage at exhalation chamber
- Compatibility with helmets and respiratory equipment
- High quality talk diaphragm, provides easy communication by using or not using communication devices.

FEATURES

Average weight	560 gr
Colour	Black
Effective field of vision	%77
Binoculars field of vision	%83
Filter connection thread	Rd 40x1/7''
Resistance against diffusion of NB agents	48 hours
Breathing resistance	
Breathing resistance at 30 lt/m	max. 25 Pa
Breathing resistance at 95 lt/m	max. 80 Pa
Exhalation resistance at 30 lt/m	max. 50 Pa



ADJUSTABLE PRESSURE RELIEF VALVE



The vehicle it will be applied should be completely hermetical (air tight).

Toxic air is filtrated by highly protected filters and filtered clean air is blown into the vehicle.

The pressure in the vehicle increases until balancing valve is opened with continuous air flow.

Pressure level is kept fixed, blown extra air is discharged from air pressure balancing valve.

The pressure created by clean air within the vehicle, prevents toxic air to penetrate inside from outside the vehicle and protection is ensured.

MIL-STD-810 High temperature

MIL-STD-810 Low temperature

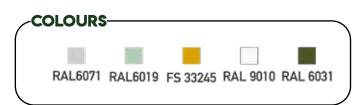
MIL-STD-810 Humidity Test

MIL-STD-810 Corrosion Test

MIL-STD-810 Shock Vibration

DIMENSIONS

Weight: 0.60 kg Width: 86mm Length: 86mm Height: 75mm



CONSTANT PRESSURE RELIEF VALVE



Blast valves are produced as relief valve on Positive Pressure CBRN Systems produced as per NATO AEP54 standards. The blast valves discharging CBRN system overpressure composed under proper conditions, are adjustable. Blast valves adjustable to requested pressure which have spring structure, can also be produced in special dimensions at user's request.

DIMENSIONS-

Weight: 1.5 kg Diameter: 250 mm Width: 132 mm





NE-MS1000 METEOROLOGICAL STATION

The Meteorological Station, developed and manufactured by Nero Industries by domestic and national resources, is a device that measures the change of weather events. Thanks to its high-sensitive sensors, it measures the change of weather conditions with a minimum margin of error and transfers it to the user via communication interfaces such as RS-422 and CAN-BUS.

Meteorological Station can perform the measurements of:

- *Temperature
- *Relative humidity
- *Wind speed
- *Wind direction
- *Atmospheric pressure

It is suitable for wheeled-tracked vehicles equipped with light and medium caliber weapons and command control shelters.

Wind Speed		
	Range	0 - 40 m/s
	Accuracy	± 0,5 m/s +%5
	Resolution	0.1 m/s
	Response Time	< 2 s

Wind Direction	
Azimuth	0 - 360°
Accuracy	± 5°
Resolution	0,1°
Response Time	< 2s

Direction Of The Sensor To Magnetic North	
Azimuth	0 - 360°
Accuracy	± 5°
Stability	0.1°
Resolution	0,00137°

Air Temperature	
Range	- 55°C - +250°C
Accuracy	± 0,25°C
Resolution	0,00465°C

Relative Humidity	
Working Range	0 -100 %
Accuracy Tolerance	± 3 relative humidity
Response Time	1 sec
Resolution	%0,01

Dimensions	
Height	421 mm
Diameter	80 mm
Base Diameter	120 mm
Weight	<3,5 kg

GPS Positioning	
Latitude	90° N - 90° S
Longitude	180° E – 180° W
Accuracy	0.01 m horizontally and vertically with RTK

System General Specifications	
Working Temperature	- 40°C - + 80°C
Storage Temperature	- 40°C - + 85°C
Built In Test	Constant
Input Voltage	18 - 32 VDC

Data Transmission	Mil Can-Bus, RS - 422,
	Full Duplex

Absolute Atmospheric Pressure	
Range	10 - 1300 hPa (mbar)
Accuracy	± 1,5 hPa (mbar)
Resolution	0,012 hPa (mbar)
Max. Pressure	10000 hPa

MILITARY STANDARDS

MIL-STD 810G MIL-STD 461F MIL-STD 1275E



MASKED TYPE CBRN SYSTEMS





GF-90 MASKED TYPE FILTRATION

GF-90 Masked Type CBRN System designed and produced by NERO engineers in accordance with MIL-STD-1472 requirements with an ergonomic structure as per standards such as NATO AEP-54, MIL-STD-810, MIL-STD-461.

Protection of the crew against chemical, biological, radiological and nuclear threats is provided by blowing adjustable fresh air filtrated by masks within the vehicle attached to private separate lines for each user with GF-90 Masked Type CBRN System which has 90m3/h air flow rate.

TECHNICAL SPECIFICATIONS

♠	It gives error when pressure difference is under the adjusted value.
(Pressure measurement has digital indicator.
<u>₹</u> Ŏ	Shelf life: 10years
4	Voltage Info: 16 -32 VDC
零	Operation Temperature -30°C / +55°C
零	Storage Temperature -40oC / +71oC
♠	90 m3/h Air Flow

STANDARDS

AEP-54	Collective Protection at CBRN Environment
MIL-C-38999	Military Connector
MIL-DTL-27500	Special Purpose, Electrical Shielded and Unshielded Wires
MIL-STD-461E	Unshielded Wires
MIL-STD-810G	Military Electromagnetic Compatibility





AF-60 MASKED TYPE CBRN FILTRATION SYSTEM

AF-60 Masked Type CBRN System designed and produced by NERO engineers in accordance with MIL-STD-1472 requirements with an ergonomic structure as per standards such as NATO AEP-54, MIL-STD-810, MIL-STD-461.

Protection of the crew against chemical, biological, radiological and nuclear threats is provided by blowing adjustable fresh air filtrated by masks within the vehicle attached to private separate lines for each user with AF-60 Masked Type CBRN System which has 60m3/h air flow rate. Gas and Particle filters in the system designed to be easily attached and removed, provides maximum speed during movement to hot zone.

TECHNICAL SPECIFICATIONS

60m³/h (35cfm)
-32°C — +49°C
-40°C — +63°C
28V DC
Max. 7,5A @ 24V DC
~25kg
330 x 370 x 440 mm (En x Derinlik x Yükseklik)
"HEPA" filter for particle filtration "Activated carbon" filter for gas filtration
7 (optional)



POSITIVE PRESSURE CBRN SYSTEMS





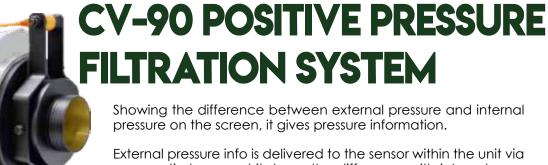
FT-80 POSITIVE PRESSURE FILTRATION SYSTEM

Showing the difference between external pressure and internal pressure on the screen, it gives pressure information. External pressure info is delivered to the sensor within the unit via pneumatic hose and it shows the difference with internal pressure on the screen. It gives audio and visual warning under the adjusted pressure value. It has dimout, alarm muting, built-in test features. Requested pressure difference warning can be adjusted manually.

TECHNICAL SPECIFICATIONS

	It gives error when pressure difference is below the adjusted value.	Shelf life: 10 years
	High pressure is blown out the valve by the help of blast valve	✓ Voltage Info: 16 – 32 VDC
	Pressure measurement has analog indicator	(■) Filtration Air Flow Rate: 80m3/h
[4]	As filtration mode and ventilation mode	Number of personnel to be protected: 4-12 Personnel
	It can be used on 2 modes	Max. Operation Height is 3000 meters
	Front Filter: is used for Coarse-Dust filtration	> Operation Temperature -30°C / +55°C
	Particle Filtration 99.97%	Storage Temperature -40°C / +71°C
	Carbon Filtration: is used for Gas Filtration	





Showing the difference between external pressure and internal pressure on the screen, it gives pressure information.

External pressure info is delivered to the sensor within the unit via pneumatic hose and it shows the difference with internal pressure on the screen. It gives audio and visual warning under the adjusted pressure value. It has dimout, alarm muting, built-in test features. Requested pressure difference warning can be adjusted manually.

TECHNICAL SPECIFICATIONS

It gives error when pressure difference is below the adjusted value.	🙏 3 Stage Fan
(■) Digital Pressure Indicator	Air Flow: 170m3/h (max)
Shelf life: 10 years for each filter	Combined Filter (Particle Filter + Activated Carbon Filter)
Voltage Info: 20 – 32 VDC	* "No Filter" Warning
Operation Temperature -32°C / +55°C	* ''Filter Change'' Warning
Storage Temperature -40°C / +71°C	* "Fan Error Warning



UFT-80 POSITIVE PRESSURE FILTRATION SYSTEM

UFT-80 is a modular CBRN fan filter mechanism / air filtration system. UFT - 80 designed for mobile applications, includes cassette type filter group which has feature of quick filter change. With advanced technology digital user interface intervention to system, system warning control and error detection can be performed instantly. It can provide up to 80 m³/h (47 CFM) filtrated air within the area the personnel is situated.

TECHNICAL SPECIFICATIONS

The gives error when pressure difference is below the adjusted value.	
Dimensions: 49x90x28 cm	Voltage Info: 32 VDC
Shelf life: 10 years for each filter	Adjustable Blast Valve
Operation Temperature -32oC / +55oC	Air Flow: 80m3/h (max)





RADIATION MEASUREMENT DEVICE

Mars detection system CBRN threats detections uses both detection technology together in accordance with the conditions included in NATO AEP-54 standard. System is developed on radiation detection sensitivity on detectable radioactive particles. Radiation detection system which provides continuous real time radiological information on military ships / vehicles, ensures detection and measurement of surplus gamma dose and ineffective alpha and beta rates along with quick gamma and dose.

- There is 0-100 R/h low level and 100 mR/h-1000 R/h high level detection on radiation detection system.
- Steel Body
- Dimensions: 150x150x85mm
- IP67 protection level
- Digital interface for connection RS485-CANBUS
- Energy range to be detected; is between 60keV 3MeV range.



BIOLOGICAL IDENTIFICATION -DETECTION SYSTEM

Biological Sampling System designed and developed by Nero Industry, gives early warning for air-borne potential biological threats including bacterial, viral agents and toxins in the environment by continuously monitoring ambient air and collecting samples from the environment. It can be used on military and land vehicles, unmanned vehicles and ventilating products.



CBRN CHEMICAL DETECTION SYSTEM

CBRN Chemical Detection System developed by Nero Industry, ensures identification of chemicals in the environment within minutes. It can be integrated to land vehicles or laboratory systems in a way to support changing requirements thanks to its sensor structure. It can give warning on vehicles on CAN-BUS system or getting involved automatically with incoming input.



BIOLOGICAL DETECTION

- Bacteria Virus Mould Fungus biological particle detection and warning is ensured.
- It has Automatic and Semi-automatic instant sample collection and storage unit.
- It stands by 365 days and there is no need for intermediate loading.
- It can store 4 different samples.
- After air sampling is completed, there is no need for any extra safety precaution while samples are collected.
- There is automatic instant detection system for 8 different biological agents.



ANALOG RADIATION MEASUREMENT UNIT



The Analog Radiation Measurement Box is a radiation monitoring system that provides continuous and real-time radiation information about naval ships/vehicles. It provides detection and measurement. It shows the numerical measurement results of the data coming from the sensors on the ship/vehicle. The analog radiation measurement box consists of the following components:

Analogue Radiation Control Panel; It provides central display and alarm of all remote radiation detectors. A separate display module for each detector shows the gamma dose rate at the detector location. This unit is also used in training situations.

Remote Radiological detectors continuously transmit data about the presence and level of radiation to the control panel.

The Analog Radiation Measurement Box can use 10 detectors, but different variations are also available upon request.

Control Panel Features

- Continuously monitors dose rate and alarm status for each detector in use
- Shows separate dose residence time for each channel
- Preset alarm level
- Visual and audible warnings at the set alarm level
- On-panel lighting
- Vibration resistant mounting wedges