

RIOT

# BUSShield

Advanced bus fire protection systems

**DRIVEN** INNOVATION

- Durable & Reliable
- Cost Effective
- Simple Installation & Maintenance
- Cloud Based Wi-Fi
   Diagnostic



# BUSShield

Advanced bus fire protection systems

### **BUSSHIELD SYSTEM**

The advanced Lehavot BUSShield system provides comprehensive fire protection for millions of passengers using public transportation around the world every day, combining excellent reliability, low lifecycle cost and outstanding fire suppression performance.

Lehavot's technology base on military harsh environment requirements of reliability, durability and ultra-fast response.

Tens of thousands of installations and hundreds of successful activations ensure that Lehavot's BUSShield is widely recognised as a market leader in the automotive fire protection.



## **LEHAVOT BUSSHIELD ADVANTAGES:**

- **FRV** Fast Release Valve 10ms Extinguishing cylinders (MIL-STD-810).
- Flexible stainless steel pipes (Teflon internal) simple and fast installation.
- Unique on-line **cloud-based Wi-Fi diagnostic** platform 30% bus downtime reduction ownership costs reduction.
- **Dry chemical** ABC best-in-class for excellent suppresion performance.
- Internal recharging batteries back up.
- Built in test for continues system monitoring.
- Simple installation & maintenance.

DI	TRANSPORT STYRELSEN Swedish Transport Agency		Botockning/Reference
CERTIFICATE			TSV 2017-1512
Fire suppression system for engine	Ð	Communication concernin a component with regard to	g approval granted of a type of o Regulation No. 107
compartment			
Insued to	Approval No:		E5 107R-06005
Lehavot Production and Protection Ltd 12125 Lehavot Habashan, Israel	Section I		
Product and product name Fire suppression system, BUS Shield		ide name of manufacturer)	Lehavot Production and Protection (1995) La
Type	2. Ty	pe:	BUSShield Fire Suppression System
Dry chemical based fire suppression system Extinguishing agent: ABC 94		rans of identification of type, if rked on the component:	Product name and manufacturers name
Technical data/Performance/Classification	3.1. Lo	cation of that marking:	On the agent cylinder
See appendix to this certificate. Certificate		-	Lehavot Production and Protection (1995) Lt
Certification The product discribed above fulfills the requirements in RISE Certification rules regarding Fire suppression systems in engine compartments of Doues and counches. SPCR 110. The certification is based on the secondstor bits certification. In Second Doues the standard specified on the secondstor bits certification.	4. jata	and address of manufactures.	Kibbutz Lehavot Habashan, Uper Galilee 1212500 Israel
Marking		pplicable, name and address of nufacturer's representative:	
Marking shall show SPCR 1832, RSEE logn, manufacturer's logn, the number of this certificate, the name of the product, its serial number, the name of the manufacturer and RISE ₱-symbol. See appendix for details. Validity:	6. Lo	cation and method of affixing of	See item 3
This certificate is valid until not longer than 9 <sup>th</sup> July 2023	Section II		
Miscellaneous The manufacturer's in-house inspection is under surveillance by RISE in accordance with section 4 and 5 of SPCR 183. Other terms and conditions are set out in section 6 of SPCR 183.		ditional information ( where licable:	See addendum
Anan Areson Marth		chnical service responsible for rying out the tests:	RISE Research Institutes of Sweden AB Box 857 SE-501 15 BORÁS
	3 Dat	te of test report:	2017-05-22
	4. Nu	mber of test report:	7900263-01
	5. Re	marks (if any):	See addendum
	6, Pla	ke:	Borlänge
Certificate No. 5C0195-181 insue 1 / 2018-07-09	7. Dal	le:	2018-03-28
RISE Research Institutes of Sweden AB   Certification RISE Research Institutes of Sweden AB   Certification Phone: +64 0535.52.000 SPP P			
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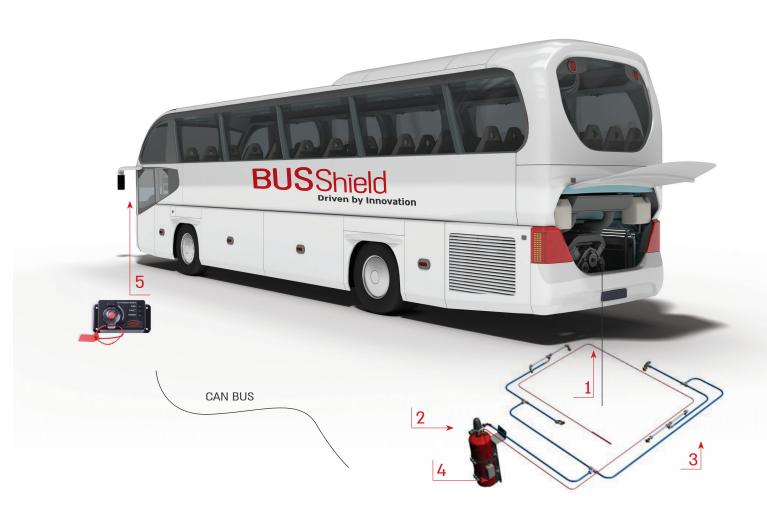


#### **INSTALLATION - SIMPLE & EFFICIENT**

- One cylinder Minimal foot print.
- Flexible pipes and hose Installation friendly.
- Small amount of nozzles (6-9).
- Modular concept.
- Simple cabling.
- Automotive standard connectors.
- No Special tooling or equipment required.
- Built-in-Test (BIT) for complete system monitoring.

#### **MAINTENANCE-SIMPLE, FAST**

- Easy access to main components.
- Fast parts replacement.
- Pulse coded fault indication.
- Accurate failures diagnostic.
- No special equipment or tools required.
- Technical support 24/7.
- On-line cloud-based Wi-Fi diagnostic.



### SYSTEM MAIN COMPONENTS

- 1. Linear Heat Detector
- 2. Dry Chemical Automatic Cylinder
- 3. Distribution system
- 4. Junction box
- 5. HMI cloud-based Wi-Fi diagnostic

# TENS OF THOUSANDS OF INSTALLATIONS WORLDWIDE:

- Buses
- Military armor vehicles
- Heavy duty and off-road vehicles

	Feature			
Linear Heat Sensing	Simple & Reliable Detection			
Detector	Operation Temperature	180C°		
0	Connection monitoring	Continuous EOL 10K Resistor		
VPS 8kg/10Kg	Best Design for Total Flooding			
Automatic Cylinder FRV - Fast Release Valve	Valve	FRV-Fast Release Volve 10ms, 3/4" Outlet		
	Actuator	MetronTM 1W/1A		
	Pressure SW	Including		
	Environmental Conditions	MIL-STD-810		
	Valve Working Media	Dry Chemical, Clean Agent, Water-Mist, Foam		
	VPS Agent	ABC-94 Dry Chemical		
	Cylinder Orientations	Vertical, Horizontal		
	Agent Replacement	Every 6 Years		
	Operating Power	8-34 Vdc, 240mW MIL-STD 1275		
	Dimensions	- Height: 8Kg 667mm, 10Kg 758mm - Diameter: 180 mm - Weight(gross): 8Kg(20 kg), 10Kg(23.3Kg)		
Distribution System	Adaptable, Easy to Install			
53	Assembly	Easy, Modular		
A A	Hose	Flexible 1/2" and 3/8" PTFE SAE 100R 14A		
	Pipes	Stainless Steel Ø12mm		
	Nozzles	Total Flooding		
	Nozzles Protection	Silicon Cover		
Junction Box	Redundant, Harsh Environment			
Lehavoi	Lines Monitoring	<ul> <li>Actuator Disconnected</li> <li>Low Pressure</li> <li>Pressure SW Disconnected</li> <li>Detector Disconnected</li> </ul>		
	Extinguisher Activation	Automatic + Remote (HMI)		
	Ingress Protection	IP-67, IP69K		
	Environmental conditions	MIL-STD-810, -40C° -125C°		
	Connectors	Terminal Block		
	Power	8-34 Vdc, 200mW, MIL-STD 1275		
	Power Backup	Internal Batteries		
	Communication with HMI	CAN BUS		
HMI Friday for the state of the	Built In Test Event Logging	Cloud-Based Wi-Fi Diagnostic		
	Mounting	Surface or Flush		
	Manual Activation SW	- Seal Protection Optional		
	Visual Indications	Fire, Fault, Power		
	Audible Indication	Fire - Continuous, Fault - Pulse Coded		
	Events Log	RTC, Alarms & Faults		
	Connectivity to driver panel	Dry Contact: Fault NC, Alarm NO, A/C NC RS-485		
	Connectors	Molex Automotive		
	Power	8-34 Vdc, 240mW, MIL-STD 1275		
	Communication with Unique Junction Box	CAN BUS		

# **ABOUT LEHAVOT**

LEHAVOT an Israeli based company has been recognized as a pioneer and leading provider of high quality Fire Protection Systems for 70 years, which offers custom designing, modeling, testing, and manufacture from a single supplier.

Incorporating the most advanced technologies, LEHAVOT's best-of-breed solutions have been proven in every level of fire protection.

Today's tailor-made solutions help global customers meet the challenges of the 21st century, delivering superior performance over a long service life at the most competitive price.





70 years in Fire Protection Solutions



Global

**Presence** 

system

**Q**o

Advanced Technology



Innovative Design

protection system

# **AUTOMATIC FIRE PROTECTION SYSTEMS BY LEHAVOT**



Advanced fire protection systems



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