

EMA series

Type B with integrated Type A* LAGs Analyser

NSNs: 6665-151805235 / 6665-151805236



- Certified according to ECAC performance requirements for Type B and Type A Liquid Explosive Detection Systems (LEDS)
- Accurate automatic inspection of sealed and unsealed LAGs (Liquids, Aerosols and Gels) in ~ 5 sec. (Type B) and ~ 4 sec. (Type A)
- Certified to screen liquids in clear, colored and opaque plastic and glass, metal and metallized containers
- Very low combined Nuisance Alarm Rate: < 0.4%
- Compact size and ergonomic design
- No-ionizing source or part in movements
- No maintenance required

* *Optional*



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Threat Detection through Electromagnetics

CEIA reserves the right to make changes, at any moment and without notice, to the models (including programming), their accessories and options, to the prices and conditions of sale





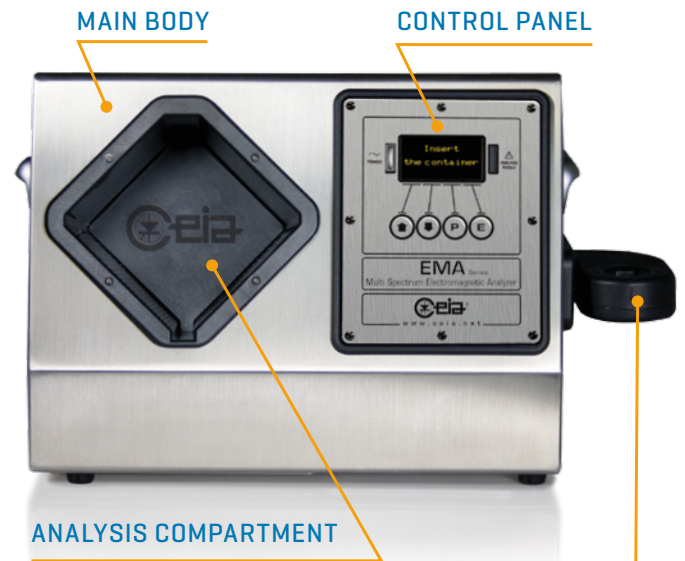
General description

The EMA is a compact device designed for the analysis of liquid containers and their contents with the goal of detecting the possible presence of explosive precursors and explosive liquids.

The content of the bottles is analyzed without the need to open the container as the detection is effected using simultaneous multiple sensing technologies.

The housing of the analyser, which is extremely robust, durable and easy to clean, is made of AISI 304 Stainless Steel and anti-friction plastic.

The Analyser consists of a main body, a control panel and an analysis compartment. In case of open containers such as cups and thermos flasks, it is possible to carry out the analysis by means of the type A integrated analyser (optional), using small disposable plastic sample cups to be inserted into an external probe.



Inspection of bottles or containers

- ✓ independently of their shape
- ✓ made of different materials
- ✓ in a wide range of capacity



INSERTION OF THE SAMPLE CUP INTO THE EXTERNAL PROBE

Examples of liquid containers that can be screened with EMA



CEIA EMA and LEDS Requirements

Type B Liquid Explosive Detection Systems are intended for the inspection of individual liquid containers with the purpose of detecting explosives and their precursors, according to the current Regulation Authority requirements [EU Reg. No 185/2010].

As containers can be made of different materials and can have different geometry and volume, the use of multiple simultaneous physical principles is necessary for a reliable and secure screening.

The CEIA EMA analyser family design started in 2003; since then the number of sensors installed on-board have been growing in order to comply with the increasing requirements on the liquid threats to be detected and on the kind of containers to be inspected. The comprehensive set of sensors installed on the equipment makes the EMA liquid analyser a unique machine on the market providing very high security and set for future detection requirements.

The detection capability of the certified CEIA EMA LAGs* analyser exceeds the current European requirements as it is able to detect additional dangerous substances.

Moreover, the CEIA EMA includes an EU Standard 3 Certified type A analyser [optional] to screen loose liquids, open containers or following to an alarm on the type B section. A disposable cup allows sampling and measurement of a minimum quantity of liquid to be analysed.

*LAGs: Liquids, Aerosols and Gels

Operating principle

When the operator places the bottle in the inspection cavity, its presence is automatically detected and the analysis is performed in ~ 5 seconds.

The analysis is performed simultaneously using multiple sensing technologies: Wideband Radio Frequency, Infrared, Magnetic Inductive and Gravimetric. The fields generated in the inspection cavity are weak in intensity and non-ionizing, therefore completely safe for the liquids and for the operator.

The fields interact with containers and with its content. The entire volume of the bottle is analyzed in order to verify its conformity with allowed liquids. After a few seconds, the unit provides an OK or Alarm message without requiring any data interpretation by the operator. Calibration is carried out automatically by the unit.

- ✓ If the results of the measurements correspond to the characteristics of allowed liquids [e.g. soft drinks, water, wine, liquor], EMA returns the "OK" message and a green light.
- ✓ If the results of the measurements correspond to the characteristics of explosive precursors and explosive liquids, EMA provides an acoustic and red light alarm and a message requiring further inspection of the content.

EMA type B Operational Sequence



1 THE OPERATOR INSERTS THE CONTAINER TO BE CHECKED AND LEAVES IT IN THE INSPECTION CAVITY.



2 THE ANALYSIS IS ACTIVATED AUTOMATICALLY. THE DISPLAY SHOWS THE ANALYSIS PROGRESS.



3a IF THE CONTAINER CONTENT IS IDENTIFIED AS CONFORMING, THE "OK" MESSAGE AND A GREEN LIGHT ARE DISPLAYED. A SHORT "DOUBLE BEEP" IS EMITTED BY THE INTERNAL SOUNDER.



3b IF THE CONTAINER CONTENT IS NOT CONFORMING, A YELLOW OR RED LIGHT AND AN ALARM MESSAGE ("NOT ALLOWED PRODUCT") ARE DISPLAYED. A BURST OF PROLONGED "BEEPS" IS EMITTED BY THE INTERNAL SOUNDER.

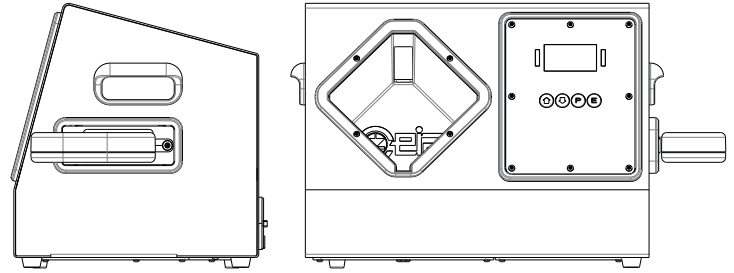


Scan QR code to see EMA video



Specifications

KEY FEATURES	Integrated Type B and Type A Standard 3 certified System		
	Automatic inspection of any type of containers		
	Inspection time in ~ 5 seconds (type B) and ~ 4 seconds (type A)		
	Multiple simultaneous sensing technologies		
	Minimum installation space		
	Minimum operator training required		
	All solid state		No mechanical parts in movements No-ionizing or laser sources
No maintenance required			
MULTIPLE SENSING TECHNOLOGY	Wideband Radio Frequency (R.F.)		
	Infrared (IR)		
	Magnetic Inductive		
	Gravimetric		
INSPECTION CHARACTERISTICS	Commercial Bottles of any shape and materials including plastic, glass, metal with capacity ranging from 100 ml to 2000 ml		
	Type A sample cups volume: 10 ml		
	Initial Start-up time: 15 sec. max		
	Analysis type: automatic		
	Analysis time: 5 sec. typical (type B) and 4 sec. typical (type A)		
DETECTABLE SUBSTANCES	Explosive precursors and explosive liquids		
ALARM SIGNALLING	LIGHT COLOR	DISPLAY MESSAGE	MEANING
	Green	OK	Allowed liquid
	Yellow	Not allowed product	Alarm of medium intensity
	Red	Not allowed product	Alarm of high intensity
ACOUSTIC ALARM			
THREAT CLASSIFICATION AVAILABLE			
OPERATOR INTERFACE	Easy to read high-contrast graphic display		
	High durability stainless steel function keys		
	Programmability of all the parameters protected by passwords		
FUNCTION AND CALIBRATION CONTROL	Automatic calibration, continuously running		
	Manual verification of calibration, performed by the operator through Pass/No-Pass reference test pieces (according to the operational procedures)		
COMMUNICATION CAPABILITY	RS-232 serial interface		
	Ethernet network interface		
REMOTE CONTROL AND ETHERNET NETWORKING FUNCTIONS	Available through the CEIA NetID Management software	Programming	
		Statistical Data Collection	
		Maintenance	
		Firmware upgrade	
DEGREE OF PROTECTION	IP 20 (IEC 60529)		
WEIGHT	17 kg (type B only)		
	17.5 kg (type B and type A)		



DIMENSIONS (WxDxH)

- 470 mm x 317 mm x 330 mm (type B only)
- 545 mm x 317 mm x 330 mm (type B and type A)

MAIN ELECTRONICS FEATURES	High integration SMT
	32-bit flash-based microcontrollers
	32-bit DSP
	Low power and high reliability
	Very low power inspection field, confined in the analysis compartment, completely safe for both the operator and the liquid
MAIN MECHANICAL FEATURES	No ionizing radiation or radioactive sources
	No laser sources
	Constructed entirely in AISI304 Stainless Steel
	Anti-fingerprint surface treatment
	Rugged and Durable
INSTALLATION AND MAINTENANCE	Compact and Aesthetically pleasing
	Automatic adjustment to environmental conditions
	No initial or periodic calibrations required
	Firmware upgradeable via RS232 or Ethernet interface
	No periodical maintenance or consumables required
CERTIFICATION AND CONFORMITY	Built-in automatic calibration and self-diagnosis system
	STANDARD 3 Certified according to ECAC performance requirements for Type B Liquid Explosive Detection Systems
	STANDARD 3 Certified according to ECAC performance requirements for Type A Liquid Explosive Detection Systems
	Conforms to the currently applicable International Standards for Electrical Safety and EMC
POWER SUPPLY	115/230V~ ±15%, 50/60 Hz ±10%, 15W
ENVIRONMENTAL CONDITIONS	Operating temperature: 0°C to +40°C
	Storage temperature: -10°C to +60°C
	Operating Relative humidity: 0 to 95% (without condensation)
	Storage Relative humidity: 0-98%, without condensation
NATO STOCK NUMBER	6665-151805235
	6665-151805236
TYPE A ANALYSER (OPTIONAL)	EMA is designed for the analysis of LAGs in their original container. In case of open containers such as cups and thermos flasks, it is possible to carry out the analysis by means of an optional type A analyser, using small disposable plastic sample cups. The external probe is installed on the right side of the device. Analysis time: 4 sec.

