

TYPHOON[®] STAND-ALONE FIRE SUPPRESSION EQUIPMENT

FK-5-1-12 SERIES

PRODUCTS, EQUIPMENT & SERVICES



**Typhoon® Stand-Alone
Fire Suppression Equipment
FK-5-1-12 SERIES**

APPLICATIONS



ALL ELECTRICAL AND ELECTRONIC EQUIPMENT AREAS

- Electrical cabinets, computer data relay and distribution rooms, control centers
- IT, automation, and telecoms centers
- Renewable energy: electricity storage units, wind turbines, delivery stations, substations
- Mines, storage units



OIL AND GAS INDUSTRIES, POWER PLANTS

MUSEUMS, LIBRARIES, ARCHIVES



HOSPITALS AND MEDICAL FACILITIES

CIVIL AND MILITARY MARITIME, AVIATION, RAIL SECTORS



PRODUCTS, EQUIPMENT & SERVICES

Typhoon® Stand-Alone Fire Suppression Equipment FK-5-1-12 SERIES

OUR EXPERTISE AT YOUR SERVICE

As one of the world's leading space companies, lead contractor for the European Ariane launchers, ArianeGroup has a wealth of unparalleled, often unique expertise and innovative solutions in state-of-the-art propulsion technologies

The company's determination to make the benefits of space available as widely as possible has led it to channel this expertise into the development of derived products,

equipment and services for sectors beyond the space industry

A notable example of such core-business derived activity is the production and marketing of equipment for vehicle safety and fire suppression. Drawing on specialist expertise in energetic materials, ArianeGroup's Typhoon® Stand-Alone Fire Suppression Equipment offers significant advantages for customers

AIRBUS-SAFRAN
JOINT COMPANY

50/50

SUBSIDIARIES AND MAIN
AFFILIATES

11

9,000

EMPLOYEES
IN FRANCE AND GERMANY

FEATURES

New-generation FK-5-1-12 gaseous fire suppression equipment:
maintenance-free, environmentally friendly, easy to install

- **Non-pressurized cylinder**
 - Highly reliable, maintenance-free
 - No periodic inspection required
 - All-in-one design for minimal weight, ease of handling and installation
- **Can be fixed very close to risk areas without piping**
- **Limited footprint**
- **Effective total flooding** for Class A, B, C, and electrical fires
- **Protection by one or more Typhoon® units** configured to achieve specified coverage concentration
- **FK-5-1-12 is a fast-acting extinguishing agent which is clean, environmentally sustainable, and safe.**

It is particularly suitable for use in areas:

 - where people are normally present
 - where there are high-value assets or where clean-up activities would create concerns
 - where an electrically non-conductive medium is required

Typhoon® Fire
Suppression Equipment
FK-5-1-12 Series

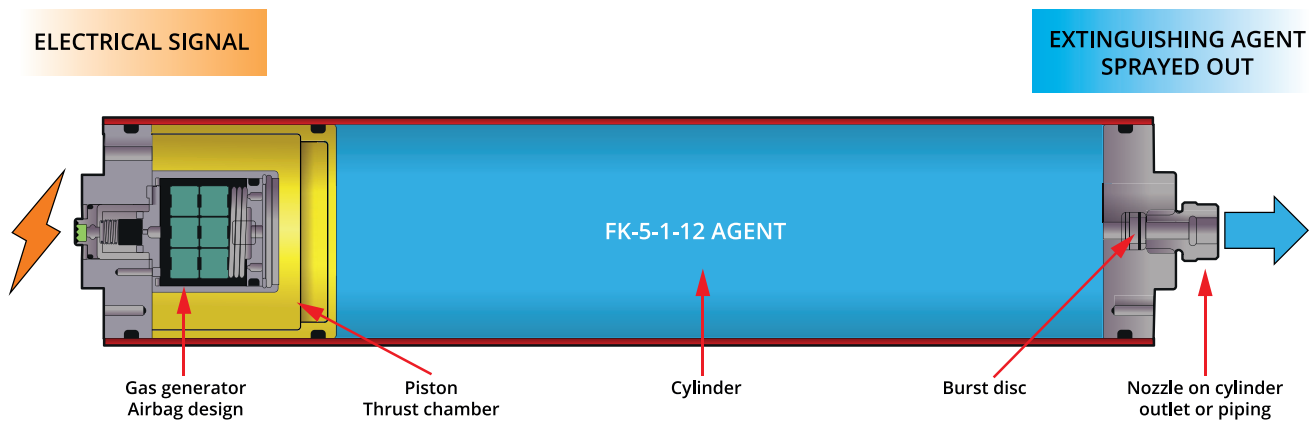


OPERATION

- **Manual activation or automatic actuation on reception of an electrical signal** from a suitable approved detection system. Discharge in under 10 seconds
- **Composed of a cylinder housing:**
 - **an airbag-type gas generator** which is triggered by the electrical signal and delivers the necessary pressure in the thrust chamber to start the piston moving and thus discharging the FK-5-1-12 agent
 - **a canister containing the FK-5-1-12 agent** sealed with a burst disc valve calibrated to open when the pressure output reaches the specified level for optimal uniform agent discharge
- **Operates in any position, vertical or horizontal**, and is easily installed in any configuration required by the customer for optimum risk-area coverage
 - **Standard design:** a nozzle is mounted on the cylinder outlet. The Typhoon® Fire Suppression Equipment's low weight and compact dimensions allow it to be installed close to risk areas without piping
 - **Modular Typhoon® Fire Suppression Equipment** can be used, with specific piping configurations and one or several nozzles



Typhoon® Fire Suppression Equipment installed horizontally (ceiling mounted)



FK-5-1-12 FIRE EXTINGUISHING AGENT CHARACTERISTICS

The FK-5-1-12 extinguishing agent is stored unpressurized in liquid form and instantly vaporizes upon discharge in ambient air pressure. Effective extinguishing concentration (4–6%) is achieved extremely rapidly

- The FK-5-1-12 agent complies with regulations APSAD R13 and NFPA-2001 and ISO-14520 Standards related to Clean Agent Fire Extinguishing Systems
- Fire suppression method: heat absorption so that the fire cannot sustain itself
- A carbon-fluorine-oxygen compound (fluorinated ketone): dodecafluoro-2-methylpentan-3-one ($\text{CF}_3\text{CF}_2\text{C}(\text{O})\text{CF}(\text{CF}_3)_2$)
- FK-5-1-12 is classified as a clean agent and leaves no residue

Environmentally friendly: complies with the highest environmental standards

- Offers a long-term, sustainable alternative to Halons, HFCs (hydrofluorocarbons) and PFCs (perfluorocarbons)
- Not subject to Kyoto Protocol restrictions - negligible Global Warming Potential (GWP = 1)
- Zero Ozone Depletion Potential (ODP = 0)
- Atmospheric lifetime of less than five days

People-safe for use in occupied spaces

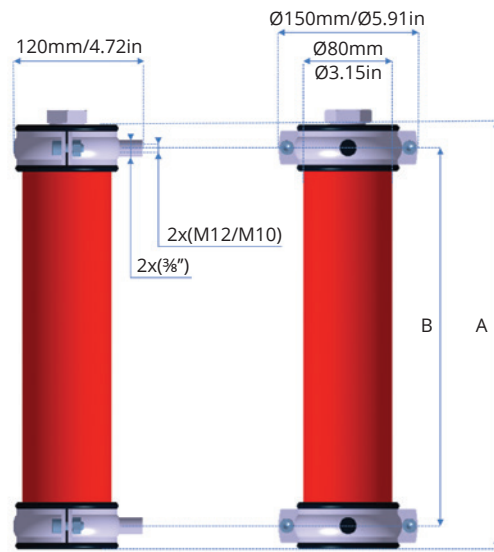
- NOAEL: 10% (No Observable Adverse Effect Level)
- LOAEL > 10% (Lowest Observed Adverse Effect Level)
- Approved by the US Environmental Protection Agency under SNAP (Significant New Alternatives Policy) program rules
- Registered in the European List of Notified Chemical Substances (ELINCS)



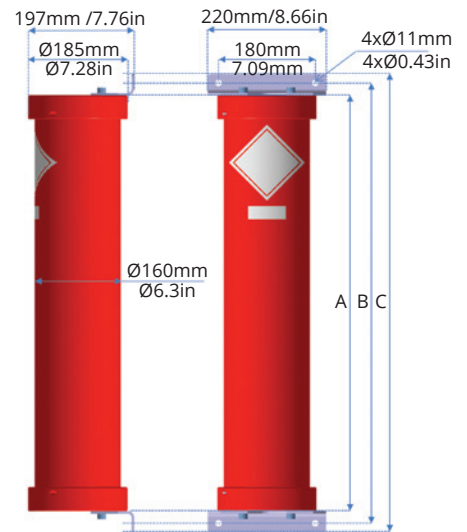
TYPHOON® FIRE SUPPRESSION EQUIPMENT DESIGN DETAILS FK-5-1-12 SERIES

Typhoon® Stand-Alone Fire Suppression Equipment FK-5-1-12 Series references	PM00111R	PM00112S	PM00113T	PM00114V
Designation	TYPHOON80-FK5112-1600	TYPHOON80-FK5112-2400	TYPHOON160-FK5112-12800	TYPHOON160-FK5112-16000
Agent volume (liters)	1	1.5	8	10
Cylinder mass when filled with agent (kg lbs)	3.2 7.05	4.2 9.26	26.8 59.08	31 68.34
Discharge time (sec)	<10		<10	
A: Cylinder length (mm in)	380.4 14.98	474.5 18.68	772.5 30.41	922.5 36.32
B: Distance between fasteners (mm in)	339 13.35	433 17.05	818.5 32.22	968.5 38.13
C: Length including brackets (mm in)			853 33.58	1,002 39.45
Fixing kit references	PM00116Z		PM00115W	

DIMENSIONS



Ref. PM00111R, PM00112S and PM00116Z



Ref. PM00113T, PM00114V and PM00115W

STANDARD ELECTRICAL CONNECTION

- Electric line length: 2 meters (78.74 inches) equipped with an end-connector for Typhoon® Fire Suppression Equipment junction
- Ignition current: 1.2 Amp
- Pulse duration: 2 milliseconds
- Maximum line monitoring current: 0.01 Amp

OPERATION PARAMETERS

- Temperatures: -10°C to +60°C (+14°F to +140°F)
- Transport vibration: DIN EN 12094-4

UN TRANSPORT CLASSIFICATION

- Hazard class 9 / UN: 3268
- Official transport designation: Safety Device, electrically initiated
- Transport limitation, land and sea: None
- Cargo air: 100 kg/package
- Passenger air: 25 kg/package

CERTIFICATION / APPROVAL

- EU type examination certificate (Module B / Directive 2013/29/EU)

INSTALLATION / COMMISSIONING / CONTROL

- All installation, commissioning and control of Typhoon® Stand-Alone Fire Suppression Equipment must be carried out by personnel authorized and trained by ArianeGroup as set out in the ArianeGroup user manual

#spaceenablers

www.ariane.group



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