ONLINE DIRECTORIES

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Halogenated Agent Extinguishing System Units

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See General Information for Halogenated Agent Extinguishing System Units

CHEMETRON FIRE SYSTEMS EX2925
400 Main St
Ashland, MA 01721-2150 USA

Models 1301-5, 1301-10, 1301-20, 1301-30, 1301-150 and 1301-250 stored-pressure, pre-engineered automatic fire extinguishing system units, designed to discharge Halon 1301 extinguishing agent for extinguishment of fires in Class A, Class B and Class C hazards in enclosed volumes. Suitable for use at temperatures from -40°C to +49°C. Model 1301-250 suitable for use at temperatures from -54°C to +49°C.

Each system consists of a cylinder of bromotrifluoromethane (Halon 1301), a mounting bracket and release bracket, assembly (Part No. 13H-150), a distribution system of piping, one or more nozzles (Parts ARS-10W, ARS-10W-58, 10-4-526 and 10-4-12), an electrical release (Part No. 13H-400), a remote manual release (Part No. ARS-49) and cable cornering boxes (Part No. HRS-45A).

Halon 1301, Modular, pre-engineered fire extinguishing systems, stored-pressure type, "Series 70", sizes 6.8, 9.1, 11.3, 13.6, 15.9, 18.1 and 20.4 kg, "High Flow", sizes 22.7, 29.5, 36.3, 45.4, 54.4, 63.5, 70.3 and 75.8 kg.

Each system includes as a minimum: Cylinder of bromotrifluoromethane (No. 2-048-0346, 2-048-0347, 2-048-0348, 2-048-0350, 2-048-0351, 2-048-0352, 2-048-0354, 2-048-0355, 2-048-0338, 2-048-0339, 2-048-0340, 2-048-0341, 2-048-0342, 2-048-0343 or 2-048-0344); discharge tube assembly (No. 2-048-0335); manual pneumatic actuator (No. 1-061-0729); flexible pilot hose (No. 1-026-0260 or 1-026-9267); one or more nozzles (No. 1-37-0550, 1-37-0551, 1-37-0552, 1-37-0553, 1-37-0554, 1-37-0555 or 1-37-0556); solenoid pilot valve assembly (No. B2-061-0018, B2-061-0019, B2-061-0023, B2-061-0021, B2-061-0022, B2-061-0020, B51191-G1, B51191-G2, B51191-G6, B51191-G4, B51191-G5 or B51101-G3); a manual titled "Pre-Calc Fire Extinguishing/Suppressing Systems for Small Volume/Large Value Property Protection, Series 70" or "Pre-Calc Fire Extinguishing/Suppressing Systems for Small Volume/Large Value Property Protection, High Flow."

The following components may be added for variations of the basic system: Pressure switch (No. 1-1017-0065), pneumatic remote manual release (No. B41874).

Class B Hazards

These systems are suitable for the protection of Class B hazards in complete enclosures. The maximum volume that each system may protect, the maximum dimensions of rectilinear enclosures, the type and number of nozzles and the maximum allowable lengths and sizes of piping are given in the following tabulation. For placement of the nozzles and other details of the installation, refer to the manufacturer's Installation Manual which accompanies each system.

System	Max Enclosed Vols that can be Protected at 21°C, m^3*	Max Dimension of Enclosed Volume, m	Type of Nozzle(s) and No. Required	Max Connecting Pipe Length and Size(s), m x NPS**	Max No. and Nom Pipe Size(s) of Elbows
1301-5	6.85	4.27	ARS-10W(1)	7.6x1/2	5x1/2
			or 10-4-516-(1)	7.6x1/2	5x1/2
			or ARS-10W(2)	6.4x1/2 & 6.1x3/8	4x1/2 & 4x3/8
			or ARS-10W(2)	7.6x1/2 & 1.5x3/8	5x1/2 & 2x3/8
1301-5	6.85	2.44	ARS-10W(2)	11.0x1/2	8x1/2
1301-10	13.7	6.10	ARS-10W(1)	16.5x3/4	6x3/4
			or 10-4-516(1)	18.0x3/4	6x3/4
			or ARS-10W(2)	16.5x3/4 & 7.3x1/2	6x3/4 & 4x1/2
1301-20	27.5	6.10	ARS-10W-58(1)	18.6x1	5x1
			or 10-4-12(1)	18.6x1	6x1

			or ARS-10W-58(2)	18.6x1 & 7.3x3/4	5x1 & 4x3/4
			or ARS-10W(4)	18.6x1 & 3.0x3/4	
				& 3.0x1/2	5x1 & 2x3/4 & 4x1/2
1301-20	27.5	3.66	ARS-10W(4)	18.6x1 & 4.9x3/4	5x1 & 2x3/4 & 4x1/2
				& 4.6x1/2	5x1 & 2x3/4 & 4x1/2
1301-30	41.2	15.24	ARS-10W-58(1)	18.9x1	6x1
			or 10-4-12(1)	19.5x1	5x1
			or ARS-10W-58(2)	18.9x1 & 3.4x3/4	5x1 & 2x3/4
			or ARS-10W-58(2)	19.5x1	5x1
			or ARS-10W(4)	15.8x1 & 7.6x3/4	
				& 8.2x1/2	4x1 & 2x3/4 & 4x1/2
			or ARS-10W(4)	19.5x1 & 6.1x1/2	5x1 & 20x1/2
1301-30	41.2	7.62	ARS-10W-58(2)	18.6x1 & 10.0x3/4	5x1 & 4x3/4
			or ARS-10W(4)	19.5x1 & 4.0x3/4	
				& 4.0x1/2	5x1 & 2x3/4 & 4x1/2
1301-30	41.2	4.27	ARS-10W(4)	19.5x1 & 5.2x3/4	5x1 & 2x3/4 & 4x1
				& 4.3x1/2	
1301-150	272	12.2	H-250-60(1)	36.0x2-1/2	8x2-1/2
		30.5	H-250-60(1)	30.8x2-1/2	6x2-1/2
		12.2	H-250-60(2)	36.0x2-1/2 & 13.4x2	6x2-1/2 & 4x2
		30.5	H-250-60(2)	36.0x2-1/2 & 31.4x2	7x2-1/2 & 4x2
		30.5	H-250-60(4)	32.9x2-1/2 & 15.2x2	6x2-1/2 & 2x2
		30.5	H-250-50(8)	31.4x2-1/2 & 15.2x2	6x2-1/2 & 2x2
				& 30.5x1-1/2	&4x1-1/2
		12.2	H-250-70(1)	36.0x2-1/2	6x2-1/2
		30.5	H-250-70(1)	34.4x2-1/2	7x2-1/2
1301-250	453	12.2	H-250-60(1)	36.0x2-1/2	6x2-1/2
		30.5	H-250-60(1)	30.8x2-1/2	6x2-1/2
		12.2	H-250-60(2)	36.0x2-1/2 & 13.4x2	6x2-1/2 & 4x2
		30.5	H-250-60(2)	36.0x2-1/2 & 31.4x2	7x2-1/2 & 4x2
		12.2	H-250-60(2)	36.0x2-1/2	6x2-1/2
		30.5	H-250-60(2)	36.0x2-1/2	7x2-1/2
		30.5	H-250-60(4)	32.9x2-1/2 & 15.2x2	6x2-1/2 & 2x2
				& 15.2x1-1/2	&4x1-1/2
		30.5	H-250-60(8)	31.4x2-1/2 & 15.2x2	6x2-1/2 & 2x2
				& 30.5x1-1/2	&4x1-1/2
		12.2	H-250-70(1)	36.0x2-1/2	6x2-1/2
		30.5	H-250-70(1)	34.4x2-1/2	7x2-1/2

System	Max Enclosed Vols that can be Protected at 21°C, m^3*	Max Dimension of Enclosed Volume, m	Type of Nozzle(s) and No. Required	Max Connecting Pipe Length and Size(s), m x NPS**	Max No. and Size(s) of Elbows
Series 70					

15-1	20.6	9.7	Radial 1x1/2	24.4x1/2	13x1/2
15-2	20.6	19.5	Radial 2x1/4	24.4x1/2 & 11.0x1/4	13x1/2 & 2x1/4
20-1	27.5	9.7	Radial 1x1/2	12.2x1/2	13x1/2
20-2	27.5	19.5	Radial 2x1/4	24.4x1/2 & 11.0x1/4	13x1/2 & 2x1/4
25-1	34.3	9.7	Radial 1x3/4	24.4x3/4	13x3/4
25-2	34.3	19.5	Radial 2x3/8	24.4x3/4 & 11.0x3/8	13x3/4 & 2x3/8
30-1	41.2	9.7	Radial 1x3/4	24.4x3/4	13x3/4
30-2	41.2	19.5	Radial 2x3/8	24.4x3/4 & 11.0x3/8	13x3/4 & 2x3/8
35-1	48.1	9.7	Radial 1x3/4	24.4x3/4	13x3/4
35-2	48.1	19.5	Radial 2x1/2	24.4x3/4 & 11.0x1/2	13x3/4 & 2x1/2
40-1	55.0	9.7	Radial 1x3/4	24.4x3/4	13x3/4
40-2	55.0	19.5	Radial 2x1/2	24.4x3/4 & 11.0x1/2	13x3/4 & 2x1/2
45-1	61.8	9.7	Radial 1x3/4	24.4x3/4	13x3/4
45-2	61.8	19.5	Radial 2x1/2	24.4x3/4 & 11.0x1/2	13x3/4 & 2x1/2
High Flow					
50-1	68.7	9.7	Radial 1x1	30.5x1	17x1
50-2	68.7	19.5	Radial 2x3/4	24.4x1 & 11.0x3/4	17x1 & 2x3/4
65-1	89.3	9.7	Radial 1x1	30.5x1	17x1
65-2	89.3	19.5	Radial 2x3/4	24.4x1 & 11.0x3/4	17x1 & 2x3/4
80-1	110	9.7	Radial 1x1	30.5x1	17x1
80-2	110	19.5	Radial 2x3/4	24.4x1 & 11.0x3/4	17x1 & 2x3/4
100-1	137	9.7	Radial 1x1-1/4	30.5x1-1/4	17x1-1/4
100-2	137	19.5	Radial 2x1	24.4x1-1/4 & 11.0x1	17x1-1/4 & 2x1
120-1	165	9.7	Radial 1x1-1/4	30.5x1-1/4	17x1-1/4
120-2	165	19.5	Radial 1x1	24.4x1-1/4 & 11.0x1	17x1-1/4 & 2x1
140-1	192	9.7	Radial 1x1-1/4	30.5x1-1/4	17x1-1/4
140-2	192	19.5	Radial 1x1	24.4x1-1/2	17x1-1/2
155-1	213	9.7	Radial 1x1-1/4	30.5x1-1/2	17x1-1/2
155-2	213	19.5	Radial 1x1	24.4x1-1/2 & 11.0x1	17x1-1/2 & 2x1
167-1	229	9.7	Radial 1x1-1/2	30.5x1-1/2	17x1-1/2
167-2	229	19.5	Radial 2x1	24.4x1-1/2 & 11.0x1	17x1-1/2 & 2x1

* (a) The discharge of these systems in the maximum enclosed volumes produces an agent concentration of approximately 5%, adequate for the extinguishment of fires in most Class B materials. Where the protection of Class B materials requiring higher concentration is contemplated or where the systems are used in smaller enclosures which will result in higher concentrations, we refer to NFPA 12A, Standard for Halon 1301 Extinguishing Systems, for limitations of personnel exposure.

(b) Where protection is to be provided at lower tempratures than 21°C, these volumes are reduced by approximately 7.5% for temperatures between 20°C and 0°C, 13% between -1°C, and -18°C, 22% -19°C and -29°C.

** The piping lengths described in this table will provide for a maximum 10 second discharge only when the cylinders are stored at temperatures of 21°C or above. Lower temperatures may result in extended discharge durations.

Class A Hazards

These systems are also suitable for the protection of ordinary Class A hazards in unoccupied enclosures where personnel will not be exposed to inhalation of the agent. The maximum enclosure dimension and the arrangements of nozzles, piping and elbows, for the protection of Class A hazards, may be determined from the tabulation for the protection of Class B hazards. The volumes that may be protected are as follows:

System	Max * Enclosed Volumes than can be Protected at 21°C, m^3
1301-5	1.59
1301-10	3.17
1301-20	6.34
1301-30	9.51
1301-150	47.2
1301-250	78.7

* (a) The discharge of these systems in the maximum enclosed volumes produces an agent concentration of approximately 19%. It has been determined that this concentration is sufficient to extinguish fires in small quantities of Class A materials in open situations. Where large quantities are present or may accumulate, where the fire may originate within a mass or where discharge of the agent is delayed, fires in Class A material can readily become deep seated. Deep-seated Class A fires will be controlled as long as the Halon concentration is retained, but may not be extinguished. Halon 1301 protection should NOT be used where the hazard is inherently deep seated such as those involving compressed or baled combustible fibrous materials.

(b) Where protection is to be provided at lower ambient temperatures, these volumes should be reduced by 7.5% for temperatures between 20°C and 0°C, 13% between -1°C and -18°C, and 22% between -19°C and -40°C.

Class C Hazards

Class A or Class B hazards become Class C hazards when energized electrical conductors are involved. As Halon 1301 is a non-conductor of electricity, the discharge of Halon 1301 into Class C hazards does not increase the risk of electrical shock in such hazards. For applications and limitations, refer to the relevant text under the Class A or Class B headings.

Where protection of larger enclosures than can be accomplished with a single system is required, multiple systems may be employed provided they are arranged to discharge simultaneously.

Where operation of a system may result in the extinguishment of fuel fired equipment or where the process heating of combustibles is accomplished by electrical energy, provision shall be made upon operation of the system to shut down the fuel or energy supply.

Halon 1301 stored-pressure, engineered type fire extinguishing systems; "Series 70" (11.8 to 75.8 kg capacity) and "High Flow" (23.6 to 75.8 kg capacity), designed to discharge Halon 1301 extinguishing agent for the control of fires in Class A, Class B and Class C hazards in enclosed spaces. Suitable for use at temperatures from -29 to 49°C. Each system is to be designed and installed only by the manufacturer's authorized representative in strict conformance with the requirements of the Standard for Halon 1301 Fire Extinguishing Systems, NFPA 12A and the manufacturer's design manual.

Each system includes as a minimum one or more cylinder assemblies, "Series 70" (Part Nos. 1-48-0209, 1-48-0210, 1-48-0211, 1-48-0205, 1-48-0206, 1-48-0234), "High Flow" (Part Nos. 2952, 4477, 5189, 64113, 82143, 95167); cylinder valve (Part No. 1-61-0720); discharge tube assembly (Part No. 2-48-0335); check valve assembly (Part No. 1-61-0739); nozzles (Part No. 1-37-05XX); selector valve (Part Nos. 36147, 36148); solenoid pilot valve assemblies (Part Nos. 161277, 161633, 161634, 161281, 161306, 161705); pressure switch (Part No. 41644).

Class B Hazards

These systems are suitable for the protection of Class B hazards in complete enclosures. At the required minimum concentration of 5%* by volume and at a temperature of 21°C**, typical systems are capable of protecting the volumes as shown in the following tabulation.

One radial nozzle may be used to protect an area up to a maximum of 89 m2 (9.7 by 9.1 m).

Multiple hazards may be protected by a single cylinder using selector valves.

Single or multiple hazards may be protected using manifolded systems.

Typical System Size, kg	Max Enclosed Volume that can be Protected, m^3
11.8	35.7
15.9	48.1
27.2	82.5
43.1	130.5
56.7	171.8
64.9	196.6
75.8	229.6

* Some Class B hazards require higher concentration; refer to NFPA 12A for limitations of personnel exposure.

** Where protection is to be provided at lower temperatures than 21°C, these volumes are reduced by approximately 7.5% for temperatures between 20°C and 0°C, 13% between -1°C and -18°C and 22% between -19°C and -29°C.

Class A Hazards

These systems are also suitable for protection of ordinary combustibles in unoccupied enclosures where personnel will not be exposed to inhalation of the agent. At the recommended minimum concentration of 19%* by volume and at a temperature of 21°C**, typical systems are capable of protecting the volumes as shown in the following tabulation:

Typical System Size, kg	Max Enclosed Volume that can be Protected, m^3
11.8	8.0
15.9	11.1
27.2	18.5
43.1	29.4
56.7	38.7
64.9	44.2
75.8	51.6

* It has been determined that this concentration is sufficient to extinguish fires in small quantities of Class A materials in open situations. Where large quantities are present or may accumulate, where the fire may originate within a mass or where discharge of the agent is delayed, fires in Class A material can readily become deep seated. Deep-seated Class A fires will be controlled as long as the Halon concentration is retained, but may not be extinguished. Halon 1301 protection should NOT be used where the hazard is inherently deep seated such as those involving compressed or baled combustible fibrous materials.

** Where protection is to be provided at lower ambient temperatures, these volumes should be reduced by 7.5% for temperatures between 20°C and 0°C, 13% between -1°C and -18°C, and 22% between -19°C and -29°C.

Class C Hazards

Class A or Class B hazards become Class C hazards when energized electrical conductors are involved. As Halon 1301 is a non-conductor of electricity, the discharge of Halon 1301 into Class C hazards does not increase the risk of electrical shock in such hazards. For applications and limitations, refer to the relevant text under the Class A or Class B headings.

Where protection of larger enclosures than can be accomplished with a single system is required, multiple systems may be employed provided they are arranged to discharge simultaneously.

Where operation of a system may result in the extinguishment of fuel fired equipment or where the process heating of combustibles is accomplished by electrical energy, provision shall be made upon operation of the system to shut down the fuel or energy supply.

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