



**PRE -ENGINEERED AUTOMATIC DIRECT LOW PRESSURE
FIRE SUPPRESSION SYSTEM UTILISING   FK5-1-12 CLEAN AGENT
TECHNICAL DATA AND SPECIFICATION SHEET**

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www.autofirex.co.uk

AutoFireX Limited. Regd. Office 12, High Street, Stonehouse, England, Gloucestershire, GL10 2NA, United Kingdom
Company Registration No. 11553258; VAT Registration No. 305 7385 04
ISO 9001-2015 Certified



DIRECT RELEASE LOW PRESSURE - DLP CLEAN AGENT FK5-1-12 SYSTEM UNIT

PRODUCT OVERVIEW & PRINCIPLE OF OPERATION

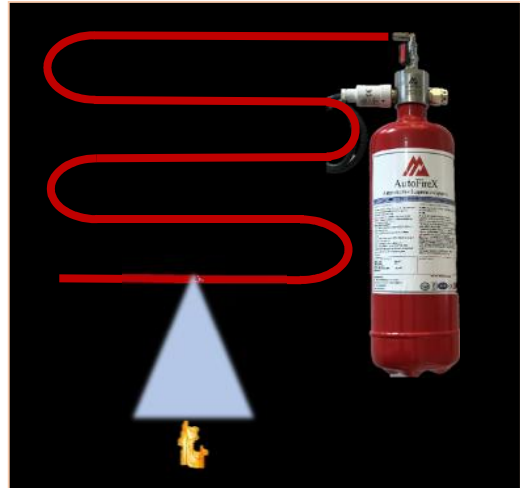
AutoFireX DLP- Direct Release Low-Pressure Clean Agent Systems are primarily a Pre-Engineered Automatic Fire detection and suppression System utilising various Low-pressure agents like, Clean agents (HFC227ea, FK 5-1-12, FE36). These Units are designed, manufactured, and tested in ISO 9001:2015 certified facilities

The AutoFireX Linear Pneumatic Fire Detection Tubing (LP-FDT) is installed and connected to DLP Valve and routed throughout the protected hazard area/enclosure. Being heat sensitive, the primary function of Linear Pneumatic Fire Detection Tube (under pressure) is to detect heat/fire and activate the valve for discharge of the agent by rupturing at the hottest point along its installed length on flame impingement. On rupture a nozzle is formed at the burst point.

The clean agent under pressure, in the cylinder then flows out through the burst point, distributing the clean agent through the protected enclosure

Each DLP system consists of a High-Grade Stainless-Steel Direct valve with stainless steel siphon tube, integrated pressure gauge embedded in the valve body for extra protection to monitor cylinder pressure, and a quarter turn isolation valve to interfaces with the AutoFireX Fire Detection Tubing. A PRD (Pressure Relief Device) tested to 44Bar is also provided. The systems is supplied complete with CE Cylinders and Brackets with appropriate agents, as required.

To assist in annunciation, an optional pressure switch provided, can be installed at one of the ports on valve or at the end of the detection line using a End of Line Adaptor, also available with the system. The pressure switch provides a potential free contact, that can be interfaced, with existing FACP (Fire Alarm Control Panel) to indicate system discharge, shutdown ventilation, shut-off electrical power, as may be required. Alternatively, it can also be connected to a Audio Visual (A/V) alarm unit for annunciation.



GENERAL SPECIFICATION

SYSTEM INFORMATION			PERFORMANCE INFORMATION	
PRODUCT CODE	AGENT QTY.	CYLINDER VOLUME	OPERATING PRESSURE(@21°C)	MAX VOLUME COVERAGE*
4000101	1 kg	1400 ml	15 Bar	1m ³
4000102	2 kg	2218 ml	15 Bar	2m ³
4000105	5 kg	5000 ml	15 Bar	5m ³
4000106	9 kg	11000 ml	15 Bar	9m ³

*Figures based on ideal conditions in fully enclosed space. Actual figures may vary according to application.

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Maximum volume coverage is determined by agent concentration discharged within the enclosure where the fire hazard is located. The discharge time for DLP system utilising various agents differ from agent to agent and capacity of the cylinder.

SUPPRESSION AGENT  

AutoFireX Automatic Linear Pneumatic DLP – Direct release Low Pressure fire suppression units are designed and supplied with UL Listed and FM approved Clean Agent FK5-1-12 (Fluro Ketone- generic name), Chemical formula -CF₃CF₂C(O)CF(CF₃)₂, which is more popularly recognised as Novec 1230 (Brand) manufactured by another reputed manufacturer. This Fluid has been evaluated and approved for use in unoccupied areas as a Total Flooding agent in NFPA 2001. This agent is a colourless, low odour fluid under room temperature condition. It is tested for being nontoxic under storage condition, electrically nonconductive, leaves no residue, environmentally friendly- Zero Ozone depleting potential & GWP of 1, and is an extremely effective fire suppression agent.

USAGE

Clean Agent FK5-1-12 Fire Protection Fluid is stored and transported as liquid under normal temperature and is discharged as gaseous fire suppression agent that is effective for use on:

- Class A – Surface type fires
- Class B – Flammable liquid fires
- Class C – Electrical fires

TYPICAL OPERATING AND ENVIRONMENTAL LIMITATIONS

DESCRIPTION	TYPICAL VALUES
SYSTEM OPERATING TEMPRATURE	-20°C to +60°C
SYSTEM STORGE TEMPRATURE	-5°C to +54°C
SYSTEM OPERATING PRESSURE	15 Bar
OPERATING HUMIDITY LEVEL	40-60 Rh

DESIGN & ENGINEERING CONSIDERATIONS

AutoFireX DLP systems are based on Pre-Engineered design concept that minimizes the amount of engineering involved in system design. The DIOM – Design Installation, Operating & Maintenance Manual clearly specifies the limitations and capabilities of the system. All such systems including the AutoFireX FDT detection/discharge tubing when installed within the limitations stated in the manual, no hydraulic calculations are required to determine pressure drop, agent flow, or discharge time.

ASSEMBLY DIMENSIONS:

PRODUCT CODE/CAP	TOTAL HEIGHT “A”(mm)	DIAMETER “B”(mm)
4000101/1 KG	326mm	90mm
4000102/2 KG	358mm	110mm
4000105/5 KG	360mm	150mm
4000106/9 KG	622mm	180mm



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CE MARKED CYLINDERS FOR FIRE SUPPRESSION SYSTEM UNITS



AutoFireX® Automatic Fire Suppression systems utilise a selection of CE marked Cylinders in assorted sizes and shapes. The cylinders can be used for static installations and can be supplied separately to our systems or valves as they do hold their own individual certifications.

Key Features

- High Grade Mild Steel Material
- 100% Non-Destructive Tested at 35 Bar
- Bursting pressure at min 50 Bar
- High Grade Stainless Steel Threaded Neck
- Shiny shot Blasted Red RAL 3000
- Internally lined with Grey Plastic Polymer/Powder coating
- Matching Medium and Heavy-Duty Brackets available
- Stainless Steel Cylinders also available

Extinguishing Agents Compatibility

- Foam
- Powder
- Class F Wet Chemical
- Clean Agent
- Water
- Inert Gas

Absolute Maximum Ratings

Operating Pressure	Min 1 Bar	Typical 20 Bar – 30 Bar	Max 50 Bar Bursting
Operating Temperature	-30° C	+25° C	+60° C
Temp. Cycle Limits	+5° C	+25° C	+35° C
Operating Humidity	-	2° C/min	10° C/min
Storage Humidity	-	35-65 Rh	-
Operation Cycles	-	Unlimited	-

TYPICAL CONSTRUCTION FEATURES:

Material Body	DC04 EN 10130 Non-alloy Quality Steel .03-.06%C, .18-.40%Mn, .02%Si, .02%S, .02%P, .02-.06%Al
Material Neck	316L AISI/DIN EN 1.4435 .02%C, <2%Mn, 17.3%Cr, 12.6%Ni, 2.6%Mo, <.10%N
Density (kg/dm3)	8.0
Elastic Modulus	200 (GPa)
Thermal Conductivity	15 (W/m.C)
Electrical Resistivity	0.75 (n.O.m)
Thermal Expansion	16.0 (µm/m/°C)
Standard Tensile Test	Approx. 289 (Body) (MPa)
Yield Strength	Approx. 182 (Body)
Standard Requirements	CE-1697-PED-H-15/026 EN3-8 PED-97/23/EC EN ISO 14341 (Welding) EN ISO 14343 (Welding)
Cylinders Marked	(SERIAL NO.) CE1697-E- 2(DRW)/(YEAR) TSD-30°C+60°C-V (VOL) PT35 Bar-PS25 Bar

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BRACKETS FOR DLP SYSTEMS:



TYPICAL CONSTRUCTION FEATURES:

Material Amortiser	Black Rubber SBR
Material Body	DC04 EN 10130 Non-alloy Quality Steel .03-.06%C, .18-.40%Mn, .02%Si, .02%S, .02%P, .02-.06%A
Density (kg/dm3)	8.0
Elastic Modulus	200 (GPa)
Thermal Conductivity	15 (W/m.C)
Electrical Resistivity	0.75 (nO.m)
Thermal Expansion	16.0 (µm/m/°C)
Yield Strength	around 182 (Body)
Standard Requirements	Can withstand 240 Hours Salt Spray per ASTM B0117 without corrosion.
Cylinders Marked	Not Visible Markings or identification.

Product Overview

The AutoFireX® Brackets are supplied along with the system as well as spares and are different for different size and capacity of the cylinder. The brackets can be used for static installations as well as mobile installations. These are user friendly and easy to handle and come with an adjustable standard cylinder clamp.

Key Features

- High Grade Steel Material
- Black Powder Coated Polyester RAL9005
- Anti-Vibration Rubber Amortisers
- Adjustable Cylinder Clamps Included

Absolute Maximum Ratings

	Min	Typical	Max
Operating Pressure		Not Applicable	
Operating Temperature	-30° C	+25° C	+65° C
Temp. Cycle Limits	+5° C	+25° C	+35° C
Operating Humidity	-	2° C/min	10° C/min
Storage Humidity	-	35-65 Rh	-
Operation Cycles	-	Unlimited	-

Distributor:

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