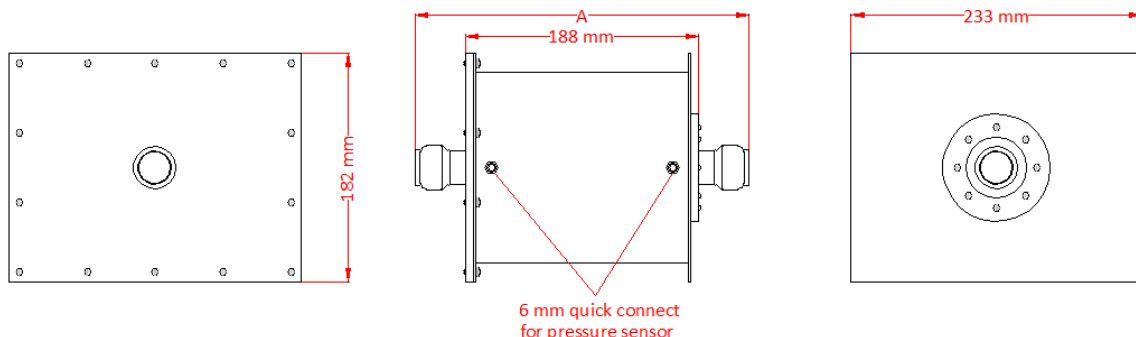


FILTRATION SYSTEM

Our filtration system is designed to work with our Mini One and PMCG units or as a Stand Alone system for filtering air delivered to the display case.

CASE



"A" size: PMCG – 275mm, Mini One – 245mm, Stand alone unit – 260mm

- Material: steel, black powder coat and acrylic.
- Weight (empty):
- Dimensions: as per drawing
- Pressure connector: 6 mm diameter quick connect fitting for connecting differential pressure gauge or optional pressure switch.
- Air connector, input side:
 - PMCG – 22 mm Quick Connect
 - Mini One/ Stand alone unit – Ø 8mm barb.
- Air connector, output side:
 - PMCG – 22 mm Quick Connect with 12 VDC fan.
 - Mini One – Ø 8mm barb.
 - Stand alone – 22 mm Quick Connect

CARTRIDGES

Four standard and non standard cartridges are offered:

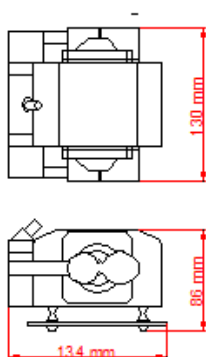
- **Standard F7 (MERV13) particle filter. For use with all configuration.**
Particle size within 0.3µm-1.0µm, All bacteria, cooking oil, Most smoke, Copier toner, Most face powder, Most paint pigments.
 - Cartridge size: 150mm x 200mm x 50 mm, weight: 375g
- **Standard H14 (Type A) particle filter. For use with all configuration.**
Particle size bigger than 0.3µm, Virus [unattached], Carbon dust, Sea salt, All combustion smoke, Radon progeny.
 - Cartridge size: 150mm x 200mm x 50 mm, weight: 400g
- **Standard Granulated Activated Carbon. For use with Mini One and Stand Alone units.**
See end of document for adsorbent ability.
 - Cartridge size: 150mm x 200mm x 50 mm, weight: 1100g (900 g carbon)
- **Standard Canvas type Activated Carbon. For use with PMCG unit**
 - Cartridge size: 150mm x 200mm x 50 mm, weight: 270g
- Non Standard Coconut shell based, activated carbon impregnated with 0.01% metallic silver. Minimum order (20) may be required.
- Non Standard Coconut shell based, activated carbon impregnated with 0.01% metallic bactericide. Minimum order (20) may be required.
- Non Standard Coconut shell based, activated carbon impregnated with 0.01% metallic silver bactericide. Minimum order (20) may be required.
- Non Standard Coconut shell based, activated carbon impregnated with 0.1% metallic silver. Minimum order (20) may be required.
- Non Standard Coconut shell based activated carbon impregnated with 0.05% metallic silver bactericide. Minimum order (20) may be required.

SYSTEM

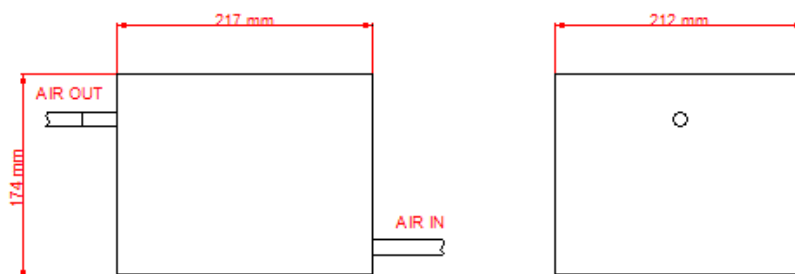
- **Mini One configuration:**
 - o System consists of: filter case with 8 mm barb on input and output. Filter is installed between Mini One air pump and Mini One unit. Any configuration of particle and carbon cartridges can be used.
- **PMCG configuration:**
 - o System consists of: filter case with 22 mm quick connect fitting on input and output. Filter is installed between PMCG unit and display case and is equipped with additional fan. Configuration of any particle filter and Canvas type activated Carbon is possible.
GRANULATED CARBON CARTRIDGE CANNOT BE USED.
- **Stand Alone unit configuration:**
 - o System consists of: Air pump (same type as Mini One unit), filter case with 8 mm barb on input and 22 mm quick connect fitting on output, silicone hoses and brass air connectors to connect to the display case.

AIR PUMP FOR STAND ALONE UNITS

Air pump can be supplied in two versions: standard and with noise dampening cover.



Standard Pump




Pump with noise reducing cover

- Voltage: 110 or 220 V AC
- Power: 8W
- Air flow: ~1500 l/h
- Noise:
 - o Standard Pump: 35dB (with hoses connected)
 - o With cover: < 22dB (with hoses connected)

PRESSURE MEASURING CONNECTORS

Measuring pressure difference is a good indicator when its time to change filters. It can be done by using handheld differential manometer from time to time or a optional pressure sensor can be connected with a dry type alarm switch indicating necessity of changing filters. If Preservatech monitoring system is in use, alarm switch can be connected to the monitoring system and alarm email is sent when pressure difference raises above allowable limits.

	Adjustable differential pressure switch. Dry contact allows to connect light indicator, sounder or BMS.
	Pressure switch can be also connected to the WiFi unit. If monitoring system is in use, server is sending email in case of overpressure.

ORDERING

FS	-	00	-	P0A	-	A0	-	B0
	Configuration		Air Pump		First cartridge - particle		Second cartridge	
	01	PMCG	P0	No pump	A1	F7 type	B0	Standard Granulated Carbon
	02	Mini One	P1A	Standard pump 110V	A2	H14 type	B1	Standard Canvas Carbon
	03	Stand Alone	P1B	Standard pump 220V			B3	Non standard
			P2A	Noise reduction 110V				
			P2B	Noise reduction 220V				
			For PMCG and Mini One this must be"P0"					

Example: **FS-03-P2B-A2-B0** – Filter with connectors for Stand Alone unit, with Noise Reducing air pump 220V, H11 type particle cartridge and Standard Granulated Carbon cartridge.

APPENDIX

Granulated carbon adsorbent ability

STANDARD ACTIVATED CARBON CARTRIDGE ADSORBENT ABILITY

Specifications for our standard activated carbon filter:

Adsorbent		Adsorbent		Adsorbent		Adsorbent	
Substance	ability	Substance	ability	Substance	ability	Substance	ability
(*)		(*)		(*)		(*)	
Acetaldehyde	+/-	Decane	+++	Hydrogen sulphide	+/-	Pentanone	+++
Acetic acid	+++	Dibromomethane	+++	Indole	+++	Pentylene	+
Acetic anhydride	+++	Dichlorobenzene	+++	Iodine	+++	Pentyne	+
Acetone	+	Dichlorodifluoromethane	+	Iodoform	+++	Perchloroethylene	+++
Acetylene	+	Dichloroethane	+++	Isophorone	+++	Phenol	+++
Acrolein	+	Dichloroethylene	+++	Isoprene	+	Phosgene	+
Acrylic acid	+++	Dichloroethyl ether	+++	Isopropyl acetate	+++	Propane	+/-
Acrylonitrile	+++	Dichloromonofluoroethane	+	Isopropyl alcohol	+	Propionaldehyde	+
Ammonia	+/-	Dichloronitroethane	+++	Isopropyl ether	+++	Propionic acid	+++
Amyl acetate	+++	Dichloropropane	+++	Kerosene	+++	Propyl acetate	+++
Amyl alcohol	+++	Dichlorotetrafluoroethane	+	Lactic acid	+++	Propyl alcohol	+++
Amyl ether	+++	Diethyl amine	+	Menthol	+++	Propyl chloride	+++
Anaesthetics	+	Diethyl ketone	+++	Mesityl oxide	+++	Propyl ether	+++
Aniline	+++	Dimethylaniline	+++	Methane	-	Propyl mercaptan	+++
Benzene	+	Dimethylsulphate	+++	Methyl acetate	+	Propylene	+/-
Bromine	+++	Dioxane	+++	Methyl acrylate	+++	Propylene	+++
Butane	+/-	Ethane	-	Propylene	+/-	Butadiene	+
Butanone	+/-	Ether	-	Butadiene	+	Dipropyl ketone	+++
Butyl acetate	+++	Ethyl acetate	+++	Methyl bromide	+	Methyl alcohol	+
Butyl alcohol	+++	Ethyl acrylate	+++	Methyl butyl ketone	+++	Pyridine	+++
Butyl cellosolve	+++	Ethyl alcohol	+	Methyl cellosolve	+++	Skatole	+++
Tetrachloroethane	+++	Methyl chloride	+/-	Methyl cellosolve acetate	+++	Styrene monomer	+++
Butyl ether	+++	Sulphur trioxide	+/-	Butyl chloride	+++	Sulphur dioxide	+/-
Butylene	+/-	Ethyl benzene	+++	Ethyl amine	+	Methyl ether	+
Butyne	+/-	Ethyl bromide	+	Methyl ethyl ketone	+++	Tetrachloroethylene	+++
Butyraldehyde	+	Ethyl chloride	+	Methyl formate	+	Toluene	+++
Butyric acid	+++	Ethyl ether	+	Methyl isobutyl ketone	+++	Toluidine	+++
Camphor	+++	Ethyl formate	+	Methyl mercaptan	+	Trichloroethylene	+++
Caprylic acid	+++	Ethyl mercaptan	+++	Methylcyclohexane	+++	Turpentine	+++
Carbolic acid	+++	Ethyl silicate	+++	Methylcyclohexanol	+++	Urea	+++
Carbon disulphide	+	Ethylene	-	Monochlorobenzene	+++	Uric acid	+++
Carbon dioxide	-	Ethylene chlorhydrin	+++	Monofluorotrichlorome	+	Valeric acid	+++
Carbon monoxide	+	Ethylene dichloride	+++	Naphta (coal tar)	+++	Valeraldehyde	+++
Carbon tetrachloride	+++	Ethylene oxide	+	Naphta (petroleum)	+++	Vinyl chloride	+
Cellosolve	+++	Fluorotrichloromethane	+	Naphtalene	+++	Xylene	+
Cellosolve acetate	+++	Formaldehyde	+/-	Nicotine	+++		
Chlorine	+	Formic acid	+	Nitrobenzene	+++		
Chlorobenzene	+++	Heptane	+++	Nitroethane	+++		
Chlorobutadiene	+++	Heptylene	+++	Nitrogen dioxide	+/-		
Chloroform	+++	Hexane	+	Nitroglycerine	+++		
Chloronitropropane	+++	Hexylene	+	Nitromethane	+		
Chloropierin	+++	Hexyne	+	Nitropropane	+++		
Creosote	+++	Hydrogen	-	Nitrotoluene	+++		
Cresol	+++	Hydrogen bromide	+/-	Nonane	+++		
Crotonaldehyde	+++	Hydrogen chloride	+/-	Octalene	+++		
Cyclohexanol	+++	Hydrogen cyanide	+/-				
Cyclohexanone	+++	Hydrogen fluoride	+/-	Octane	+++	Scale	
Cyclohexene	+	Hydrogen iodide	+	Ozone	+++	Readily adsorbed	+++
		Hydrogen selenide	+/-	Paradichlorobenzene	+++	Adsorbed	+
				Pentane	+	Not readily adsorbed	+/-
						Not adsorbed	-

CARTRIDGES



H11 – HEPA Filter

Size: 150 x 200 x 50 mm

Weight: 400g

Frame: galvanized Steel

Particle size bigger than 0.3µm, Virus [unattached], Carbon dust, Sea salt, All combustion smoke, Radon progeny.



F7 – MERV13 Filter

Size: 150 x 200 x 50 mm

Weight: 375g

Frame: galvanized Steel

Particle size within 0.3µm-1.0µm, All bacteria, cooking oil, Most smoke, Copier toner, Most face powders, Most paint pigments.



Granulated Carbon Filter

Size: 150 x 200 x 50 mm

Weight: 1000g (900g carbon)

Frame: galvanized Steel



Canvas Carbon Filter

Size: 150 x 200 x 50 mm

Weight: 270g

Frame: galvanized Steel



Non standard carbon filters.

- Coconut shell based, activated carbon impregnated with 0.01% metallic silver.
- Non Standard Coconut shell based, activated carbon impregnated with 0.01% metallic bactericide.
- Non Standard Coconut shell based, activated carbon impregnated with 0.01% metallic silver bactericide..
- Non Standard Coconut shell based, activated carbon impregnated with 0.1% metallic silver.
- Non Standard Coconut shell based activated carbon impregnated with 0.05% metallic silver bactericide.
-

For all non standard filters, minimum order (20) may be required.

CONNECTORS

OUTPUTS



Filter output for PMCG, Quick connect 22mm fitting, 12VDC fan and 12 VDC Jack. Powered by supplied DC power supply adapter.



Filter output for Mini One, barb fitting for 8 mm silicone hose.



Filter output for Stand Alone unit. Quick connect 22 mm fitting.

INPUTS



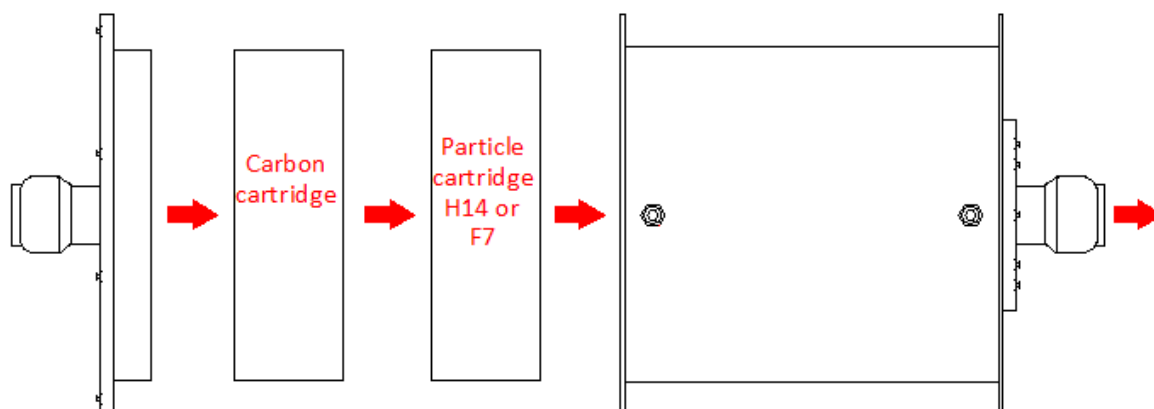
Filter input for PMCG, Quick connect 22mm fitting



Filter input for Mini One and Stand Alone units. Barb fitting for 8 mm hose

MANUAL

CARTRIDGE INSTALLATION

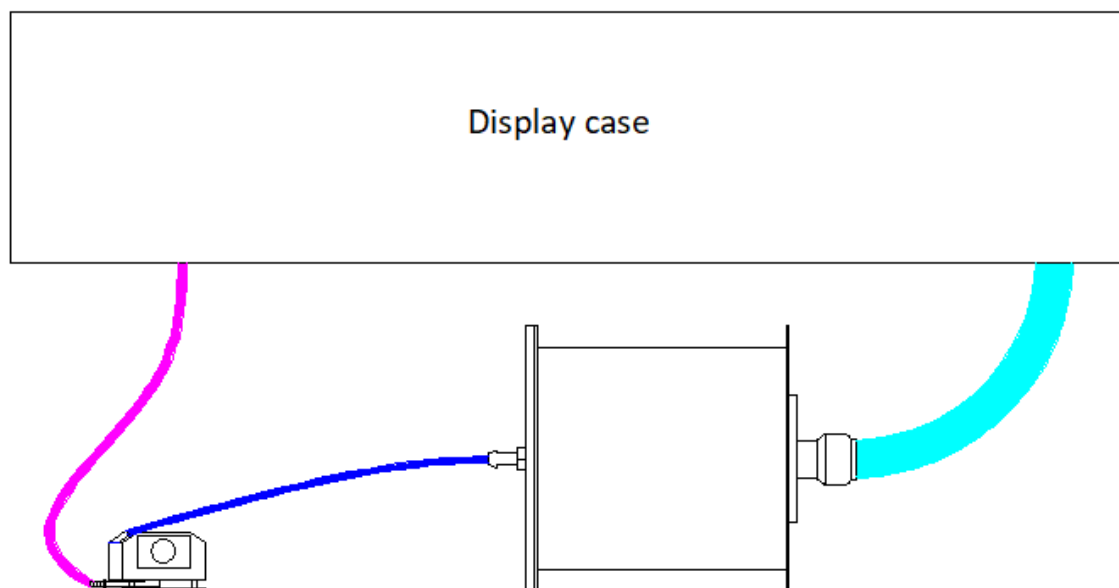


Filters are shipped with ordered cartridges already installed but when time comes for replacement it is important to do this in the correct order:

- First cartridge to install is the particle filter (H14 or F7) following the carbon cartridge. This configuration prevents any possible carbon dust from carbon cartridge to enter air stream.
- When installing the cover, it is important to make sure the silicone gasket is in the proper position to avoid leakage.

CONNECTING FILTERS IN PARTICULAR CONFIGURATION

STAND ALONE UNIT

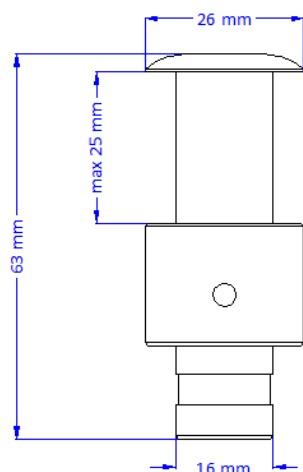


- 8mm silicone hose from air pump to the filter
- 22mm silicone hose from filter to the display case
- Optional 8mm silicone hose from the case to the pump

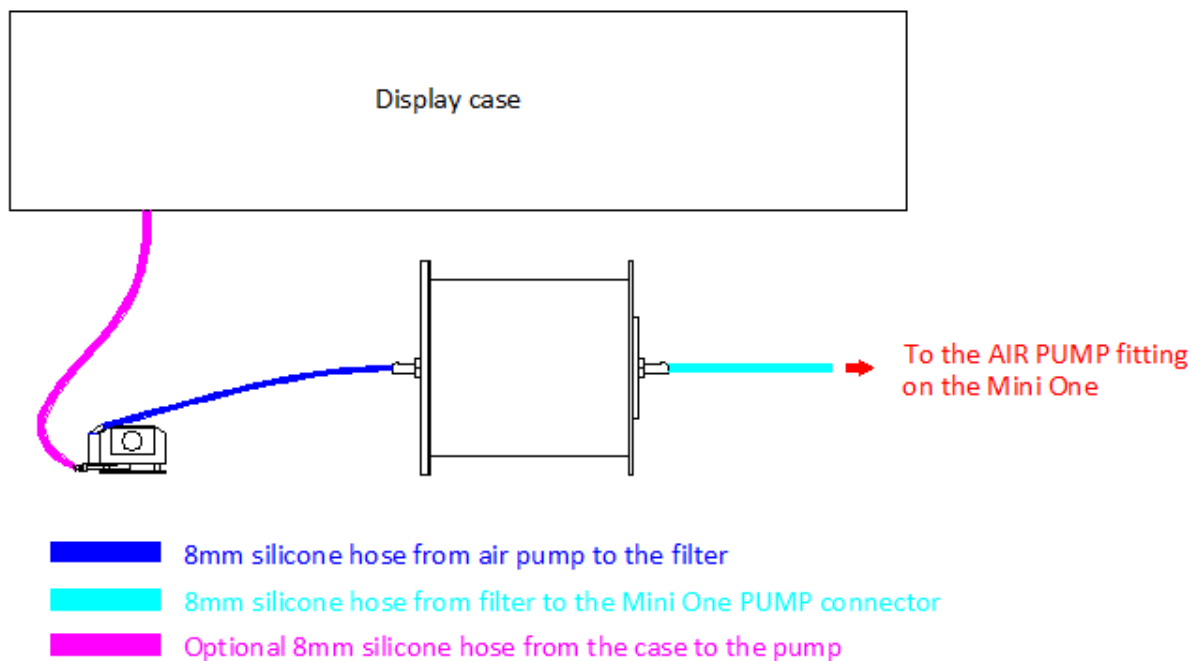
For stand alone configuration

- Air pump output is connected to the filter input by supplied 8 mm silicone hose,
- Output of the filter is connected to the case by a 22mm supplied silicone hose.
- Optionally it is possible to connect in a closed loop, pump input can be connected back to the case.

The stand-alone system is sent with a barb brass air connector for connecting hoses to the case.



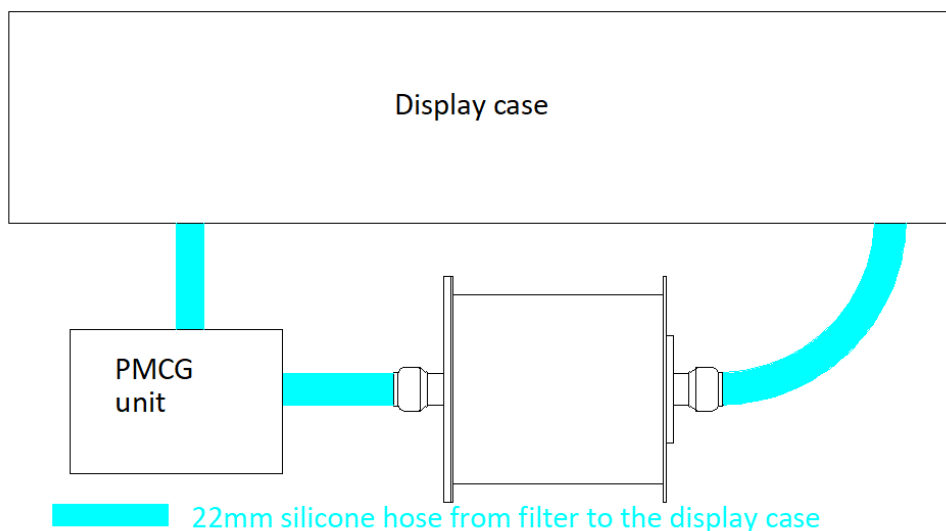
MINI ONE UNIT



Installing inline with our Mini One

- Filter output hose is fed directly into the Minione air pump barb fitting
- All other connections are identical to the standard Mini One installation.

PMCG FILTER INSTALLATION



Filter on PMCG unit is installed on the hose connected PMCG output with a display case. To make sure, System will be working at full capacity, filter fan must be connected to the power by included adapter.

INSTALLATION OF DIFFERENTIAL PRESSURE SWITCH

If filter unit is ordered with pressure switch it arrives preinstalled in the factory and properly set according to the ordered configuration. Switch has build in dry relay, which can be connected to a LED, sound device or BMS.

It is also possible to connect this switch to Preservatech's monitoring system. In that case, the server will send a email if internal pressure is out of allowable range.

If a switch was not ordered, internal pressure can be measured with a client's hand held, low pressure differential manometer.



CHANGING FILTER CATRIDGES

It is very difficult to specify how often filter cartridges should be replaced since it depends on a number of factors including air quality, volume of VOC's in the air. Generally, assuming filters are installed in a relatively clean museum environment, we recommend changing filters:

- H14 filters – every 4 months
- F7 filters – every 8 months
- Carbon filter – every 6 months
- Canvas type carbon filter – every 2 months.

CE DECLARATION OF CONFORMITY

Product: Blower fan for filtration system

Description: Blower fan assisting airflow in filter system working with PMCG humidity generator.

Manufacturer: Preservatech Europe sp z o.o. sp. k. Rowna 1, 85-846 Bydgoszcz

Country of origin: Poland

The above-mentioned product complies with following regulation:

EU Low Voltage Directive 2006/95/EC

EU Electromagnetic Compatibility Directive 2004/108/EC

Harmonised Standards: EN 60335-2-98:2003 + A2:2008, EN 61000-6-3:2007 + A1: 2011, EN 61000-6-1: 2007

Signed Oct 5, 2020 in Bydgoszcz



Jan Maternicki
President