

PRE-ENGINEERED AUTOMATIC INDIRECT UNIT

Designed for use with HFC-227ea Clean Agent Fire Suppressant

DESCRIPTION

Firetrace Pre-Engineered Automatic Indirect Suppression Units are designed, manufactured, and tested in ISO 9001:2008 certified facilities. All system cylinders are stamped in accordance with the relevant DOT/TC requirements.

Each system is equipped with a nickel plated brass valve, a pressure gauge to monitor cylinder pressure, and a quarter turn ball valve that interfaces with the Firetrace Detection Tubing. A piston in the valve bore is equipped with a static seal that keeps the agent under pressure within the cylinder, while allowing the pressure to equalize on both sides of the piston.

When the pressure from the top assembly is released by means of automatic or manual activation, the internal piston slides to its fully open position and allows the HFC-227ea agent to discharge through the two outlets.



Each assembly is equipped with a straight siphon tube and can only be mounted in a vertical (upright) position.

GENERAL SPECIFICATIONS

SYSTEM INFORMATION			CYLINDER INFORMATION			PERFORMANCE INFORMATION		
MODEL NUMBER	AGENT AMOUNT	GROSS WEIGHT	VOLUME	SPECIFICATION		OPERATING PRESSURE 70°F	MAX AREA COVERAGE	MAX VOLUME COVERAGE
940302	3.0 lbs (1.36 kg)	6.5 lbs (3.0 kg)	75 in ³ (1.2 L)	DOT 4BA240	TC 4BAM16	150 PSI (10.34 Bar)	36 ft ² (3.34 m ²)	61.0 ft ³ (1.73 m ³)
940602	6.0 lbs (2.72 kg)	13.3 lbs (6.0 kg)	145 in ³ (2.4 L)	DOT 4BA240	TC 4BAM16	150 PSI (10.34 Bar)	36 ft ² (3.34 m ²)	123.0 ft ³ (3.48 m ³)
940202	12 lbs (5.44 kg)	24.6 lbs (11.2 kg)	300 in ³ (4.9 L)	DOT 4BA360	TC 4BAM25	150 PSI (10.34 Bar)	36 ft ² (3.34 m ²)	246.0 ft ³ (6.97 m ³)

SUPPRESSION AGENT

The suppression agent used in Firetrace pre-engineered automatic indirect fire suppression units is Heptafluoropropane, more commonly known as HFC-227ea.

HFC-227ea (1,1,1,2,3,3,3-heptafluoropropane, $\text{CF}_3\text{CHFCF}_3$) is a colorless odorless gas, low in toxicity, electrically non-conductive, leaves no residue, and is an extremely effective fire suppression agent.

HFC-227ea is included in NFPA-2001 and has been evaluated and approved for use in occupied areas as a Total Flooding agent when used as specified under the U.S. Environmental Protection Agency (EPA) SNAP Program rules. Refer to the SNAP Program rules for more information.

ENVIRONMENTAL LIMITATIONS

- Storage Temperature:
0°F [-17.8°C] to 130°F [54.4°C]
- System Operating Pressure:
150 psig [10.3 bar] at 70° F [21°C]

ENGINEERING CONSIDERATIONS

Each installed Pre-Engineered Automatic Indirect Suppression Unit is equipped with its own detection tubing, discharge piping, and nozzles. The pre-engineered concept minimizes the amount of engineering involved in the unit's design. When the discharge piping and nozzles are installed within the limitations stated in the manual no hydraulic calculations are required to determine pressure drop, agent flow, or discharge time.

For the Indirect HFC-227ea Systems, the Firetrace tubing performs two functions: heat detection, and system activation. The tubing is installed throughout the hazard volume with one end connected to the top of the cylinder valve, then pressurized with nitrogen to 195 psig. The detector tubing is heat sensitive and in a fire situation is designed to burst at any point along the tube upon direct flame impingement or where the radiant heat from the flame reaches approximately 375°F to 400°F (190.5°C to 204°C). The rupture

of the tube results in a complete discharge of the extinguishing agent through the pipe/nozzle network.

The hazard being protected can be any size, shape, or volume provided that the hazard being protected is within the limitations described in the manual. Each suppression unit shall be equipped with its own automatic (non-electric) detection system, which when actuated, automatically releases the suppression agent into the hazard area.

Since the units are supplied as automatic units (e.g. no simultaneous manual or electric actuation means is provided), only one (1) suppression unit can be used to protect one hazard. These suppression units cannot be combined to protect a larger size hazard, since they are not designed to provide for simultaneous actuation of (2) or more units.

Local authorities having jurisdiction should be consulted as to the acceptability for particular hazards and requirements covering installation.

USAGE

HFC-227ea is a gaseous fire-extinguishing agent that is effective for use on:

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

LISTINGS AND APPROVALS

Underwriters Laboratories:	GMFZ EX5323
Factory Mutual:	PI 3009890
CSIRO/Acetifier:	AFP - 2834

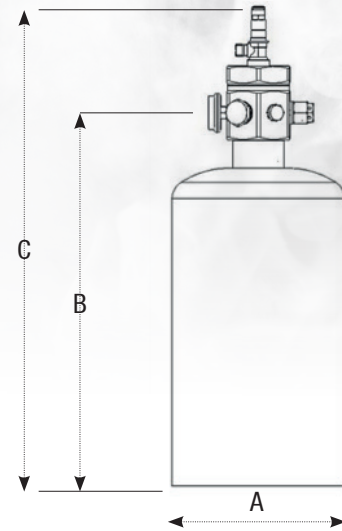


NOTE: Reference P/Ns 940301, 940601, 941201 (Systems minus Agent) for listings and approvals.

SERVICE NOTE: Cylinders Assemblies shall be designed, filled, pressurized and maintained by trained personnel in accordance with Firetrace Design, Installation, Operation and Maintenance Manuals and related prescriptive documents.

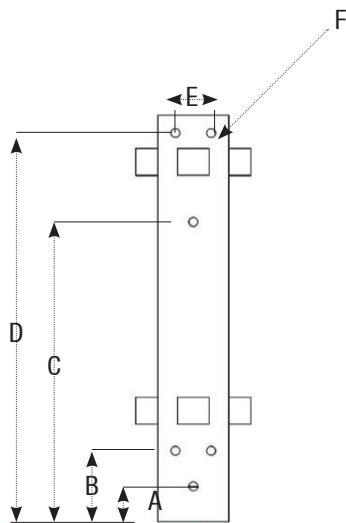
ASSEMBLY DIMENSIONS

MODEL NUMBER	OUTSIDE DIAMETER	OUTLET HEIGHT	TOTAL HEIGHT
940302	3.0 in (7.6 cm)	13.2 in (33.5 cm)	17.4 in (44.1 cm)
940602	4.3 in (10.8 cm)	13.6 in (34.5 cm)	17.5 in (44.4 cm)
940202	6.3 in (16.0 cm)	13.8 in (35.0 cm)	17.7 in (44.9 cm)

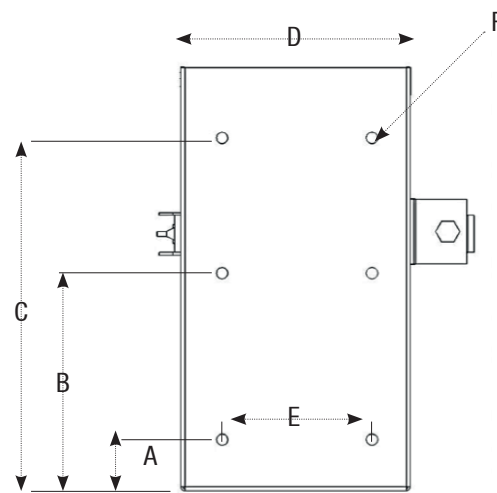


BRACKET BOLT PATTERN

MODEL NUMBER	A	B	C	D	E	F
940302	1 in (2.7 cm)	2 in (5.2 cm)	9 in (23.0 cm)	11 in (28.01 cm)	1 in (2.5 cm)	0.25 in (0.64 cm)
940602	1 in (2.7 cm)	2 in (5.2 cm)	9 in (23.0 cm)	11 in (28.0 cm)	1 in (2.5 cm)	0.25 in (0.64 cm)
940202	1 7/8 in (4.7 cm)	5 7/8 in (14.9 cm)	9 3/8 in (23.8 cm)	6 in (15.2 cm)	3 in (7.6 cm)	0.44 in (1.1 cm)



Models: 940302/940602



Model: 940202

SUPPRESSION UNIT COMPONENTS

ITEM	DESCRIPTION
1	ILP Valve
2	Collar O-Ring
3	Siphon Tube
4	Cylinder
5	Port Plug
6	Installation Bracket
7	Slip-on Tubing Union
PS	Pressure Switch (Optional)

