

AVENGER 5112

5112 FIRE SUPPRESSION SYSTEM

UL FM APPROVED

Welcome to Avenger Systems

Avenger Systems is an independently owned fire detection and suppression company based in the United States and operating in most regions around the world.

Avenger Systems is committed to providing you with cost-effective, high-quality solutions. Our vast industry experience, state-of-the-art technology, and dedication to customer service can't be beat. You can rely on Avenger Systems for all of your fire protection needs.

OUR VISION

Building on Our Past Success

Avenger Systems was founded with the passion, vision, and determination to provide our customers with complete, cost-effective, high-quality fire detection and suppression system solutions. Our mission is a simple one – provide you with the best products, service, and support that consistently exceeds your expectations.

OUR CULTURE

Our Foundation is Our People

Avenger Systems corporate culture fosters creativity, hard work, collaboration and success.

OUR TECHNOLOGY

Searching for the Lowest Percentage of Risk

Building on our past success in the fire and suppression markets we adopted state of the art technologies to enable our customers to compete in all type of projects from small to the very large with easy to learn, configure and use software.

What is Avenger 5112?

Avenger 5112 (FK-5-1-12, Dodecafluoro-2-methylpentan-3-one) is a widely-used fire extinguishing clean agent. It is environmentally safe and best used in fire hazard areas containing A, B, and C classes of fire. It has been approved by the U.S. EPA and ISO for its safe characteristics and fire extinguishing effectiveness.

FEATURES

- Very low Global Warming Potential (GWP)
- Atmospheric lifetime of approximately 5 days
- Ozone Depletion Potential (ODP) of Zero
- No post-fire resides to clean up
- No damage to protected equipment
- Is electrically non-conductive
- Safe for use in a wide range of normally-occupied hazard areas
- SNAP List Approved

PERFORMANCE

Avenger 5112 is a highly effective clean agent fire suppressant, designed to extinguish fire in its incipient stage before it has a chance to spread. It is applied as a gas but is liquid at room temperature.

APPLICATIONS

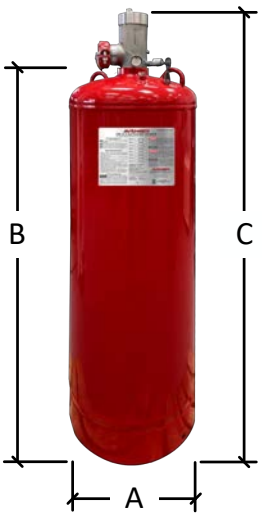
- Telecommunications Facilities
- Computer Rooms
- Control Rooms
- Marine Systems
- Libraries
- Engine Rooms
- Universities and Museums
- Art Galleries
- Record & Storage Facilities
- Pharmaceutical and Medical Facilities
- Electronics and Data Processing Equipment





Avenger Clean Agent Cylinders

500 PSI System



DESCRIPTION

The Avenger Systems 5112 clean agent systems are intended to be designed and installed to protect single or multiple hazards within the limitations tested by a recognized testing agency. Authorities Having Jurisdiction (AHJ) should follow the information specified by the Standard on Clean Agent Extinguishing Systems, NFPA 2001. The equipment described in this catalog are listed by Underwriters Laboratories Inc. in compliance with UL standard 2166. Avenger Systems total flooding fire extinguishing systems are UL listed to utilize Orient 5112 from Orient Corporation under UL file EX15295. The clean agent cylinders are manufactured, tested, and stamped in accordance with DOT 4BW500 or DOT 4BA500 and EN ISO 13322-1 or EN 14208.

The cylinder must be installed in an upright position with the valve on the top.

Cylinder Models and Dimensions

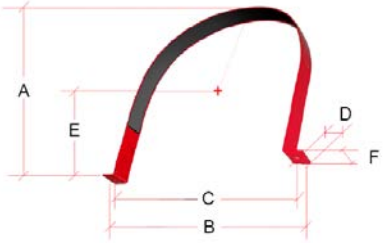
Part #	Size	Max Fill @ 70 lb/ft3	Min Fill @ 35 lb/ft3	Valve Size	A	B	C
382A0020*	20 lb.	21 lb.	11 lb.	1” Valve	10.75”	13.632”	18.633”
382A0035*	35 lb.	38 lb.	18 lb.	1” Valve	10.75”	18.667”	23.678”
382A0070*	70 lb.	76 lb.	36 lb.	1” Valve	10.75”	28.166”	33.167”
382A0100*-1	100 lb.	108 lb.	51 lb.	1” Valve	12.795”	26.709”	31.709”
382A0150*	150 lb.	163 lb.	77 lb.	1-1/2” Valve	12.795”	37.343”	43.172”
382A0250*	250 lb.	271 lb.	127 lb.	1-1/2” Valve	16.0”	40.099”	45.928”
382A0375*	375 lb.	406 lb.	190 lb.	2-1/2” Valve	16.0”	57.248”	65.351”
382A0560*	560 lb.	601 lb .	281 lb.	2-1/2” Valve	20.0”	55.516”	63.619”
382A0650S-2	650 lb.	712 lb.	333 lb.	3” Valve	20.0”	63.085”	72.569”

Note: * add “B” when using Brass Valve and “S” when using Stainless Steel Valve.

Cylinder Bracket

The cylinder bracket is manufactured from stainless steel band formed to the radius of the cylinder with flanges for bolting to the continuous slot metal framing channel of 12-gauge steel with corrosion resistant paint. The channel must be supplied by the installer. The cylinder bracket must be secured to a surface that the bracket will withstand a load up to 5 times of the cylinder weight. This precaution is to have the bracket safely support the weight of the cylinder and the reaction force of the Avenger 5112 Clean Agent during discharge.

Cylinder Part #	Bracket Part #	A	B	C	D	E	F
382A0020*	383F001	11.0”	14.0”	12.6”	1.5”	5.6”	2.0”
382A0035*	383F001	11.0”	14.0”	12.6”	1.5”	5.6”	2.0”
382A0070*	383F001	11.0”	14.0”	12.6”	1.5”	5.6”	2.0”
382A0100*-1	383F002	13.0”	16.05”	14.65”	1.65”	6.48”	2.0”
382A0150*	383F002	13.0”	16.05”	14.65”	1.65”	6.48”	2.0”
382A0250*	383F003	16.25”	19.2”	17.7”	1.65”	8.2”	2.0”
382A0375*	383F003	16.25”	19.2”	17.7”	1.5”	8.2”	2.0”
382A0560*	383F004	20.25”	23.2”	21.7”	1.5”	10.1”	2.0”
382A0650S-2	383F004	20.25”	23.2”	21.7”	1.5”	10.1”	2.0”



For the 20 lb. to 250 lb. cylinders—one bracket must be used
For the 375 lb. to 650 lb. cylinders—two cylinder brackets must be used

800 lb. & 1000 lb. Clean Agent Cylinder

500 PSI System

DESCRIPTION

The 800 lb. and 1,000 lb. cylinders are filled with one-pound increments in order to meet the exact amount of agent required.

Part #	Size	Max Fill @ 70 lb/ft3	Min Fill @ 35 lb/ft3	Valve Size	Diameter	Total Height	Height to Discharge Outlet
382A0800S-1	800 lb.	900 lb.	420 lb.	4" Valve	30.0"	58.941"	47.404"
382A01000S-1	1000 lb.	1112 lb.	520 lb.	4" Valve	30.0"	66.303"	54.767"
382A0800S-2	800 lb.	900 lb.	420 lb.	3" Valve	30.0"	55.438"	46.680"
382A01000S-2	1000 lb.	1112 lb.	520 lb.	3" Valve	30.0"	62.801"	54.570"



By using Avenger's Flow Calculation Software, the two-phase and the two-component flow of agent and nitrogen through the distribution piping network in quasi-steady state from the initiation of the discharge to the final gas blow-down can be estimated and predicted. The cylinder is equipped with a stainless steel valve that offers excellent flow characteristics for the liquefied gas, allowing for long pipe runs and a greater coverage area.

Temperature Range: 32°F (0°C) to 130°F (54.4°C)
Operating Pressure: 500 psi (34.5 Bar) at 70°F (21.2°C)

The cylinder is equipped with a stainless steel back-pressure type valve in which a piston installed within the valve is equipped with a rubber seal that keeps the clean agent under pressure within the cylinder. A small hole in the piston allows the pressure within the cylinder to be equalized on both sides of the piston. Since the area at the top of the piston is greater than the area at the bottom of the piston, the net force seals the piston against the valve discharge outlet. When the cylinder pressure on the top of the piston is relieved by means of automatic or manual activation, there is only cylinder pressure acting against the piston seal; hence, the piston slides to its full-open position, allowing cylinder discharge through the distribution piping network.

The cylinder must be installed in an upright position (valve on top) in which each cylinder installation shall use a top plug adapter. The available accessories include electric solenoid, pressure gauge, liquid level indicator, and bracket as described below. The clean agent cylinders are manufactured, tested, and stamped in accordance with DOT 4BW500 or DOT 4BA500 and EN 14208.

Description	Usage
Latching Solenoid	To automatically start and operate the clean agent discharge
Low Pressure Supervisory Switch	To monitor the internal pressure of the cylinder
Pressure Gauge, 500 psi	For quick visual inspection of the cylinder's internal pressure
Piston Actuator	For use in a multiple cylinder installation
Liquid Level Indicator	To measure the weight of the clean agent in the cylinder.
Cylinder Bracket	To support the weight of the cylinder and the reaction force of the clean agent during discharge

Cylinder Part #	Bracket Part #	Mounting
382A0800*-1/*-2	383F005	Wall
382A0800*-1/*-2	383F101	Floor
382A01000*-1/*-2	383F005	Wall
382A01000*-1/*-2	383F101	Floor

1200 lb. Clean Agent Cylinder

500 PSI System



DESCRIPTION

The Avenger Systems 1200 lb. cylinder is filled with one pound increments from a minimum of 606 lbs. to a maximum of 1297 lbs., to meet the exact amount of agent required. The quantity of agent required for each enclosure can be calculated using Avenger System's Flow Calculation Software. The cylinder is super-pressurized with dry nitrogen to 500 psi at 70°F to provide extinguishment in 10 seconds or less. The 4" stainless steel valve offers excellent flow characteristics for the liquefied gas, allowing for longer pipe runs and a greater coverage area. This is the largest clean agent cylinder currently manufactured and is designed for very large applications. The 1200 lb. cylinder is manufactured, tested, and stamped in accordance with DOT 4BW500 or DOT 4BA500 and EN 14208.

Temperature Range: 32°F (0°C) to 130°F (54.4°C)
Operating Pressure: 500 psi (34.5 Bar) at 70°F (21.2°C)

The cylinder is equipped with a 4" stainless steel back-pressure type valve and a 4" Victaulic male outlet. A piston in the valve bore is equipped with a rubber seal that keeps the clean agent under pressure within the cylinder. A small hole in the piston allows the pressure within the cylinder to be equalized on both sides of the piston. Since the area at the top of the piston is greater than the area at the bottom of the piston, the net force seals the piston against the valve discharge outlet. When the cylinder pressure on the top of the piston is relieved by means of automatic or manual activation, there is only cylinder pressure acting against the piston seal; hence, the piston slides to its full-open position, allowing cylinder discharge through the distribution piping network.

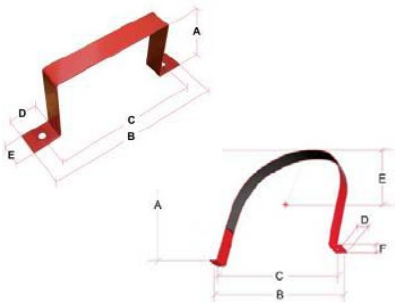
Attached to the bottom of the cylinder valve is a stainless steel siphon tube, which is straight and runs from the top of the cylinder to the bottom of the cylinder. The cylinder must be installed in an upright position (valve on top). Each cylinder installation shall use a top plug or a top plug adapter. The electric solenoid requires 24 VDC @ 15 Watts.

The cylinder is equipped with a 500 psi pressure gauge for quick visual inspection of the cylinder's internal pressure. A Liquid Level Indicator is available as an option for measurement of the weight of the clean agent in the cylinder and is highly recommended for ease of maintenance.

Part Number	Cylinder Size	Max Fill @ 70 lb/ft^3	Min Fill @ 35 lb/ft^3	Valve Size	Diameter	Total Height	Height to Discharge Outlet
382A1200s	1200 lb.	1297 lb	606 lbs	4" Valve	30.00"	73.673"	62.135"

Cylinder Bracket

The cylinder bracket is manufactured from stainless steel band formed to the radius of the cylinder with flanges for bolting to the continuous slot metal framing channel of 12-gauge steel with corrosion resistant paint. The channel must be supplied by the installer. The cylinder bracket must be secured to a surface so that the bracket will withstand a load up to 5 times the cylinder weight. This precaution is to have the bracket safely support the weight of the cylinder and the reaction force of the FK -5-1-12 clean agent during discharge.



Part Number	Diameter	A	B	C	D	E	F
383F005 (wall)	30.00"	30.225"	35.200"	33.200"	1.00"	15.225"	2.00"
383F101 (floor)	30.00"	4.500"	11.500"	10.00"	1.500"	N/A	2.00"

Cylinder Valves Assembly



1” Brass Valve
Brass, ASTM B-16
P/N: 383B010-B



1-1/2” Brass Valve
Brass, ASTM B-16
P/N: 383B015-B



2-1/2” Brass Valve
Brass, ASTM B-16
P/N: 383B025-B



1” Stainless Steel Valve
SS, AISI 316-L
P/N: 383B010-S



1-1/2” Stainless Steel Valve
SS, AISI 316-L
P/N: 383B015-S



2-1/2” Stainless Steel Valve
SS, AISI 316-L
P/N: 383B025-S



3” Stainless Steel Valve
SS, AISI 316-L
P/N: 383B030-S



4” Stainless Steel Valve
SS, AISI 316-L
P/N: 383B040-S

FK-5-1-12 Clean Agent

DESCRIPTION

Avenger Systems offers FK-5-1-12 that has received the component recognition from Underwriters Laboratories (UL). UL is an independent third-party organization that certifies the technical specifications as required by NFPA 2001 in order to ensure the effectiveness of clean agents in suppressing fires.

Avenger Systems 5112 (Dodecafluoro-2-methylpentan-3-one) is a widely-used extinguishing clean agent. It is environmentally safe and best used in fire hazard areas containing A, B, and C classes of fire. It has been approved by the U.S. EPA and ISO for its safe characteristics and fire extinguishing effectiveness.

FK-5-1-12 has been marketed by 3M with the brand name of NOVEC 1230. Avenger Systems 5112 is an acceptable clean agent for use as a Halon 1301 alternative. Avenger 5112 is guaranteed to meet the minimum NFPA 2001 requirements as follows:

CLEAN AGENT PROPERTIES	
IUPAC Name	1,1,1,2,2,4,5,5,5—Nonafluoro-4-(trifluoromethyl)-3-pentanone
ASHRAE Designation	FK-5-1-12
Synonym	Dodecafluoro-2-methylpentan-3-one
CAS Registry Number	756-13-8
Chemical Formula	$CF_3CF_2C(O)CF(CF_3)_2$
Molecular Weight	316.04
Freezing point	-162.4°F (-108°C)
Boiling Point at 760 mmHg	120.2°F (49°C)
Critical Temperature	335.6°F (168.66°C)
Critical Density	39.91 lbm/ft^3 (639.1 kg/m^3)
Critical Pressure	270.44 psi (1,865 kPa)
Critical Volume	0.0251 ft^3/lbm (494.5 cc/mole)
Viscosity, Liquid at 77°F (25°C)	1.27 lb/ft-hr (0.524 cP)
Solubility in Water at 70°F (21.1°C)	<0.001% by weight
Property	**Requirement**
Purity	99.0% (minimum)
Water Content (by weight)	0.001%
Non-Volatile Residue (g/100 ml)	0.05
Environmental Impact	
Ozone Depletion Potential (ODP)	0
Global Warming Potential (GWP)	≤1
Atmospheric Lifetime (ATL)	0.014 years
US EPA SNAP (Yes/No)	Yes

Schrader Valve with Cap

DESCRIPTION

A Schrader valve consists of an externally threaded hollow cylindrical metal tube, typically of nickel-plated brass. In the center of the exterior end is a metal pin pointing along the axis of the valve stem; the pin's end is approximately flush with the end of the valve body. It is used for pressurizing clean agent fire extinguishing system cylinders. Avenger Schrader valves are used on 20 lb. to 1200 lb. cylinders.



P/N: 383P035



NIPPLE CAP

A valve cap is important on a Schrader valve because if one is not fitter, dirt and water can enter the inside of the valve stem, potentially jamming it or contaminating the sealing surfaces and causing a leak. The cap helps prevent air from escaping from a leaking valve core.



CORE (SCHRADER VALVE)

The valve core has a seal which is attached to a pin. When you push the Nitrogen (N_2) line hose onto the valve, it presses on the pin and it opens the valve to allow the Nitrogen in. The valve ensures that the Nitrogen already in the cylinder is retained.

1/8 NPT to 7/16-20-UNEF FLARE NIPPLE



Flare fittings are used in the construction of our Schrader valve.

Features:

- Precisely Designed
- Rust Proof
- Durable Finish Standards

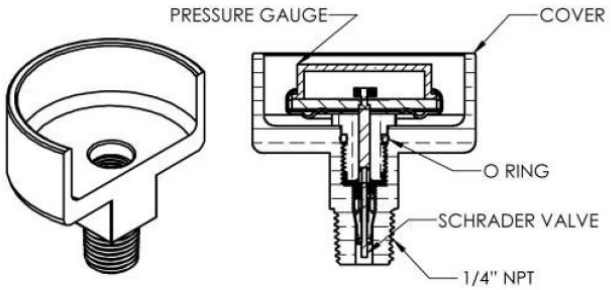
Pressure Gauge & Supervisory Switch Guards

DESCRIPTION

The Pressure Gauge and Pressure Supervisory Switch Guards provide increased safety, flexibility and serviceability when used in valve/cylinder assemblies. They are made of brass material and protect the pressure gauge and pressure supervisory switch from impacts that may cause a leak. The Pressure Gauge and Pressure Supervisory Switch Guards also incorporate a *no loss* connection which allows for the pressure gauge to be replaced easily and safely without discharging the cylinder.

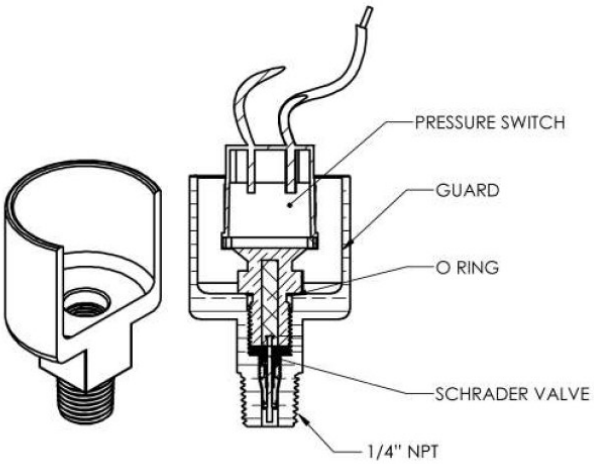
PRESSURE GAUGE GUARD





PRESSURE SUPERVISORY SWITCH GUARD





Safety Relief Disc

DESCRIPTION

Avenger Safety Relief Disc is designed as a pressure safety relief device that prevents over-pressure of pressurized vessels.



BRASS

FEATURES

- Burst Disc pressure is up to 900 psi ± 10%
- Non-corrosive
- Durable and High-Quality performance
- Lightweight
- Designed with accurate thread patterns
- Easy to install
- Available in Brass and Stainless Steel

When over pressure inside of the cylinder is determined to be too high, the foil will burst and the pressure will vent out of these holes.

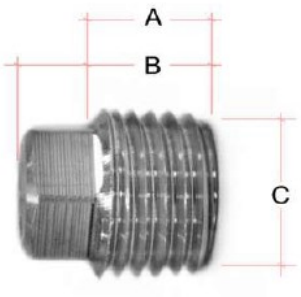




Stainless Steel Plug

DESCRIPTION

Made with 316L Stainless Steel material to provide improved corrosion resistance in corrosive environments. It is often used in processes which contain chlorides and/or halides. It also provides higher creep, stress-to-rupture and tensile strength at elevated temperatures.





FEATURES

- High mechanical properties
- Superior corrosion/oxidation resistance, withstands chemical and high-saline environments
- Excellent weight-bearing properties
- Superior durability
- High strength-to-weigh ratio
- Fair resistance to thermal and electrical conductivity
- Ease of fabrication
- Ease of cleaning and non-magnetic



SPECIFICATIONS

- Connection 1: 1/2”, 1/4”, 1/8” in NPT Male
- Connection Gender 1: Male
- Fitting Type: Plug
- Shape: Hexagon
- Thread Size1: 1/2”, 1/4”, 1/8”
- Thread Standard 1: NPT (Taper)
- Material: Stainless Steel

Latching Solenoid and Local Manual Control



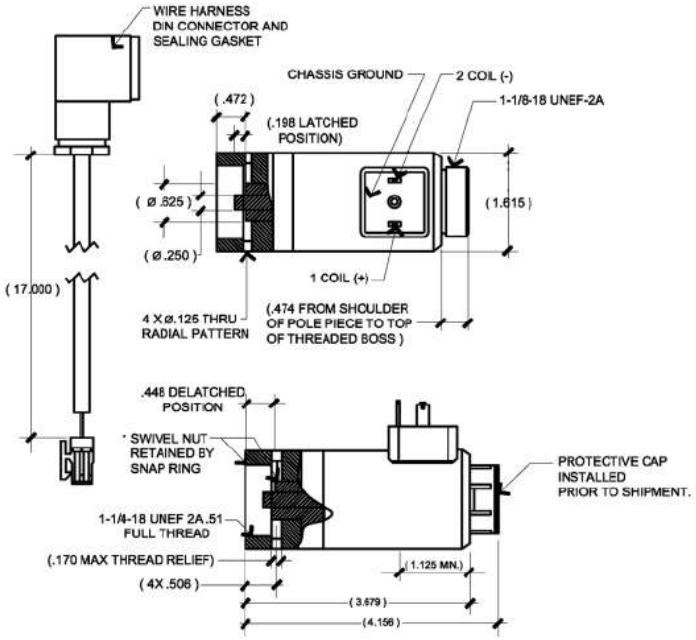
The Latching Solenoid is utilized to open a Schrader Valve on the top fitting connector of the cylinder valve. The application provides a quick reaction and high latching power used with the Avenger 5112 Fire Extinguishing Liquid Agent.

A latching solenoid with a discretionary nearby manual control head is the best answer for the application. The actuator is held in the latching position without power until a flag from the operator discharge control board removes the permanent magnet. When discharged, the latching solenoid opens the cylinder valve enabling the quenching medium to release from the cylinder into the system. The latching solenoid is designed with an emergency release local manual control to manually force the pin to depress the cylinder valve to release the extinguishing medium when needed. In order to reset the system, the solenoid is to be manually returned to the latched position.

This custom latching solenoid designed specifically for fire protection systems is UL listed and tested in accordance with UL 508.

FEATURES

- High latching forces
- Fast response
- Options
  - Manual release button cap
  - Reset tool
- UL approval—recognized to UL 864
- Tested in accordance with UL 508



SPECIFICATION

- Manual actuation force: 12-40 lb (5.44-18kg) max
- Operating force: 20.25—14.6 lb (90-65 N) min
- Power requirement: 24 VDC
- Current: 0.5A @ 24 VDC
- Electrical connection: DIN 43 650-A/ISO 440 3-pin
- Operating temperature range: -4 to 131°F (-20 to 55°C)
- Weight—1.9 lbs. (.86 kg)
- Dimensions:
  - Body diameter: 1.61 in (41mm)
  - Length: 4.17 or 5.9 in (106 or 150 mm) with manual actuation cap

LATCHING SOLENOID LOCAL MANUAL CONTROL



The Latching Solenoid Local Manual Control features a local lever-driven push rod that depresses the Schrader check valve through the latching solenoid with fitted onto the top of the solenoid, thereby venting the pressure from the top of the piston in the cylinder valve, allowed the piston to slide upward and commence cylinder discharge. It can be mounted directly to the top plug adapter on the cylinder valve.

Pressure Supervisory Switch

DESCRIPTION

The switch is utilized to monitor the pressure inside the liquid agent cylinder. In the event that a cylinder spill happens and its weight drops to below 291±10 PSIG, the switch contacts will be activated providing a signal to the releasing control panel to indicate a loss of pressure and potential spillage. The pressure supervisory switch is wired into a supervised circuit to give an indication upon activation.



Electrical Rating

120 VAC - 5.8FLA, 4.8LRA
240 VAC - 2.9FLA, 15LRA
24 VDC - 125VA Pilot Duty
28 VDC - 2 amps

Part Number	Description	Operation
383K0500-N	500 psi NPT	Normally-Closed
383K1500-N	500 psi NPT	Normally-Open
383K0500-M	500 psi M-10	Normally-Closed
383K1500-M	500 psi M-10	Normally-Open

Temperature Range

Ambient –20°F to +150°F

Specification

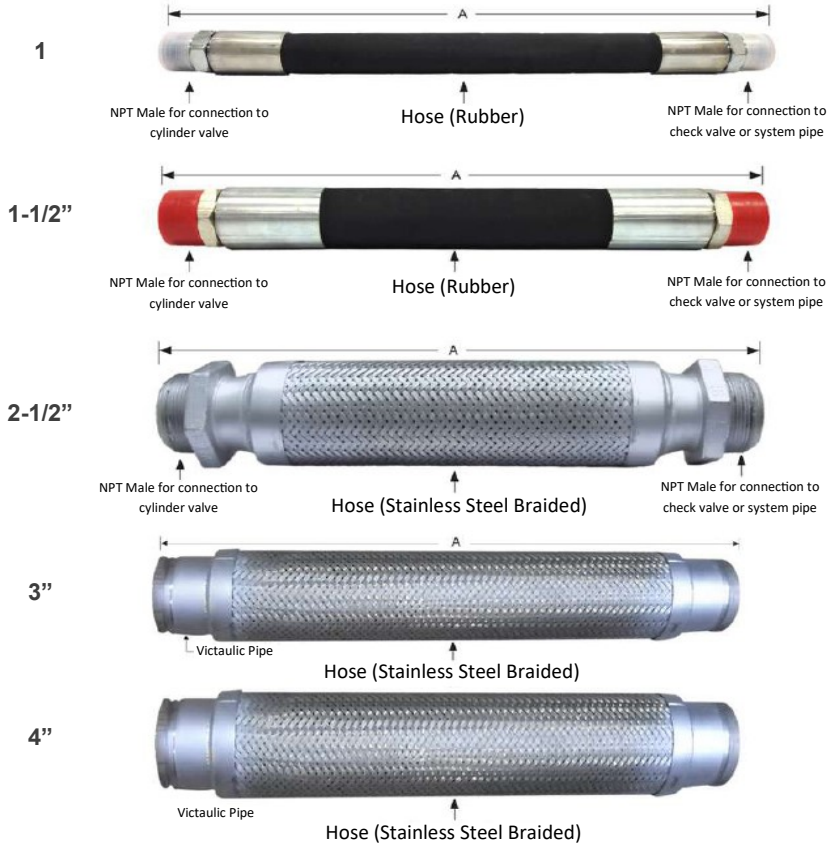
1) Auto-Reset Pressure Switch (SPST)
2) Proof Pressure: 600 PSIG
3) Burst pressure: 5000 PSIG
4) Electrical Ratings:
   120/240 VAC—375 VA
   24 VAC—125 VA
5) Cycle Life: 100,000 Minimum
6) Ambient Temperature: -30 to +70°C
7) Fluid Temperature: -54 to +135°C

Flexible Hoses

DESCRIPTION

Flex hoses are utilized to interface the agent storage cylinders to the distribution pipe network. The flex hoses are constructed of high-pressure driven elastic in the 1” and 1-1/2” sizes, and a stainless steel layered inward center with stainless steel interlaced in the 2-1/2” to 4” versions. All sizes are fitted with male NPT connectors.

For the 650 lb, 800 lb, and 1000 lb cylinders, the flex hose is 3” in diameter and 18” long. The hose is fabricated of a stainless steel folded internal center with stainless steel interlaced. The hose has 3” Victaulic fittings on each end. The 4” flex hose is fabricated of a stainless steel folded internal center with stainless steel interlaced. The hose has 4” Victaulic fittings on each end.



Part Number	Diameter	Description	A	Material
383S1010	1”	Flexible Hose	18”	Rubber
383S1015	1-1/2”	Flexible Hose	18”	Rubber
383S1025	2-1/2”	Flexible Hose	18”	Stainless Steel Braided
383S1030	3”	Flexible Hose	18”	Stainless Steel Braided
383S1230	3” x 6”	Flexible Hose and Check Valve Assembly	26”	Stainless Steel Braided/Brass
383S1040	4”	Flexible Hose	18”	Stainless Steel Braided
383S1240	4” x 6”	Flexible Hose and Check Valve Assembly	26”	Stainless Steel Braided/Brass

Shuttle & Check Valves

CHECK VALVE

The check valves are utilized when at least two agent storage cylinders are manifolded together with a single release pipe design. The purpose is to prevent the loss of agent if a cylinder is not present at the time of system discharge and to anticipate reverse flow of agent into different cylinder connected to the manifold. All parts of the check valve are crafted of metal for strength and protection against consumption. The metal to metal fixing range of the circle and seat is precisely lapped, giving a tight close-off of both gas and fluid.



Part Number	Description	Valve Size
383S2010	Check Valve	1”
383S2015	Check Valve	1-1/2”
383S2025	Check Valve	2-1/2”
383S1300	Check Valve Assembly	3”
383S1330	Check Valve Assembly	4”

SHUTTLE VALVE

The brass shuttle valve is utilized to associate two cylinders - main and reserve - to a typical release pipe and nozzle(s). The shuttle valve prevents agent flow from a reserve cylinder from entering the main cylinder during discharge.

Part Number	Description
383S3010	1” Shuttle Valve
383S3015	1-1/2” Shuttle Valve



Discharge Nozzle

DESCRIPTION



The function of the discharge nozzle in a fire extinguishing system, is to distribute the clean agent in a uniform, pre-determined pattern and concentration. The nozzles are designed to complete the discharge of clean agent in 10 seconds or less when installed within the design limitations as stated in the installation instruction manual.

Discharge nozzles are available in sizes of 1/2", 3/4", 1", 1-1/4", 1-1/2", and 3". Each discharge nozzle comes in tow configurations; 180 and 360 degree distribution patterns. Deflector plates are available as an option where sensitive ceiling tiles must be protected.

All discharge nozzles have female pipe threads. The orifice size of the discharge nozzle is determined by the hydraulic flow calculations. All nozzles are rated for a maximum hazard height of 16 feet. If hazards exceed 16 feet in height, a second tier of nozzles must be used.

Discharge nozzles are available in Aluminum, Brass, and Stainless Steel material.

Discharge Nozzle Selection - Sidewall 180°

Typically installed adjacent to the center of the wall in one enclosure. The discharge path will be across the enclosure. At no time shall the area coverage be exceeded.

Discharge Nozzle Selection - Central 360°

Typically installed at the center of the enclosure. The discharge path will be across the enclosure. At no time shall the area coverage be exceeded.

Installation

Please refer to the Avenger 5112 Installation, Maintenance, and Service technical manual for discharge nozzle are coverage and application selections.

Part Number	Description	Part Number	Description
383S40501*-xxxx	1/2" (180°) Sidewall	383S41251*=xxxx	1-1/4" (180°) Sidewall
383S40502*-xxxx	1/2" (360°) Central	383S41252*=xxxx	1-1/4" (360°) Central
383S40751*=xxxx	3/4" (180°) Sidewall	383S41501*=xxxx	1-1/2" (180°) Sidewall
383S40752*=xxxx	3/4" (360°) Central	383S41502*=xxxx	1-1/2" (360°) Central
383S41001*=xxxx	1" (180°) Sidewall	383S42001*=xxxx	2" (180°) Sidewall
383S41002*=xxxx	1" (360°) Central	383S42002*=xxxx	2" (360°) Central

Note: * is "A" for Aluminum, "B" for Brass, and "S" for Stainless Steel

Instructional Signs

DESCRIPTION

Instructional Signs should be supplied in order to provide a system in which the function of all devices is easy to understand. Avenger Systems offers several standard signs to comply with NFPA and other industry requirements. All signs are made of durable plastic and backed with a strong adhesive for easy installation. Signs are typically installed at all entrances [e.g. CAUTION—Room Protected by FK-5-1-12] and near any devices for which additional explanation is helpful. Custom instructional signage is available upon request.

MANUAL DISCHARGE STATON SIGN



The purpose of the Manual Discharge Station Sign is to identify the manual pull station as the place where the FK-5-1-12 can be manually discharged. It also minimizes the possibility of the manual pull station being mistaken for a fire alarm device. The sign has a dimension of 4" x 4" x 1/16" (100 x 100 x 1.5 mm) and is made of plastic with white lettering on a red background. The manual discharge station sign should be located in proximity to the manual pull station for quick positive identification.

FLASHING LIGHT SIGN



The purpose of the Flashing Light Sign is to attract public notice/attention in the event of a FK-5-1-12 discharge. The sign has a dimension of 7" x 4-1/4" x 1/16" (178 x 108 x 1.5 mm) and is made of plastic with white lettering on a red background. This will alert personnel when FK-5-1-12 has been discharged and allow them to take appropriate action.

YELLOW CAUTION SIGN



The purpose of the Caution Sign is to alert personnel that the room is protected by FK-5-1-12 and that all doors should be kept closed in the event of fire. The sign has a dimension of 14" x 10" x 1/16" (356 x 254 x 1.5 mm) and is constructed of plastic with a yellow background. The Caution sign should be conspicuously located in any rooms where FK-5-1-12 protection is being provided.

Avenger Systems offers 3 additional standard CAUTION signs to comply with NFPA and AHJs to provide caution and direction to various system component devices. All signs are made of durable plastic and backed with a strong adhesive for easy installation. All signs have a dimension of 3-1/2" x 7-1/2" x 1/16" with white lettering on a red background.



CAUTION (When Alarm Sounds…)

The purpose of the caution sign is to alert personnel to evacuate the protected area. The sign should be conspicuously located near alarm devices.



CAUTION (Do Not Enter Room…)

The purpose of the caution sign is to prevent personnel from entering a protected area. The sign should be conspicuously located outside the entrance door to the protected area.



CAUTION (Operation of Manual Station Will…)

The purpose of this caution sign is to instruct personnel as to the use of the Agent Release Manual Pull Station. This sign should be installed adjacent to all Agent Release Manual Pull Stations.

Liquid Level Indicator

DESCRIPTION

The Liquid Level Indicator is a simple, manually-operated device that allows one to determine the amount of liquid agent in vertically-mounted agent cylinders. Once the liquid level is determined it can be used to determine the weight of the liquid agent present in the cylinder.



Operation

A magnet equipped float moves with the liquid level along the unit stem. Level readout is obtained by simply removing the protective cap and pulling out a calibrated tape until magnetic interlock with the float is felt. With the tape in this position, the readout is obtained at the point where the tape emerges from the unit housing. With the graph (per cylinder size), the tape reading is converted to lbs. of Clean Agent in the cylinder.

Features

- Reduced maintenance time - weight in a cylinder can be determined in a fraction of the time it would take to remove and weigh it.
- Continuous fire protection - use of the liquid level indicator does not require removing the cylinder form the system, thus providing uninterrupted fire protection
- Field installation capability - the indicator can easily be installed in the field using a single wrench as long as the container is empty and is equipped with a mounting boss.
- Compact - when not in use, the unit requires no more space than that required by the cylinder
- Flexibility - the flexible tape design allows the unit to be used in tight spaces that would otherwise hinder the use of a rigid -type indicator “stick”
- Availability - units are available for all Avenger Systems cylinders from sizes of 150 lb through 1200 lb.

Part Number	Description
383E001	Liquid Level Indicator for 150 lb & 250 lb cylinders
383E002	Liquid Level Indicator for 375 lb & 560 lb cylinders
383E006	Liquid Level Indicator for 650 lb cylinders
383E005	Liquid Level Indicator for 800 lb cylinders
383E004	Liquid Level Indicator for 1000 lb cylinders
383E003	Liquid Level Indicator for 1200 lb cylinders



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