LARGE-CAPACITY DRY CHEMICAL SYSTEM AG-SIDP-B-xxxx

Pre-engineered fixed dry chemical extinguishing system for large-volume applications, designed for piping system / 250 to 1000 kg
Attached pressure / Total flooding and local application

Data sheet 13224 Rev.00

Product description

The AG-SIDP-B-xxxx dry chemical systems are pre-engineered fixed fire extinguishing systems designed for a predefined piping network and a specified quantity of extinguishing agent. They are available in five nominal sizes, using between 250 and 1000 kg of extinguishing agent.

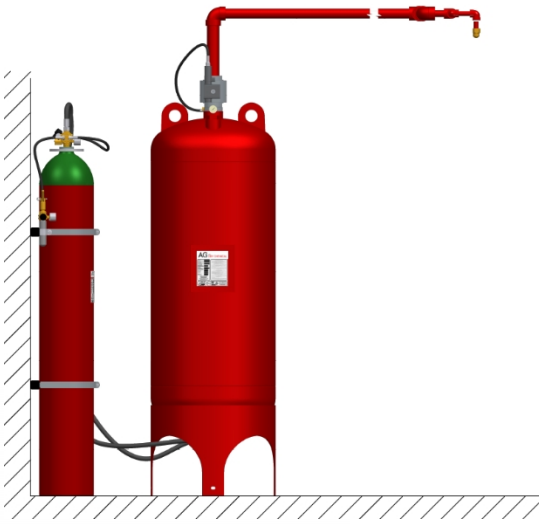
These systems are design for the protection of large volumes involving high-hazard risks that require significant quantities of this extinguishing agent, such as marine applications and offshore platforms, loading stations, petrochemical facilities, as well as fuel and LPG storage areas. Dry chemical systems are suitable for Class A hazards (solid combustible materials), Class B hazards (flammable liquids and gases), and Class C hazards (energized electrical equipment).

The system consists of a tank model SIDP-B-xxxx, filled with dry chemical powder and connected to a piping network that distributes the agent to the total flooding or local application discharge nozzles. The dry chemical tank is pressurized by one or more attached cylinders containing the expellant agent (N_2), normally at 200 or 300 bar, equipped with a pressure regulating RGS-MAM-RD11 valve. Once activated, the nitrogen pressurizes the dry chemical tank and, once the nominal operating pressure (15 bar) is reached, the extinguishing agent is released into the piping network. Agent discharge can be controlled by means of a dry chemical control valve (SVDNxxxxxSH) or a rupture disc (SIDRxx).

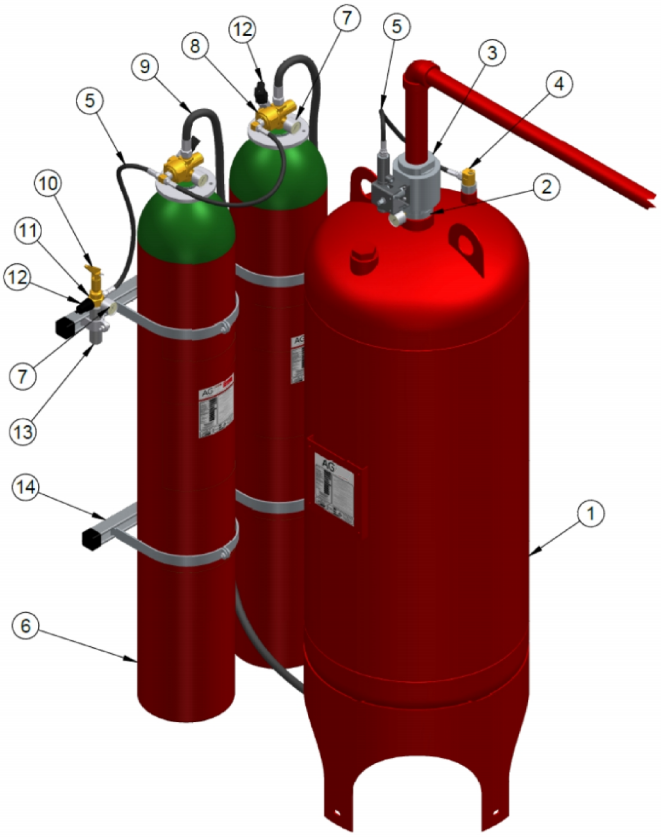
To adapt to the configuration of each installation, the system can be supplied with the tank and expellant cylinders as separate components or integrated on a skid as a complete unit.

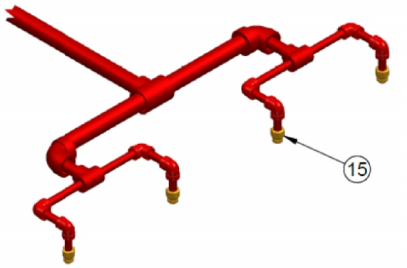
Technical data

LARGE CAPACITY DRY CHEMICAL SYSTEM			
Model	**Dry chemical maximum filling lbs (kg)**	**Number and size of expellant cylinders**	**Type of dry chem.**
AG-SIDP-B-250	551 (250)	1 cylind. (80L) at 200 bar	ABC
AG-SIDP-B-300	661 (300)	2 cylind. (80L) at 200 bar 1 cylind. (80L) at 300 bar	BC
AG-SIDP-B-500	1102 (500)	1 cylind. (140L) at 200 bar 1 cylind. (140L) at 300 bar	KBC
AG-SIDP-B-750	1653 (750)	2 cylind. (80L) at 300 bar 2 cylind. (140L) at 200 bar	D
AG-SIDP-B-1000	2204 (1000)	1 cylind. (140L) at 300 bar	



System components





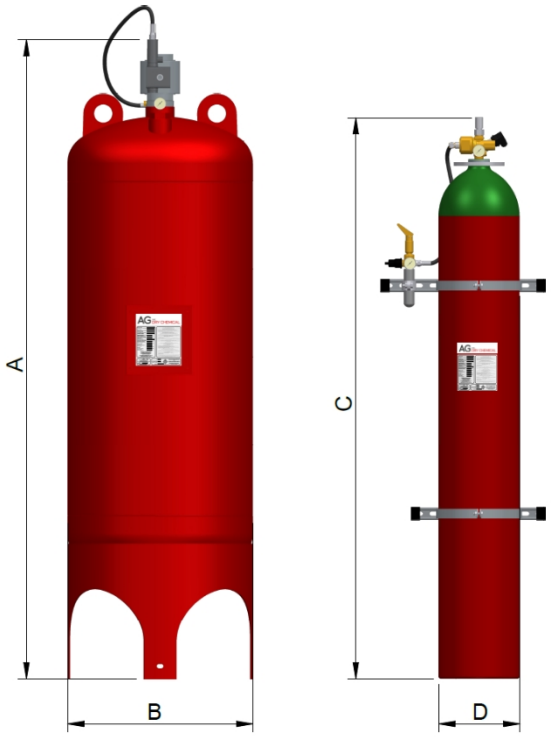
Applications

- Paint preparation and spray booth facilities
- Coating and finishing process areas
- Machinery and equipment areas
- Boiler and furnace rooms
- Flammable and hazardous liquid storage locations
- Electrical and mechanical rooms
- Quench and dip tank installations
- Spill containment dikes
- Bulk storage facilities
- Environmental storage areas
- Modular storage units for hazardous materials

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Nº	Description	Type	Qty
1	Tank	AG-SIDP-B-xxxx	1
2	Tank valve	DCHDNxx	1
3	Dry chemical control valve	SVDNxxxxxSH, SVDNxxxxx	1
	Rupture disc	SIDRxx	
4	Pilot valve	FTSV-6	1
5	Activation flexible hose ¼"	DH10, DH10I, DH11, DH11I	1
6	Expellant cylinder N_2 (200 o 300 bar)	101M80UFxx, 101M140UFxx	≥1
7	Pressure gauge	5140-W25, 5140-W250, 5140-W400, UF40I-P150, UF40I-P200, UF40I-P300	≥2
	Pressure gauge with electrical contacts (optional)	5140-E40SP13, 5140-E250SP144, 5140-E250SP180, 5140-E400SP270, UF40I-E150, UF40I-E200, UF40I-E300	
8	Expellant cylinder valve	RGS-MAM-RD11	≥1
9	Impulsion hose	DH15, DH15CO, DH15I, DH16, DH16I	≥1
10	Manual actuator	227DMR, 227DMS, 227CMCC, 227CMC, 227CN, 227CNM, KCTM, KCTM-C	1
	Electrical actuator (optional)	227SOLR, 227SOLCR, 227SOLCR125	
	Mechanical detection and actuator (optional)	TK-SIMPLEX, TK-COMPLEX, TK-SIMPLEX-C, TK-COMPLEX-C, KCTM, KCTM-C	
11	Pilot cartridge valve	RGS-MAM-03	1
12	Pressure switch (optional)	POPRENA150, PROPENC150, APRESA150, APRESC150, POPRENA200, PROPENC200, APRESA200, APRESC200, POPRENA300, PROPENC300, APRESA300, APRESC300	-
	ATEX Pressure switch (optional)	POPRECO-AD PSP	
13	N_2 Pilot cartridge	100M008UFxx, 00M018UFxx, 100M1UFxx, 00M2UFxx	1
14	Fixing Brackets	POHCxxx	-
15	Nozzle	AG-TF-1, AG-0-2, AG-TK-1, SIDIH40, SIDIH80, SIDIHX40, SIDIHX80	-

Dimensions



TANK DIMENSIONS		
Model	A inch (mm)	B inch (mm)
AG-SIDP-B-250	75.2 (1911)	Ø 22.7 (576)
AG-SIDP-B-300	83.0 (2109)	Ø 24.3 (616)
AG-SIDP-B-500	93.4 (2373)	Ø 32.1 (816)
AG-SIDP-B-750	104.5 (2654)	Ø 36.1 (916)
AG-SIDP-B-1000	116.0 (2947)	Ø 36.1 (916)

*General tolerances ±1%

N_2 EXPELLANT CYLINDERS DIMENSIONS			
Model	Capacity	C inch (mm)	D inch (mm)
101M80UFxx	2.83 ft3 (80L)	74.0 (1880)	Ø 10.5 (267)
101M140UFxx	4.94 ft3 (140L)	75.5 (1918)	Ø 14.2 (360)

*Worst-case dimensions (General tolerances ±1%)

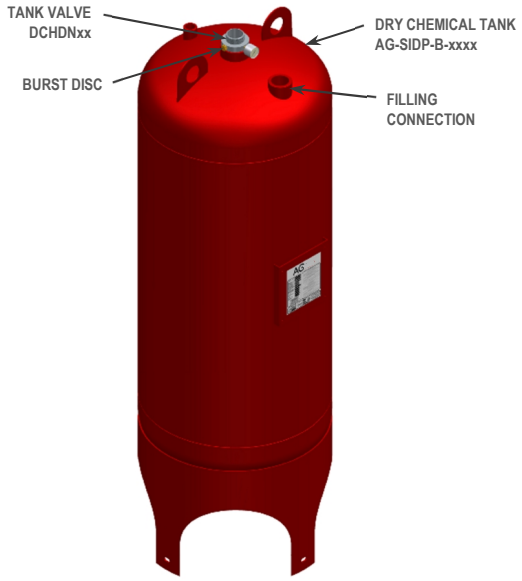
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AG-SIDP-B-xxxx dry chemical tank

The extinguishing agent storage tank consists of a welded carbon steel pressure vessel designed in accordance with ASME Section VIII or UNE-EN 13445-4 for a working pressure of 217 psi (15 bar). It is factory-filled with the appropriate extinguishing agent and equipped with an internal shiphon tube and a DCHCNxx valve. This valve is fitted with a pressure gauge and a burs disc which protects pressurized vessels by automatically relieving excess pressure without the need for external intervention.

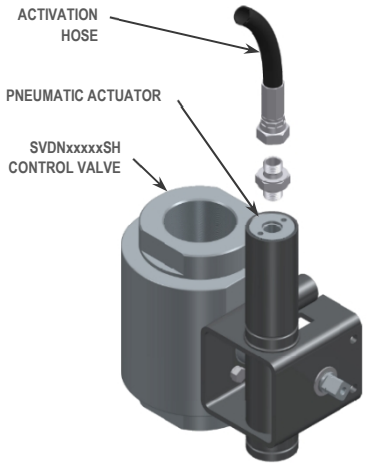
The tank is fitted with lower inlet connections for pressurization with the expellant gas, allowing the dry chemical powder to be fluidized and maintaining constant pressure throughout the discharge. It also features a 2” upper filling connection and a 2" lower connection for emptying.

The tank is surface-protected against corrosion by Sa 2½ abrasive blast cleaning followed by the application of a primer and an aliphatic polyurethane topcoat. As an option, a zinc-rich coating system is available for C5 corrosivity environments in accordance with ISO 12944:2018.



SVDNxxxxxSH dry chemical control valve

The SVDNxxxxxSH automatic dry chemical control valve releases the dry chemical agent from the tank once the operating pressure reaches 15 bar. The actuation system includes an FTSV-6 pilot valve, installed on agent tank and connected to the control valve actuator by means of an actuation hose. During the final stage of pressurization, the pilot valve transmits pressure to the actuator, which automatically opens the control valve, allowing the dry chemical agent to flow into the discharge piping and be distributed to the discharge nozzles.



Activation pilot cartridge

Its function is to pneumatically actuate the valves of the expellant cylinders. The cartridge incorporates an RGS-MAM-03 valve, which can be actuated electrically, manually, or mechanically to allow N_2 to flow from the pilot cartridge to the RGS-MAM-RD11 valves installed on the expellant cylinders.

A combination of a 227SOLR electric actuator and a 227DMS manual actuator is commonly used.

Expellant assembly

The assembly consists of one or more cylinders containing nitrogen (N_2), whose function is to pressurize the dry chemical tank. These cylinders are pneumatically actuated via the pilot cartridge and discharge the nitrogen through flexible hoses to the lower inlet connections of the tank, allowing the dry chemical to be fluidized and maintaining constant pressure throughout the discharge.

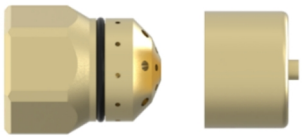
The expellant cylinders are equipped with an RGS-MAM-RD11 valve, which functions as a pressure regulator (pressure-reducing valve). Although the cylinder is always charged to 2900 or 4350 psi (200 or 300 bar), the outlet pressure depends on the pneumatic actuation pressure applied to the valve. In other words, if no pressure is present at the valve actuation port, the valve remains closed. When an actuation pressure of 261 psi (18 bar) is applied, the regulated outlet pressure is 261 psi (18 bar).

Nozzles

Its function is to discharge the extinguishing agent into the protected area as homogeneously as possible to achieve effective suppression. The number and model of the discharge nozzles depend on the tank size and the application for which they are intended:

AG-TF1 total flooding nozzle

This nozzle is intended for total flooding application of dry chemical and is threaded onto the discharge piping in a vertical position.



AG-O-2 local application nozzle

Designed for local application fire protection systems, it is threaded onto the discharge pipe in a vertical position.



AG-TK-1 local application nozzle

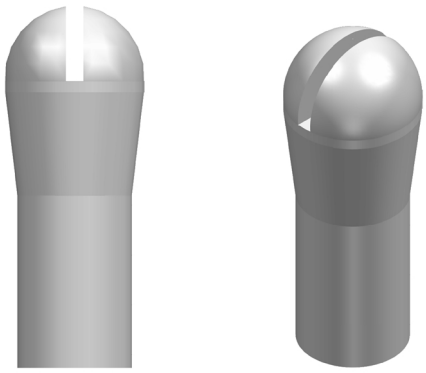
Developed for the protection of flammable liquid storage tanks or to cover by immersion areas prone to flammable liquid spills. It is installed next to the tank and discharges at a 90º angle to the piping, creating a flat semicircular chemical blanket over the surface of the flammable liquid.



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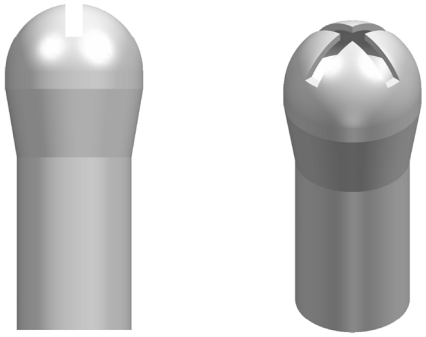
SIDIH40 / SIDIH80 local application nozzle

These nozzles provide a high flow rate and high discharge velocity, making them ideal for outdoor applications where wind conditions or obstructions may be present within the hazard area. They are used in local application fire protection systems and feature a slotted discharge opening parallel to the nozzle inlet axis.



SIDIHX40 / SIDIHX80 local application nozzle

Like the SIDIH40/80 nozzles, these models are particularly suitable for outdoor local application systems due to their high flow rate and high discharge velocity. In this case, they feature a cross-shaped discharge opening.



WARNING: This type of system is manufactured and approved for use in fixed dry chemical extinguishing installations. These products are not designed for any other use or purpose. If the product user has any questions regarding the application or use of the product, please contact +34 947 28 11 08. Any unauthorized use or application and/or any other unauthorized modification of the product or its function may cause serious accidents and/or personal injury. AG Fire is not responsible for any unauthorized use of the application.

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